ASPECTS OF WARLPIRI MORPHOLOGY AND SYNTAX

by

JANE HELEN SIMPSON

B.A.(HONS), Australian National University [1974]

M.A., Australian National University [1976]

SUBMITTED TO THE DEPARTMENT OF LINGUISTICS AND PHILOSOPHY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

April 1983

© Jane Helen Simpson 1983

The author hereby grants to M.I.T. permission to reproduce and to distribute copies of this thesis document in whole or in part.

Signature of Author ____________________________

Department of Linguistics and Philosophy

April 1983

Certified by ____________________________

Kenneth Locke Hale
Thesis Supervisor

Accepted by ____________________________

Samuel Jay Keyser
Chairman, Departmental Graduate Committee

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

AUG 1 1983
ASPECTS OF WARLPIRI MORPHOLOGY AND SYNTAX

Jane Helen Simpson

Submitted to the Department of Linguistics and Philosophy in April, 1983, in partial fulfillment of the requirements for the degree of Doctor of Philosophy

ABSTRACT

I present a fragment of Warlpiri grammar, within the framework of Lexical-Functional Grammar (LFG), focusing on the morphological and syntactic representation of the relations between arguments and argument-taking predicates. In Chapter 2, I discuss the assignment of grammatical functions to arguments within finite clauses headed by verbs or nominals. I argue for a rule which assigns grammatical functions freely to the daughters of S. This rule is the source of free word-order in Warlpiri. I also argue for a rule allowing an argument-taking predicate to introduce a null pronominal for any grammatical function which is linked to an argument of that predicate. This rule is the source of zero anaphora in Warlpiri.

Chapter 3 shows that case-suffixes have two main uses: to indicate that a nominal bears a particular grammatical function, such as SUBJECT, or that it is an attribute of another argument, and to act as an argument-taking predicate analogous to an English preposition. To preserve the Lexical Integrity Hypothesis, this last use requires the assignment of grammatical functions within the morphology, as part of the word-building process. I show that this assignment allows an account of the unusual phenomenon of double case-marking.

Chapters 4 and 5 treat the use of nominals as secondary predicates. The existence of discontinuous nominal expressions marked with the same case-suffix is shown to follow from independently needed rules. I claim that nominal secondary predicates are normally independent adjuncts, rather than subcategorizing arguments, as in English. A striking illustration of this is provided by the great freedom resultative attributes in Warlpiri have, compared with their English counterparts.

In Chapter 6, I examine the use of nominalized verbs, action nominals, and complementizer suffixes as secondary predicates. Such clauses have null pronominal SUBJECTs which bear case, suggesting that they must be anaphorically controlled. I show that the properties of complementizer suffixes can be represented in the same way as the properties of case-suffixes, with the exception that complementizer suffixes specify the grammatical function of their controllers. I present a classification of Warlpiri complementizer suffixes, in terms of their controllers and their tense properties, including a discussion of clauses with controlled OBJECTs.

Thesis Supervisor: Kenneth Locke Hale

Title: Ferrari P. Ward Professor of Linguistics
ACKNOWLEDGEMENTS

I thank my adviser, Kenneth Hale, and the other members of my committee, Joan Bresnan and Paul Kiparsky, for reading and criticising the drafts which coalesced to form this thesis. Ken Hale not only spent a great deal of time arguing about the analysis and its presentation, and suggesting improvements to both: he also provided most of the Warlpiri material. Were it not for his extraordinary generosity with ideas, material and time, this thesis would not have been written. I thank Joan Bresnan and Paul Kiparsky, for pointing out weaknesses and suggesting improvements and solutions, which have led to many revisions and excisions.

Mary Laughren and David Nash generously supplied many Warlpiri examples and counter-examples, as well as insights into the structure of Warlpiri. I also wish to thank Edith Bavin, Jeannie Nungarrayi Egan, Leonard Japanganka Granites, and Timothy Shopen, for Warlpiri data; Boris and Natasha Katz, and Carol Neidle for help with Russian; Lauri and Seija Carlson, and Paul Kiparsky for help with Finnish, and James Huang, for help with Chinese.

I thank Avery Andrews, Noam Chomsky, Mary Laughren, Beth Leviin, Lori Levin, K.P. Mohanan, and Annie Zaenen for reading earlier drafts. Their criticisms were invaluable. The sections on morphology owe a lot to Diana Archangeli, K.P Mohanan, Douglas Pulleyblank, Donca Steriade and Meg Withgott. The sections on secondary predicates benefited from the help, both intellectual and practical, of Annie Zaenen and Joan Maling, as well as from discussions with Lori Levin, John Robert Ross, Susan Rothstein, Barry Schein, Timothy Stowell, and Edwin Williams.

It is hard to list all the people around MIT who have helped me over the past few years, but, in connection with this thesis, I would like to thank in particular Jane Grimshaw, Per-Kristian Halvorsen, James Higginbotham, Ronald Kaplan, Maria Rita Manzini, Alec Marantz, Carol Neidle, Malka Rappaport, Mamoru Saito and Maria Luisa Zubizarreta.

At the Australian National University, R.M.W. Dixon, John Haiman, and Anna Wierzbicka introduced me to lexical semantics. This interest, which informs the thesis, has been furthered by discussions with Richard Carter and Nicholas Ostler, and by work on the Warlpiri Dictionary Project.

Work on this thesis was funded by NSF Grant No. BNS-7913950 (Principal Investigator, Kenneth Hale). Word processing facilities at M.I.T. were provided by Joan Bresnan and Kenneth Hale, and at PARC-Xerox, by Ronald Kaplan. The excerption of example sentences was made much easier by the existence of the on-line text corpus, typed in as part of the Warlpiri dictionary project, by Lisa Travis, David Nash, Allan Wechsler, Mary Laughren and Mohammed Guerssel. The M.I.T. Hayden Library inter-library loan staff went out of their way to find obscure books. Finally, I thank my family, Mary Laughren, Beth Levin, Lori Levin, and, above all, Carol Neidle, without whose unfailing help this thesis would never have been finished.
ABBREVIATIONS

Sources

I have tried to indicate the source of each example sentence where I know it. If the example sentence is made up, I have indicated this, unless the sentence is elementary.

Lowercase words enclosed in square brackets, e.g. [wapami], refer to entries in the Warlpiri Dictionary.

Works by Warlpiri speakers.

JJ1 Jerry Jangala, text 1. In Swartz (ed.) See Bibliography.


MLJ Maurice Luther Jupurrula, introduction. In Swartz (ed.) See Bibliography.


Works by Hale.

EFW Hale, Kenneth: *Essential features of Warlpiri main clauses*. See Bibliography.
Excerpt Hale, Kenneth: Excerptions from fieldnotes.
Hnotes Hale, Kenneth: fieldnotes
HS9 Hale, Kenneth: fieldnotes made in 1959
H60Dial Hale, Kenneth: [H59.7.110os]
H66PSJ Hale, Kenneth: transcription of text recorded by Paddy Stuart Jupurrula.
Messages Messages sent to Ken Hale from Yuendumu.

Works by others

Carrier Carrier, Jill. See Bibliography.
JS Simpson, Jane: fieldnotes 1982
Kesteven Kesteven, Sue. See Bibliography.
ML Laughren, Mary. See Bibliography.
Nash Nash, David. See Bibliography.
Swartz Swartz, Stephen. See Bibliography.

Abbreviations used in glosses

NOTE: I have adopted the following conventions in glossing.
1. The default case ABSOLUTE is marked.

2. The default AUXILIARY Aspect marker is not marked.

3. If a single Warlpiri word corresponds to several English words, I have marked the breaks with fullstops. However, I have been cavalier about using single English words to gloss preverb-verb combinations, and verbs formed with the CAUS or INCH suffixes, if the combination is not transparent.

\[ \text{pikirri} \quad \text{wajili-pi} \]

\[ \text{spear.thrower} \quad \text{chase} \]
1. **AUXILIARY**

a. *Propositional particle*

| DEC         | declarative     | karinganta |
| HYP         | counterfactual  | kulanganta |
| INT         | interrogative   | japa      |
| PROB        | probably, potential | marda |
| QUOT        | quotative, suppose | nganta |

b. **Conjunctions**

| AND  | and, inclusive or | manu |
| BUT  |                   | kala |

c. *Sentence particle*

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMON</td>
<td>kalaka</td>
</tr>
<tr>
<td>ATT</td>
<td>kuku</td>
</tr>
<tr>
<td>FUT</td>
<td>kapikapu</td>
</tr>
<tr>
<td>FUT</td>
<td>ngarra</td>
</tr>
<tr>
<td>IF</td>
<td>kaji</td>
</tr>
<tr>
<td>NEG</td>
<td>kula</td>
</tr>
<tr>
<td>NEG</td>
<td>winjarra/winjarni</td>
</tr>
<tr>
<td>PERM</td>
<td>pangkala</td>
</tr>
<tr>
<td>POT</td>
<td>kajika</td>
</tr>
<tr>
<td>REAS</td>
<td>yungu/yinga/yingi</td>
</tr>
<tr>
<td>REAS</td>
<td>yi</td>
</tr>
<tr>
<td>REL</td>
<td>kuja/ngula</td>
</tr>
<tr>
<td>USIT</td>
<td>kala</td>
</tr>
</tbody>
</table>

d. **Aspect**

**NOTES:**

1. Occasionally in the texts pa is used for ka. I have standardized these to ka.

2. I have in general not recorded the zero PERF Aspect.

PRES ka present imperfect
PAST -/pa past imperfect
PERF Ø perfect

e. **Pronominal clitic**

NOTE: I have not distinguished between Clitic 1 (SUBJECT) and Clitic 2 (non-SUBJECT) in glossing pronominal clitics. So, if an AUX has a first person SUBJECT Clitic 1, and a second person OBJECT Clitic 2: rna-ngku, it is glossed as "1sg-2sg".

<table>
<thead>
<tr>
<th>sg</th>
<th>dual</th>
<th>pl</th>
<th>1,2,3</th>
<th>DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>singular</td>
<td>in</td>
<td>ex</td>
<td>inclusive</td>
<td>reflexive</td>
</tr>
<tr>
<td>ex</td>
<td>CON</td>
<td>refl</td>
<td>reflexive</td>
<td></td>
</tr>
<tr>
<td>exclusive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **VERB**

NOTE: Verbs are cited in their *Non-past* form in the text.

a. **Tense inflections, arranged by conjugation:**

<table>
<thead>
<tr>
<th>IMM.FUT</th>
<th>IMMEDIATE FUTURE (rare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>V2</td>
</tr>
<tr>
<td>ju</td>
<td>ku</td>
</tr>
<tr>
<td>IMP</td>
<td>IMPERATIVE</td>
</tr>
<tr>
<td>ya</td>
<td>ka</td>
</tr>
<tr>
<td>IRR</td>
<td>IRRREALIS</td>
</tr>
<tr>
<td>ya-rla</td>
<td>ka-rla</td>
</tr>
<tr>
<td>NPST</td>
<td>NONPAST</td>
</tr>
<tr>
<td>mi,0</td>
<td>rni,ni</td>
</tr>
<tr>
<td>PAST</td>
<td>PAST</td>
</tr>
<tr>
<td>ja</td>
<td>rnu</td>
</tr>
<tr>
<td>PREST</td>
<td>PRESENTATIONAL PRESENT (rare)</td>
</tr>
<tr>
<td>nya</td>
<td>rninya</td>
</tr>
</tbody>
</table>
b. Non-finite forms

<table>
<thead>
<tr>
<th></th>
<th>nja</th>
<th>rininja</th>
<th>nja</th>
<th>rininja</th>
<th>ninja</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AG</td>
<td>ngu</td>
<td>rnu</td>
<td>ngu</td>
<td>rnu</td>
<td>nu</td>
</tr>
<tr>
<td>Agentive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. NOMINAL

a. Case

**grammatical:**

| Case   |  
|--------|--------
| ABS    | ABSOLUTIVE  
| DAT    | DATIVE  
| ERG    | ERGATIVE  
| ALL    | ALLATIVE  
| COM    | COMITATIVE: 'with'  
| EL     | ELATIVE  
| LOC    | LOCATIVE  
| TRANS  | TRANSLATIVE  

**semantic:**

| Case   |  
|--------|--------
| ABS    |  
| DAT    | -ku  
| ERG    | -ngku, -rlu  
| ALL    |  
| COM    | -ngkajinta, -rlajinta  
| EL     | -ngurulu  
| LOC    | -ngka, -rla  
| TRANS  | -karda  

b. Non-finite forms

CAUS causative
EMIT emit noise
INCH inchoative
LATIVE 'go and V'
PROG progressive

N-arrimi
V-INF-ini
V-INF-yani

d. Directionals

|       |  
|-------|--------
| HERE  | hither, to here  
| BY    | past, by, across  
| THERE | thither, to there  

-rra

|       |  
|-------|--------
| ABS    |  
| DAT    |  
| ERG    |  
| ALL    |  
| COM    |  
| EL     |  
| LOC    |  
| TRANS  |  

N-mani
N-mani

### Derivational:

<table>
<thead>
<tr>
<th>ASSOC</th>
<th>associative, perfective</th>
<th>-warnu</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPAB</td>
<td>capable of</td>
<td>-marda</td>
</tr>
<tr>
<td>CHAR</td>
<td>characteristic</td>
<td>-panu</td>
</tr>
<tr>
<td>DENIZ</td>
<td>denizen of</td>
<td>-ngawurrpa</td>
</tr>
<tr>
<td>EXCESS</td>
<td>excessive</td>
<td>-witawangu</td>
</tr>
<tr>
<td>INHAB</td>
<td>inhabitant of</td>
<td>-wardingki</td>
</tr>
<tr>
<td>LIKE</td>
<td>as, like, simile-former</td>
<td>-piya</td>
</tr>
<tr>
<td>PERL</td>
<td>perlative: 'along'</td>
<td>-wana</td>
</tr>
<tr>
<td>POSS</td>
<td>possessive</td>
<td>-kurlangu</td>
</tr>
<tr>
<td>PRIV</td>
<td>privative, negative</td>
<td>-wangu</td>
</tr>
<tr>
<td>PROP</td>
<td>proprietary, having</td>
<td>-kurlu, -parnta</td>
</tr>
<tr>
<td>SOURCE</td>
<td>Elative of SOURCE</td>
<td>-jangka</td>
</tr>
</tbody>
</table>

### b. Number

<table>
<thead>
<tr>
<th>PL</th>
<th>PLURAL</th>
<th>-patu</th>
</tr>
</thead>
<tbody>
<tr>
<td>DU</td>
<td>DUAL</td>
<td>-jarra</td>
</tr>
</tbody>
</table>

### c. Nominal formatives

| ANOTHER          | -kariyinyanu |
| BETTER           | be better off, rather | -katu |
| DIM              | diminutive     | -pardu |
| EVER             | on interrogatives | -puka |
| E.G.             | for example    | -rlangu |
| KIN              | various kinship suffixes, e.g. | -puraji, nyanu |
| LIKE             | as, like, simile-former | -piya |
| ONE              | the one which is, definite | -pirdinypa |
| ONLY             |                   | -mipa |
| OTHER            |                   | -kari |
| SET              |                   | -pinki |
| TOWARD           | towards         | -purda |
| VERY             | intensifier, really | -nyayirni |

### d. Demonstratives

### NOTES:

1. The clitic *ju* freely attaches to most of the demonstratives. I will not gloss this clitic separately when attached to demonstratives.

2. I generally do not gloss morphologically unmarked demonstratives with ABSOLUTIVE.
4. **Complementizers appearing on both nominals and infinitives**

<table>
<thead>
<tr>
<th>Complementizer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMON</td>
<td>admonitive</td>
</tr>
<tr>
<td>ALL</td>
<td>ALLATIVE purposive complementizer</td>
</tr>
<tr>
<td>ASSOC</td>
<td>associative, perfective</td>
</tr>
<tr>
<td>CIRC</td>
<td>circumstantial</td>
</tr>
<tr>
<td>COMCOMP</td>
<td>COMITATIVE complementizer</td>
</tr>
<tr>
<td>DAT</td>
<td>DATIVE purposive complementizer</td>
</tr>
<tr>
<td>DESIR</td>
<td>desirous of</td>
</tr>
<tr>
<td>OCOMP</td>
<td>Object-controlled complementizer</td>
</tr>
<tr>
<td>OBLCOMP</td>
<td>Oblique-controlled complementizer</td>
</tr>
<tr>
<td>PREP</td>
<td>preparatory</td>
</tr>
<tr>
<td>PRIV</td>
<td>privative, negative</td>
</tr>
<tr>
<td>SEQ</td>
<td>sequential</td>
</tr>
<tr>
<td>SSCOMP</td>
<td>Subject-controlled complementizer</td>
</tr>
</tbody>
</table>

5. **Clitics and particles**

**NOTE:** Clitics other than AUXILIARY clitics are marked with a + boundary.

<table>
<thead>
<tr>
<th>Clitic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALSO</td>
<td>assertive</td>
</tr>
<tr>
<td>ASSERT</td>
<td>assertive</td>
</tr>
<tr>
<td>BEFORE</td>
<td>state/action not coincident with matrix event</td>
</tr>
<tr>
<td>CLEARLY</td>
<td>obviously, as you know</td>
</tr>
<tr>
<td>CONC</td>
<td>concessive, contrastive</td>
</tr>
<tr>
<td>CONT</td>
<td>continuative (on verbs)</td>
</tr>
<tr>
<td>EMPH</td>
<td>emphatic</td>
</tr>
<tr>
<td>EMPH</td>
<td>emphatic, interrogative</td>
</tr>
<tr>
<td>+ yijala</td>
<td></td>
</tr>
<tr>
<td>+ wiyi</td>
<td></td>
</tr>
<tr>
<td>+ jala</td>
<td></td>
</tr>
<tr>
<td>+ kula</td>
<td></td>
</tr>
<tr>
<td>+ yi</td>
<td></td>
</tr>
<tr>
<td>+ wu(rru)</td>
<td></td>
</tr>
<tr>
<td>+ nya</td>
<td></td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Meaning</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EUPH</td>
<td>used both as a stylistic phonological extender, and as an 'old information marker'</td>
</tr>
<tr>
<td>EVID</td>
<td>evidential, assertive</td>
</tr>
<tr>
<td>JUST</td>
<td>just</td>
</tr>
<tr>
<td>PREC</td>
<td>precisely</td>
</tr>
<tr>
<td>STILL</td>
<td>still, yet</td>
</tr>
<tr>
<td>THEN</td>
<td>state/action coincident with matrix event</td>
</tr>
<tr>
<td>WONDER</td>
<td>I wonder, self-interrogative</td>
</tr>
<tr>
<td>YCU.KNOW</td>
<td></td>
</tr>
</tbody>
</table>
CONTENTS

1. Introductory Chapter ...........................................................................................................18
   1.1 Introduction ..................................................................................................................18
   1.2 Events and participants ...............................................................................................21
   1.3 The model ....................................................................................................................32
     1.3.1 An LFG account of grammatical functions .........................................................34
       1.3.1.1 Constraints .......................................................................................................45
       1.3.1.2 Complements and Adjuncts ...........................................................................52
       1.3.1.3 Summary of grammatical functions ...............................................................64
       1.3.2 The Lexicon .........................................................................................................65
       1.3.3 Morphological Expression ......................................................................................72
       1.3.4 Constituent-structure expression ............................................................................79
         1.3.4.1 Categorial Features .........................................................................................80
         1.3.4.2 Phrase-structure rules ......................................................................................83
   1.4 Outline ..........................................................................................................................84
CONTENTS

2. Simple sentences ............................................................................................................ 88
   2.1 Introduction .................................................................................................................. 88
   2.2 An intransitive sentence ............................................................................................. 90
      2.2.1 Categorial information ....................................................................................... 92
      2.2.2 Morphological information ............................................................................... 103
      2.2.3 Semantic information ......................................................................................... 106
      2.2.4 Assigning other functions ................................................................................. 109
      2.2.5 Building an f-structure ...................................................................................... 111
      2.2.6 Constraints on f-structures ............................................................................... 114
         2.2.6.1 General constraints on f-structures ............................................................. 115
         2.2.6.2 Particular constraints on f-structures ............................................................ 122
      2.2.7 Summary of principles and constraints ............................................................... 124
   2.2.8 Introduction of PRO ................................................................................................ 125
      2.2.8.1 Clitic-doubling ................................................................................................ 135
   2.3 Transitive sentences ..................................................................................................... 139
      2.3.1 Other transitives .................................................................................................... 148
         2.3.1.1 The ABSOLUTIVE-DATIVE case-frame ..................................................... 149
         2.3.1.2 The ERGATIVE-DATIVE verbs .................................................................. 158
         2.3.1.3 Summary ....................................................................................................... 168
         2.3.1.4 Ditransitive verbs ......................................................................................... 168
      2.3.2 Other DATIVES ...................................................................................................... 170
         2.3.2.1 Adjunct DATIVES ........................................................................................ 171
         2.3.2.2 Unregistered DATIVES ............................................................................... 179
      2.3.3 Reflexives .............................................................................................................. 182
      2.3.4 Summary of pronominal clitics ............................................................................ 189
         2.3.4.1 Paradigmatic gaps ........................................................................................ 195
   2.4 Nominal-headed sentences ............................................................................................ 203
      2.4.1 General properties ................................................................................................ 203
      2.4.2 Comparison with verb-beaded sentences ............................................................. 208
   2.5 Phrase structure ............................................................................................................ 214
      2.5.1 Projection of N ..................................................................................................... 215
      2.5.2 Projection of V ..................................................................................................... 219
CONTENTS

3. Case .................................................................................................................... 227

3.1 Introduction ....................................................................................................... 227
3.2 Uses of case in Warlpiri ................................................................................. 230
  3.2.1 Argument-relaters ....................................................................................... 231
  3.2.2 Argument-taking predicates ....................................................................... 232
  3.2.3 Arguments and attributes .......................................................................... 234
    3.2.3.1 Nominalized verbs .............................................................................. 236
    3.2.3.2 Case suffixes ...................................................................................... 236
  3.3 Case as a concord marker .............................................................................. 238
    3.3.1 Case on adverbs ..................................................................................... 242
  3.3.2 Concord of ADJUNCTS ............................................................................. 248
  3.4 Case as an argument-taking predicate .......................................................... 253
    3.4.1 XCOMP .................................................................................................. 253
    3.4.2 Matrix predicates ..................................................................................... 260
    3.4.3 ADJUNCTS ............................................................................................ 263
      3.4.3.1 Sentential ADJUNCTs ..................................................................... 263
      3.4.3.2 Argument ADJUNCTs .................................................................... 264
  3.5 Representation of case-marked nominals ....................................................... 265
    3.5.1 Solution .................................................................................................. 273
    3.5.2 Double case-marking ............................................................................... 284
      3.5.2.1 ERGATIVE ....................................................................................... 294
      3.5.2.2 DATIVE ........................................................................................... 297
      3.5.2.3 ABSOLUTIVE ............................................................................... 299
    3.5.3 Summary of case representation ............................................................. 301
  3.6 Derivational Case ........................................................................................... 301
CONTENTS

4. Discontinuous expressions ................................................................. 310

  4.1 Introduction ..................................................................................... 310
  4.2 ADJUNCTS within N
                          ................................................................. 316
    4.2.1 ADJUNCTS within AGR nominals ................................................. 316
    4.2.2 ADJUNCTS within ATP nominals ................................................. 320
    4.2.2.1 Derivational case-suffixes ...................................................... 330
    4.2.2.2 LOCATIVE .............................................................................. 341
    4.2.2.3 Double case-marking and concord ........................................... 342
    4.2.3 Summary ..................................................................................... 346
  4.3 Discontinuous expressions .............................................................. 347
    4.3.1 Discontinuous expressions with AGR case. ................................... 347
      4.3.1.1 The unmerged interpretation ............................................... 348
      4.3.1.2 The merged interpretation ................................................. 350
    4.3.2 Discontinuous expressions with ATP case-suffixes ....................... 355
      4.3.2.1 ATP nominals as merged attributes ..................................... 361
    4.4 Summary ......................................................................................... 362
CONTENTS

5. Nominal predicates ................................................................. 364
  5.1 Introduction ........................................................................ 364
  5.2 Phrase structure position ....................................................... 367
    5.2.1 Phrase structure position and XCOMP in English .......... 367
    5.2.2 Phrase structure position and ADJUNCTs ..................... 369
    5.2.3 Position and ADJUNCTs in Warlpiri ............................. 377
      5.2.3.1 Apposition in Warlpiri ....................................... 377
      5.2.3.2 Circumstantials in Warlpiri ................................. 380
      5.2.3.3 Other interpretations .......................................... 382
    5.2.4 Summary ...................................................................... 391
  5.3 Category .......................................................................... 392
  5.4 The Lexicon .................................................................... 396
    5.4.1 Classes of English verbs selecting XCOMP .................. 397
    5.4.2 XCOMP in Warlpiri .................................................... 398
      5.4.2.1 Copula and XCOMP constructions ......................... 402
    5.4.3 XCOMP-adding rules ................................................. 410
      5.4.3.1 Depictive-type adjuncts ...................................... 411
      5.4.4 Resultatives .......................................................... 418
      5.4.4.1 Translative ....................................................... 420
    5.5 Conclusion ..................................................................... 424
## CONTENTS

6. Nominalized verbs and complementizer suffixes .............................................. 426

6.1 Introduction ........................................................................................................ 426
6.2 Evidence for anaphoric control ........................................................................ 428
  6.2.1 Introduction .................................................................................................... 428
  6.2.2 Anaphors and disjoint reference .................................................................. 429
    6.2.2.1 Kariinyanu ............................................................................................. 429
  6.2.2.2 The Case of PRO .................................................................................... 434
  6.2.2.3 Functions of non-finite clauses ................................................................. 438
6.3 Structure of the nominalized verb .................................................................... 446
  6.3.1 External structure .......................................................................................... 446
  6.3.2 Internal structure ........................................................................................... 447
  6.3.2.1 Arguments for non-finite verbs as nominals ............................................ 447
6.4 Complementizer suffix structures .................................................................... 452
  6.4.1 OBLIQUE\textsubscript{theta} Nominal + karra .............................................. 453
  6.4.2 Action Nominal + karra ............................................................................. 455
  6.4.3 Nominalized Verb + karra .......................................................................... 458
6.5 The complementizer suffixes ......................................................................... 464
  6.5.1 An account of anaphoric control .................................................................. 465
    6.5.1.1 Dependent tense .................................................................................... 467
  6.6 Overview of complementizer suffixes ............................................................... 478
    6.6.1 Simultaneous action obviation system ....................................................... 479
    6.6.1.1 Non-finite clauses with overt SUBJECTs: rlarni .................................... 485
    6.6.2 Subsequent action suffixes ........................................................................ 489
    6.6.3 Circumstantial suffixes ............................................................................... 495
    6.6.4 Derivational suffixes ................................................................................. 498
    6.6.5 Case-suffixes ............................................................................................. 510
    6.6.6 Multiple ADJUNCTs .................................................................................. 516
1. Introductory Chapter

1.1 Introduction

The main point of psychologic interest here involved is that logical relations that are in many, probably most, languages expressed by syntactic means are in several American languages expressed, to at least some extent, by morphologic, or, if preferred, compositional processes. "I song-write" is such a replacement of the syntactic "I write songs", but the replacement is logically and psychologically parallel to that of "as white as snow" by "snow-white". In both cases the grammatical expression of a logical relation, in other words a syntactic process, is sacrificed to a compositional process in which the logical relation is only implied. The sacrifice of syntax to morphology or word-building is indeed a general tendency in more than one American language. [Sapir, 1911: 257].

Like the American languages described by Sapir, Warlpiri, a Pama-Nyungan language spoken in Central Australia, is a language in which the burden of representing the relations between predicates and arguments (Sapir's "logical relations")is borne by the morphology, rather than the syntax. Many of the properties associated with constituent structure in English are associated with morphological structure in Warlpiri. Recent work in generative grammar has tended to concentrate on languages which make much greater use of constituent structure than Warlpiri does. There has been relatively little attention paid to representing information about grammatical functions which is provided by the morphology.

In this thesis I present a fragment of the grammar of Warlpiri, in an attempt to show how the morphological expression of "logical relations" can be represented within the
Lexical-Functional Grammar theory of syntax (LFG),\textsuperscript{2} and theLexical Morphology/Phonology theory of morphology (LPM).\textsuperscript{3} I have chosen to use LFG, because it provides an explicit theory of predicate-argument relationships which is independent of configurational or morphological structure. This involves an intermediate level of representation consisting of grammatical functions. As Carrier (1976) observes, a number of generalizations about Warlpiri syntax and morphology are hard to represent without recourse to grammatical functions. Although in principle the LFG theory encompasses both the morphological and the syntactic expressions of grammatical functions, in fact relatively little work has been done in developing an LFG theory of morphology. I will therefore take as my starting point the LPM theory of morphology, as its premises do not conflict with the requirements LFG has of a compatible theory of morphology.

\begin{enumerate}

Second, I have made use of texts and material collected by Hale and Laughren, in particular of the material excerpted for the Warlpiri Dictionary being prepared at M.I.T. and the Warlpiri Literature Production Centre, Yuendumu.

Third, I was able to check a few points with some Warlpiri speakers. Since I do not speak Warlpiri, claims I make about the grammaticality and ungrammaticality of sentences, as well as generalizations should be treated with caution. All but a few very simple example sentences have been taken from the sources listed in the Abbreviations section. Generalizations that I make which have not appeared in previous work on Warlpiri have usually been derived in conversations with Hale and Laughren. Of course, they are not responsible for the interpretations I have placed on these generalizations, or for any descriptive inadequacy.

\item This framework is developed in, among other works, Andrews, 1982c; Bresnan, 1979; Grimshaw, 1982; Halvorsen (to appear); L. Levin (in prep.); Mohanan, 1982b; Montalbetti, 1981; Neidle, 1982a, and b.; and the papers in Bresnan, ed., 1982b.

\item This framework developed from work by Allen (1978), and Pesetsky (1979). More recent work includes Mohanan (1982), Kiparsky (1982, and to appear).
\end{enumerate}
A principal concern of this thesis is the interaction of morphology and syntax. I will argue that, in order to maintain certain constraints placed on this interaction in the LFG and LPM theories, and in order to provide an adequate account of Warlpiri, it is necessary to allow much more information to be expressed in the morphology than has been customary. First, I propose that words may be functionally complex; they need not be single lexical packages, but may carry information about different "logical relations", as, for example *song-write* does in Sapir's example. Second, I claim that, as well as the information overtly expressed by morphological markers such as case, the lexical entries for words must also contain a substantial amount of information about grammatical functions which is not overtly expressed. In particular, information about the case of selected grammatical functions, and about null anaphora properties of selected grammatical functions may be part of the lexical entry of a word. For instance, it is generally accepted that to know the meaning of the word *hit* one must know that it selects a *hitter*, and *something hit*. The lexical entry for a verb such as *hit* in English contains the information that it is subcategorized for two arguments. I claim that in Warlpiri, to know the meaning of the verb *pakarni* 'hit', one must not only know that it selects a *hitter* and *something hit*, one must also know that the *hitter* receives ERGATIVE case, and the *thing hit* ABSOLUTIVE case. No overt affix on the verb expresses this information. However, one does not have to learn for each verb the case of every argument it is subcategorized for. Rather, there are lexical redundancy rules which generalize these statements, perhaps along the lines of the case-linking proposed in Ostler (1980). More controversially, I propose another type of lexical rule which introduces null anaphora for selected grammatical functions. In Warlpiri, a sentence may consist of just a verb. The selected arguments of the verb are understood to be third person definite, and usually singular. I propose that this information is part of the lexical entry of the verb, and that it is introduced by a general lexical rule.

From this, it is clear that I assume that the lexicon does not merely consist of lists of words and affixes, and rules for combining them. It contains information essential for determining the predicate-argument relations in a sentence.
The first part of this chapter is devoted to general reasons for adopting a theory that makes use of grammatical functions. I will then describe basic properties of LFG and LPM. Finally, I provide an outline of the thesis.

1.2 Events and participants

Consider the sentence *Napaljarri saw Jangala*, and its Warlpiri translation:

(1) Napaljarri-rli nya-nga Jangala.
    Napaljarri-ERG see-PAST Jangala.
    Napaljarri saw Jangala.

The event is one of *seeing*; the participants in the event are the *see-er* and the *entity seen*. One of the tasks of the theoretical linguist is to represent the knowledge that Jangala is the *person seen*, and Napaljarri is the *see-er*, Sapir's "logical relations". I will refer to these as the relation between an argument-taking predicate\(^1\) which represents the event, and arguments, which represent the participants in the event. I will call this relation the *predicate-argument relationship*. Arguments themselves can be semantically simple (having no arguments of their own), or semantically complex (being argument-taking

---

1. The use I make of the term *argument-taking predicate* is equivalent to the use made of the term *predicate* in the first-order predicate calculus. A predicate is an operator with one or more arguments. (This is the use that Lyons (1977) terms *predicator*). Thus, the predicate *see* has as arguments *Napaljarri* and *Jangala* in the sentence given.

I have chosen to use the phrase *argument-taking predicate*, rather than *predicate*, to distinguish this use from two other common uses. The first is exemplified in the following sentence.

'Traditional grammarians consider a sentence to consist of a Subject and a Predicate'. Here, the word 'predicate' describes a function that is missing one argument, the SUBJECT argument. This use of the word *predicate* is found in current Government-Binding literature (Zubizarreta (1982)), as well as in the work of Marantz (1981a and b).

The second use of the word 'predicate' is to be found in the LFG literature. The term 'predicate' (shortened to PRED) names a feature whose value is the lexical form (loosely the meaning) of nouns, verbs, and other lexical items. Thus, the PRED feature is a device for expressing a *grammatical attribute* whose *value* is a semantic form, while an argument-taking predicate is a *semantic concept*. 
predicates that take arguments). The argument-taking predicate see demands that one of its arguments be a see-er and the other the entity seen. I will call a specific type of relationship, such as that of the see-er to the event of seeing, a semantic relationship, and I will describe the bearer of that relationship as having a semantic role. Thus Napaljarri has the semantic role of see-er in (1). To express the intuition that see requires a see-er argument and an entity seen, I will say that see selects these arguments.

One can imagine all sorts of ways the predicate-argument relationship could be represented. However, in actual fact languages provide three main ways of expressing the relationships: the meaning of words (more precisely, their lexical entries), constituent structure (the linear order and hierarchical arrangement of words), and the morphological marking of words.

All languages use the meaning of words to represent predicate-argument relationships. For example, the meanings of see in English and nyanyi in Warlpiri provide the information that these words are argument-taking predicates which take arguments bearing certain semantic roles, as described above. But languages vary as to how much they use constituent-structure and how much they use morphology to represent these relationships, and as to which relationships are represented in which way. English relies mostly on constituent structure, whereas Warlpiri relies mostly on morphology.

A simple hypothesis about the expression of the predicate-argument relation is that there are direct links between argument-taking predicates and arguments on the one hand, and some means of morphological or structural expression on the other hand. For instance, in the English sentence Napaljarri saw Jangala, Napaljarri is a Noun; it is the first element in the sentence, and it directly precedes a Verb. In English, the see-er argument of the argument-taking predicate see is expressed as the Noun directly preceding the

2. I have chosen to use the terms semantic role and semantic relationship to avoid confusion with the concept of thematic role within the Government-Binding Framework, to which certain syntactic properties are attributed. Semantic role is equivalent to the use of thematic role made in Jackendoff (1976), and approximates Fillmore's (1968) "deep Case".
Verb. In the model of transformational grammar developed in Chomsky (1965), it is assumed that sentences can not only be linearly ordered but also hierarchically structured. In such a model, the Noun immediately preceding the Verb in English can be more exactly described as the Noun-phrase immediately dominated by the Sentence. I will refer to this position as '[NP of S]'.

But the hypothesis of direct linking encounters several problems. First, the passive sentence: *Jangaia was seen by Napaljarri* describes essentially the same event as the active sentence, and yet the *see-er* is realized as a *by* prepositional phrase, not as [NP of S]. The one semantic relationship, *see-er*, can be represented in several ways.

Second, the position [NP of S] is not a unique representation of an argument with the *see-er* semantic role. It is also used to represent arguments with the *lover, kisser, admirer, grower,* and *owner* semantic roles in the following sentences:

(2) a. Lucy loves Anna.
   b. Lucy delights Anna.
   c. Anna delights in Lucy.
   d. Lucy admires Anna.
   e. Lucy kissed Anna.
   f. Lucy grows tomatoes.
   g. Lucy owns a garden.
   h. The garden belongs to Lucy.

A simple explanation for the appearance in sentences with different argument-taking predicates of arguments with different semantic relationships as [NP of S] is to suppose that these semantic relationships form a natural class, and that [NP of S] is assigned to any member of this class. The question then arises: is it possible to decompose the meanings of these sentences in such a way that we can determine automatically which argument of any argument-taking predicate will be realized as [NP of S]? Much interesting work has been done along these lines (Gruber (1970), Jackendoff (1972, 1976), Carter (1976), Hale (1982b), Ostler (1979, 1980)), and many important generalizations have been made. However, attempts at direct linking of semantic roles to constituent structure positions or morphological markers have foundered on exceptional classes, such as verbs of emotion, or inversion verbs, like own and belong, in which the
[NP of S] of one verb appears to have the same semantic role as some non-[NP of S] argument of another verb. And sometimes the meaning differences are very small; for instance, perhaps Anna is more actively taking pleasure in Lucy in (2c) than in (2)b). But, when the meaning differences become as small as that, it is hard to tell whether the difference is due to a difference in semantic roles or to the fact that an argument in [NP of S] position in a transitive sentence (a sentence with a two-place argument-taking predicate) is stereotypically more active or 'prominent' than an argument in some other position.

What these examples show is that it is not wholly (or perhaps not clearly) predictable from the meaning of a argument-taking predicate which argument of that argument-taking predicate will be expressed as [NP of S].

3. See Bowers (1973), Carter (1976) and Ostler (1980) for attempts to deal with the inversion verbs. Ostler avoids the problem of one-to-one linking by matching a hierarchy of thematic roles with a hierarchy of syntactic or morphological expression.

Fillmore (1977) argues that the inversion verbs show the need for language-specific principles of Subject Selection, (approximately equivalent to determining what is [NP of S], as well as universal principles of Subject Selection. A universal principle of SUBJECT selection could be that agents when 'in perspective' (when salient) are underlying Subjects, (with the possible exception of deep ERGATIVE languages such as Dyirbal). Another example of a language-specific principle that Fillmore gives is the fact that Japanese and German do not allow "enabling or occasioning causes" as Subjects, and so these languages have no direct translations of sentences such as The smell sickened me.

Jespersen also observed the impossibility of defining subjects and objects in terms of meaning.

The subject cannot be defined by means of such words as active and agent, for they do not cover such cases as "He lost his father in the war" or "he was surprised" or "the garden swarms with bees" (otherwise expressed "bees swarm in the garden"). Nor can the object be defined as the person or thing most directly affected by the action, for in "John loves Ann", "John sees the moon" John is more directly affected than Ann or the moon.

Jespersen, 1933: 502.
However, although the semantic relationship of an argument to a argument-taking predicate does not entirely determine its morphological or structural expression, nevertheless there exist interesting cross-linguistic convergences of semantic roles upon some form of expression. In English, [NP of S] can express an Agent (I kiss), Perceiver (I see), a Causer (I grow tomatoes), a Cause of an Experience (delight) an Experiencer (I love), an argument to which ownership or possession is attributed (I own, I possess, I have..). In Latin, NOMINATIVE case can express much the same kinds of relationships: (video, 'I see', colo 'I grow — transitive.', amo 'I love', osculus 'I kiss', possideo 'I possess', alectat 'it delights'. In Warlpiri, ERGATIVE case expresses Agents (pakarni 'hit'), Perceivers (nyanyi 'see') and Causers (nyurnu-mani 'make someone sick'). Across many languages, roughly the same class of semantic relationships is singled out for special expression, whether this be [NP of S] or NOMINATIVE case, or ERGATIVE case.4

Elements having this special expression generally share a cluster of properties5 which are independent of the semantic relationship between the argument and the argument-taking predicate. The traditional term for these elements is SUBJECT. An

4. The ERGATIVE case in Warlpiri is more restricted than either the Latin NOMINATIVE or [NP of S] in English as to what semantic roles it can represent, since it almost always appears with verbs that are two-place predicates.
5. This is not to say that all languages have to exhibit all properties: there may in fact be no one property which uniquely identifies the SUBJECT in all languages, although reflexivization, as discussed below, is a strong candidate.
example of a cross-linguistic property of SUBJECTs is found in reflexivization. In almost all the sentences given in (2), the SUBJECT and OBJECT can co-refer by means of a reflexive pronoun in the OBJECT position, but not by means of a reflexive pronoun in the SUBJECT position.

(3) a. Lucy is hitting herself.

A reflexive pronoun cannot appear in the [NP of S] position of a root clause, as (4) shows.

6. Hale (to appear) speculates that, universally, a SUBJECT and OBJECT can never corefer by means of a SUBJECT reflexive anaphor rather than an OBJECT reflexive anaphor, if this reflexive appears in the AUXILIARY or verbal morphology. As David Johnson (1977) observes, a few languages allow independent reflexive anaphors to appear in SUBJECT position. The most convincing example is from Samoan (Chapin (1970)):

i. Sa sogi loane e ia lava.
   Tns cut John AGENT himself
   Himself cut John.

ii. Sa sogi e loane ia lava.
   Tns cut AGENT John himself
   John cut himself.

6. Hale (to appear) speculates that, universally, a SUBJECT and OBJECT can never corefer by means of a SUBJECT reflexive anaphor rather than an OBJECT reflexive anaphor, if this reflexive appears in the AUXILIARY or verbal morphology. As David Johnson (1977) observes, a few languages allow independent reflexive anaphors to appear in SUBJECT position. The most convincing example is from Samoan (Chapin (1970)):

i. Sa sogi loane e ia lava.
   Tns cut John AGENT himself
   Himself cut John.

ii. Sa sogi e loane ia lava.
   Tns cut AGENT John himself
   John cut himself.

* is an AGENT marker and can appear on either the reflexive *ia lava or the nominal it is coreferent with. If AGENT-marked nominals are SUBJECTS, (rather than, say, passive instrumentals), then i. is an instance of a reflexive in SUBJECT position. Interestingly, reflexivization in Samoan is constrained by precedence. The reflexive cannot precede the nominal it refers to – both the sentences would be unacceptable if *ia lava preceded *loane.

7. This must be restricted to unembedded finite clauses, because some languages allow reflexives in the subject position of embedded clauses. See Mohanan, (1981b), Maling (1982). In the Government-Binding theory, a reflexive object of a Raising-to-Object verb such as believe is also in SUBJECT position. (Chomsky, 1981).

John believes [himself to have been elected President].
4) *Herself is hitting Lucy.

This constraint on reflexivization is independent of the semantic role of the SUBJECT. Suppose that reflexivization does depend on the semantic role, that arguments with the semantic role of AGENT are unacceptable as reflexives. Then, in passive sentences, reflexive SUBJECTS should be acceptable, because the SUBJECTs of passive sentences are rarely if ever AGENTS. But they are not.

5) *Himself was hit by John.

 Likewise, two arguments with very similar semantic relationships to their argument-taking predicates, can have different possibilities for reflexivization. For instance, in (6), only the person delighted can be replaced by a reflexive pronoun; the delighter-in cannot be so replaced. Similarly, in (7)a the object of possession can be reflexivized, while in (7)b it cannot.

6) a. Lucy delighted herself by winning.
   b. *Herself delights in Lucy.

7) a. Lucy owns herself and her car, nothing else.
   b. *Herself belongs to Lucy, and to no-one else.

Other properties which tend to be tied to the SUBJECT function include the possibility for a SUBJECT argument of one argument-taking predicate to be unrealized phonologically when it is referentially dependent on an argument of another argument-taking predicate. I will use the conventional term control (used in Postal (1970)) to refer to this phenomenon. The unrealized argument is the controlled argument, and the argument to which it is co-referent, is its controller.

8. There are some practical constraints on reflexivization, for instance the sentences ?? Lucy grows herself, and ?? The garden belongs to itself are only acceptable in situations where people have the ability to cause themselves to grow, and gardens have property rights. It is, however, important to recognize that reflexivization possibilities cannot be defined purely in terms of lexical semantics, and must make reference to SUBJECTs.
In (8), the SUBJECT of the dependent participle clause loving herself is unexpressed. But it is dependent referentially on the SUBJECT of the main, or matrix clause. Lucy is both the lover and the talker, although the Noun-phrase Lucy is structurally only the [NP of S] of the clause containing talk. The SUBJECT of the dependent clause is controlled by the SUBJECT of the matrix clause.

(8) Loving herself, Lucy talked loudly and often.

The following examples show that the controlled argument of the dependent participle not only can be, but must be the SUBJECT, (that is, the argument which, in a finite clause, would be expressed as [NP of S]). (9) a and (10) a are well-formed because the delighter-in ((9) a), and the delighter ((10) a), are expressed as [NP of S] in the corresponding finite clauses. (11) a is ill-formed because the one delighted is not expressed as [NP of S] in the corresponding finite clause.

(9) a. Delighting in candy-bars, John soon grew fat.
   b. John delights in candy-bars.

(10) a. Delighting her friends with tales of Peru, Lucy soon gained renown.
    b. Lucy delights her friends with tales of Peru.

(11) a. *Candy-bars delighting, John soon grew fat. (= candy-bars delighting him,..)
    b. Candy-bars delight John.

If the semantic roles of arguments determine directly which argument of a dependent participle may be controlled, it is hard to explain the acceptability of (9) a, and the unacceptability of (11) a, since the missing arguments have similar semantic roles.

The same kinds of properties appear clustered around some expression of an argument in other languages. For example, the argument morphologically marked with NOMINATIVE case in Latin has much the same properties of control and reflexivization as [NP of S] does in English. Just as in English a reflexive pronoun cannot appear in the [NP of S] position, so in Latin it is not possible for a NOMINATIVE reflexive pronoun to act as an antecedent for the OBJECT. Latin has, in fact, no morphological realization of the reflexive pronoun with NOMINATIVE case.
Similar facts hold in Warlpiri:

Napaljarri-ERG PRES-refl hit-NPST  
Napaljarri is hitting herself.

b. *Napaljarri ka-nyanu pakarni.  
Napaljarri-ABS PRES-refl hit-NPST  
Herself is hitting Napaljarri.

In (12)a. the overt nominal with ERGATIVE case, Napaljarri-ri is the SUBJECT. It corresponds semantically to Lucy, the nominal in [NP of S] position, in Lucy is hitting herself. The reflexive is represented by a clitic nyanu. In (12)b Napaljarri has ABSOLUTIVE case, and cannot be the SUBJECT; the example corresponds to Herself is hitting Lucy, and is ungrammatical for the same reason — the clitic nyanu cannot represent the SUBJECT. (See Hale, to appear).

Warlpiri SUBJECTs do not only share this non-reflexivizability with English SUBJECTS. They also share control properties. An example of a controlled SUBJECT in a kungarnti ('in preparation for') clause follows. The clause is paarr-pardi-nja-kungarnti ‘before taking off’. Its SUBJECT is not overtly expressed, but is understood to be the SUBJECT of the matrix clause: parrulka ‘bustards’.

(13) Parrull 3 ka-lu marralya-pardi-mi  
Parrull-ABS PRES-3pl SPREAD-RISE-NPST  
paarr-pardi-nja-kungarnti.  
fly off-INF-PREP  
Bustards spread their wings before taking off. [marralya-pardimi]

In conclusion, the clustering of these properties does not depend on whether the argument is expressed by constituent structure, as [NP of S] in English, or by morphological-marking, as NOMINATIVE case, in Latin. Therefore, the property of being an antecedent for reflexivization, and the property of being controlled, etc. cannot be properties of the configurational position [NP of S], or of morphological case (NOMINATIVE). Nor do these properties depend on particular semantic relationships of arguments to argument-taking predicates. Although there is a strong tendency for
arguments bearing the same semantic role to be expressed the same way in a given language, for any particular argument-taking predicate it is not wholly determined which argument will be realized in which way. Neither constituent structure, nor morphological marking, nor meaning serve to define completely which special expression of an argument will have which clustering of properties.

In several linguistic theories it is argued that these clusterings of properties should be represented by intermediate entities, which are not completely definable in terms of semantic role, constituent structure position or morphological marking. Such theories include: Government-Binding (GE), Lexical-Functional Grammar (LFG) and Relational Grammar (RG). Proponents of intermediate entities assume that there is no direct relationship between predicate-argument relationships and word-order or morphological expression. Instead, there is an intermediate level of representation onto which arguments are mapped, and which in turn undergo morphological or word-order expression.

Current theories differ as to exactly what are the necessary entities on this intermediate level, but they all have the equivalents of SUBJECT and OBJECT and Complements which are neither SUBJECT nor OBJECT. Following Chomsky (1965), I will

9. See Marantz (1981) for a clear description of the approaches to the relation between semantic roles and surface expression in Government-Binding (GB), Lexical-Functional Grammar (LFG), and Relational Grammar (RG). Bell (1981) provides a useful comparison of LFG and RG. Cole and Sadock (eds) (1977), and Zaenen (ed.) (1982) contain a number of articles on approaches to grammatical relations in different theories.
refer to these intermediate entities as grammatical functions (GFs). In some theories, the step is taken of assuming that these intermediate entities need not be expressed in the same way in a given language. I have said that languages may use configurational means or morphological means to express grammatical functions. This does not preclude a language from using both; Finnish and Russian may be examples of languages in which both phrase structure position and case-marking determine grammatical functions. In

10. The claim that grammatical functions (at least SUBJECT, OBJECT and INDIRECT OBJECT) are primitive and cannot be defined in terms of observable morphological or configurational expression is essential to Relational Grammar. See Johnson (1977) and Perlmutter (1980).

The existence of these entities is sometimes blurred in the Government-Binding theory (GB), because of the labelling of these entities with 'configuration' names, such as [NP of S] and [NP of VP]. If it were always possible to distinguish SUBJECTs and OBJECTs configurationally, (that is by surface precedence and dominance relations), then there would be no need for an autonomous level of grammatical relations. But it is not. There are languages, such as Warlpiri, without surfaca configurational expression of the SUBJECT and OBJECT functions. So, GB introduces the notion of a lexical VP (Chomsky (1981)), or a virtual VP (Zubizarreta (1982)), in terms of which the SUBJECT and OBJECT can be defined. But, to define SUBJECT and OBJECT in terms of this abstract entity is to make SUBJECTs and OBJECTs abstract entities.

Various properties of SUBJECT and OBJECT which cannot be made to follow from configuration, even when lexical VPs are admitted, are attributed to theories of Abstract Case assignment and Thematic role assignment. But these theories themselves are not directly relatable to surface structure properties. Abstract case is present in all languages, whether or not they have morphological case. Thematic role assignment is not equivalent to the notion 'argument of a argument-taking predicate', first because the Subject, which is certainly an argument of the matrix argument-taking predicate, does not receive its thematic role directly from that argument-taking predicate, and second because, at least in some versions of GB (Marantz, (1981), Schein (1982)), an argument-taking predicate can usually only assign one thematic role, although it can have several arguments. For example, the English verb give in the sentence I gave John a book has three arguments, giver, thing given, recipient. But this verb assigns only one thematic role, that of the recipient. The giver thematic role is assigned by the VP, and the thing given is assigned in some other way, perhaps by the structural position, or by a null preposition.

If the theories of thematic role assignment and abstract case can be shown to have independent uses, then defining properties of grammatical functions in terms of these theories has explanatory force.
Warlpiri, for instance, a SUBJECT may have ABSOLUTIVE or ERGATIVE case, and an OBJECT may have DATIVE or ABSOLUTIVE case. In Icelandic, SUBJECTs and OBJECTs may have NOMINATIVE, ACCUSATIVE, GENITIVE or DATIVE case. Moreover, a language is not precluded from using configurational structure and case-marking for other purposes. For instance, semantic concepts such as Definiteness or Specificity may be determined by phrase structure position: in Chinese (Huang, 1982) the pre-verbal [NP of S] position requires a specific NP to fill it. An NP in this position has the GF SUBJECT, and is required to be specific. Configurational position may also serve discourse purposes, such as marking Theme, or Rheme. Case-marking is often closely linked with the semantic role; for instance, in Icelandic, OBJECTs with particular thematic roles may have DATIVE case (see Andrews 1982d, and Levin 1981). Case-marking is also used to indicate quantification, and even aspect, as for example the Russian GENITIVE (Neidle, 1982, and Pesetsky, 1982), and the Finnish PARTITIVE (Carlson, 1978).

1.3 The model

Because LFG not only provides an autonomous theory of grammatical functions, but also requires that certain information be represented in the lexicon rather than in the constituent-structure, it is possible to represent the similarities and differences between morphological and constituent-structure expressions of grammatical functions with relative ease.

The model of grammar that I assume is illustrated below.
The lexicon contains dictionary entries for all words and affixes, including information about the case of selected functions. In the morphology, words are created by affixation, compounding, and template forming (discussed in Chapter 2). (The precise nature of the relationship between the lexicon and the morphological component, whether they are identical, or whether one feeds the other, is a matter for further research). Lexical items, complete with information from both the lexicon and the morphology are inserted into the terminal nodes of constituent structure trees created by the phrase structure rules. The lexicon, morphology and phrase structure rules all provide information about grammatical functions, and grammatical features (such as CASE). This information is represented as equations which are attached to nodes. These equations are then solved in the process of building a functional structure, which gathers together information about functions and features from all parts of the annotated constituent structure tree. The functional structure acts as input for semantic interpretation.

11. For instance, Marantz (1981) assumes that most alternations which have been called lexical rules simply consist of the morphological adding of affixes with particular features. Both he and Kiparsky (to appear) assume that morphological processes have access to the lexicon, in that the adding of an affix, or the interpretation of an affix may be blocked by the presence of another word with the same meaning. Baker (1982) assumes that lexical rules operate in parallel with the concatenation of morphemes.
The remainder of this chapter treats the type of information used in annotating the constituent structure trees, and the constraints placed on its representation. In Chapter 2 I will show how to construct constituent structure trees, and functional structures.

1.3.1 An LFG account of grammatical functions

Lexical-Functional Grammar assumes the existence of a universal set of grammatical functions, or GFs, which are entities on the intermediate level discussed in 1.2. The semantic relationship of an argument to a argument-taking predicate can be represented as a relation between a SUBJECT (SUBJ), OBJECT(OBJ), or OBJECT 2 (OBJ2) and a lexical realization of that argument-taking predicate.

Illustrations follow from English and Warlpiri:

I am running.

*Ngaju ka-rna parnka-mi.*

I-ABS PRES-1sg run-NPST.

I am running.

Jangala saw Napaljarri.

Jangala-flu nya-ngu Napaljarri.

Jangala-ERG see-PAST Napaljarri-ABS

Jangala saw Napaljarri.

Nangala gave the book to Jangala.

Nangala gave Jangala the book.

Nangala-rlu + rla yu-ngu pipa Jangala-ku.

Nangala-ERG + DAT give-PAST book-ABS Jangala-DAT.

Nangala gave the book to Jangala.

The extension of the concept SUBJECT is relatively easy to determine — control and...
reflexive phenomena usually pick out SUBJECTs cross-linguistically, as I mentioned earlier. Language-particular tests include Passive (the fact that the original SUBJECT is demoted), and the ability to be deleted under identity in coordinate structures (I came and got the book, *I read the book and I bought).

It is quite easy to distinguish SUBJECTs from non-SUBJECTs. It is not always so easy to distinguish OBJECTs from prepositional-type arguments. On the assumption that only OBJECTs can undergo promotion to SUBJECTs via Passive, Passive provides a test for OBJECT. (A few languages appear to allow prepositional objects to passivize, but, in the cases that I am aware of, there is evidence for a rule reanalysing the Verb and the preposition as a complex verb which takes the object of the preposition as its object. See Bresnan (1980b). Languages which allow either non-SUBJECT argument of a ditransitive to passivize present a problem still). In English, another test for OBJECTs is provided by the behaviour of secondary argument-taking predicates. OBJECTs can control various secondary argument-taking predicates, such as resultative attributes, whereas prepositional phrases (except a few that have undergone reanalysis) cannot. (See Williams, 1980). (14) a. shows a secondary argument-taking predicate (more exactly, a resultative attribute) red modifying the OBJECT the canvas. (14) b. shows a prepositional phrase with the same verb paint. (14) c. shows this prepositional phrase failing to control a resultative attribute.

(14) a. I painted the canvas red.
   b. He's painting on the canvas.
   c. *He's painting on the canvas red.

However, it is not so easy to distinguish OBJECTs from OBJECT 2s. Arguments for
the existence of OBJECT 2s have mainly come from the behaviour of ditransitive verbs. Consider a ditransitive verb such as give.

(15) Lucy gave John a gorilla.
    SUBJECT  OBJECT  OBJECT 2 LFG
    Subject   indirect object direct object traditional

(16) Lucy gave a gorilla to John.
    SUBJECT  OBJECT  OBLIQUE\textsubscript{goal} LFG
    Subject   indirect object prepositional phrase traditional

Traditionally, John in (15) is called the ‘Indirect object’ and a gorilla the ‘direct object’. (Jespersen, for instance, makes this distinction). A gorilla is also considered the ‘direct object’ in (16). However, in the LFG account of English given in Bresnan (1980b), these two sentences differ as to what is the OBJECT. In (15) John is the OBJECT, while in (16) a gorilla is the OBJECT. In (15) a gorilla has the GF OBJECT 2. In (16) to John has an OBLIQUE function.

The discrepancy between the accounts of objects given in LFG and in traditional grammars stems from the fact that in LFG grammatical functions are syntactic concepts which, although they represent semantic relationships, do not necessarily do so consistently. However, the concept of Direct and Indirect Object in traditional grammar is not purely syntactic; it is also semantic. The Indirect Object of traditional grammar

12. Carol Neidle informs me that the $a$ OBJECT for transitive verbs such as téléphoner in French is a candidate for OBJECT 2. It patterns with the indirect $a$ OBJECT of ditransitives in that both can be represented by the oblique clitics such as lui and, unlike direct objects, neither can undergo passivization. Unlike normal OBJECTs, it does not trigger agreement of the past participle:
   i. il lui a téléphoné.
      He telephoned her. no agreement
   ii. il l’a vue.
      He saw her. agreement

Neidle suggests that this is because in French, unlike English, the indirect $a$ OBJECTs of ditransitives, and the $a$ OBJECTs in transitive verbs are OBJECT 2s, not OBJECTS. See Grimshaw (1980) for an alternative account in which the $a$ OBJECTS are not treated as OBJECT 2s, but as OBLIQUE arguments.
corresponds to a semantic relationship such as Goal.

The first reason for calling the Direct and Indirect objects OBJECT 2 and OBJECT respectively is theory-internal. An important constraint on the well-formedness of functional structures, the Functional Uniqueness principle, states that every grammatical function has a unique value. This prevents there from being two OBJECTS in a sentence, and so the direct and indirect objects must have different functions.

The second reason for assigning the direct and indirect objects of ditransitive different GFs is theory-neutral — it is that, in English, and a number of other languages, the direct and indirect objects in ditransitives have different properties. Indirect
objects\textsuperscript{13} appear to pattern like OBJECTS with respect to Passive, while direct objects cannot undergo Passive if an indirect object is present. It is hypothesised in LFG that, in English, the indirect objects are OBJECTS and so undergo the lexical rule of Passive. The direct objects are OBJECT 2s, and, in English at least, Passive only applies to

\begin{itemize}
  \item Wordick (1982) shows that in Yinjibarndi, an Australian Aboriginal language, both the indirect and direct objects of ditransitives are marked with OBJECTIVE Case (equivalent to ACCUSATIVE).
    \begin{verbatim}
    Ngaarta yungku-nha ngayu murla-yi.
    man-NOM give-PAST me-OBJ meat-OBJ
    The man gave me the meat.
    \end{verbatim}
  According to Wordick, Yinjibarndi has free word-order, so that there is apparently no structural way of telling the two OBJECTIVE-case-marked nominals apart. But only the indirect object can passivize.
    \begin{verbatim}
    Ngayi yungku-nguli-nha murla-yi ngaarta-lu.
    I-NOM give-PASSIVE-PAST meat-OBJ man-INST
    I was given the meat by the man.
    \end{verbatim}
    \begin{verbatim}
    *Murla yungku-nguli-nha ngayu ngaarta-lu.
    Meat-NOM give-PASSIVE-PAST me-OBJ man-INST
    *The meat was given me by the man.
    \end{verbatim}
  So, there is no way of picking out which nominal will passivize in terms of overt morphological or structural information.
  Of course, one could say that Passive is defined with respect to semantic relations - in a transitive sentence, Passive operates on arguments with various thematic roles, including \textit{themes} and \textit{goals}, while a ditransitive it operates on the \textit{goal}, not on the \textit{theme}; that is, there is a disjunction in the description of the Passive rule. A Passive rule defined in terms of semantic roles will be complicated, and may need unmotivated assumptions about what semantic role a given argument has.
  As Marantz (1981) points out, it seems preferable to define Passive in Yinjibarndi as a rule operating on grammatical functions. In LFG, we can propose that the indirect objects are OBJECTS, the direct objects are OBJECT 2s, and that Passive in Yinjibarndi is a lexical rule which operates on OBJECTS of sentences, just as in English. See Simpson (1980) and Dench (1981) for related facts in the neighbouring languages, Ngarluma and Panyjima.
OBJECTs.\textsuperscript{14}

(17) I gave Lucy a book. \hspace{1cm} Lucy \hspace{1cm} OBJECT
\hspace{1cm} a book \hspace{1cm} OBJECT 2

(18) Lucy was given a book. \hspace{1cm} Passive of \hspace{1cm} OBJECT

(19) A book was given Lucy. \hspace{1cm} Passive of \hspace{1cm} OBJECT 2

The PASSIVE rule is a GF-changing rule. It operates on the lexical entries of verbs to change the assignment of GFs to arguments. Consider the effect of PASSIVE on the verb give, where the thing given is an OBJECT. The lexical entry is as follows:

(20) \textit{give} \hspace{1cm} \textit{SUBJECT} \hspace{1cm} \textit{OBJECT} \hspace{1cm} \textit{OBLIQUE}_{\text{goal}}
\hspace{1cm} giver \hspace{1cm} thing given \hspace{1cm} person given something

The PASSIVE rule consists of two parts:

a. \textit{SUBJECT} $\rightarrow$ $\emptyset$ /OBLIQUE$_{agent}$

(i.e. the argument linked to the SUBJECT is either linked to the \textit{null grammatical function} or to an OBLIQUE agent-phrase.)

b. \textit{OBJECT} $\rightarrow$ \textit{SUBJECT}

(i.e. the argument originally linked to the OBJECT is relinked to the SUBJECT).

The passive lexical entry has the following form:

\textsuperscript{14} However, Dowty (1982) notes that Passives of OBJECT 2s are possible in some dialects. For most speakers the following semi-idiomatic expressions are acceptable.

i. Our sins were forgiven us.

ii. The ordeal was spared us.

Some dialects allow sentences such as the following.

iii. A book was given John.

(The latter improves considerably with a pronoun \textit{him} instead of the nominal \textit{John} for many speakers.) Dowty postulates a secondary rule of passivization to account for these cases. In LFG, Passive of OBJECT 2 would also have to be allowed as a marked option.
Now, the other lexical entry for *give* has an OBJECT and an OBJECT 2. I assume that it is related to the lexical entry in (20) by a grammatical function-changing rule that converts an OBJECT into an OBJECT 2, and an OBLIQUE\textsubscript{goal} into an OBJECT.\textsuperscript{15} The two lexical entries resulting from application or non-application of this rule are given below.

\begin{align*}
(22) & \begin{array}{llll}
\text{give}_1 & \text{SUBJECT} & \text{OBJECT} & \text{OBLIQUE}_{\text{goal}} \\
giver & \text{thing given} & \text{recipient} \\
\end{array} \\
\text{give}_2 & \begin{array}{llll}
\text{SUBJECT} & \text{OBJECT 2} & \text{OBJECT} \\
giver & \text{thing given} & \text{recipient} \\
\end{array}
\end{align*}

I will conclude this discussion of ditransitives with a summary of the assignments of grammatical functions to ditransitive verbs in English, French, Yinjibarndi, and Warlpiri. (I will argue for the Warlpiri assignment in 2.3.1.3.)

\textsuperscript{15} An alternative approach is adopted in Marantz (1981). He claims that the same argument structure: *giver, thing given, recipient* is simply linked with different grammatical functions: *thing given* can be linked with OBJECT or OBJECT 2, and *recipient* can be linked with OBJECT or OBLIQUE\textsubscript{goal}. Linking both arguments to OBJECT is a highly marked option. Languages allowing passives of either non-SUBJECT argument in a ditransitive adopt this option.
<table>
<thead>
<tr>
<th>Language</th>
<th>Subject Function</th>
<th>Object Function 1</th>
<th>Object Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>thing given</td>
<td>OBJECT / OBJECT 2</td>
<td>recipient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NP</td>
<td>OBLgoal / OBJECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to + NP</td>
<td>NP</td>
</tr>
<tr>
<td><strong>French</strong></td>
<td>thing given</td>
<td>OBJECT</td>
<td>recipient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NP</td>
<td>OBJECT 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a + NP</td>
<td></td>
</tr>
<tr>
<td><strong>Yinjibarndi</strong></td>
<td>thing given</td>
<td>OBJECT 2</td>
<td>recipient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NP + OBJECTIVE</td>
<td>OBJECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NP + OBJECTIVE</td>
</tr>
<tr>
<td><strong>Warlpiri</strong></td>
<td>thing given</td>
<td>OBJECT 2</td>
<td>recipient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NP + ABSOLUTIVE</td>
<td>OBJECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NP + DATIVE</td>
</tr>
</tbody>
</table>

So, the same semantic roles are assigned different combinations of grammatical functions in the three languages. The assignment of OBJECT and OBJECT 2 in English and Yinjibarndi basically depends on the behaviour of Passive in those languages. The formulation of the Passive rule in Bresnan (1980b) assumes that Passive in the unmarked case applies to OBJECTs, rather than, say, OBJECT 2s. It is clear that languages do differ as to how they treat the non-Subject arguments of ditransitives, and, at the present state of knowledge, it seems simplest to describe this difference in terms of a difference in grammatical functions.

The SUBJECT and OBJECT functions can be linked with a wide variety of semantic roles. Bresnan (1982) classifies these as *semantically unrestricted* grammatical functions. Further evidence for their unrestricted nature is the fact that semantically empty (or partly
empty) elements can appear in SUBJECT or OBJECT\textsuperscript{16} position. I will call these empty elements \textit{pleonastic elements.}\textsuperscript{17}

16. The existence of pleonastic elements in OBJECT position is an unresolved problem in the GB framework, because the Projection Principle rules them out. The Projection Principle states that:

[1] If $\beta$ is an immediate constituent of $\gamma$ in a c-command configuration of the form $[\gamma \ldots \alpha \ldots \beta \ldots]$ or $[\gamma \ldots \beta \ldots \alpha \ldots]$ at Level\textsubscript{i}, and $\gamma = \overline{\alpha}$, then $\alpha$ \textit{$\theta$-marks} $\beta$ in $\gamma$.

[2] If $\alpha$ selects $\beta$ in $\gamma$ as a lexical property, then $\alpha$ selects $\beta$ in $\gamma$ at Level\textsubscript{i}.

[3] If $\alpha$ selects $\beta$ in $\gamma$ at Level\textsubscript{i}, then $\alpha$ selects $\beta$ in $\gamma$ at Level\textsubscript{j}. [Chomsky, 1981]

That is, if an element such as a verb directly c-commands another element, it must assign a thematic role to that element. Furthermore, if a verb assigns a thematic role to a nominal at one level, it must do so at every level. Pleonastic elements in OBJECT position are ruled out because the position immediately following the V in a VP is an immediate constituent of the VP, and therefore must receive a $\theta$ role from the V. A semantically empty element does not receive a thematic role. It is claimed that elements in SUBJECT position do not have to receive thematic roles, and so pleonastic elements can appear there. Now, if a V has an OBJECT position at one level, it should have an OBJECT at all levels. But, in collocations such as \textit{Cool it!} and \textit{hate it that...}, the verbs have the same kind of unclear semantic relationship with the $it$, as \textit{seems} does with \textit{it} in \textit{It seems that John is happy}. That is, these $its$ appearing in OBJECT position seem to be place-holders in much the same way that the $it$ of \\textit{extra}position is a place-holder. They do not receive thematic roles from the verb in the Government-Binding theory. But this is a violation of Part 1. of the Projection Principle.

17. See Visser (Vol.1: 449) for a short discussion of $it$ in such collocations as $take it easy$, $fight it out$, $how do you like it here?$, where he argues that the pronoun $it$ is "used indefinitely, without referring to anything previously mentioned."

Whether all, or any, of the elements that have been characterized as pleonastic actually are completely semantically empty is debateable. See Footnote 2\textsubscript{6} for a discussion of "weather" $it$. The $it$ of SUBJECT and OBJECT extraposition, \textit{It was known that John liked Lucy}, \textit{I regret it that John likes Lucy}, intuitively seems to act as a referential pronoun, referring to the clause that \textit{John liked Lucy}. Even the classic example of expletive $it$ in SUBJECT-raising, \textit{It seems that John is sick}, can be thought of as a statement about the present state of affairs: the present state of affairs is such that one is led to believe that John is sick.
(23) *It* was upsetting to watch the possum die. 

(24) a. I hate *it* that he shoots possums. 
b. I regret *it* that he wears a possum fur hat.

(25) a. The Queen of Sheba lorded *it* over Solomon. 
b. I'm going to brown-bag *it* today. 

(26) Cool *it!/Blast *it!/Damn *it!/Bugger *it! 

The contrast between the semantic role of the normal OBJECT of *beat* and the *it* in expletives provides the humour in the following quotation from the series *The hitch-hiker's guide to the galaxy*:

(27) I'm the guy that's telling you: 'Beat it! Before it gets beaten for you.'"

The linking of OBJECT 2 is less clear. The fact that in French it can, arguably, be linked with the indirect object in a ditransitive, while in English and Yinjibarndi it can be linked to the direct object of a ditransitive, suggests that it, too, is semantically unrestricted. But there is no evidence from pleonastic elements for the OBJECT 2 being semantically unrestricted. For example, the verb *give* can have a pleonastic OBJECT and an OBLIQUEgoal, as in (28), but its counterpart with a pleonastic OBJECT 2 and an OBJECT is unacceptable, as in (29).

(28) You really gave it to him straight.

(29) *You really gave him it straight.

However, (29) may be ill-formed for an independent reason, since there are restrictions on the appearance of pronominals in OBJECT 2 position in English anyway:18

18. In British English, where constructions such as *Give it me* are acceptable, and the *it* is presumably the OBJECT, pleonastic elements can also appear in OBJECT position:

*But have you ever noticed a rummy thing about life? I mean the way something always comes along to give it you in the neck at the very moment....* P.G Wodehouse

*The Inimitable Jeeves*, p.27
(30) ??I gave him it to read.
??I gave the man it to read.

Not all semantic roles are paired with SUBJECT, OBJECT and OBJECT 2 grammatical functions. Some are represented by named OBLIQUE functions, which correspond to more narrowly defined classes of semantic roles. For instance, the LOCATIVE ‘on John’ in the sentence *Lucy dotes on John* can be represented as an OBLIQUE LOCATIVE: OBL\textsubscript{loc}. Similarly, ‘to Lucy’ in (29) is an OBLIQUE GOAL: OBL\textsubscript{go}. The OBLIQUES are semantically restricted, by virtue of the fact that they represent particular semantic roles.

I will now turn to the requirements which argument-taking predicates place on the grammatical functions that represent their arguments. First, I will look at three general constraints on the assignment of functions to arguments, and then I will look at particular requirements.

19. There is no one-to-one mapping between an oblique grammatical function and a single semantic argument type, because a function such as OBL\textsubscript{direction} is a syntactic entity which can be mapped onto a number of similar DIRECTION-type semantic relations. For instance, there seems no need to distinguish syntactically in English between direction upwards, downwards or sideways.

20. This leads us to expect that OBLIQUES should not appear with pleonastic elements, and in general they do not. However, there are some counter examples for which I have no explanation:
i. *Jump/hop to it!*
   *Come off it!*
   *Get on with it!*

   Perhaps the *it* represents a figurative direction, rather than a pleonastic element, in which case i. is not a counterexample. But if it is not, there is no principled way of separating the *it* in these examples from the *it in lord it over*, unless we assume that Verb-Preposition Incorporation (see 1.3.2) incorporates the preposition into the verb, so that the *it* is really the OBJECT of the Verb. But there is no independent evidence for the Verb-Preposition Incorporation rule operating in i. If the *it* could passivize, then this would suggest that *it* really is the OBJECT of an incorporated verb *jump to*, on the assumption that only OBJECTs passivize. However, it cannot passivize: *It was hopped to.*
1.3.1.1 Constraints

The first important constraint on the expression of the predicate-argument relation is the Principle of selection for function. Most argument-taking predicates require that some argument be linked to an NP or S in the SUBJECT function. Many also require OBJECTs (linked to NP, S or PP). A much smaller number require OBJECT 2s or OBLIQUE arguments (linked to NP or PP). If a lexically-realized argument-taking predicate requires some element with particular function for its meaning to be complete, I will call that selection, or subcategorization. Thus the verb discuss obligatorily selects a NP SUBJECT and an NP OBJECT:

(31) We discussed the case.

(32) a. ??We discussed for three hours.
    b. ??We discussed and came to a conclusion.

The question is, do argument-taking predicates select a particular category, or do they select a particular function, or do they select both? In both GB and LFG, it is assumed that selecting both is redundant, because, in English at least, phrase structure rules provide overlapping categorial and functional information. Grimshaw (1982) provides arguments in favour of simplifying the grammar by subcategorization for function rather than category.21

Principle 1: Selection for function
Argument-taking predicates are subcategorized for grammatical functions, not for categories.

21. Stowell (1981) provides a different solution to the redundancy problem within the GB framework, which hinges on a principle of case-assignment by adjacency, essentially an elegant rule for expressing the relation between phrase structure position and grammatical function, which captures the fact that in SVO and SOV languages, verbs, prepositions, adjectives and nominals are, for the most part, immediately adjacent to their complements. He does not discuss VSO languages, which raise difficulties for the generality of his proposal.
The lexical entry for a verb such as see in English states that the see-er argument is linked to a SUBJECT, not to an element with the category N. This principle is crucial for an account of Warlpiri in terms of the LFG framework, because Warlpiri allows selected grammatical functions to be represented by either an overt NP, or a null pronominal. If verbs were subcategorized for categories, null pronominals would be impossible to explain without recourse to empty NPs, which are forbidden by other principles of LFG. Selection for function is a strong principle which requires that certain cases of apparent subcategorization for category rather than function be explained by independent principles. I will discuss some such cases in 1.3.1.2.1.

A second constraint on the mapping of 'arguments' (where 'arguments' includes semantically complex arguments) onto grammatical functions is the Functional uniqueness principle (see Kaplan and Bresnan, 1980).

**Principle 2: Functional Uniqueness**

Every grammatical function must have a unique value.

(This condition will be subsumed in 2.2.6.1 under a general consistency convention.)

What this means, is that no sentence consisting of a single lexically-realized argument-taking predicate can have more than one SUBJECT, more than one OBJECT
A sentence can have any number of OBLIQUES, so long as they all represent different allowable Obliques in the language concerned: OBL\textsubscript{LOC}, OBL\textsubscript{GOAL} etc.\textsuperscript{23}

A third constraint on the expression of the relations between argument-taking predicates and their arguments is the Function-argument bi-uniqueness principle. (See Bresnan 1980a for a more formal definition).\textsuperscript{24}

\textsuperscript{22} The claim, made in several current theories of syntax, for the uniqueness of grammatical functions, can be traced to several sources, in particular, Chomsky (1965, Ch. 2, Footnote 7), who tentatively suggested that [NP of S] and [NP of VP] are unique, and Fillmore (1968), who proposes that deep Cases are unique: a sentence can have no more than one Instrumental, for instance. In Relational Grammar, this uniqueness is formalized as the Stratal Uniqueness Law. The suggestion in Marantz (1981) and Schein (1982b) that argument-taking predicates assign at most one thematic role has much the same effect within GB as the LFG and RG principles. All three principles either rule out, or treat as highly marked, the occurrence of two realized OBJECTs at a given level.

Gary and Keenan (1977) use data from Kinyarwanda to argue against the Stratal Uniqueness Law. It is true that, from Kimenyi’s (1980) detailed study of Kinyarwanda, it is very hard to find syntactic evidence to distinguish between the OBJECTs of a ditransitive — processes such as Passive, Reflexivization, Causativization and Agreement do not distinguish between them. To assign both arguments the GF OBJECT violates Functional Uniqueness. Languages such as Kinyarwanda are rare. See Dryer (forthcoming), Zaenen (1981) and Marantz (1981) for a discussion of these problems within RG, LFG, and a version of GB, respectively.

\textsuperscript{23} However, sequences of OBLIQUES in which each further specifies the next are allowable:

\begin{itemize}
\item I sent it to Paris to John.
\item I put the guinea-pigs on the treadmill in the cage on the table.
\end{itemize}

\textsuperscript{24} Bi-uniqueness does much the same work as the GB $\theta$ Criterion (which says that every argument has a $\theta$ role and every $\theta$ role is assigned to an argument).

Bi-uniqueness refers specifically to arguments within the lexical entry of a verb, and to grammatical functions, not to semantic roles. An argument position can be associated with several semantic roles, as Jackendoff (1972: 32) argues. Therefore a grammatical function such as SUBJECT can be associated with several semantic roles. But an argument position can only be associated with one grammatical function at a time, although, as Passive shows, the one argument position may be associated with different grammatical functions in different lexical entries of the same verb.
Principle 3: Bi-uniqueness

Each argument must be assigned a unique grammatical function, and no grammatical function can be assigned to more than one argument.

The insight represented by this principle is straightforward: if a verb has two arguments, those arguments must be represented by different grammatical functions. Consider the dyadic verb see: the see-er argument cannot be represented by both the SUBJECT and the OBJECT of a sentence. Similarly, a SUBJECT cannot express both the see-er and the thing seen semantic roles (unless a lexical rule of reflexivization has taken place, as Grimshaw (1980) shows).25

A lexical item will have a different lexical entry for each different sense, and for each different subcategorization frame. For instance the Warlpiri nominal pakarli has two lexical entries, one meaning 'paper-bark tree', and one meaning 'bucket-shaped ceremonial head-dress'. Similarly, the Warlpiri verb nyanyi has two lexical entries, one in which it selects an ERGATIVE SUBJECT and an ABSOLUTIVE OBJECT, and means 'see, look at', and another in which it selects an ERGATIVE SUBJECT and a DATIVE OBJECT, and means 'look for'.

25. Bi-uniqueness does not preclude grammatical functions from being expressed by semantically empty elements. Nor does it force predicate arguments to be realized. Predicate arguments can fail to be lexically realized by virtue of being linked to the null grammatical function $\emptyset$. This function is found in Passive – the old SUBJECT can be represented either by a by-OBJECT or by the null grammatical function $\emptyset$. Grammatical functions can be expressed by empty elements through FORM equations. These state that the FORM of the SUBJECT or OBJECT is it, there etc. For instance the verb lord it (over X) has the lexical entry:

```
lord \langle (SUBJ) (OBLIQUE_{over}) \rangle OBJ
Agent Patient
(\top OBJ FORM) = it
```

This lexical entry states that lord is semantically a dyadic predicate; the Agent is linked to the SUBJECT, and the Patient to an OBLIQUE argument. However, lord has a semantically empty element acting as its OBJECT, which is realized phonetically as it.
Almost all argument-taking predicates require that some argument of the argument-taking predicate they represent be mapped onto the SUBJECT function. It is sometimes claimed that every argument-taking predicate must have a argument linked to the SUBJECT position. Nothing within the LFG framework requires this, and the evidence from weather verbs and impersonal constructions in other languages leads me to think that it is not a desirable constraint. A given language may require an element present in SUBJECT position, but that will be a language particular requirement.

---

26. In English, it appears as if every argument-taking predicate requires a SUBJECT, because every English sentence must have some element in SUBJECT position. Sometimes this element can be a sequence of prepositional phrases:

*From London to Tonbridge is a long way.*

Weather verbs have to have it in SUBJECT position. Chomsky (1981) and Bresnan (1982) claim that weather 'it' in English is not semantically empty. Some evidence for this is provided by the fact that a weather it can act as the antecedent for a participle:

*While snowing it never rains.*

However, languages such as Russian do not require surface SUBJECTS, and allow impersonal sentences such as *Nužno* 'it is necessary', *Možno* 'it is possible'. Some weather verbs in Russian are also impersonal: *Temnele* 'it grew dark'. *Xolodno* 'It's cold'. I do not see any reason to say that these argument-taking predicates have null pronominal SUBJECTS, especially as they cannot control participles:

*Temneja, stalo ochen’ xolodno.*

darken-participle, become-PAST-NEUT very cold-NEUT

When getting dark, it got cold.

Contrast this with the personal use of the verb *temnet*, when referring to an object getting dark.

*Bystro temneja, tucha pokryla vse nebo.*

quickly darken-participle cloud-NOM cover-PAST-FEM all sky

As it quickly darkened, the cloud covered the whole sky.

Contrast it also with a non control situation, where there are two finite clauses:

*Kogda stemnelo, stalo ochen’ xolodno.*

when darken-PAST-NEUT become-PAST-NEUT very cold-NEUT

When it got dark, it got very cold.

(Boris Katz and Beth Levin provided this data).

It is possible that weather verbs have some vague state of affairs as a semantic argument. But in Russian at least, this argument can remain unlinked to a SUBJECT position.
To summarize, an argument maps onto one of a small set of grammatical functions. Which grammatical function it maps onto is determined by the lexical realization of the argument-taking predicate, and by several constraints on the expressions of arguments by grammatical functions.

Let us now return to the examination of grammatical functions. A SUBJECT, OBJECT, OBJECT 2 or OBLIQUE can correspond either to a semantically simple argument, or to a semantically complex argument (a argument-taking predicate which in turn takes arguments). The following sentences show grammatical functions represented by demonstrative pronouns denoting propositions:

(33) White's ward-bosses are corrupt. That doesn't surprise me. 

SUBJECT

I don't believe that. OBJECT

Try telling him that. OBJECT 2

By that, do you mean he's crooked? OBLIQUE

In Warlpiri, the demonstrative ngula is used to stand for propositions, as in the following example, in which ngula stands for the event denoted by the first clause.

(34) Wardilyka-ku -lpa-lu-rla wurru-ka-ngu karli-parnta, turkey-DAT -PAST-3pl-DAT sneak.up.on-PAST boomerang-PROP-ABS ngula-jangka -lpa-lu luwa-ru nu mantamanta-pardi-nja-kurra that-SOURCE -PAST-3pl shoot-PAST take.off-INF-OCOMP They would sneak up on the turkey armed with a boomerang and after that hit it as it took off in flight. [mantamanta]

However, complex arguments do not have to be expressed as NPs; they can be represented by Ss, i.e. by a syntactic category which can express an argument-taking predicate and all of its arguments (as well as modifiers of the argument-taking predicate and its arguments). In English, for example, a SUBJECT may be expressed as a clause:
(35)  That John left so suddenly upset Lucy.

It is probably universally true that grammatical functions such as SUBJECT, OBJECT etc can represent complex semantic propositions consisting of an argument-taking predicate and its arguments and modifiers. Languages may differ as to whether a particular grammatical function may be expressed categorically as C, (where C is the normal means of expressing complex propositions categorically: for instance, S and $\bar{S}$ in English). Principle 1, selection for function rather than form, means that the inability of $\bar{S}$ to appear as OBJECT 2 in some language cannot be stipulated in the selection frame of the matrix verb.\(^27\) We have to find some other principled way of excluding it. Often what rules out the appearance of $\bar{S}$ is semantic incongruity. For instance, the SUBJECT of read in English cannot ever be a proposition: it must be something that one can imagine being able to read. Therefore (36) a. and b. are unacceptable, whereas (37) is acceptable.

(36)  a. *That they are good students reads complex articles easily.
      b. *The fact that they are good students reads books easily.

(37)  The machine will read 2 pages at a time.

Since the SUBJECT of read cannot be a proposition, as (36) shows, it cannot be represented by an $\bar{S}$, because $\bar{S}$s only represent propositions.

There are two other functions which only represent complex semantic types (argument-taking predicates and their arguments). These functions are the 'Complement' function and the 'Adjunct' function.

\(^{27}\) This of course can be stipulated by a phrase structure rule which does not contain a function annotation of the right form; that is, does not include:

\[
\begin{align*}
 \text{VP} & \rightarrow \ldots \text{S} \ldots \\
(\uparrow \text{OBJ 2}) & = \downarrow
\end{align*}
\]
1.3.1.2 Complements and Adjuncts

Complements act as arguments of argument-taking predicates. Adjuncts are argument-taking predicates which modify either propositions, or argument-taking predicates, or arguments. They are the only instance of non-selected grammatical functions. Verbs select complements, and so, for such a verb, the absence of the complement either renders the sentence ungrammatical, or else forces another interpretation of the verb. In this, complements contrast with adjuncts. The absence of an adjunct has no direct effect on the interpretation of the verb. For instance, (38), which has a VP complement means something different from (39), in which the VP complement is omitted. However, the presence or absence of the SUBJECT-controlled adjunct has no effect on the interpretation of the verb.

(38) a. She made John leave. (leave is an XCOMP).
   b. She made John.

(39) a. In a rage, she made John leave. (In a rage is an ADJUNCT)
   b. She made John leave.

The open and closed distinction cross-cuts complements and adjuncts, producing four types of grammatical function: COMPs, XCOMPs, ADJUNCTs, XADJUNCTs. The difference between open complements (XCOMPs) and adjuncts (XADJUNCTs), on the one hand, and closed complements (COMPs or SCOMPS) and adjuncts (ADJUNCTs), on the other, is that the SUBJECT of the open XCOMP or XADJUNCT has to be identical to some particular function of the matrix predicate selecting the XCOMP, whereas COMPs and ADJUNCTs contain their own phrasal SUBJECT. However, the SUBJECT of an ADJUNCT or COMP could be a null pronominal. An XCOMP or XADJUNCT is considered open, because its f-structure is incomplete unless supplied with a SUBJECT from among the arguments of the matrix predicate. A COMP or ADJUNCT is considered closed, because no additional information is needed for a complete f-structure; it provides its own SUBJECT (which may be a null pronominal).
The relation between the SUBJECT of an open function such as an XCOMP, and its controller, is called functional control. The relation between a null pronominal SUBJECT of a closed function, and the argument with which that null pronominal SUBJECT is coreferential is called anaphoric control. The following sentences contrast a COMP with an XCOMP:

\[(40)\]
a. He told me to leave. \hspace{2cm} XCOMP
b. He told me that I should leave. \hspace{2cm} COMP
c. He signalled to leave. \hspace{2cm} COMP
d. He signalled for us to leave. \hspace{2cm} COMP

\[(40)a.\] shows an XCOMP which is obligatorily controlled by the matrix OBJECT me. \[(40)b.\] shows its counterpart with a finite clause, (a COMP). \[(40)c.\] and \[(40)d.\] show COMPs which are non-finite clauses; in \[(40)d.\] the COMP has an overt nominal SUBJECT, while in \[(40)c.\] it has a null pronominal SUBJECT which has an arbitrary interpretation.

There are two types of XCOMP, the idiosyncratically selected, and those introduced by lexical rule. The idiosyncratic are those XCOMPs selected by a given verb, such as make, or become, or persuade. But some XCOMPs can be added to the lexical entries of verbs by lexical rules. These include the directional complements to verbs of motion, such as in Gibraltar in the sentence I arrived in Gibraltar. Bresnan (1979) argues that these are XCOMPs. See 3.4.1. A second type of XCOMP introduced by lexical rule comprises the resultative attributes and depictive attributes, as illustrated below.

---

28. Since SUBJECT, OBJECT, OBJECT 2 and OBLIQUES do not need any additional information for completion of their f-structures, they are also closed functions.
(41) a. She dyed the cloth a delicate blue.  
   b. She cried her eyes blind. 
   c. She drank herself to death. 
   d. Little Willy was burned to ashes. 
   e. She froze solid.

(42) a. He ate the meat nude.  
   b. He ate the meat raw. 
   c. He arrived sober. 
   d. He died a hero.

Bresnan (1982a) argues that the depictive attributes in (42) are XCOMPs.30 Ir. Simpson (1982b and to appear), I argue that both the resultatives and the depictives are added to the argument-structures of certain verb-classes, and assigned the function XCOMP, by general lexical rules. I will examine them further in Chapter 5.

Because the distinctions between ADJUNCTs and XCOMPs, and between functional and anaphoric control play an important role in Chapters 3, 4, 5 and 6, I will outline the major differences here.

ADJUNCTs differ from XCOMPs in three main respects.31 First, by definition, XCOMPs are selected, whereas ADJUNCTs are not. Second, a sentence can have more than one ADJUNCT, whereas it can only have one XCOMP. The complementary distribution of XCOMP type argument-taking predicates is observed in Halliday (1967),

30. See Travis, 1980, for arguments that they must be ADJUNCTs.
31. Aside from the three principal differences between ADJUNCTs and XCOMP to be described, Bresnan (1979) proposes a test involving the ability of COMPs but not ADJUNCTs to be questioned. In ii. the OBJECT of the XCOMP to avoid the snakes can be questioned, while in iv. the OBJECT of the ADJUNCT result clause only to lose her to a snake charmer cannot be questioned.

i. Jones tried to avoid the snakes.
ii. What did Jones try to avoid?
iii. Jones tried hard, only to lose her to a Tibetan snake charmer.
iv. *Who did Jones try hard, only to lose to a snake charmer?
Bowers (1973) and Nichols (1978). Bresnan (1979) represents the XCOMP in English as an annotation on the phrase structure rule expanding VP.

\[ VP \rightarrow V (NP) (NP) (XP) \]
\[ \uparrow = \downarrow \quad (\uparrow OBJ) = \downarrow \quad (\uparrow OBJ 2) = \downarrow \quad \uparrow XCOMP = \downarrow \]

Principle 2. **Functional Uniqueness**, prevents a sentence from having more than one XCOMP, because XCOMP is a function, which, like the SUBJECT and OBJECT functions, is assigned by identity. In contrast the function ADJUNCT is assigned by inclusion in a set of ADJUNCTs, and so a sentence can have many ADJUNCTs. (The formalism for representing this will be given in Chapter 2).

---

32. XCOMPs correspond to the PREDICATE node proposed in Bowers (1973). "[the Predicate node]... allows us to expand the category Predicate into any of the four major phrase-node categories NP, VP, AP, PP. Finally, such a system explains automatically why these four types of predicate-phrase are mutually exclusive. In other words, it explains the fact that Predicate-AP's, Predicate-NP's, Predicate-PP's, and Predicate-VP's may not co-occur in the same VP. I propose, therefore, to set up the following phrase-structure rules for the expansion of the node VP:

(206) 1. \[ VP \rightarrow V (\{NP\} (NP_2) (Pred) (PP)^* (S) \]

2. \[ Pred \rightarrow \{NP, AP, PP, VP\} \]

[Bowers, 1973:366]

Assigning to a **categorial** node a label such as Pred which expresses the **function** of the element under that node, is arguably a confusion of semantic and syntactic information, a violation of the autonomy of syntax, so Jackendoff (1977) claims:

"I believe, however, that postulating this node [Predicate node, JS] is as much a mistake as postulating a node Agent. Rather, Predicate, like Agent, is a semantic relation which may be assigned by the projection rule for the NP/AP position in the VP." [Jackendoff, 1977: 67]
Third, ADJUNCTs are anaphorically controlled, whereas XCOMPs are functionally controlled. I will now examine these distinctions more closely.

1.3.1.2.1 Selectional restrictions on XCOMPs

Since XCOMPs are selected, verbs can place semantic selectional restrictions on the type of argument-taking predicate that can be an XCOMP. For instance, *persuade* restricts its XCOMP to *volitional* argument-taking predicates, hence the unacceptability of *I persuaded John to look a lot like his father.* Similarly, the lexical rules introducing resultative attributes have semantic selectional restrictions – resultatives can only be attached to verbs which have some effect on their object: *She shot John dead; She touched John wet.* ADJUNCTs, however, have no such restrictions, as (43) and (44) show.

(43) *Looking a lot like his father,* John persuaded me to vote for him.
(44) *She touched his cheek,* still wet with remorseful tears.

Verbs also appear to place *categorial* restrictions on the XCOMPs they select,
whereas ADJUNCTS, as (45) through (48) show, can be of any category,\textsuperscript{33} and do not depend on the verb.

(45) PP: In a rage. I left the house.
(46) AP: Angry at myself, I left the house.
(47) NP: A picture of rage, I left the house.
(48) a. VP: Cursing the world, I left the house.
   b. VP: Angered by her attitude, I left the house.

XCOMPs can also be of any category. \textit{Keep} is a clear case of a verb which selects for a function, XCOMP, rather than for a particular category (NP, VP, A, PP) representing that function. However, in fact many verbs only allow a particular category to represent XCOMP.\textsuperscript{34} For example, verbs of \textit{naming} only allow NPs as XCOMPS. This is not

\textsuperscript{33}English \textit{absolute} constructions (secondary predicates with overt SUBJECTs), however, show a strong preference for certain categories, and these constructions are presumably ADJUNCTs with lexical SUBJECTs. The acceptability of categories as argument-taking predicates in ABSOLUTE constructions forms a hierarchy. Absolutes are uncommon, although not impossible, with nominals as argument-taking predicates.

i. \textit{Her face a picture of woe}, Mary rushed out of the house.
ii. \textit{John the best man}, Bill was married yesterday.

They are slightly more common with adjectives.

iii. \textit{Her dog dead}, Mary rushed out of the house.
iv. \textit{A man dead}, Mary rushed out of the house.

They are relatively common with prepositional phrases and participles.

v. Returning to Diabolo on the Cascadian, \textit{my coatcollar turned up against the chill}, I talked to R.J. Stretch... \textit{The New Yorker} 17/5/82.
vi. \textit{His pride injured, his finances in disarray}, Arnold persuaded himself that he could be a different sort of hero.... \textit{New York Times Book Review} 22/11/81.

vii. And on that bed there lies a knight, \textit{his wounds bleeding both day and night}. [Corpus Christi song]

I suspect that this restriction is semantically motivated, perhaps by the \textit{individual-level/state-level} predicate distinction referred to later.

\textsuperscript{34}Originally, Bresnan (1979) proposed that verbs were subcategorized for functions whose names incorporated categorial information: NCOMP, PCOMP, ACOMP, or VCOMP. However, Peterson (1981a) and Grimshaw (1982) pointed out that this was a confusion of \textit{function} (complement) with \textit{category} (N, V, A, P). In line with Principle 2 (\textit{functional uniqueness}), the single function XCOMP has been adopted in recent work in LFG (Bresnan (1982a), Neidle (1982a)).
surprising since the XCOMP represents the ‘name’ argument of the verb, and only NPs in general can act as names.

(49) They named/christened/baptized her Lucy/happy/into a good name.

Some verbs demand volitional complements, and these can only be represented by VPs.

(50) a. I tried to go/happy/on the ski-course/ the ski-course. VP
    AP is not possible, and NP and PP are only possible with a different sense of the verb.
    b. I promised John to go/happy/into the house/the rose. VP
    AP and PP are not possible, and NP is only possible with a different sense of the verb.
    c. I persuaded John to go/happy/President/into the car/of it/ VP
    AP and NP are not possible. A directional PP is marginally acceptable, while the PP of it probably reflects a different subcategorization frame.

Looking now at XCOMPs introduced by lexical rule, we find categorial restrictions. Resultative XCOMPs can only be APs or PPs, and not VPs or NPs, with a few exceptions. See Green (1972).

(51) I cooked the meat black/to a cinder/a cinder/blackened/burning.

(52) I shot him dead/to death/a corpse/dying/killed.

The exceptions are quasi-adjectival nominals such as a pale shade of X, the right length:

(53) I painted the car green/ a pale shade of green.
(54) I cut the stick too short/ the right length.

The existence of these exceptions suggest that the restriction is not on category, but rather on the kind of semantic predicate a category can represent. Nominals in general cannot represent a resultant state.
Some support for this is provided in work by Carlson (1977) and Stump (1981). They show that predicate nominals are much more restricted in their interpretation than APs or PPs: Carlson argues for a distinction between individual-level predicates and stage-level predicates: individual-level has to do with kinds or objects, while stage-level has to do with "the spatio-temporal slices of an individual that show up as part of some event or state of affairs. [Stump, 1981: 80]. This distinction corresponds roughly to the inherent/temporary property classification often used when talking about adjectives. (Bolinger, 1967; James, 1979). They provide a number of examples suggesting that nominals are almost always used as individual-level predicates. If resultative XCOMPs represent stage-level predicates, (which is plausible, since a resultant state such as 'black' is NOT an inherent property of an object such as 'meat'), then there is a natural explanation for why resultatives cannot in general be NPs. A pale shade of pink etc will be rare uses of NPs as stage-level predicates. The participles are perhaps blocked by a conflict of aspect. A present participle specifies a continuing action, whereas a resultative describes a state that is achieved by the action of the verb, a completed state. A past participle describes a completed state also, but it implies that the state was completed before some time-reference-point. When a past participle is added to a verb as a resultative, it gives a strange time-travel impression: the action of the verb results in the OBJECT already being in some particular state. Thus *I shot him killed suggests that, as a result of my shooting him, he was killed at some earlier time.

To maintain the claim that verbs select functions, not categories, (that is, persuade selects an XCOMP, rather than a VP, and name selects an XCOMP, not an NP), it is necessary to find an independent, well-motivated, theory of lexical semantics that explains why Adjectives, Prepositional Phrases and argument-taking predicate Nominals cannot represent volitional arguments of the sort required by the verb persuade, and why only Nominals can be names, and why Nominals are individual-level argument-taking predicates, not stage-level argument-taking predicates. Work is being done in this area

35. More work needs to be done on this topic, because not all nominals and adjectives behave exactly the same way with respect to stage-level and individual-level tests. Some behave as stage-level for one test, but as individual-level for other tests.
(Maling 1981), but a coherent theory is still awaited.

1.3.1.2.2 Complementary distribution of XCOMPS

The second difference between ADJUNCTs and XCOMPs is their distribution. A sentence can have many ADJUNCTs, but only one XCOMP. Since a sentence can have only one XCOMP, resultative attributes and depictive attributes cannot co-occur, and nor can they co-occur with idiosyncratically selected XCOMPs, as the following examples show. The first set show adjectival XCOMPs.

(55) *The doctor made John well happy.
   'The doctor made John well as a result of which he was happy.'
   (resultative XCOMP happy and idiosyncratic XCOMP well).

(56) *The doctor made the tea strong weak.
   'The doctor made the tea strong when it was weak'
   (depictive XCOMP weak and idiosyncratic XCOMP strong).

(57) *They believed the mouse unconscious dead.
   'When the mouse was in fact dead they believed it unconscious'
   (depictive XCOMP dead and idiosyncratic XCOMP unconscious)

(58) *They shot John dead drunk.
   'They shot John dead when he was drunk'
   (depictive XCOMP drunk and resultative XCOMP dead; marginally possible with drunk as an ADJUNCT separated by a heavy intonation break)

(59) *They boiled the lobster alive red.
   'They boiled the lobster alive, and they boiled it to the stage where it became red'
   (depictive XCOMP alive and resultative XCOMP red)
This complementary distribution does not only hold of adjectival XCOMPs. Consider the following examples with SUBJECT-controlled verbal XCOMPs.

(60) *I promised John drunk/happy to go to the zoo.

(60) is ungrammatical, no matter whether the depictive and resultative are predicated of the SUBJECT or of the OBJECT. Neither a depictive attribute (he/I was drunk when I made my promise) nor a resultative attribute (he/I was happy as a result of my making the promise) can co-occur with a SUBJECT-controlled complement. The following examples

36. There are two classes of possible counter-examples to this complementary distribution claim. The first I owe to David Dowty.

i. She dished the food out into the bowls.

Following a suggestion in Bolinger (1971), I assume that intransitive prepositions such as out can (but need not) be resultative attributes. I also assume that directional PPs such as into the bowls can (but need not be) resultative attributes. If in i. the particle out and the PP into the dishes are distinct resultative attributes with the XCOMP function, then functional uniqueness is violated. There are several possible explanations for these examples. The first is to assume that one or other of the intransitive P and the PP is not an XCOMP, for which independent evidence would be desirable. The second is to assume that out into the dishes is a complex resultative predicate, rather than two separate resultatives. I incline towards the first alternative, taking dish out as a complex verb, rather than a verb with an XCOMP. While particles used as XCOMPs act like XCOMPs in not appearing in participle constructions, complex verbs formed of verb + particle can appear in such constructions, and so can the verb dish out.

\[
\begin{align*}
\text{The King is counting out his money.} & \quad \text{Complex verb} \\
\text{John counted the strike-breakers out.} & \quad V + \text{XCOMP} \\
\text{The King's counting out of his money lasted five hours.} \\
\text{??John's counting out of the strike-breakers distressed their families.} \\
\text{Mary's dish out of the food lasted ten minutes.} \\
\end{align*}
\]

Janet Wager pointed out a second class of counter-examples to me. If the directional argument of verbs such as arrive and bring is taken to be an XCOMP, then sentences such as the following should be unacceptable:

\[
\begin{align*}
\text{He arrived home drunk.} \\
\text{They brought him home drunk.} \\
\end{align*}
\]

In order to maintain the claim that depictives are XCOMPs, we must either say that drunk in this example is not a depictive, but an ADJUNCT, or that home is not an XCOMP, but an OBLIQUE argument. I have no evidence for either alternative.
show that it is not the presence of an OBJECT which prevents the appearance of two XCOMPs. Verbs like hope and try have no OBJECTs, and take SUBJECT-controlled XCOMPs, but cannot have resultative or depictive XCOMPs, even with the help of a ‘fake reflexive’ like the one in She drank herself to death.

(61) a. *I tried drunk/exhausted to please John.
   b. *I tried myself exhausted to go there.

(62) a. *I hoped drunk/into a terrible state to go there.
   (Acceptable when the depictive is contained within the non-finite clause, as a complement: I hoped to go there drunk).
   b. *I hoped myself into a terrible state to go there.

Similarly, a verb with an OBJECT-controlled XCOMP like persuade, or ask cannot take a resultative or depictive XCOMP.

(63) *I persuaded John drunk/convinced to go there alone.
(64) *I asked John drunk/upset to go there alone.

The prediction then is that, if a secondary argument-taking predicate is not an XCOMP, but an ADJUNCT, it should be able to co-occur with an XCOMP. This is borne out by the examples below, in which an ADJUNCT co-occurs with a variety of XCOMPs.

(65) a. Drunk, I promised John to go to the zoo
   b. Drunk, I tried to please John.
   c. Drunk, I hoped to go there.
   d. I promised to go there, besotted by him

(66) a. Secretly amused, I persuaded John to go to the zoo.
   b. I persuaded John to go to the zoo, secretly amused at his reluctance.

(67) a. Sober, he could never have shot the cow dead.
   b. Sober, he would never have eaten the meat raw.
   c. He would never have eaten the meat raw, sober.

Non-functionally controlled purpose clauses are also ADJUNCTs, and they can co-occur with resultative (68) or depictive XCOMPs (69), as well as with idiosyncratically selected
XCOMPs (70).

(68) She knocked the patient unconscious, to operate on him.
(69) I gave him the meat raw, to feed to the dogs.
(70) John kept Paul amused to please Lucy.

Since ADJUNCTS are not restricted by Functional Uniqueness, a sentence can have multiple ADJUNCTS, as in (71) (due to Halliday (1967)).

(71) They keep warm naked young.

1.3.1.2.3 Anaphoric and functional control

The third difference between XCOMPs and ADJUNCTS is that the former are functionally controlled, whereas the latter are anaphorically controlled. In functional control, what is important for determining the controller of a clause is the function of that controller. For English XCOMPs, the identification of the SUBJECT with an argument of the matrix is done in the lexicon. The lexical entry for a verb such as try has a control equation stating:

\[ \langle \text{SUBJ} \rangle = \langle \text{XCOMP SUBJ} \rangle \]

The SUBJECT of the sentence is identified with the SUBJECT of the XCOMP. Control equations can only refer to grammatical functions, and therefore it has to be function which identifies the controller, rather than other properties, such as Case. Another important property of functionally controlled clauses is that all of the controller’s features, such as CASE, NUMBER, PERSON and GENDER, must be identical to the features of the XCOMP’s SUBJECT.

In anaphoric control, a null pronominal ‘PRO’ is introduced as the SUBJECT. The PRO can be referentially identical to some other argument of the sentence. What determines the controller of an anaphorically controlled complement varies from language to language, and sometimes from structure to structure. Sometimes an obviation principle operates (cf. Bresnan, 1982a), sometimes function is used, and
sometimes control depends on real world knowledge. For many languages, including Warlpiri, case-concord determines the controller.

Crucially, the anaphorically controlled PRO and its antecedent do not have to have identical features. In particular, whereas the SUBJECT of a functionally controlled clause must have the same CASE feature as its controller, the PRO SUBJECT of an anaphorically controlled clause normally has the same case that a lexical SUBJECT of the same verb would have. Andrews (1982c, 1982d) and Neidle (1982a, 1982b) exploit this distinction to explain the differences between certain kinds of complements in Icelandic and Russian. In Chapter 6 I will use this test to argue that certain clauses in Warlpiri are anaphorically, rather than functionally, controlled, even though function is crucial in determining their controller.

1.3.1.3 Summary of grammatical functions

The set of grammatical functions consists of XCOMPS, COMPS, XADJUNCTS, ADJUNCTS, SUBJECTS, OBJECTS, OBJECT 2s, and OBLIQUES. The diagram gives the information about types of functions provided so far. (The diagram is adapted from Bresnan (1982a).

37. In Warlpiri, case-concord is not the only means of determining the controller of an anaphorically controlled clause. The complementizer suffix may determine the controller. See Chapter 6.
I will now examine the properties of the lexicon and of morphological and word-order expression within the LFG framework.

1.3.2 The Lexicon

The grammatical functions are selected by lexical items. This selection is recorded in the *lexical entry* for a lexical item.

A lexical entry for a given lexical item contains categorial information, information about the syntactically relevant features of the lexical item (such as NUMBER), as well as a *lexical form*. A lexical form consists of the *predicate-argument structure* of the lexical item (the arguments of the argument-taking predicate) paired with the *grammatical functions* selected by that lexical item. The pairing is subject to Principles 2 and 3 (*functional uniqueness* and *function-argument bi-uniqueness*).

Only the *syntactically relevant* arguments of a argument-taking predicate are included in its lexical form. An example of an argument which is not *syntactically relevant* is the kind of incorporated object found in *He homered* (*= He hit a home-run.*) (Bresnan, 1980a), or the locative arguments in verbs such as corral or tree (Kiparsky, p.c.). This incorporated object cannot be referred to in syntax by processes such as anaphora:
Lexical rules can operate on lexical forms to alter the pairing of grammatical functions with arguments in the predicate argument structure. Such rules include Passive and Dative-movement in English. Only lexical rules can change the assignment of a grammatical function to an argument, because there is a constraint placed on the expression of grammatical functions by word-order and morphological marking. This constraint is the principle of Direct Syntactic Encoding.

**Principle 4: Direct Syntactic Encoding**

*Every non-lexical rule of grammar must preserve the assignment of grammatical functions.* [Bresnan, 1980b: 5]

Essentially, the principle prevents the destruction or creation of argument-structure other than in the lexicon. This principle prevents rules of syntax, say, movement transformations, from changing one grammatical function to another. In LFG, Passive cannot be a constituent-structure rule, because it changes the grammatical functions of the SUBJECT and the OBJECT. But it can be a lexical rule.

I will call rules relating the lexical entries of argument-taking predicates *diathetical* rules, because they operate on the diatheses of argument-taking predicates. I assume that there are two types of diathetical rules — those that involve alternations of grammatical function: *relation-changing* rules, and those that relate predicate argument structures: *semantic redundancy rules*.


39. The Projection Principle of Government Binding (Footnote 16) captures part of this intuition, among its other properties. However, since GB assumes that grammatical function changing rules such as Passive are movement rules, it requires the use of null elements (*traces*) to preserve argument-structure under movement transformations.
Relation-changing rules describe a single predicate-argument structure with different assignments of grammatical functions. An example of a relation-changing rule is *Passive* in English, which I discussed earlier. In a typical active sentence, the semantic role of Actor/Perceiver/Experiencer/Emotion instigator etc. is assigned to the grammatical function SUBJECT, while the grammatical function OBJECT is associated with the semantic role of Patient/Perceived/Object of Emotion. In the passive counterpart of such a sentence, the semantic role of Patient etc. is associated with the SUBJECT, while the role of Actor etc. is expressed by a prepositional phrase, or else is linked to a null grammatical function. There is no significant meaning difference between active and passive forms of the same verb, although their discourse functions may be different.  

Whether relation-changing rules are directional and ordered is a question for

40. For instance, consider the two sentences:
   i. Lucy loves John.
   ii. John is loved by Lucy.
   i. focusses on Lucy's behaviour, ii. on a property of John's.
research (see L. Levin, in progress). Bresnan (1980a) assumes that they are not.\textsuperscript{41}

Lexical entries which seem to be related, but which do not have precisely the same meaning, are related by \textit{lexical redundancy rules}. Examples from English include the alternations \textit{shoot at}, and \textit{shoot; laugh at and laugh}. \textit{Laugh} does not presuppose an object of merriment, as \textit{laugh at} does, and \textit{shoot} presupposes that the object is shot, while \textit{shoot at} does not. A redundancy rule relates a one-place predicate \textit{laugh} with a two-place predicate \textit{laugh}. The second argument of the two-place predicate may be linked to either an OBJECT or an OBLIQUE\textsubscript{goal}.\textsuperscript{42} The relation between \textit{shoot} and \textit{shoot at} is a relation between two two-place predicates, one of which, \textit{shoot}, has an affected object linked to an OBJECT, and the other of which, \textit{shoot at}, has a goal or endpoint (the target), linked to either an OBJECT or an OBLIQUE\textsubscript{goal}.

41. A small piece of evidence for ordering lexical rules comes from DATIVE movement. The assumption that DATIVE movement changes OBJECTs into OBJECT 2, and OBLIQUE\textsubscript{goal}s into OBJECT, and that DATIVE movement is ordered with respect to a rule adding XCOMPs, provides an explanation for the failure of DATIVE OBJECTs in ditransitives to be modified by depictive attributes. OBJECTs usually can have depictive attributes predicated of them, subject to certain semantic conditions.

\textit{I ate the meat raw.}

The OBJECT 2 in a ditransitive, or the OBJECT in the ditransitive which has not undergone DATIVE shift, can have depictive attributes predicated of them:

\textit{I gave the meat raw to him.}
\textit{I gave him the meat raw.}

But the OBJECT in a DATIVE-shifted ditransitive cannot have a depictive attribute predicated of it:

\*\textit{I sent him the grapes sick.}

Suppose that depictive attributes such as \textit{sick} are XCOMPs, controlled by the OBJECT, and suppose that the diathetical rule adding such an XCOMP applies to the non-DATIVE shifted ditransitive only. Then, when DATIVE shift occurs, and the OBJECT \textit{the meat} becomes an OBJECT 2, the controller of the XCOMP will also become an OBJECT 2, because the rule changing OBJECT to OBJECT 2 applies to \textit{all} instances of OBJECT in the lexical entry of the verb. If the XCOMP adding rule has to precede DATIVE movement, the ill-formed sentence \*\textit{I sent him the grapes sick} is underivable.

42. Exactly how the semantic relationship between the \textit{at}-forms and the non-\textit{at} forms should be expressed is an area that needs much more work, because there is as yet no agreed-upon way of expressing the lexical meanings of words.
The alternation between OBJECT and OBLIQUE in laugh at and shoot at is of course a relation-changing rule, since it is an alternation between two different grammatical functions assigned to one semantic relationship. Bresnan (1980b) provides evidence of this for the laugh at cases. She observes that the prepositional object behaves both like an OBJECT and like an OBLIQUE. It behaves like an OBJECT in that it undergoes Passive:

(74)  

a. They laughed at John.
   b. John was laughed at.

Passive in English is defined as operating on OBJECTs. But the intransitive verb laugh has no OBJECT.

(75)  

   *John was laughed.

Furthermore, the OBJECTs of prepositions usually do not undergo passive (*The garden was kissed in by John and Mary > John and Mary kissed in the garden*). So the presence of the preposition at changes the transitivity of the verb laugh, allowing it to have an OBJECT. But, if the function assignment of a predicate is changed, an LFG account must use a lexical rule. Otherwise Principle 4 (Direct Syntactic Encoding) would be violated.

However, in other respects the prepositional objects behave like genuine prepositional phrases. The evidence for the prepositional OBJECT being part of an OBLIQUE prepositional phrase comes from clefting. The preposition and the NP can move together as a constituent.

(76)  

a. John was laughed at by the kids.
   b. ?It's at John that they were laughing.

Bresnan (1980b) proposed that verbs with prepositional OBJECTs such as laugh at be derived by an optional rule of Verb Preposition Incorporation. When the rule does not apply, the prepositional phrase remains a prepositional phrase, and has an OBLIQUE grammatical function. When the rule applies, the preposition becomes part of a complex
verb, e.g. *laugh at*, and the OBLIQUE becomes the OBJECT. Bresnan proposes the morphological change to a complex verb, because the verb and the transitive preposition seem to form a single constituent: for instance, the passive participle of an incorporated Verb-Preposition Verb can be used adjectivally: *a much talked-about event*.

Verb-Preposition Incorporation allows the lexical incorporation of a preposition and its OBJECT to form a new transitive verb, whose OBJECT is the prepositional object. A modified version of the rule in Bresnan (1980b) follows:

**Verb-Preposition Incorporation**

<table>
<thead>
<tr>
<th>Operation on lexical form:</th>
<th>OBL _prep. → OBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphological change:</td>
<td>V → [V P]_v</td>
</tr>
</tbody>
</table>

The rule converting an OBLIQUE into an OBJECT is optional. When it applies, Passive is free to apply to its output. When it doesn’t apply, the OBLIQUE is still a prepositional phrase, and has the same structural properties as other prepositional phrases.44

The boundary between relation-changing rules and semantic redundancy rules is not always clear. A debatable case concerns the so-called indefinite-object deleting verbs. For example, a verb like *eat* can appear with or without an OBJECT.

43. The Verb-Preposition Incorporation rule is a formalization of Jespersen's insight:

"In 'everybody laughed at Jim' 'Jim' may be considered the object of the whole combination verb + preposition, and consequently may be made the subject of the passive: 'Jim was laughed at by everybody'; in set phrases modern English goes even further: 'She will be taken good care of'."


44. Notice in this context an interesting piece of evidence pointed out by Bresnan (1980b). While adverbs cannot intervene between the verb and the *at* in the prepositional passive (because the verb plus *at* form a complex verb), they *can* intervene between the verb and the *at* in active sentences (because, optionally, the *at* is still part of the preposition phrase and not part of a complex verb.)

John was laughed at cruelly by the children.

*John was laughed cruelly at (by the children.)*

*Who is the man the children were laughing so cruelly at?*
(77) I ate the apricot tart.
(78) I ate, and then felt better.

In (77), the argument-taking predicate which eat represents means something like X uses X’s mouth to cause Y to go down from X’s mouth into X’s stomach, where Y is something solid. (See Wierzbicka. 1980 for a somewhat different definition). However, in (78) this argument is not overtly expressed in the sentence, although it is entailed. Observe that the two forms have different uses. First, unlike the use in which the thing eaten is overtly expressed, when the thing eaten is a constant, it must be something thought of as food. It would be inappropriate to say The baby’s eating, when it is chewing up cigarette butts. (I am grateful to Richard Carter for pointing this out to me.) Second, there is an aspectual difference. Without an overt object, eat normally expresses duration of an action.

Suppose that there are two lexical entries for eat, with grammatical function assignments differing as follows.

```
eat 1  eater  thing eaten
      I      I
    SUBJ    OBJ

eat 2  eater  thing eaten
      I
    SUBJ    0
```

In the second example, the argument representing the thing eaten is linked to a null grammatical function. The issue is, are the meanings of the two uses of the verb eat sufficiently similar for us to assume that the null grammatical function and the OBJECT function are just alternate assignments of grammatical functions to the one argument? Or should they be related instead by a semantic redundancy rule, like, say shoot and shoot at? Bresnan (1980a) takes the former route. But the matter remains open.

I have discussed the eat and laugh at alternations at such length, because in 2.3.1 I shall examine similar diathetical rules in Warlpiri.
1.3.3 Morphological Expression

In LFG, it is assumed that all inflection, including case-marking, is done in the lexicon before lexical insertion. There are no syntactic rules adding or deleting inflections. The inflections carry information about functions and function features which is available to the syntax. So, the success of LFG as a model of grammar requires a compatible theory of morphology. The theories of morphology presented in Lieber (1980) and Selkirk (1981, 1982), as well as the Lexical Phonology/Morphology theory (LPM) seem to be compatible with LFG.\footnote{45}

All these theories assume that inflectional affixation is the same type of process as derivational affixation, and that it should be done in the morphology. Affixation is assumed to be a sequential process, which creates branching trees of the form:

\[
[[[[[X]_{root} Y]_{c} Z]_{M} A]_{k}
\]

\footnote{45. Muysken, 1981 and 1982, has interesting ideas on the representation of information about grammatical functions provided by the morphology in Quechua. Marantz, 1981, contains a proposal for explaining the similarities between certain syntactic constructions and their morphological counterparts by means of \textit{morphological merger}. Unfortunately, neither of these proposals fits well with the LFG and LPM theories simultaneously. Muysken makes use of empty abstract c-structure categories such as CASE, which are controlled by morphological elements, such as morphological case-markers. But, LFG forbids the use of null categories. LPM requires erasure of brackets prior to lexical insertion, so that it is not clear how a c-structure position could be controlled by a morphological case-marker, since that case-marker would not be an identifiable morpheme. (Allowing a case-\textit{feature} to act as morphological controller is insufficient, because Muysken, 1981, crucially relies on the position of morphemes in double case-marking structures to determine which morpheme controls which abstract case position). Marantz’s theory embodies the important insight that certain affixes can, and should be treated, as functionally equivalent to argument-taking predicates, an insight which informs the account of semantic case given here in Chapter 4. To distinguish different types of predicate-argument relation, Marantz relies on lexical insertion taking place at different levels of representation: logico-semantic structure, deep structure and s-structure. At present, LFG does not have the required distinctions between levels, and lexical insertion can only take place once, so that Marantz’s analysis is not easily translateable. But see L. Levin, in prep.}
Compounding is assumed to be a similar process:

\[
[[ [X]_{rcot} [Y]_{root} ]_L Z]_M A]_K
\]

Features from each part of the word percolate up to the top, giving priority to the features of the head, by means of feature percolation conventions. Lieber (1980), Selkirk (1982), and Williams (1981) accept that a category-changing affix, such as the derivational suffix -ness, is the head of the word. But they differ as to whether inflectional suffixes should be considered heads of words. They also differ as to how much priority in percolation is given to the features of the head. See Selkirk (1982) for some discussion.

Let us look at feature percolation in Warlpiri, first in a derivational suffix, and then in an inflected form. Consider the Warlpiri verb nyinami ‘to sit’. The root is nyina. When the nominalizing suffix ngu is attached, a nominal is created: [nyinangu]. Ngu has a lexical entry stating that it attaches to verb roots (Vr) of the first conjugation class, to form nominals.

\[
ngu: \ [V_r + 1st\ conj. \ldots ]_N
\]

Then the past tense suffix is attached to the verb root nyina, a verb is created: [nyinaja]. Ja has a lexical entry stating that it attaches to verb roots of the first conjugation class. Either the inflectional suffix provides its own category information, or else it is transparent, and the category of the verb takes priority. In any event, the resultant verb has the category V, provided by either the inflection or the verb, and the TENSE feature PAST, provided by the inflection:
None of these theories has much to say about what information is available to the syntax from morphology other than through feature percolation. In Chapter 3, I will argue that, although much information provided by the morphology can be captured in terms of features, not all of it can. Some functional information must also be provided. I will claim that the notion 'morphological head' of a word needs to be distinguished from a semantic, or functional, head of a word. The same morphological affix may function as the semantic head of a word or simply as an agreement marker, even though it is morphologically still in the same position. I will also argue that functional considerations may determine feature percolation, rather than a simple 'head first' account.

I have adopted the Lexical Phonology/Morphology theory in this thesis, because an important condition on the operation of syntactic rules can be readily derived in this theory. This condition is the *Lexical Integrity Hypothesis*.

**Principle 5: Lexical Integrity Hypothesis**

*No constituent structure rule may order any element into or out of lexical categories such as N, A, V.*

That is, constituent-structure rules are blind to the internal structure of lexical categories.

The *Lexical Integrity Hypothesis* is a constraint imposed on the interaction of morphology with syntax, which derives from the claim made in Chomsky (1970) that derivation is a process done in the lexicon, not in syntax. From this claim, the view arose that:

*Syntactic rules cannot move elements into or out of lexical categories.*

However, Chomsky (1970), also argued that productive morphological processes, such as inflection, should be done in the syntax. The *Lexical Integrity Hypothesis* thus would not block rules from moving inflectional morphemes around. Theories which accept the evidence for doing inflection in the morphology, rather than in syntax, (such as LPM, and LFG), have therefore a stronger interpretation of the *Lexical Integrity Hypothesis*: namely that no syntactic process can move inflectional morphemes around. In order for the inflectional information provided by a morpheme such as the plural suffix *s*...
in English to be visible in the syntax, such theories rely on features and feature percolation.

A second area in which the interpretation of the *Lexical Integrity Hypothesis* differs is as to exactly which syntactic processes are prevented from applying to parts of a lexical category. Selkirk (1982) considers that the *Lexical Integrity Hypothesis* blocks movement rules from applying to parts of a word, but explicitly allows anaphoric processes to look inside words. But LPM makes a stronger claim, namely that:

**Principle 5': Revised Lexical Integrity Hypothesis**

Constituent-structure processes (which include annotation of functional information, and indexing of anaphoric information) are blind to the internal structure of words.

I will give three examples to show what the different interpretations of the *Lexical Integrity Hypothesis* block, before showing how it follows from Lexical Phonology/Morphology.

First, the *Lexical Integrity Hypothesis* prevents deletion processes, such as gapping,
from deleting parts of words.\(^\text{46}\) Thus, whereas one can gap the verb under identity with a verb in the previous sentence, one cannot gap part of a verb:

(79) a. John paid the electricity bills, and Mary the gas bills.
    b. *John liked the play, and Mary dis- it.

(80) a. John outran Bill, and Mary Patrick.
    b. *John outran Bill and Mary -swam Patrick.

Similarly, an adjective or nominal cannot be gapped from its suffix:

\(^{46}\) The prohibition against omitting parts of words under identity is not absolute. Conjunction of two categories allows gapping under certain semantic conditions. Consider \textit{in both pre- and post-war Germany}..., pointed out to me by Maria Luisa Zubizarreta. If pre and post are lexically-attached prefixes, then these constructions violate the \textit{Lexical Integrity Hypothesis}. In general Level 2 suffixes (see ahead for this term) are freer than Level 1 suffixes to violate the \textit{Lexical Integrity Hypothesis}. Consider the sentence \textit{John is father- and motherless}. However, there are severe restrictions on gapping of Level 2 suffixes. For instance, not all words with \textit{less} allow gapping. In particular words formed by compounding \textit{less} with an abstract noun do not: *\textit{John is hope- and careless}. Abstract nouns do not gap out of other structures either: *\textit{John is hope- and cheerful}. *\textit{John's hopeful- and cheeriness kept us going}.

Giving up the \textit{Lexical Integrity Hypothesis} for the sake of this restricted set of examples seems to me unwarranted, until an alternative explanation for why the vast majority of words are opaque to syntactic processes is found. I speculate that the acceptability of structures such as \textit{pre- and post-World War 11} has to do with the fact that their argument structures are relatively transparent, and thus that they are easily interpretable. By this I mean that if an affix resembles an independent word with an argument structure, and if what it attaches to is easily interpreted as an argument, then it is possible to interpret the conjunction as a conjunction of two arguments of one predicate. For instance, the prefixes \textit{pre-} and \textit{post-} resemble semantically prepositions such as \textit{before} and \textit{after}: \textit{before and after World War 2}. Similarly, \textit{less} resembles the preposition without. Apparently, concreteness (\textit{father} as opposed to \textit{hope}) is important in interpreting something as an argument (whereas for independent prepositions it is irrelevant: \textit{John is without hope and joy}).

As Ken Hale pointed out to me, a more difficult case is presented by the Spanish examples of adverbials consisting of conjoined adjectives followed by the adverbial suffix \textit{mente}: [\textit{clara y distinta-mente}] 'clearly and distinctly'. See Harris and Mohanan (in prep.).
(81) *John was hopeless, but Mary was -ful.
(82) *Lucy admired his open- and faithful-ness.

Second, on the assumption that words are opaque not only to movement and deletion processes, but to all other syntactic processes, the generalization noted by Postal (1969), that words are anaphoric islands is captured. In a sentence such as John is fatherless now, it is impossible to refer to father by a pronoun, whereas in a paraphrase which uses a negative word, rather than a negative suffix, the word father can be referred to:

(83) ??John is fatherless now, and he misses him.
(84) John has no father now, and he misses him.

Third, on the assumption that inflectional elements such as TENSE and CASE and NUMBER markers are attached in the morphology, rather than in syntax, the Lexical Integrity Hypothesis prevents syntactic rules from changing, or moving, these markers. Thus, for instance, there is an alternation in Russian with respect to the case of OBJECT nominals. If the sentence is affirmatives, a normal OBJECT will have ACCUSATIVE case,

47. The generalization is more striking when the word is not derived:
   i. *John is an orphan now, and he misses them.
   ii. John has no parents now, and he misses them.
But it is debateable whether a decomposition involving parents is the right way to express the meaning of the word orphan, and therefore as to whether i. actually is an anaphoric island violation.

There are counterexamples to the anaphoric island claim. Corum (1973) sums up a number of them. They fall into two main classes: derived nominals, and words formed from proper names:
   Lucy interviewed Hawke, and Bill had one with Fraser.
   After painting the house I had enough left over for the dog-kennel.
   Shakespearian imitators usually fail to capture his style.
   I speak French fluently because I lived there.
(Examples given by Corum which do not fall into either classification include: John became a guitarist because he thought it such a beautiful instrument.)

Again, I have no real explanation, and can only speculate that factors such as the existence of definite referents (France, Shakespeare) make these sentences marginally acceptable.
while the same sentence. if negative, can have an OBJECT with GENITIVE Case. The
Lexical Integrity Hypothesis prevents formulating a syntactic rule which changes an
ACCUSATIVE case-marker to a GENITIVE case-marker in the presence of a NEGATIVE
feature, because the ACCUSATIVE and GENITIVE case-suffixes are both morphemes,
and no morpheme can be substituted for another morpheme in the syntax. Similarly, the
Lexical Integrity Hypothesis rules out transformations such as Affix-hopping, because it
disallows movement of parts of words, whether inflectional or derivational.

Pesetsky (1979), and Mohanan (1982d), derive the Lexical Integrity Hypothesis from
a level-ordered theory of morphology, in fact from the Bracket Erasure Convention. I will
briefly sketch out the basic assumptions of LPM.

Affixes attach to roots and stems at different levels in the morphology. Part of the
lexical entry for an affix states at what level that affix can be attached. For instance, the
suffix *in* can attach to adjectives at Level 1, and the suffix *ious* attaches to nouns at Level
1, while the suffixes *ness* and *non* attach to adjectives at Level 2.

(85) Lexical Morphology

| Level 1     | in + A           | in + legible: illegible |
|            | N + ious         | grace + ious            |
| Level 2     | non + A          | non + legible           |
|            | A + ness          | gracious + ness         |

A word moves up through the levels until the level of lexical insertion into the syntax. It
cannot loop back from one level to an earlier level. Thus, a Level 2 affix must be attached
after a Level 1 affix. The assertion that *non* and *ness* are Level 2 affixes, is a claim that the
Level 1 prefix *in* cannot precede *non*, and that the Level 1 suffix *ious* cannot follow *ness.*
The following forms are unacceptable:
In each level, phonological rules apply to the combination of stem + suffix. Phonological rules can be specific to a particular level. For instance, the assimilation of $n$ to $l$ preceding an $l$, in illegible is a Level 1 rule, not a Level 2 rule. Nollegible is unacceptable.

The internal categorial brackets of words which are created by affixation or compounding, are erased at the end of every level, thus making the boundaries invisible to rules operating at the next level. This operation is called Bracket Erasure. Erasure of internal brackets at the top level of the morphology renders all internal brackets of a lexical item invisible to post-lexical phonological rules, as well as to syntactic rules. The fact that the word fatherless consists of the morphemes [father] and [less] will not be apparent in syntax, and therefore these brackets cannot be referred to in a syntactic rule moving elements around. But not only can these brackets not be referred to, they are non-existent, and so it is impossible to annotate with a function name, or provide an anaphoric index to, a part of a word. Thus, from Bracket Erasure is derived the strongest form of the Lexical Integrity Hypothesis.

The Lexical Integrity Hypothesis together with Direct Syntactic Encoding restrict greatly the interaction of morphology and syntax. In 2.5.2 I will briefly sketch out a problem for the Lexical Integrity Hypothesis resulting from discontinuous expressions which seem to act as single lexical words. In Chapter 3 I will discuss the problem of single lexical items which seem to violate the Lexical Integrity Hypothesis in that they carry information about several grammatical functions. I propose a solution which requires annotating morphemes with functional information as part of the affixation process.

1.3.4 Constituent-structure expression
Constituent-structure rules are expressed as context-free rewriting rules which represent precedence and dominance relations. These rules take as their input and output the categories of the language. Most LFG literature has assumed that these rules conform more or less to the \( \lambda \) account of categorial structure given in Chomsky (1970), Bresnan (1976) and Jackendoff (1977).

There are two types of category, major and minor. Minor categories are specified by their labels: Particle, Comp, Det etc. Major categories consist of a type and a distinctive feature matrix of categorial features. The type of a major category denotes the level of projection from the basic lexical category. Major categories in many languages consist not only of lexical categories N, A, V, P, but also of projections of these categories. The highest projection is called the maximal projection. The level of projection of a particular category is called the type of that category. So, a lexical category has type 0: \( \lambda \); the first projection has type 1: \( \lambda \); the second projection has type 2: \( \lambda \), etc.

1.3.4.1 Categorial Features

The category of an item is relevant both in the lexicon and in the syntax.\(^{48}\) In the lexicon, an item's category determines what affixes it can take; verbs in English and Warlpiri have tense affixes, while nominals in English and Warlpiri cannot take tense affixes. In the syntax, the category of an item determines where it can appear in the phrase structure, and what grammatical functions can be assigned to it. Thus, in English and Warlpiri a V cannot be the SUBJECT of a sentence.

For morphological rules, the categories need to be distinct, because morphological rules apply to particular categories. For instance, the Past tense markers in English and Warlpiri attach only to elements of the category V. So, if the categories are to be represented in terms of features, these features must uniquely identify them for the purposes of morphological rules. The simplest proposal is that there is a one-to-one correspondence between syntactic and morphological categories, and this is the claim of

\(^{48}\) I am particularly grateful to Paul Kiparsky for discussion of this section.
theory. Therefore, if the categories are to be defined in terms of categorial features, these features should uniquely identify categories both in the morphology and in syntax.

Ideally, the categorial features should be universal. Jackendoff (1977: 31) and Bresnan (1982) suggest using functional (in Jackendoff's terms 'phrase structure') properties of categories to define the categories. Since grammatical functions are, by hypothesis, universal, features defined solely in terms of functions should also be universal. Unfortunately, the definitions of categorial features given by both Jackendoff and Bresnan on the basis of English do not carry over naturally to Warlpiri. Warlpiri has only two major categories, and both Jackendoff's and Bresnan's categorial features render these categories non-distinct.49

Morphologically, N and V in Warlpiri are clearly distinguished – tense suffixes attach to the one, and case suffixes to the other. They also have different phonological properties. For instance, there are rules of regressive vowel assimilation and reduplication that apply only to verb roots. See Nash (1980).

Syntactically and semantically, however, Nominals form a continuum, as Hale (to appear) shows. At one end, the nominals act as argument-taking predicates, which can correspond to verbs in other languages (for instance, experiencer nominals like lani 'afraid'), or to adpositions and adverbs representing locational and directional predicates (for instance kankarlrarni 'up above'). At the other end, nominals such as Pronouns are used almost exclusively as arguments. In between is a whole range: from nominals denoting entities, which are translated by Nouns in English, such as wati 'man', to nominals denoting attributes, which translate as Adjectives in English, such as wiri 'big'.

49. Jackendoff uses the features \([\pm \text{OBJECT}]\) and \([\pm \text{SUBJECT}]\). Since nominals and verbs in Warlpiri can both act as matrix argument-taking predicates, and can both select OBJECTS, nominals and verbs are not distinct. Bresnan (1982a) uses the features \([\text{transitive}]\) and \([\text{predicative}]\), and allows an unmarked value for these features, as well as \(+\) and \(-\). Both N and V are \([+ \text{transitive}]\) under her account. It is not clear what values N and V should have for the feature \([\text{predicative}]\), because the definition as stated does not apply directly to Warlpiri. However, since \([\text{predicative}]\) covers much the same area as Jackendoff's \([\pm \text{SUBJECT}]\), it is difficult to formulate the definition so that N and V are distinct.
The uses of these are not fixed: a nominal such as *wiru* can denote an attribute, or it can denote an entity, translatable by a locution such as a *big one* in English.

The crucial syntactic difference between categories in Warlpiri seems to be between categories which can act as arguments, and categories which can only act as argument-taking predicates.50 Nouns can act as arguments or as argument-taking predicates, while Verbs can only act as argument-taking predicates (unless of course they are nominalized, in which case they can act as arguments.)

So, functional definitions in terms of SUBJECT and OBJECT cannot be formulated in Warlpiri. The features \([\pm N]\) and \([\pm V]\) which Chomsky (1970) proposed are also unenlightening, unless we assume that \(N\) really stands for the property of being an argument, while \(V\) stands for the property of being a argument-taking predicate.51 The generalizations about the functions of categories in Warlpiri can be expressed in a feature matrix. However this feature matrix is not readily extendable to languages with more than two major categories. Therefore this feature matrix should be treated simply as a summary of the Warlpiri categorial generalizations.

<table>
<thead>
<tr>
<th></th>
<th>Argument</th>
<th>Predicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>(V)</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>(S)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Sentences are neither argument-taking predicates nor arguments (there are no finite sentential arguments in Warlpiri), although they contain both argument-taking predicates and arguments. Therefore they are negatively specified for both values.

50. Warlpiri has other minor categories, such as Particles.
51. The distinction between argument and argument-taking predicate is approximately equivalent to the distinction between terms and contentives adopted by Emmon Bach (1975) when arguing for a simplification of the categories of English at an abstract level.
1.3.4.2 Phrase-structure rules

Projections of lexical categories are related to each other by means of the $\bar{X}$ schema, a context-free rewriting rule. This schema covers endocentric structures, but not exocentric structures, such as Sentences.

$$X^{(n)} \rightarrow \alpha_1 \ldots X^{(n-1)} \ldots \alpha_k$$

where $\alpha_i$ is a minor category, or a maximal projection, and $n$ is the number of projections of the lexical category $X^0$. $X^{n-1}$ is called the head.

The $\bar{X}$ schema includes both dominance relations (the relation of $X^n$ to $X^{n-1}$, and to the minor categories in the rewrite rule), and precedence relations (this is represented by the linear order of the categories in the rewriting rule).

The $\bar{X}$ rule can be used to construct a tree, which is called a constituent Structure tree, or c-structure tree. Lexical items are inserted under the preterminal nodes of this tree. Bresnan (1982a) proposes that lexical insertion is subject to one very important constraint:

**Principle 6: The Null Element Constraint**

A non-terminal category cannot exhaustively dominate the empty string $e$, except in the case of constituent control, where constituent control is the long-distance dependency characterizing wh-movement and similar constructions.

This constraint prevents, for instance, the appearance of null pronominals in constituent
structure.\textsuperscript{52} (But see Neidle, 1982 for an argument for constituent structure null pronominals). In 2.3.4.1 I shall argue that the Null Element Constraint must be weakened to accommodate paradigmatic gap information from pronominal clitics.

Warlpiri has phrase structure rules expanding $S$, $\overline{N}$ and $\overline{V}$. The phrase structure rule expanding $S$ is of course exocentric. The phrase structure rule expanding $\overline{N}$ does not conform to the $\overline{X}$ schema, in that, aside from the head, it contains non-maximal projections of $N$. I will discuss these at greater length in Chapters 2 and 4.

This concludes the overview of the role of grammatical functions in LFG, and the kind of lexicon, constituent-structure and morphology available. A summary of the principles constraining the mapping from one component to another is given in 2.2.7.

1.4 Outline

In Chapter 2, I present some basic properties of verb-headed and nominal-headed finite clauses in Warlpiri, concentrating on representing properties of particular relevance to the predicate-argument relation. These fall into several types. First, what grammatical functions does Warlpiri employ? Second, how are grammatical functions assigned? I discuss evidence for SUBJECTs and OBJECTs, and also the somewhat inconclusive status of arguments with DATIVE case. The expression of grammatical functions is done by a syntactic rule and a lexical rule. An annotation on the phrase structure rule assigns grammatical functions freely to the daughters of $S$. A lexical rule allows any argument-taking predicate to introduce a null pronominal for any grammatical function it selects. The assignment of grammatical functions is constrained in two ways. First, a

\textsuperscript{52} The constraint represents one of the principal differences between LFG and GB. GB requires empty categories because of two principles, the Projection Principle (see Footnote 16), and the $\theta$ Criterion (which says that every argument has a $\theta$ role and every $\theta$ role is assigned to an argument). These principles demand the appearance of empty categories to represent constituents that have undergone the movement rule Move $\alpha$. Move $\alpha$ includes NP-movement (Passive, and an OBJECT $\rightarrow$ SUBJECT rule for Unaccusative verbs), and WH-movement. LFG allows empty categories for WH-movement, but not for NP-movement.
given grammatical function has to have the right case-marking. I claim that information about *case-marking* is stored in the lexical entries of argument-taking predicates. Second, certain grammatical functions must agree with pronominal clitics in the AUXILIARY. I discuss the representation of these clitics.

In chapters 3, 4, 5, and 6, I discuss the case when an argument-taking predicate does not head a finite clause, but rather is dependent on some other finite clause. The concept of a dependent argument-taking predicate covers a number of situations, in particular:

1. Modification of an event by setting it in a time or place: (ADJUNCT)
   
   *Lucy kissed John in the garden on Saturday.*

2. Secondary predication: attributing a property to an argument independently of the argument-taking predicate: (ADJUNCT)
   
   *Lucy walked away, homesick for Aberdeen.*

3. Secondary predication: attributing a property to an argument, where the attribute is also an argument of the same argument-taking predicate: (XCOMP)
   
   *Lucy wanted John happy.*

4. Attributing a property to an argument, where the attribute is expressed by a verb: (ADJUNCT and XCOMP)
   
   *John wanted to leave.*

   *Lucy gave John a Look to read.*

The discussion is organized according to the category of the dependent argument-taking predicate. The categories include the lexical category of Nominal, (including nominalized verbs), and the affixal categories of Case, and Complementizer suffixes. I show that the same kinds of rule can be used to represent dependent argument-taking predicates, irrespective of their categorial status. Furthermore, most of these rules are independently needed for the representation of argument-taking predicates which head finite clauses.
Case is discussed in Chapter 3. I show that case-suffixes in Warlpiri can have three uses. They can simply indicate that a nominal has a particular grammatical function, such as SUBJECT. They can indicate that a nominal attributes a property to an argument with the same case. I claim that these two uses behave alike syntactically, and call them the agreement (AGR) use of case-suffixes. The third use of case-suffixes is as argument-taking predicates analogous to English prepositions (the ATP use of case-suffixes). I argue that the agreement use and the argument-taking predicate use can be represented as the difference between case-suffixes which have no syntactically relevant meaning, and case-suffixes which do have a syntactically relevant meaning. This last use requires the assignment of grammatical functions within the morphology, as part of the word-building process. However, I argue that a morphological distinction between grammatical and semantic case-suffixes is still required to account for the unusual phenomenon of double case-marking.

The use of nominals as dependent argument-taking predicates is discussed in Chapters 4 and 5. In Chapter 4 I show that discontinuous nominal expressions bearing the same case-suffix can be treated as nominals used as argument-taking predicates, and bearing the grammatical function of ADJUNCT. I show that the existence of these discontinuous nominal expressions follows from the rules assigning functions within S and N, together with the rule introducing null pronominals, and a convention, tentatively proposed as a universal rule, that ADJUNCTS must not disagree in case with their controllers.

In Chapter 5, I examine the uses of nominals as dependent argument-taking predicates in Warlpiri, arguing that they are not normally selected arguments. I show how semantic structures expressed in English by complements (selected arguments which are semantically complex), are paraphrased by other structures in Warlpiri. A striking illustration of this is provided by the great freedom which resultative attributes have in Warlpiri, compared with their English counterparts. This freedom can, I claim, be attributed to the English resultatives being XCOMPS (that is, arguments of an argument-taking predicate), and the Warlpiri resultatives being simply ADJUNCTS (attributes).
The use of nominalized verbs and complementizer suffixes as dependent argument-taking predicates is the topic of Chapter 6. I show that the assumption that, like case-suffixes, complementizer suffixes optionally have meanings, (depending on whether they act as agreement markers, or as argument-taking predicates), accounts for the behaviour of complementizer suffixes with nominals, nominalized verbs, and a special class of action nominals.
2. Simple sentences

2.1 Introduction

Certain properties of simple sentences in Warlpiri are relevant to expressing the predicate argument relation, but have no obvious counterpart in the syntax of more familiar languages. These include:

[1] The fact that the argument-taking predicate of a finite clause may be a verb or a nominal.


[3] The agreement of pronominal clitics with certain subcategorizing grammatical functions, whether represented by an overt lexical item or by a null pronominal.


All these properties will be crucial for the account of secondary predicates (dependent argument-taking predicates) and control structures developed in later chapters. It is therefore incumbent on me to show how these properties are represented in the fragment of Warlpiri grammar which I am developing. Besides, the attempt to write a relatively explicit account of simple, uncontroversial, sentences is useful in itself, as a way of finding out the virtues and shortcomings of a linguistic theory.

The first property, that a verb or a nominal may act as an argument-taking predicate, has implications for the general theories of categories, which I examined briefly in §3.4.1. I will look more closely at nominal-headed sentences in 2.4.

The second property, the use of case-marking rather than configurational structure to determine grammatical functions, is the topic of Sections 2.2 and 2.3. Because LFG divorces configurational structure from grammatical function, it can account for free constituent order, that is, the fact that order does not determine grammatical functions.
Instead, grammatical functions are determined by the *ERGATIVE-ABSOLUTIVE case-marking system*, which allows the SUBJECT to be either ERGATIVE or ABSOLUTIVE, depending largely on the meaning of the verb. I propose that the case of grammatical functions is determined in the lexicon as part of the lexical entries of argument-taking predicates such as verbs. In LFG, the SUBJECT function is selected by the verb, and appears as part of a verb’s lexical entry. Hence, lexical rules can determine the case of the SUBJECT of a given verb. Unlike nominals, however, the pronominal clitics in Warlpiri do not show ERGATIVE-ABSOLUTIVE case-marking. Following Hale (1973a), I will claim that the Warlpiri pronominal clitics represent SUBJECT, OBJECT and Adjunct DATIVE, rather than NOMINATIVE and ACCUSATIVE case. This will lead to an account of the third property.

The fourth property, that subcategorizing grammatical functions may be expressed by null anaphors, rather than by overt lexical items, can be represented within LFG, by assuming that, under certain circumstances, an argument-taking predicate can introduce a null pronominal to express a grammatical function selected by that predicate. Clitic doubling is also easily expressed by extending the account of clitic pronouns developed in Grimshaw (1980)

The format of the present chapter is as follows. 2.2 contains a discussion of a typical intransitive sentence. I show how constituent structure, lexical and morphological information is gathered together to build a functional structure, and I discuss constraints on the building of a functional structure. The general rule for function assignment in Warlpiri: *Assign grammatical functions freely* is presented. This rule of function assignment makes Warlpiri a non-configurational language in contrast to configurational languages such as English, in which grammatical functions are associated with nodes of the phrase structure. An introduction to the AUXILIARY and to null pronouns in Warlpiri is given.

Section 2.3 deals with transitive sentences, including possible case-frames for two-place predicates, and the agreement of arguments with the AUXILIARY. I present evidence for choice of grammatical function assignment in Warlpiri. The analysis of grammatical functions is extended to include ditransitive sentences, and adjunct
DATIVES. I argue for the existence of two diathetical rules affecting both case selection and grammatical function selection in Warlpiri. Finally, I gather together information about the AUXILIARY pronominal clitics, including a short discussion of reflexives and reciprocals. I show that agreement with the AUXILIARY can be simplified if grammatical functions are represented in terms of features, and suggest that the antecedent features of reflexives and anaphoric control structures can be expressed in terms of these grammatical function features.

Section 2.4 introduces sentences headed by nominals. These have many properties in common with verb-headed sentences, with the exception of the obligatoriness of the AUX. Section 2.5 discusses phrase structure rules for N and V in Warlpiri. I show that the functional head of an \( \overline{N} \) does not necessarily correspond to its phrase structure head. I show that certain complex verb structures, while lexical words, can nevertheless be discontinuous in the syntax, thus presenting a paradox for the principle of Direct Syntactic Encoding and the Lexical Integrity Hypothesis.

2.2 An intransitive sentence

Consider a simple Warlpiri sentence with an intransitive verb.

(1) Ngaju ka-rna parnka-mi.
    I-ABS PRES-1sg run-NPST
    I am running.

This sentence can be re-ordered:

(2) Parnka-mi ka-rna ngaju.
But ka-rna, which is the AUXILIARY (AUX), must appear in second position.¹

(3)  a. *Ngaju parnka-mi ka-rna.
    b. *Parnka-mi ngaju ka-rna.
    c. *Ka-rna ngaju parnka-mi.
    d. *Ka-rna parnka-mi ngaju.

This general freedom of word-order, together with the initial or second position of the AUX, are the most striking features of Warlpiri word-order. The freedom of word-order can readily be expressed in an X* phrase structure rule (Hale, 1979; Nash, 1980). Such a rule simply concatenates different categories to create an expression. ²

---

1. This is true when the first element of the AUX is an enclitic, as ka-rna is. However AUXs with non-enclitic first elements can appear initially, as in the following example.

   *Kala* -lu mangi rdarri-marda-rnu kurdiji-rla + lku.
   USIT -3pl boy·ABS catch-PAST initiation·LOC + THEN

   Then they caught the youths at initiation time. [mangi]

2. Furthermore, preposing of conjunctions and propositional particles creates the illusion of the AUX appearing later than second position in the sentence, as in the following sentence in which the conjunction kala is preposed.

   *Kala* jalangujalangu-rlu + ju ka-rliga-jana maliki + ji punku
   But now·ERG PRES·1pl·3pl dog·ABS + EUPH bad·ABS
   marda-rni kuyu-pungu·wangu.
   have·NPST meat·killer·PRIV·ABS

   But nowadays we have bad dogs who don’t kill meat [Maliki:20]
   [conjunction, time-adverbial, AUX]

3. Left-dislocated Ns or Vs also cause the AUX to appear later in the sentence.

   *Malkarri* ngulaju ka-rnalu kurdiji + jala ngarri-rni.
   + shield design, that PRES·1plex shield·ABS + CLEARLY call·NPST

   Malkarri is what we call the shield. [malkarri]

I assume that preposed and left-dislocated elements are generated outside the S. Therefore in the examples given, the AUX is still in first or second position within the S.

2. The Kleene star X* allows there to be as many Xs as desired, including none. If an X is required, I will express this as X X*. Alternatively, one can use X+ to stand for “at least one X, and perhaps more.” I have chosen to use the Kleene star instead, because of its use in the literature on non-configurational languages.
The optional second position of the AUX will be expressed by placing it in sentence-initial position, and moving it into second position by a stylistic movement rule, as Hale (1979) suggests.

\[ (4) \quad \text{Phrase Structure Rule 1} \quad S \rightarrow \text{(AUX) } \alpha \ \alpha' \]

Stylistic movement rule \[ \text{AUX } \alpha \alpha' \rightarrow \alpha \text{ AUX } \alpha' \]

(I have made the AUX optional because the AUX is optional in nominal-headed sentences.) Equally, the AUX could follow the first constituent, and then move into initial position by a stylistic movement rule.¹

LFG at the moment does not provide for stylistic movement rules. However, there is a fact which is very hard to handle without stylistic movement. This is the position of the AUX with respect to preverbs and verbs. (Loosely, a preverb is an adverbial element that attaches to the Verb). In a nutshell, the problem is that the preverb and verb form a single lexical unit, but the AUX can intervene between the preverb and the verb. If it is assumed that the preverb and verb have to be inserted together because they form a single lexical item, then the only way that the AUX can intervene between the preverb and the verb is for it to move there. I will present the evidence in 2.5.2.

The phrase structure rule defines a constituent structure tree, a c-structure for a sentence.

2.2.1 Categorial information

The categorial information that ngaju is an N, and that parnkami is a V is provided by the lexical entries for ngaju and parnkami. The categorial specification of a lexical entry determines what are the preterminal nodes of a constituent structure tree, under which the lexical item can be inserted. The lexical item itself is the terminal node of the c-structure tree.

³ A phonological constraint on certain AUX elements, such as ka, that they are clitics, ensures that they cannot appear initially, although non-clitic AUXILIARIES can do so.
The major categories in Warlpiri are N, V and S. The minor categories are the AUX, and various PARTICLES, CONJUNCTIONS and CLITICS (the latter may perhaps be subsumed under PARTICLES, since the chief difference between the two is phonological — whether or not they cliticize to a host). The phrase structure rule must contain an annotation to the effect that $\alpha$ can be N, V, or PARTICLE.

(5) **Phrase Structure Rule 1’**

$$S \rightarrow \text{(AUX)} \quad \alpha \quad \alpha^* \quad \alpha = \overline{N}, \overline{V}, \text{Particle}$$

In 2.5.3, I will justify using $\overline{V}$ and $\overline{N}$ in the phrase structure rule, rather than N and V.

The phrase structure rule, together with the categorial information from the lexical entries of the lexical items inserted, creates a c-structure tree for (5.3), which is given below.

```
S
  /\   \\
N  AUX  V
```

Ngaju ka-rna parnka-mi

This c-structure tree contains no information about the representation of grammatical functions — how and where is the fact that the SUBJECT of the sentence is first person singular represented? The word-order tells us nothing about the relations between argument-taking predicates and arguments, or of argument-taking predicates with each other. The categorial information, however, does tell us something. As the categorial feature matrix I proposed in 1.3.4.1 indicates, Warlpiri verbs are always argument-taking predicates. They can never act as arguments. Warlpiri nominals can

---

4. In the lexicon, a verb-root can become nominalized through the addition of an agentive suffix. However, in this case, the category of the whole item is an N and not a V.
be either arguments or argument-taking predicates.

Linguists conventionally assume that a sentence normally consists of at least five argument-taking predicates. All other elements in the sentence are interpreted with respect to this argument-taking predicate. They can be arguments of that argument-taking predicate (for instance, SUBJECT, OBJECT, XCOMP etc.), attributes of arguments (adjectival or prepositional ADJUNCTs), attributes of argument-taking predicates (adverbial ADJUNCTs), or attributes of the proposition (sentential adverbs, negative particles, etc.).

Suppose the element with respect to which all other elements are interpreted, is called the head. The head of a sentence in English will be the Verb. The head of a sentence in Warlpiri will be N or V; the head of a sentence in Russian (assuming that there is no null copula), can be an adjective, a prepositional phrase, a nominal or a verb. If we also assume, as LFG does, that there is a category Sentence, then, since the Head of the Sentence is not of the category Sentence, Sentences are exocentric structures.

In building a functional structure which expresses relations between argument-taking predicates, arguments and attributes, it is important to know which element is the Head; that is, which element is the argument-taking predicate to which all other elements are related. To express the idea that information about the Head of a

5. The reason for the at least qualification is that a sentence may contain other argument-taking predicates which are used as secondary predicates, such as raw in: I ate the meat raw.

Actually, this statement is too strong: exclamations and vocatives are sentences without argument-taking predicates. They have no propositional force, but they are speech-acts, and will be interpreted by whatever rules of semantic interpretation are required for non-declarative utterances.

6. If participles are considered nominals, participial clauses are headed by nominals.

7. Jackendoff (1977) argues that sentences in English are projections of V, making the sentence category an endocentric category. But there are numerous difficulties with this, and, since I wish to claim that in Warlpiri finite sentences may be headed by N or by V, I will not adopt Jackendoff's approach.
category is in a sense information about the whole category. LFG adopts a formalism making use of functional equations involving the meta-variables \( \uparrow \) and \( \downarrow \). These functional equations represent information which is used to build a functional structure. The \( \uparrow \) arrow stands for the immediately dominating node (which is called ‘mother’ or ‘up’ in the LFG literature), and the \( \downarrow \) arrow stands for the node to which the equation is attached (this node is called ‘ego’, ‘self’ or ‘down’). The equation \( \uparrow = \downarrow \) is read as:

*Information about moth \( \forall \) is information about self.*

*Information* refers to other equations representing syntactically relevant features and functions. It does not, for instance, include categorial information.

In English, the information that the VP is the Head of S is expressed by adding the equation \( \uparrow = \downarrow \) to the VP in the phrase structure rule expanding S:

\[
(6) \quad \mathbf{S} \quad \rightarrow \quad \mathbf{NP} \quad \mathbf{VP} \quad \uparrow = \downarrow
\]

Annotating the VP with this equation does not indicate that the S is an \( \overline{X} \) projection of V; it simply means that information about V (excluding categorial information) is information about the sentence.

VP, however, is an endocentric category. In the phrase structure rule expanding it, V will be annotated with the equation \( \uparrow = \downarrow \).

---

8. This is another important difference between LFG and GB. In LFG, the argument-taking predicate has to be the Head of the sentence. Otherwise no complete and coherent functional structure could be built from a sentence. In GB, the V does not have to be the Head of the sentence: an element, INFL, which need not be phonetically realized, can be the Head of the sentence; S and \( \overline{S} \) can be viewed as projections of INFL. Being headed by V or by INFL may be a parameter distinguishing languages, and also may be associated with non-configurationality. (See Huang, 1982, and Whitman, 1982, for discussion of this.)
An annotated c-structure for the sentence *Lucy sees John* created by the S and VP phrase structure rules is given below.

\[(7)\]
\[
\begin{array}{c}
\text{VP} \\
\rightarrow \\
\text{V} \\
\uparrow = \downarrow \\
\end{array}
\]

Annotated c-structure rules:
- V is the head of VP, and the VP is the head of the sentence. Since the Head relation is transitive, V is the Head of the sentence. V has the feature *tense*, represented by an equation \(\uparrow \text{TENSE} = \text{(tense-name)}\), and it has a meaning, represented by an equation with the PRED feature (these equations will be discussed later.). We can interpret the sequence of \(\uparrow = \downarrow\) equations as follows:

Information about the V, including the information that the TENSE is nonpast, and that its meaning is *run*, is information about the VP. Information about the VP, including the information that its TENSE is nonpast, and that its meaning is *run* is information about the sentence. Therefore, the sentence has non-past tense, and its argument-taking predicate (the value of the PRED feature) is *run*.

Let us now look at endocentric structures, such as VP. \(\overline{X}\) theory embodies the claim that major lexical categories expand into projections. A feature percolation convention is adopted by which features of the head of a projection percolate up, ultimately to become features of the maximal projection. On such an account, the percolation of features such as TENSE from the V to VP is automatic, because the V *must* be the head of the VP. I will call the \(\overline{X}\) head, the *phrase-structure* head, in contrast to the node assigned \(\uparrow = \downarrow\) which I
will call the *functional* head. In the case of VP, the phrase structure head and the functional head are identical. But this is not essential. LFG claims that the two notions need to be kept distinct, first, to allow for exocentric constructions, such as sentences, which have functional heads, but no phrase structure heads; second, to allow for possible differences between phrase-structure heads and functional heads, and third, to allow easy representation of syntactically relevant features and function information carried by more than one element within a maximal projection. I have already discussed the exocentric constructions. I will briefly illustrate the second and third points.

The unmarked convention in configurational encoding is for phrase structure heads always to be functional heads. However, consider an example such as the $\text{N}$ in Warlpiri. The rightmost nominal is marked with Case. Nominals to its left may or may not be marked with Case. But, although the rightmost nominal determines the Case of the whole $\bar{N}$, (and, arguably, the Category of the NP) and is the only obligatory element within an $\bar{N}$ (an $\bar{N}$ must consist of at least one case-marked nominal), it is not necessarily the functional head of the $\bar{N}$, as there is no particular position in the expansion of $\bar{N}$ which is assigned the equation $\uparrow = \downarrow$.

![Diagram](image)

*the small child*

(See 2.5.1 for the use of N-1).

In this example, *kurdu* is semantically the head, (and in LFG would be assigned the equation $\uparrow = \downarrow$), while *wita-ngku* is an attribute of that head. However, it is the nominal *wita-ngku* which determines the CASE of the whole NP. In other words, the
phrase-structure head, *wita-ngku*. is distinct from the functional head, *kurdu*.9

Let us look now at the conveying of information about a maximal projection by several elements within that maximal projection. The equation $\uparrow = \downarrow$ is not only attached to *major* categories. Bresnan (1982a) assumes that *minor* categories such as determiners are annotated with the equation $\uparrow = \downarrow$. This means that their features also can be treated as features of the immediately dominating node. This can be illustrated with a simplified version of the NP expansion rule:

\[ (\text{NP}) \rightarrow (\text{Det}) (\text{Adj}) \text{ N} \]

The N is both the phrase structure head of the NP and also the functional head, providing the category for the NP, and the meaning. But the NP has a *definiteness* feature from the DET. So, the NP does not obtain *all* its features from the N.

Multiple annotations of the equation $\uparrow = \downarrow$ do not result in multiple heads of a structure. Recall that a head provides an argument-taking predicate, or more generally a *meaning*. Thus a verb provides an argument-taking predicate for a VP, and a noun provides something equivalent for an NP. (Just as nominals in the VP are interpreted as arguments or attributes of the V, so other elements in the NP are interpreted as attributes (or as arguments) of the N.) An independent principle, *Consistency*, to be discussed in 2.2.6.1.1, prevents an element such as a VP from having more than one argument-taking predicate acting as functional head. We can thus revise the definition of *functional head* to be:

*an element labelled with the equation $\uparrow = \downarrow$ which also has a meaning.*

A determiner does not have a meaning in this sense: it is neither an argument-taking predicate nor a referential object; it consists of features such as [definite]. Therefore,

9. In Chapter 3, I will claim that the distinction between phrase structure head and functional head is paralleled by a difference between morphological head and functional head.
although both the N and the DET are labelled with the equation $\Uparrow = \downarrow$, only the N is the functional head of the $\overline{N}$.

Let us now turn to the expression of functional head of a Sentence in Warlpiri. In English, this was expressed by labelling with the equation $\Uparrow = \downarrow$ a VP position in the phrase structure rule expanding the Sentence. But the Warlpiri phrase structure rule given above does not explicitly mention $V$. And, in fact, a sentence can have a nominal predicate instead of a $V$. An example is $\text{lani}$ in (10).

(10) \text{Ngaju lani.}
\text{I-ABS frightened.}
\text{I am frightened.}

(This sentence has no AUX because nominal-headed sentences do not have to have AUXs. See 2.4.2). Furthermore there is no particular place in the sentence dedicated to the argument-taking predicate which is its functional head, as there is in English. I propose instead a general annotation on the phrase structure rule.

(11) Phrase Structure Rule $1''$
\begin{equation}
S \rightarrow \text{(AUX) } \alpha \text{ } \alpha^* \text{ (where } \alpha = \overline{N}, \overline{V}, \text{ Particle)}
\end{equation}

Assign $\Uparrow = \downarrow$ freely

Independent conditions on the interpretation of f-structures prevent the assignment of $\Uparrow = \downarrow$ to more than one argument-taking predicate in a sentence, as I will show in 2.2.6. Thus, $\Uparrow = \downarrow$ cannot be assigned to a nominal if there is a $V$ present, because verbs must always be argument-taking predicates. I will assume the correct assignment of $\Uparrow = \downarrow$ to the $\overline{V}$. The effect of the revised phrase-structure rule is illustrated in the c-structure tree given below for (12).
This tree includes an expansion of the AUXILIARY into an ASPECT marker followed by a pronominal clitic. Pronominal clitics representing the SUBJECT have a particular position in the AUX, which I will call the Clitic 1 position. 2.3.4 contains a more detailed discussion of the positions of the pronominal clitics.

Now that we have seen how assignment of functional heads operates, let us look at other functions. Consider the expansion of the English sentence rule given in (6). To express the fact that the NP acts as the SUBJECT of the sentence, the NP is labelled with the equation (\(\uparrow\text{SUBJ} = \downarrow\)), which is read as: Information about the Sentence's SUBJECT is information provided by self.

Similar equations can be provided for the NP in the VP, labelling it as an OBJECT, in the VP expansion rule given in (7). The c-structure tree for the sentence Lucy sees John annotated with the SUBJECT and OBJECT equations is given below:
Bresnan (1982a) sums up the assignment of $\uparrow = \downarrow$ to functional heads and minor categories, and the assignment of functions, with respect to the $\overline{x}$ theory, as follows:

In configurational encoding a basic form of $c$-structure rule is, for any categorial feature matrix $X$, $X^{n+1} \rightarrow C_1 \ldots X_m \ldots C_m$, where $n > 0$, and $C_i$ is either a minor category or a maximal projection. ... For this rule form, the basic principle of configurational encoding is to associate a function-assigning equation $(\uparrow G) = \downarrow$ with each $C_i$ if and only if $C_i$ is a maximal projection, and to associate the equation $\uparrow = \downarrow$ elsewhere. (1982b: 296)

Let us now look at Warlpiri. Where in the sentence *Ngaju ka-rna parnkami* is the information that *ngaju* is the SUBJECT of the sentence expressed? *Ngaju* can be thought of as a maximal projection, and so eligible for being the SUBJECT. But what tells us that it is the SUBJECT? Jumping ahead a little, I will assume that we have the information for the nominal *ngaju* that its Case is ABSOLUTIVE. The lexical entry of the verb *parnkami* also provides information about the SUBJECT’s CASE.

Suppose assignment of the SUBJECT equation is done by a general rule – if an element has ABSOLUTIVE case, assign it the equation $(\uparrow \text{SUBJ}) = \downarrow$. This rule is too strong, since not all SUBJECTs are ABSOLUTIVE, and not all ABSOLUTIVE nominals are SUBJECTs. A disjunction would be required: Assign an element with ABSOLUTIVE case the function SUBJECT if the verb does not select an ERGATIVE-case-marked SUBJECT. Such a disjunction would have to be a constraint on the well-formedness of f-structures, and might be hard to implement. There is a simpler solution at hand.
Just as \( \uparrow = \downarrow \) can be assigned freely, the equations \( (\uparrow \text{SUBJ}) = \downarrow \), \( (\uparrow \text{OBJ}) = \downarrow \), \( (\uparrow \text{OBJ2}) = \downarrow \), \( (\uparrow \text{OBL.GO}) = \downarrow \) etc. can also be assigned freely. The c-structure for the sentence \textit{Ngaju karna parnkami}, annotated with \( \uparrow \text{SUBJ} = \downarrow \), is as follows.

(16) \textbf{C-structure 2 for (1)}

\begin{center}
\begin{tikzpicture}
  \node (S) {S} edge[->] node[above left] {\( \uparrow \text{SUBJ} = \downarrow \)}
  \node (N) {\( \downarrow \text{SUBJ} \)} edge[->] node[above right] {\( \uparrow = \downarrow \)}
  \node (AUX) {AUX} edge[->] node[below right] {\( \uparrow \text{OBJ} \)}
  \node (N1) {N} edge[->] node[below left] {\( \uparrow \text{OBJ2} \)}
  \node (ASP) {ASP} edge[->] node[below right] {\( \uparrow \text{OBL.GO} \)}
  \node (Pron.Clitic) {Pron.Clitic} edge[->] node[below left] {\( \uparrow \text{OBL.GO2} \)}
  \node (V) {V} edge[->] node[below right] {\( \uparrow \text{OBL.GO3} \)}
  \node (Ngaju) {Ngaju} edge[->] node[below left] {\( \uparrow \text{OBJ2} \)}
  \node (ka) {ka} edge[->] node[below left] {\( \uparrow \text{OBJ2} \)}
  \node (rna) {rna} edge[->] node[below left] {\( \uparrow \text{OBJ2} \)}
  \node (parnkami) {parnkami} edge[->] node[below left] {\( \uparrow \text{OBJ2} \)}

\end{tikzpicture}
\end{center}

In 2.2.6, I will show that consistency, together with the assumption that verbs specify the case of nominals expressing arguments which they select, ensures that the SUBJECT of \textit{parnkami} has ABSOLUTIVE case.

The assignment of grammatical functions in Warlpiri can be collapsed into a single annotation on the phrase structure rule.

(17) \textbf{Phrase Structure Rule 1'''}

\[
S \rightarrow (\text{AUX}) \quad \alpha \quad \alpha^* \quad \text{(where } \alpha = \overline{N}, \overline{V}, \text{ Particle)}
\]

Assign \( \uparrow = \downarrow \) freely to daughters of \( S \)

Of course, free assignment overgenerates. However, the conditions on the well-formedness of functional structures given in 2.2.6, together with a convention on agreement discussed in Chapter 3 filter out most ungrammatical structures. This free assignment of grammatical functions is part of what makes Warlpiri a non-configurational
language. 10 With a couple of additional assumptions, free assignment can also extend to cover the existence of discontinuous nominal expressions, as I will show in Chapter 4.

2.2.2 Morphological information

Categorial and constituent-structure information about grammatical functions in simple sentences was discussed in the previous section. This section examines other kinds of information provided by the lexicon. When lexical items are inserted under the preterminal nodes of a c-structure tree, they bring with them morphological information, and semantic information. Aside from categorial information, which has already been discussed, the morphological information consists of features such as CASE, TENSE, NUMBER etc,11 and also of functional information. This information may be derived from the root (for example, people has the feature PLURAL), or from an affix (the information that books is PLURAL comes from the plural affix s, and, similarly, the information that the SUBJECT's NUMBER is SINGULAR, and its PERSON THIRD, comes from the affix s attached to verbs, as in gives). A fundamental hypothesis of both LFG and LPM is that all inflection is done prior to lexical insertion. Therefore the plural morpheme is attached to

---

10. My approach differs from that given in Bresnan (1982a). Bresnan adopts syntactic grammatical function assignment rules which link case-marking to grammatical functions. In order to account for grammatical functions expressed by null pronouns rather than by overt case-marked nominals, I have adopted the general rule of free assignment of grammatical function.

Free assignment of grammatical function is essentially what underlies Chomsky's (1981) account of Japanese, where he proposes a rule Assume grammatical function to express grammatical function changing rules, where grammatical functions are not defined configurationally. See Hale (to appear) for an adaptation of Chomsky's proposal to Warlpiri.

11. These features are syntactically relevant features, and they do not always coincide with the corresponding semantic descriptions. For instance the English word crowd is semantically a plurality, but it can be syntactically singular, as number agreement shows: The crowd has gathered. ?The crowd have gathered.

It is NOT a tenet of LFG theory that the meaning of the word 'I' consists in a feature matrix with such 'Markerese' features as semantic primitives. The importance of these features lies in their usefulness for capturing syntactic generalizations.
book in the morphology. and, upon lexical insertion, the word books already has the feature [plural].

Syntactically relevant features such as [plural] are called functional features, and the set of such features is assumed to form a restricted universal set. It is further assumed (Kaplan and Bresnan, 1980: 12) that these functional feature equations are associated with the categorial label of a lexical item in the morphology. By convention, functional features are attached in c-structure to the node immediately dominating that lexical item. That is, if a lexical item has the category N in the lexicon, it is inserted under a node N in the c-structure, and equations such as (↑CASE) = ABSOLUTIVE are attached to that node N.

In (18), I give the features for the words in the sentence *Ngaju karna parnkami* which are provided by their lexical entries. The values that I have assigned to the features CASE etc. are probably further analysable into distinctive features. Similarly, the PERSON feature of 1st person is decomposable into something like [+ Speaker − Hearer], and the NUMBER feature is perhaps decomposable into [− pl + sg] or else [− pl − du]. Instead of saying (↑NUM) = sg, one could say (↑NUM) = [− pl + sg]. That these features are syntactically relevant is shown in Hale (1972). Hale discusses coordination of nominals of different persons and numbers, and shows that the AUX agrees with a consistent intersection of the features of the conjoined nominals, where these features include the equivalents of Speaker and Hearer.

(18) **Lexical Entries for the sentence: Ngaju karna parnkami**

*Ngaju* has the features:

(↑CASE) = ABS (read as mother’s case is ABS)
(↑PERS) = 1 (mother’s person = 1)
(↑NUM) = sg (mother’s number = sg)

For the N *ngaju*, the ‘mother’ node is the $\overline{N}$ which dominates it.

Parankami has the features:
\[ (\uparrow \text{TENSE}) = \text{non-past (mother's tense is non-past)} \]
\[ (\uparrow \text{FINITE}) = + \ (\text{mother is } [+] \text{ FINITE}) \]

For the V parnkami, the ‘mother’ node is the \( \overline{V} \) which dominates it.

Ka has the feature:
\[ (\uparrow \text{ASP}) = \text{present imperfect} \]
\[ (\text{mother's aspect is present imperfect}) \]

rna has the features:
\[ (\uparrow \text{SUBJ PERS}) = 1 \ (\text{mother's SUBJECT's person} = 1) \]
\[ (\uparrow \text{SUBJ NUM}) = \text{sg} \ (\text{mother's SUBJECT's number} = \text{sg}) \]

The ‘mother’ node for both rna and ka is the AUX node.

Observe that I have included information about the SUBJECT as part of the lexical entry of the pronominal clitic rna. That is, I am claiming that part of the meaning of the pronominal clitic rna is that it has to represent a SUBJECT. In 2.3.4, I will elaborate on this incorporation of functional information into lexical entries.

In (19), I give an abbreviated annotated c-structure tree for the sentence Ngaju ka-rna parnkami ‘I am running.’

(19) C-structure 3 for (1)

\[
\text{N}\quad \text{AUX}\quad \text{V}
\]
\[
\text{Ngaju}\quad \text{ka}\quad \text{rna}\quad \text{parnkami}
\]

\[ (\uparrow \text{PERS}) = 1 \]
\[ (\uparrow \text{SUBJ PERS}) = 1 \]
\[ (\uparrow \text{CASE}) = \text{ABS} \]
\[ (\uparrow \text{SUBJ NUM}) = \text{sg} \]
\[ (\uparrow \text{TENSE}) = \text{non-past} \]
\[ (\uparrow \text{NUM}) = \text{sg} \]
\[ (\uparrow \text{ASP}) = \text{PRES} \]
\[ (\uparrow \text{FINITE}) = + \]
2.2.3 Semantic information

The lexical entry for a word provides not only morphological information but also lexical semantic information. Semantic information includes information about whether an element is an argument, an argument-taking predicate, or a sentence operator. It also includes information about the type of arguments an argument-taking predicate takes. In this section I will show how semantic information is represented in LFG.

Information about arguments and argument-taking predicates (in particular, their argument-structure and the grammatical functions assigned to the arguments) is provided by the lexical form of the lexical entry. Each lexical entry is represented as an equation giving a value (the lexical form) to a functional feature, the predicate functional feature (PRED). The PRED functional feature is technically the same kind of entity as the CASE, TENSE, NUMBER etc. functional features. The difference is that, while the values of CASE, TENSE, NUMBER etc are symbols, the value of PRED is a lexical form.

The PRED feature equations for ngaju and parnkami follow:

ngaju: \((\uparrow \text{PRED}) = \text{\'1}\)  

parnkami: \((\uparrow \text{PRED}) = \text{\'parnkami'}\)

\begin{tabular}{ll}
\text{\langle (SUBJ) \rangle} & \text{runner} \\
\end{tabular}

13. Sentence operators include elements such as quantifiers. I will not be discussing sentence operators in this thesis.

14. One could also claim that the PRED feature for a pronoun such as ngaju is just ‘PRO’, where ‘PRO’ stands for the property of being dependent on context for reference, apart from the features of person, number, and perhaps animacy. The referent of a definite noun-phrase such as the possum is dependent on context, but also contributes the information that the referent is a possum. However, if Wierzbicka (1973) is correct, the meaning of words such as I and you is not decomposable even into such features as Speaker and Hearer. Therefore it seems advisable not to reduce the semantic form of an overt pronominal such as ngaju to the bare statement that its referent is dependent on context. anaphor.
The entry for *parnhami* given here indicates that it is a one-place predicate, whose single argument *runner* has the grammatical function SUBJECT. The semantic form (meaning) is given in quotations to indicate that it stands for some definition or decomposition. Within the lexicon, there are principles for relating the meanings of argument-taking predicates to their arguments.

For instance, consider the dictionary entry for one meaning of *parnhami* 'run' (adapted from an entry given in *The Warlpiri Dictionary* (June 1982 version)):

\[ X \text{ moves rapidly along a path beginning at one place and ending at another place.} \]

*Variables* in the definition represent arguments of the verb. Since the definition has only one variable, this meaning of *parnhami* is a one-place predicate. *Constants* in the definition (e.g. *path, place*) represent general arguments common to a particular class of verbs. (It is implicit in the meaning of a verb of motion such as *run* that one moves from one place to another, and that one follows a path in doing so.)\(^\text{15}\)

The lexical entry pairs the argument *X* with the grammatical function SUBJECT. The constants may be expressed by ADJUNCTs. The exact representation of the relation between dictionary entries, and subcategorization frames, is debateable, especially where optional arguments are involved. In this thesis I will not spell out dictionary entries in lexical forms. I will simply use *parnhami, or run* instead, and I will assume that principles can be found associating meanings (as represented by the dictionary entry) and subcategorization frames.

---

\(^{15}\) *Run* differs from verbs such as *arrive* and *come*. *Run* focusses on the manner of motion, and so the source and end-point are constants. *Arrive* and *come* focus on the end-point, which is, I assume an argument of the verb. See 3.4.1.
Equations with the PRED feature are treated like equations with the CASE or NUMBER feature, and will be inserted in the c-structure tree accordingly. However they differ from features such as NUMBER and CASE in one important respect. Each instance of a PRED feature equation is unique and must be differentiated, whereas instances of a NUMBER symbol do not have to be distinguished. This amounts to saying that a lexical entry is a unique item, while the value for a feature such as CASE is not. The value for a feature can be given in many places. For instance, in English, information about the SUBJECT's NUMBER is provided both on the SUBJECT and on the VERB: *The man loves possums.* But the dictionary entry for the PRED feature can only be given in one place: *The man loves possums, the man.*\(^{16}\) This difference between PRED feature equations and CASE feature equations is marked by indexing each instance of a PRED feature equation in a c-structure tree. Values for features such as CASE and NUMBER are not indexed.

Annotated with both the indexed PRED functional feature equations and the CASE, TENSE, NUMBER, ASPECT, PERSON, FINITE functional features, the tree is as follows:

\(^{16}\) I ignore appositional uses here.
2.2.4 Assigning other functions

The only information lacking in the annotated c-structure tree concerns the function of the AUX. The AUX provides information about the ASPECT of the sentence, and about its SUBJECT. The AUX can also provide information about other arguments of the predicate, as well as about the sentence’s modality (negation, hypotheticality, counter-factual etc), as in (21).

(21) Wati  
     kula-ka  wangka-mi.
  man-ABS  not-PRES  speak-NPST
The man is not speaking.
In other words, information about the AUX is information about the sentence. For it to be represented as such, the AUX must also have the equation \( \uparrow = \downarrow \). The rule freely assigning \( \uparrow = \downarrow \) will assign the AUX \( \uparrow = \downarrow \). The conditions on the well-formedness of f-structures to be described in 2.2.6 preclude the assignment of any other function to the AUX. The fully annotated c-structure tree for the sentence *Ngaju ka-rna parnkami* follows.

(22) **C-structure 5 for (1)**

Observe the importance of distinguishing between saying that a node is the SUBJECT, and that a node carries information about the SUBJECT. The \( \overline{N} \) dominating *ngaju* has the equation \( \uparrow_{\text{SUBJ}} = \downarrow \) attached, while the pronominal clitic *rna* has referring to the SUBJECT’s person and number. But this does not mean that the sentence has two SUBJECTs. Instead, it means that information about the SUBJECT of the sentence comes from two places, the pronominal clitic and the nominal. This distinction will be crucial in the account of case-suffixes in Chapter 3, where I will argue that a single
word can contain information about two different functions.

Using equations such as (↑SUBJ) = ↓ rather than simply labelling a node SUBJECT helps to keep this distinction clear. However, as Grimshaw (1980) points out, using ↑ and ↓ arrows is largely redundant:

i. Only ↑ arrows appear in lexical entries, because information about a word is always passed up.

ii. Equations referring to grammatical functions state that 'ego' provides information about a particular grammatical function with respect to 'mother', and so always have the form ↑G (FEATURE) = ↓.

I will show in Chapter 3 that convention i. is not completely tenable; occasionally it is necessary to block feature percolation. However, I accept her general point. I will assume that readers are now aware that labelling a node SUBJECT simply means that the node carries information about the SUBJECT. In future I will only use ↑ and ↓ arrows where necessary, as in general they detract from readability.

2.2.5 Building an f-structure

We now have all the information necessary for interpreting the sentence, and for working out the relation between the argument-taking predicate and its arguments. However, the information is scattered among the nodes of the trees. It has to be collected and organized, so as to create a form which semantic interpretation rules can take as input. This form is the functional structure (f-structure) of the sentence. The f-structure expresses meaningful grammatical relations and acts as input for semantic interpretation.

The functional structure is derived formally from the annotated constituent structure by means of an algorithm for solving the equations on the annotated c-structure tree. This algorithm is given in Kaplan and Bresnan (1980). I will not give it here, but will instead build functional structures informally.
A functional structure is represented as a set of ordered pairs, each of which consists of the name of a grammatical function or function feature (such as PRED, SUBJ, CASE...) paired with a value for that grammatical function or function feature. Values are of four types:

(23) **Value-types of functions and functional features**

<table>
<thead>
<tr>
<th>function/feature</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>symbols</em>:</td>
<td>CASE = ABSOLUTIVE</td>
</tr>
<tr>
<td>2. <em>lexical forms</em>:</td>
<td>PRED = 'PRO'</td>
</tr>
<tr>
<td>3. <em>subsidiary f-structures</em></td>
<td>SUBJ</td>
</tr>
<tr>
<td>These allow recursive embedding.</td>
<td>[ CASE = ABS</td>
</tr>
<tr>
<td></td>
<td>NUM = sg</td>
</tr>
<tr>
<td></td>
<td>PERS = 3</td>
</tr>
<tr>
<td></td>
<td>PRED = 'PRO' ]</td>
</tr>
<tr>
<td>4. <em>sets of symbols. or f-structures</em></td>
<td>ADJ</td>
</tr>
<tr>
<td>The internal f-structures are abbreviated.</td>
<td>[ PRED = 'yesterday' ]</td>
</tr>
<tr>
<td></td>
<td>[ PRED = 'with' ⟨OBJECT⟩ ]</td>
</tr>
<tr>
<td></td>
<td>[ OBJECT 'pleasure' ]</td>
</tr>
<tr>
<td></td>
<td>[ PRED = 'in' ⟨OBJECT⟩ ]</td>
</tr>
<tr>
<td></td>
<td>[ OBJECT 'the garden' ]</td>
</tr>
</tbody>
</table>

This f-structure represents the set of ADJUNCTs in the English sentence *Yesterday, Lucy kissed John with pleasure in the garden*. Since the function ADJUNCT can be evaluated by a set of f-structures, rather than a unique f-structure, formally, an ADJUNCT argument should not be assigned an equality equation (†ADJ) = ⊥, but rather an inclusion equation which expresses this set relation: ⊥ ∈ (†ADJUNCTS).

I will now show how to build an f-structure from the annotated c-structure tree (22). Let us start from the top left of the tree, for convenience. The equation (†SUBJ) = ⊥ attached to $\bar{N}$ gives the information that the sentence has a SUBJECT, and that this SUBJECT is the $\bar{N}$. The equations attached to $\bar{N}$ give more information about that SUBJECT. This is expressed in the f-structure as follows:
The next element in the tree is the AUX. It has been assigned the equation $\uparrow = \downarrow$. So, features of the AUX are features of the whole sentence. Thus, the ASPECT is interpreted as the ASPECT of the sentence. The pronominal clitic rna provides PERSON and NUMBER information about the SUBJECT of the AUX. By virtue of the equation $\uparrow = \downarrow$ assigned to the AUX, the SUBJECT of the AUX is the SUBJECT of the sentence. The PERSON and NUMBER information given by rna agrees with the PERSON and NUMBER information provided by the nominal ngaju. With the addition of the AUX information, the f-structure is as follows:

$$\begin{bmatrix}
\text{SUBJ} & \text{CASE} = \text{ABS} \\
\text{PERS} = 1 \\
\text{NUM} = \text{sg} \\
\text{PRED} = 'I'
\end{bmatrix}$$

The SUBJECT function is represented by a subsidiary f-structure (in square brackets), whereas the ASPECT feature is represented by a symbol (in bold-face) present imperfect.
The next element in the tree is $\bar{\nu}$. Like the AUX, $\bar{\nu}$ has been assigned the equation $\uparrow = \downarrow$. So, all the features and properties of $\bar{\nu}$ are features and properties of S. $\bar{\nu}$'s PRED, FINITE and TENSE are the PRED, TENSE and FINITE features of the sentence. The $\bar{\nu}$ provides the information about the CASE of the SUBJECT that it is ABSOLUTIVE. This agrees with the information already provided by $ngaju$. The information given by the annotations on $\bar{\nu}$ completes the functional structure for the sentence.

(24) Functional structure for (1)

$$\begin{align*}
PRED &= \text{run } \langle \text{SUBJ} \rangle \\
TENSE &= \text{non-past} \\
FINITE &= + \\
ASP &= \text{present imperfect} \\
SUBJ &= \begin{cases} 
\text{CASE} = \text{ABS} \\
\text{PERS} = 1 \\
\text{NUM} = \text{sg} \\
\text{PRED} = \text{''/''} 
\end{cases}
\end{align*}$$

2.2.6 Constraints on f-structures

The system described above of building c-structure trees, annotating them with functional equations, and then building functional structures could, unconstrained, result in a large number of ungrammatical sentences. For example, free assignment of equations such as $\uparrow = \downarrow$ and $(\uparrow\text{OBJ}) = \downarrow$ could result in assigning $ngaju$ the equation $(\uparrow\text{OBJ}) = \downarrow$ in the sentence:
(25) Ngaju ka-rna parnka-mi.
    PRES-1sg run-NPST
    I am running.

However, the PRED of the sentence, parn kami, selects only a SUBJECT. Under this assignment of functions, (25) has an extraneous OBJECT which has no PRED form. Additional constraints are needed to rule out such impossible interpretations.

There are two types of constraint: general constraints and particular constraints.

2.2.6.1 General constraints on f-structures

The general constraints on f-structures are basically a matter of common sense. There are three principal constraints, consistency, completeness and coherence. Consistency prevents an f-structure from containing conflicting information; completeness ensures that everything which has to be present is present; coherence ensures that nothing is present which cannot be interpreted.

2.2.6.1.1 Consistency

Consistency is a generalization of the Functional Uniqueness Hypothesis introduced in 1.3.1.1.

Principle 7: Consistency

Every grammatical function and every functional feature must have a unique value.

For grammatical functions, this means that there cannot be, say two SUBJECTs in a sentence, or more controversially (see Chapter 1, Footnote 2') two OBJECTs. This rules out sentences such as (26).
Two nominals are competing for SUBJECT function. For functional features such as CASE, TENSE, PERSON, consistency prevents the same feature, say the SUBJECT's PERSON feature, from being assigned two different values. This rules out (27), in which the AUX provides the information that the SUBJECT is first person, while the overt nominal is a second person pronoun.

For the functional feature PRED, consistency precludes the assignment of more than one lexical form to the same function. That is, although the information about the SUBJECT's Person can come from several different sources, information about the SUBJECT's PRED can be given only once.

Consider the following sentence:

Assume later, that karnta wati has to be an $\bar{N}$ (see 2.5.1), and that this $\bar{N}$ is assigned the function SUBJECT. Assume also that both karnta and wati are assigned the equation $\uparrow = \downarrow$ within $\bar{N}$, and that both have PRED features. The constituent structure for the $\bar{N}$ is as follows:

17. Karnta might act as a predicate modifying wati under rather strange circumstances: Wati ka paraŋka-mi karnta + iqũ, 'The man runs now a woman'. (iqũ is a clitic meaning 'now, then'). But in this case the function SUBJECT does not have two conflicting PREDs, because one PRED represents the lexical form of the SUBJECT, and the other represents the lexical form of an ADJUNCT attributing a property to the SUBJECT.
The corresponding functional structure has two competing PREDs, and so is inconsistent. The f-structures for (26) and (28) are identical, because the information about a grammatical function such as SUBJECT, say, is gathered together in one subsidiary f-structure. The inconsistent f-structure is given in (30).

One further comment on the application of consistency to the PRED feature is necessary. If two different sources provide the same lexical form for the PRED, the f-structure is still ill-formed. (31) illustrates this.

Since every lexical form receives a unique index each time it occurs in the annotated c-structure tree (as I mentioned in 2.2.3), the two instances of karnta in (31) will each
receive a different index. Therefore, the function SUBJECT in (31) will have two different
PREDs, and the f-structure will violate consistency. Features such as CASE and NUMBER
whose values are symbols can agree. The PRED feature has a lexical form as its value,
and cannot agree.

Consistency acts as a filter on free assignment of grammatical functions in Warlpiri.
If $\uparrow = \downarrow$ is assigned to two items, each of which has its own own PRED feature,
consistency is violated, because then the f-structure containing both items to which $\uparrow = \downarrow$
has been assigned will have two PREDs. Thus, if both a V and an N are assigned the
equation $\uparrow = \downarrow$ the sentence will have two matrix predicates.\(^{18}\) However, since the AUX
does not have a PRED feature of its own, the AUX can be assigned the equation $\uparrow = \downarrow$.
Consistency ensures that the equation $\uparrow = \downarrow$ can only be assigned to one element with a
lexical form, while it can be assigned to other elements without lexical forms, such as the
AUX.

2.2.6.1.2 Completeness

Completeness is a condition which ensures that every grammatical function
selected by some PRED (every grammatical function paired with an argument of some
argument-taking predicate) is actually realized in the f-structure.

**Principle 8: Completeness**

If a grammatical function is obligatorily selected by the argument-taking
predicate of an f-structure, it must appear in that f-structure.\(^ {19}\)

\(^{18}\) Of course coordination structures have to be accounted for also, since two
coordinated finite verbs both have PREDs, but do not violate consistency. Coordination
represents a problem well beyond the scope of this thesis. See Andrews (1981) and
Peterson (1981b) for attempts to describe it within LFG.

\(^{19}\) For a more formal definition, see Kaplan & Bresnan (1980: 36)
The role of *completeness* is readily apparent in English. Consider the sentence: *Ran.* This has no overt SUBJECT, and yet the verb *run* selects a SUBJECT. The f-structure of this sentence is incomplete. The role of *completeness* is not so apparent in Warlpiri, because Warlpiri allows subcategorized grammatical functions to be expressed by null pronominals. For instance, a SUBJECT need not be overtly expressed by a nominal. So the Warlpiri equivalent, *Parnka-ja ‘run-PAST’*, is acceptable, because it can have a null pronominal SUBJECT. Nevertheless, there are violations of *completeness* in Warlpiri, as (32) through (34) illustrate.

(32) Rdanpa-rni ka-rna-rla ngaju wati-ki
    Accompanv-NPST PRES-1sg-DAT I-ABS man-DAT
    I accompany the man.

(33) Rdanpa-mi ka-ma-rla ngaju
    accompany-NPST PRES-1sg-DAT -ABS
    I accompany him.

(34) *Rdanpa-rni ka-ma ngaju
    accompany-NPST PRES-1sg I-ABS
    I accompany.

The verb *rdanparni* requires a DATIVE OBJECT. (32) is acceptable because the DATIVE OBJECT is overtly expressed. (33) is acceptable because, although the DATIVE OBJECT is not overtly expressed, it is registered in the AUXILIARY. (34) is ruled out by *completeness* because there is no overt DATIVE OBJECT and no registration of a DATIVE OBJECT in the AUX.

2.2.6.1.3 Coherence

A functional structure is *coherent* if it contains no extraneous grammatical functions.

**Principle 9: Coherence**

If a subcategorizing grammatical function appears as an attribute of a member of an f-structure, the PRED of the f-structure must be subcategorized for that
grammatical function.

Consider the simplified tree given in (35). An ABSOLUTIVE case-marked nominal appears, and is assigned the function (↑OBJ) = ↓, but the verb *parnkami* 'run' is not subcategorized for an OBJECT.

(35)

![Diagram]

The woman ran the man

Because there is an OBJECT present, and the PRED of the f-structure built from this tree does not contain an OBJECT, the f-structure violates *coherence*, and is ruled out, as in (36).
To sum up the effects of the three general conditions on f-structures: Completeness ensures that every obligatorily selected grammatical function is expressed. Coherence ensures that there are no extraneous grammatical functions. Consistency ensures that grammatical functions and features do not have conflicting values. As Hale (to appear) points out, these conditions act as filters reducing the overgeneration resulting from free assignment of grammatical functions within Warlpiri.

There is one final general constraint to be discussed. This is not a constraint on functional structures as such, but rather on the form of functional equations, Functional locality.

**Principle 10: Functional locality**

For human languages, designators in functional equations may specify no more than two function-applications. (Kaplan & Bresnan (1982: p.278))
This principle limits the context over which functional properties may be explicitly referred to. For instance, a functional equation may state $\uparrow XCOMP \, SUBJ = \uparrow SUBJ$, because there are no more than two functional applications on either side of the equation. But it may not state $\uparrow XCOMP \, SUBJ \, ADJ \, SUBJ = \uparrow SUBJ$, because there are more than two functions or features named on the left side of the equation. *Functional locality* is intended to capture the intuition that languages do not have long-distance dependencies that extend down more than one clause-nucleus deep (with the exception of *unbounded* long-distance dependencies, as in WH-movement).

### 2.2.6.2 Particular constraints on f-structures

As well as the general constraints on f-structures, there are language-particular constraints. These are represented as *constraint equations*, which, like functional equations such as $(\uparrow CASE) = \text{ABS}$, attach either to particular morphemes, or to positions in the phrase structure expansion, or can generalize over the whole phrase structure rule. These constraint equations are used to ensure the presence of particular morphemes in sentences, to determine agreement processes, and numerous other language-particular constraints on the grammaticality of a sentence.

For instance, in Warlpiri the Aspect marker *ka* can only appear if the verb has non-past tense. (37) shows a well-formed sentence, and (38) an ill-formed sentence.

(37) Ngaju ka-ma parnka-mi.
I-ABS PRES-1sg run-NPST
I am running.

(38) *Ngaju ka-ma parnka-ja.
I-ABS PRES-1sg run-PAST
I was ran.

This constraint equation can be attached to the lexical entry of the morpheme *ka*:

```
ka
ASPECT = Present imperfect
TENSE = c Non-past
```
The first equation is a *defining* functional equation; the second equation is a *constraint* equation. The defining equation introduces a value. The constraint equation does not introduce a value, but demands that something else in the sentence introduce a particular value. By convention, a constraint equation with an equality symbol requires, not only that the value of the feature be whatever it is said to be (*non-past* in this example), but also that the feature be present. Thus if *ka* is present, the matrix predicate must have the right tense marker. The constraint equation is not satisfied if there is no tense marker. Therefore *ka* cannot appear in non-finite clauses or nominal-headed clauses in which there is no tense marker. A sentence such as (39) which has a nominal head *ngurrpa* 'ignorant' is ruled out.

(39) *Ngaju *ka-rna ngurrpa.
    I-ABS PRES-1sg ignorant
    I am ignorant.

See 2.4.2 for more discussion of the dependency. Another example of constraint equations is given in 2.3.1.2. in the discussion of the *Conative* lexical rule.

Another type of constraint equation is an *existential* constraint equation. An existential constraint equation does not involve the value of a particular feature or function; it is simply concerned with whether or not a given feature exists. For example, in English, a matrix clause has the annotation (↑ TENSE). This means that a matrix sentence must have a tense-marker. It does not matter what the value of the TENSE is, so long as there is a tense-marker.

I have now shown how to build a constituent structure tree and a functional structure for a simple intransitive sentence. In doing so, I have given an account of how the information from the phrase structure and the lexicon is expressed in the c-structure tree. I have also described some of the constraints on building an f-structure from an annotated c-structure tree. In the next few sections, I will discuss more complex sentences, gradually introducing new aspects of the LFG system, as well as showing areas that need further research. Before doing so, however, I will summarize the principles and constraints that I have introduced so far.
2.2.7 Summary of principles and constraints

First, there are two important constraints on the relation of predicate-argument structures and grammatical functions, introduced in 1.3.1.1.

**Principle 1: Selection for function**
Argument-taking predicates are subcategorized for grammatical functions, not for categories.

**Principle 3: Bi-uniqueness**
Each argument of an argument-taking predicate must be assigned a unique grammatical function, and no grammatical function can be assigned to more than one argument.

Second, there are constraints on constituent-structures, one on the interaction of morphology and syntax, introduced in 1.3.3, one preventing c-structure processes from changing grammatical functions, introduced in 1.3.2, and one on admissible terminal elements, introduced in 1.3.4.2.

**Principle 4: The Principle of Direct Syntactic Encoding**
Every non-lexical rule of grammar must preserve the assignment of grammatical functions. [Bresnan, 1980b: 5]

**Principle 5: Lexical Integrity Hypothesis**
Constituent-structure processes (which include annotation of functional information, and indexing of anaphoric information) are blind to the internal structure of words.

**Principle 6: The Null-Element Constraint**
A non-terminal category cannot exhaustively dominate the empty string $e$, except in the case of constituent control, where constituent control is the long-distance dependency characterizing wh-movement and similar
Principle 6 will be revised in 2.3.4.1.3.

Third, there are three general constraints on the well-formedness of functional structures, introduced in 2.2.6.1.1, 2.2.6.1.2, and 2.2.6.1.3 respectively.

Principle 7: Consistency

Every grammatical function and every functional feature must have a unique value.

Principle 8: Completeness

If a grammatical function is obligatorily selected by the argument-taking predicate of an f-structure, it must appear in that f-structure.

Principle 9: Coherence

If a subcategorizing grammatical function appears as an attribute of a member of an f-structure, the PRED of the f-structure must be subcategorized for that grammatical function.

Fourth, there is a constraint on the form of functional equations.

Principle 10: Functional locality

For human languages, designators in functional equations may specify no more than two function-applications. (Kaplan & Bresnan (1982: p.278))

2.2.8 Introduction of PRO
Consider the following intransitive sentence:

(40) Parnka-mi ka-rna.
Run-NPST PRES-1sg
I run.

(40) differs from the sentence discussed in the last section (Ngaju ka-rna parnkami) only in the absence of the pronoun ngaju. The annotated c-structure tree follows in (41).

(41) C-structure for (40).

As it stands, any f-structure built from this tree is incomplete, because there is no lexical form for the SUBJECT, while the verb demands a SUBJECT, and the AUX provides information about the SUBJECT’s PERSON and NUMBER. The equivalent sentence is of course ungrammatical in English. But in Warlpiri, it is a perfectly acceptable sentence. The SUBJECT is understood to be a null pronominal referring to the speaker. Therefore there must be some way of introducing a null pronominal for the SUBJECT in such sentences, that is, o’ introducing a PRED feature for the SUBJECT.

There are at least two ways of introducing this null pronominal. The first is to follow the Grimshaw (1980)/Montalbetti (1981) account of Romance clitics, and say that the pronominal clitics in the AUX are meaningful. The pronominal clitic provides information about the SUBJECT’s person and number. Suppose it also has a PRED feature which introduces a lexical form for the SUBJECT. The lexical form will be a pronoun ‘P-PRO’. The other choice is to adopt the account of the IMPERATIVE given in Kaplan and Bresnan
(1980), whereby a null SUBJECT pronominal is introduced by IMPERATIVE verbs. That is, generally in Warlpiri the lexical entry for the verb will carry optional equations (\(\text{T} \text{SUBJ PRED}\) = 'PRO', (\(\text{T} \text{OBJ PRED}\) = 'PRO' etc.

The difference is between treating the pronominal clitic *rna* as a pronominal clitic like the French pronominal clitics which have their own lexical forms, and treating *rna* as an agreement marker, such as the person-number marking on verbs in Russian. I claim that in Warlpiri the verb introduces (\(\text{T} \text{G PRED}\) = 'PRO' for the grammatical functions it selects (it obviously cannot introduce these equations for non-selected grammatical functions, because these do not appear in the lexical entry for the verb). I will extend this later to all argument-taking predicates, and this will provide the basis for my analysis of control and predication in Warlpiri.

The first argument for having the verb introduce the (\(\text{T} \text{PRED}\) = 'PRO' equations is that need not be an overt pronominal clitic in the AUX; the absence of a clitic is interpreted as a third person singular definite pronoun. The second argument is that it simplifies the account of null pronouns in non-finite clauses. In non-finite clauses, selected grammatical functions can be represented by null pronouns, just as they can be in finite clauses. But there are no AUXs in non-finite clauses. If the AUX pronominal clitics introduced the null pronouns for finite clauses, a different mechanism would be needed to introduce the null pronouns in non-finite clauses. It appears simpler to have the (\(\text{T} \text{G PRED}\) = 'PRO' equations introduced by the same mechanism, namely the verb, for both finite and non-finite clauses.

---

20. Kaplan and Bresnan (1980) allowed the attachment of the equation (\(\text{T} \text{SUBJ PRED}\) = 'YOU' to the verb as an alternative expansion of S for imperatives:

\[
\begin{align*}
S & \rightarrow \quad \text{VP} \\
\uparrow & = \downarrow \\
(\text{T} \text{INF}) & = _c + \\
(\text{T} \text{SUBJ PRED}) & = 'PRO' \\
(\text{T} \text{SUBJ PERS}) & = 2
\end{align*}
\]

However, in recent work (Halvorsen (to appear), Bresnan (1982)) it is assumed that lexical forms must be introduced lexically. So the (\(\text{T} \text{SUBJ PRED}\) = 'YOU' equation must be introduced together with the IMPERATIVE inflection.
Below, I illustrate this ability for null pronouns to appear in non-finite clauses in some detail, because the status and properties of null pronouns are an issue of concern not only for LFG, but also for Government-Binding theory.

First, consider the sentence in (42).

(42) Japanangka karlarra-jarri-ja Jupurrula nya-nja-ku.
    Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
    Japanangka went west... [Nash, p.c.]

This sentence has a non-finite clause nya-njaku "to see". David Nash informs me that a linguistically sophisticated speaker, when confronted with this sentence, considered that the following interpretations are possible.

i. Japanangka went west [to see Jupurrula]

ii. Japanangka went west [for Jupurrula to see PRO = himself]

iii. Japanangka went west [for Jupurrula to see PRO = him]

iv. Japanangka went west [for Jupurrula to see PRO = him]

Reading i. can be blocked by giving 'Jupurrula' ERGATIVE case, thus forcing it to be construed as the SUBJECT of the non-finite clause. Further examples of null pronouns in non-finite clauses follow.

    speak-PAST -1sg-DAT meat-DAT give-INF-DAT
    I asked him, for meat, PRO to give PRO, PRO, [wangkami]
    = I asked him to give me meat.

(44) Japanangka-rlu ka-rla karli-ki jaala-nya-nyi
    Japanangka-ERG PRES-DAT boomerang-DAT back.and.forth-see-NPST

21. The fact that the SUBJECT of a non-finite verb need not have ERGATIVE case, as in the examples given, is a problem for my account of null pronouns. See Chapter 6.
kuja kiji-rinja-rla waja-wajama-nu. REL throw-INF-SEQ lose-PAST
Japanangka, is going back and forth looking for the boomerangi, that after
throwing PROj PROj lost PROj. [jaala-nyanyi] = .. that after throwing he lost.

(45) Ngurlu lukarrara yurrpa-rinja-rla kala-lu yapa-ngku seed lukarrara-ABS grind-INF-SEQ USIT-3pl person-ERG
purrja pirdijirri -- nga-rinja-ku + ju. After throwing the "lukarrara" seeds people, would cook them into cakes, to
eat PROj. [lukarrara]

In (45), the OBJECT of the non-finite clause nga-rinja-ku + ju is left unexpressed, but it is
clearly the seed-cakes.

(46) Ngaka kala-lu-nganpa karli-puka jarnti-rinja-rla then USIT-3pl-1plex boomerang-EVER-ABS trim-INF-SEQ
yu-ngu jarlu-patu-rlu. give-PAST old.man-PL-ERG
Kurlarda kala-lu-nganpa maja-rinja-rla yu-ngu. spear-ABS USIT-3pl-1plex straighten-INF-SEQ give-PAST
Having carved boomerangs the old men would give them to us. They would give
us spearsi after straightening PROj. [jarntirni]

In the first clause of this example the nominal karli-puka could either be construed as an
OBJECT 'thing trimmed' of the non-finite clause jarntirninjarla (in which case the matrix
verb yungu has a null pronominal as OBJECT 2). Or it could be construed as the OBJECT
2 'thing given' of the matrix verb, in which case the non-finite clause has a null pronominal
as OBJECT. In the second clause, the nominal kurlarda is separated from the non-finite
clause majarinnjarla by the AUX. I assume that it must be the OBJECT 2 of the matrix, and
therefore that the non-finite clause has a null pronominal OBJECT.

(47) Yinarlingi-ki ka-rnalu-rla jiri jarnti-rni;
echidna-DAT PRES-1plex-DAT quill-ABS trim-NPST
kirika-ma-ni ka-rnalu jarnti-rinja-rlu.
clean-CAUS-NPST PRES-1plex trim-INF-ERG
We scrape the echidna, clean of quills. We clean PROj by scraping PROj.
[jarntirni]
In this example the first clause has an overt OBJECT and an overt DATIVE argument. The DATIVE argument *yinarlingiki* 'echidna' is the antecedent for the null pronominal OBJECT of the finite verb *kirka-mani* 'clean' next clause, and also the null pronominal OBJECT of the non-finite clause *jarntirninjarlu*.

Normally, a null pronominal in non-finite clauses has an understood third person antecedent. This contrasts with matrix sentences, in which a null pronominal can have any person or number, because the pronominal's features are provided by the AUX. So the information is recoverable. But, even in non-finite clauses, it is possible to have null proninals with non-third person referents, provided this information is recoverable from the context. Thus, in (48) there is a second person SUBJECT *nyuntu + ju* in the first finite clause. This acts as an antecedent for the null pronominal OBJECT of the non-finite clause *yuikanjaku* 'to love'. The SUBJECT of *yuikanjaku* is an understood third person pronominal 'he', which may or may not be coreferential with the expressed SUBJECT of the final clause, *waninja-warnu-rlu* "lover". The OBJECT is second person, and is coreferential with the matrix SUBJECT.

(48) Milkarra-ku ka-npa nyuntu + ju wapa-mi warrikirdikirdi show-off-DAT PRES-2sg you-ABS + EUPH go-NPST around
    yulka-nja-ku nganta, yungu-ngku nyuntu-nyangu-rlu
    love-INF-DAT QUOT REAS-2sg 2sg-poss-ERG
    waninja-warnu-rlu nya-nyi.
love-ASSOC-ERG see-NPST

You, walk around all over the place showing-off thinking for PRO$_i$/$_k$ (him) to love PRO$_i$ (you), so that your lover$_i$ might see PRO$_i$ (you). [milkarra]

Again, it is important to emphasise that we really do not know what constraints are to be placed on null anaphora in Warlpiri. I have assumed a very liberal account, which is consonant with the data found so far. But no systematic study has yet been undertaken, on the order of the illuminating study of Chinese null anaphora to be found in Huang (1983). See Hale (to appear) for a start on this difficult project.
To conclude: in both finite and non-finite clauses, null pronominals are introduced by the argument-taking predicate. In finite clauses the features of the null pronominal are determined by the features of the pronominal clitics in the AUX, while in nonfinite clauses the features of null pronominals are determined either by discourse antecedency (as in (48)), or by control (see Chapters 3, 4, 5 and 6), or by some default equation attached to the verb, making the PRO third person singular.

The revised lexical entry for the verb *parnkami* (excluding tense information) is as follows:

\[
\begin{align*}
\text{parnkami:} & \quad (\text{PRED}) = \text{'parnkami'} \\
& \quad <(\text{SUBJ})> \\
& \quad (\text{SUBJ PRED}) = \text{'PRO'} \\
& \quad (\text{(SUBJ PERS)} = 3) \\
& \quad (\text{(SUBJ NUM)} = \text{sg})
\end{align*}
\]

The optional person and number equations are to allow the null pronominal in non-finite clauses to be third person singular if there is no discourse antecedent. The \((\text{SUBJ PRED}) = \text{'PRO'}\) equation has to be optional, in order to prevent a violation of consistency in a sentence such as *Ngaju ka-rna parnkami*. If *ngaju* has a lexical form, and the verb introduces a null pronominal by means of the PRED feature 'PRO', then consistency is violated because the one function SUBJECT has two PREDs. As I mentioned earlier, all PRED features in the c-structure tree are indexed, and so the lexical form introduced by *ngaju* has a different index from the null pronominal introduced by the verb. A simplified c-structure tree is given in (49).
Since there are two lexical forms for the one function SUBJECT, the f-structure corresponding to this c-structure will be inconsistent.

The existence of null anaphora lends support to Principle 1, selection for function. For instance, it is not possible to say that a verb such as parnkami ‘run’ is subcategorized for an NP, because no overt NP need appear in the sentence. But it is subcategorized for a SUBJECT, which may be represented either by an NP or by a null pronominal.

Let us look now at another intransitive sentence.

(50) Kurdu ka parnka-mi.
Child-ABS PRES run-NPST
The child is running.
The major differences between (50) and the sentence *Ngaju ka-rna parnkami are first, that the SUBJECT is third person. and second that there is no overt information on the AUX giving the SUBJECT’s Number and Person. Like *ngaju,* _kurdu_ is singular and has ABSOLUTIVE case. (51) is ungrammatical (except in an appositive reading: ‘I, a child.’) because the person and number features given by the AUX clash with those given by the overt nominal _kurdu_, and thus violate consistency.

(51) *Kurdu ka-rna parnika-mi.
Child-ABS PRES-1sg run-NPST
The child is running.

In this connection, observe that (52) is grammatical ONLY with the interpretation that the SUBJECT is 3rd person singular.

(52) Parnka-mi ka.
run-NPST PRES
He/she/it is running.

These two examples suggest that the absence of an overt pronominal clitic is treated as a paradigmatic gap, and is assigned the interpretation that the SUBJECT’s number is singular and its person third. Further evidence for the absence of an overt pronominal clitic being meaningful is the fact that a non-third person SUBJECT cannot occur unregistered, as in (53).

(53) *Ngaju ka parnika-mi.
I-ABS PRES run-NPST.
I am running.

If the absence of registration is interpreted as indicating that the SUBJECT of the sentence is third person, then (53) would be ruled out by Consistency – the AUX provides the information that the SUBJECT is third person singular, while _ngaju_, which also has to be a SUBJECT, is first person singular.
The representation of paradigmatic gap information of this kind is not easy. In 2.3.4, I will briefly discuss the problem. For the moment, observe that, if the verb introduces the equation (.Timestamp PRED) = 'PRO', the f-structure corresponding to (52) then contains a SUBJECT, and so is complete. Because parnkami in (52) selects a SUBJECT, it can introduce an equation (Timestamp PRED) = 'PRO'. Parnkami does not select an OBJECT, and so cannot introduce an equation (Timestamp OBJ PRED) = 'PRO'. Since the verb is the head of the sentence, properties of the verb are properties of the sentence. Therefore, if the PRED of the SUBJECT of the Verb is 'PRO', the PRED of the SUBJECT of the sentence must also be 'PRO'.

The equations (Timestamp PRED) = 'PRO' will be introduced in the lexicon. Instead of each verb being specified separately for an equation (Timestamp OBJ PRED) = 'PRO', (Timestamp OBJ PRED) = 'PRO' etc, I assume that a general lexical rule introduces the (Timestamp PRED) = 'PRO' equations. The rule is given in (54).

(54) Rule of PRO-introduction

If an argument-taking predicate selects a grammatical function G, it may optionally introduce a null pronominal to represent that function, by introducing a PRED feature equation: (Timestamp PRED G) = 'PRO'.

The fact that no selected function has to be overtly realized is one of the major differences between Warlpiri, on the one hand, and Germanic and Romance languages on the other. The information about who is doing what to who is recoverable in most finite clauses in Warlpiri, because agreement with all selected functions is marked in the AUX (whether overtly or by means of a paradigmatic gap), and the AUX is obligatory in verb-headed sentences. However, this information is not syntactically recoverable in non-finite clauses.

Agreement with pronominal clitics is a phenomenon observable in many languages. In the next section I present a general account of pronominal clitics in Warlpiri, looking at clitics in sentence-types that I have not yet discussed, as well as comparing the behaviour of pronominal clitics in Warlpiri with pronominal clitics in Romance.
2.2.8.1 Clitic-doubling

The pronominal clitics express information about the selected arguments of the verbs and about major grammatical functions. They mark the person and number of the SUBJECT, OBJECT or Adjunct DATIVE of a sentence. (They do NOT mark OBJECT 2s, as I will show later). They also mark the Case of the OBJECT or Adjunct DATIVE if DATIVE and third person.

At first glance, the AUX pronominal clitics seem to resemble the pronominal clitics found in languages such as French and Spanish. Most of them are historically derived from pronouns, like the Romance clitics. There are similar constraints on co-occurrence of particular clitics - thus, like French, a first or second person direct object cannot co-occur with a first or second person indirect object :

(55) a. *Il me te donne.

Man-ERG PRES-1sg-2sg take away-NPST
*He is taking you/me away from you/me.

The pronominal clitics in French and Warlpiri represent much the same kinds of grammatical functions: SUBJECTs, OBJECTs, Adjunct DATIVEs. They also represent reflexives. In (56) there are pronominal clitics referring to the SUBJECT (npa) and the REFLEXIVE OBJECT (nyanu).

---

22. I am grateful to Carol Neidle for this observation.
23. This sentence has the added complexity that an ABSOLUTIVE nominal jangarnka beard is in a body-part predication relation to the reflexive object: Did you shave yourself beard-wise? might be a more literal rendition.
Did you shave your beard off? [H59Notes]

In (57) there are pronominal clitics referring to the SUBJECT (lu) and the REFLEXIVE Adjunct DATIVE (nyanu). The OBJECT ngurrju jukurrpa 'good laws' is not represented by an overt clitic.

They (councils) can make good laws for themselves. [MKJ:2]

There are two major differences between Warlpiri pronominal clitics and Romance pronominal clitics. First, unlike the Romance clitics, the absence of an overt clitic is meaningful; so, for example, if there is no overt SUBJECT clitic, then the SUBJECT is understood to be third person. Usually, if the SUBJECT is animate, it is understood to be singular. Thus, in (58), the SUBJECT is understood to be third person. Because the verb ngarni 'eat' requires an animate SUBJECT, the normal interpretation is that just one person ate something.

Second, a nominal with any selected function (except OBJECT 2: the ABSOLUTIVE OBJECT in ditransitives) can co-occur with an agreeing clitic, that is, Warlpiri permits clitic doubling freely. In (59), an overt SUBJECT ngaju 'I' appears with a SUBJECT

---

24. Not much is known about the discourse function of doubling. It is quite possible that pragmatic 'Avoid Pronoun Strategies' make clitic doubling of pronouns, especially of OBJECT pronouns, less common than their undoubled counterparts. Suffice it to say that no syntactic considerations have been found blocking or demanding clitic doubling in Warlpiri, with the exception of reflexives and reciprocals – see 2.3.3.
pronominal clitic, rna. In (60) an overt Adjunct DATIVE, ngajuku, is cross-referenced by an OBLIQUE clitic, ju, and in (61) an overt OBJECT, wawirri, is cross-referenced by an OBJECT clitic, jana. (In (61) the SUBJECT is represented only by the SUBJECT pronominal clitic.)

(59) Ngaju -rna wangka-ja.
    I-ABS -1sg speak-PAST
    I spoke. [H59Notes]
    [SUBJECT and clitic]

(60) Ngaju-ku ka-ju karli jarnti-rni.
    1sg-DAT PRES-1sg boomerang-ABS trim-NPST
    He's making me a boomerang. [H59Notes]
    [Benefactive OBJECT and clitic]

(61) Kapi-ri-jarra-jana panu wawirri panti-rni.
    FUT-1duin-3pl many-ABS kangaroo-ABS spear-NPST
    We two are going to spear many kangaroos. [H59Notes]
    [Direct OBJECT and clitic]

In literary French, either a clitic is present or a nominal is present (except in the case of inchoative se constructions, see Grimshaw (1980)). In River Plate Spanish (see Montalbetti (1981)), either a clitic is present, or a nominal is present, or both are present, subject to restrictions on animacy and grammatical functions. In Warlpiri, nominal clauses behave like River Plate Spanish in allowing a clitic, a nominal or both. But verbal clauses have only two possibilities: the clitic MUST be present, and the nominal may optionally be absent. That is, clitic doubling is obligatory if a nominal is present (pace the paradigmatic gap of third person singular).

Much valuable work has been done within the Government-Binding framework on the behaviour of clitic-doubling constructions in Romance languages and some other languages, such as Modern Hebrew (Borer (1980)). Study of these languages has in general borne out an observation attributed to Richard Kayne that, in Romance, clitic-doubling can only occur if the NP which is doubled is preceded by a preposition. This has been described within the Government-Binding framework by saying that the clitic in some sense absorbs the Case assigned by the verb. Therefore the presence of an
overt nominal will violate the Case filter (which says that each referential nominal must have Case), unless there is some other mechanism for assigning case to that nominal. An overt preposition provides such a mechanism.

However, as Montalbetti (1981) shows, Kayne’s generalization does not hold for a number of languages. Warlpiri is such a language.

In Warlpiri a nominal with almost any -elected function can appear with an agreeing clitic. But, if in fact the clitic does absorb the case assigned by the matrix predicate, there is then no obvious alternative way for the nominal to get Case. Therefore, failing some ingenious alternative case-assignment mechanism, we would have to say that the Warlpiri pronominal clitics, although seemingly analogous to Romance clitics, are in fact rather different. Cross-linguistically, the Warlpiri pattern seems more common. It is clear that a more general account of clitic-doubling is needed to show the similarities between Warlpiri pronominal clitics and Romance clitics.

Montalbetti (1981) has devised a way of accounting for clitic doubling in River Plate Spanish within the LFG framework, in the spirit of the analysis of French clitics given in Grimshaw (1980). The heart of this analysis is that pronominal clitics either have meanings like free pronominals, or else they act as agreement markers. This is expressed within the LFG framework by saying that, while a pronominal clitic always comes with features of person, number and case, it only optionally has a PRED feature equation.

In French, the pronominal clitics are obligatorily full pronouns (i.e. have a PRED feature equation), as Grimshaw (1980) argues, while in River Plate Spanish certain pronominal clitics will only optionally be full pronouns, depending on both the clitic and the features of the nominal being doubled (e.g. whether it refers to an animate being or a specific pronominal etc.). Consistency rules out a clitic which is a full pronominal from co-occurring with an overt nominal, as discussed above. Thus (62) is unacceptable in non-colloquial French.

25. Many Australian Aboriginal, American Indian, and Caucasian languages show similar behaviour. See Harris (1981) for an illuminating description of agreement in Georgian, and Archangeli (1982) for a reanalysis within the LFG framework.
The pronominal clitic *le has a pronominal lexical form ‘PRO’, the overt nominal has its own lexical form ‘Jean’. This violates consistency. Thus, in French clitic-doubling cannot occur, because the clitic is always a full pronominal.

In effect, Montalbetti provides a mechanism for dealing with clitic-doubling in general. His account can easily be extended to pronominal clitics in languages such as Warlpiri and Georgian, in which Kayne’s generalization does not hold, if we assume that pronominal clitics act as pronouns in having the equation (\(\uparrow\text{PRED}\)) = ‘PRO’.

However, I am proposing that in Warlpiri it is not the pronominal clitics but rather the verb which introduces the equations (\(\uparrow\text{G PRED}\)) = ‘PRO’. The optionality of this equation allows the appearance of overt nominals. This account permits a uniform account of the appearance of null pronominals in both finite and non-finite clauses. Under this analysis, the pronominal clitics serve simply as agreement markers. Nevertheless, the account of clitic doubling is based on the optionality of a \(\text{PRED} = \text{PRO}\) equation, which is the basis for the Montalbetti and Grimshaw accounts. Under either a Montalbetti-type account, or this account, the existence of clitic doubling in Warlpiri is easily represented.

2.3 Transitive sentences

Consider a typical transitive sentence such as (63).

26. As for Kayne’s generalization, Montalbetti argues that it can be obtained in River Plate Spanish from independent considerations of animacy and specificity, together with conditions on the lexical entries of accusative and dative clitics. The conditions on the lexical entries make clitic doubling free for dative clitics, but constrain clitic doubling with animacy and specificity requirements for accusative clitics. These are language-particular requirements. Montalbetti (1981) looks at other Romance languages in an attempt to find similar explanations for the appearance of Kayne’s generalization in those languages.
(63) Kurdu-ngku ka-ju nya-nyi ngaju.
    child-ERG PRES-1sg see-NPST I-ABS
    The child sees me.

Like an intransitive sentence, it has completely free word-order, except that the AUX Ka-ju
must remain in second position. There are thus five other possible variants of this
sentence. The phrase structure rule given in (17) will give the c-structure for this sentence.

(64) C-structure 1 for (63)

In discussing the phrase structure rule 17, I assumed that \( \alpha \) could be \( \bar{N}, \bar{V} \) or
Particles. I did not discuss whether \( \bar{V} \) was a maximal projection analogous to VP in
English. In English, a VP consists of V and its complements, including OBJECT.\(^{27}\)
Transitive sentences are pertinent to this question, because there is evidence against the
existence of a VP constituent. Hale (1973a) proposed using the position of the
AUXILIARY as a test for constituency. On the assumption that only one constituent can
precede the AUX, then, if \( \alpha \) in Warlpiri could be a maximal projection of V comparable to
the English VP, the sequence V + NP (where NP is an OBJECT) should be able to
precede the AUX. There should then be a variant of (64) in which \( ngaju \) and \( nya-nyi \)
precede the V together. But they cannot.\(^{28}\)

\(^{27}\) This can be shown by tests such as Do-so replacement: in the following sentence do
so replaces the Verb, the OBJECT and the Location:
    *Lucy kissed Phil in the garden, and Mary did so too.*
\(^{28}\) (65) a. is acceptable with an intonation break and a topicalized reading for the \( ngaju.\)
(65) a. *Ngaju nyanyi ka-ju kurdu-ngku.

b. *Nyanyi ngaju ka-ju kurdu-ngku.

(66)

If there is no syntactic VP in Warlpiri, then SUBJECT cannot be defined in terms of an actual configuration [NP of S], and OBJECT cannot be defined as [NP of VP].

How then are SUBJECT and OBJECT expressed? Is it possible to define them in terms of case-marking? ABSOLUTIVE case marks the SUBJECT of an intransitive sentence, as I showed in the previous section. But in (65), the ABSOLUTIVE case-marked nominal does not correspond to the SUBJECT in the English translation. It corresponds to the OBJECT. The ERGATIVE case-marked nominal corresponds to the SUBJECT. So, it is not possible to say that ABSOLUTIVE case always expresses SUBJECT in Warlpiri, as,

29. Of course one can always add a separate level of representation which contains abstract or virtual VPs in terms of which SUBJECT and OBJECT are defined. But, to be explanatory, such a level requires further justification than just the ability to define grammatical functions configurationally. See Zubizarreta, 1982, and Zubizarreta and Vergnaud, 1982.
say NOMINATIVE case expresses SUBJECT in Latin.30

Evidence from the agreement markers in the AUX supports the claim that the ABSOLUTIVE nominal of intransitive sentences has the same grammatical function as the ERGATIVE nominal of the transitive sentence, rather than having the same grammatical function as the ABSOLUTIVE nominal in the transitive sentence. I showed in the previous section that an ABSOLUTIVE first person singular nominal in an intransitive sentence agreed with a Clitic 1 rna in the AUX. (63) shows an ABSOLUTIVE first person singular nominal in a transitive sentence agreeing with a clitic ju, rather than rna. (67) shows that the ABSOLUTIVE cannot agree with rna in a transitive sentence:

(67) *Ngaju ka-rna nya-nyi kurdu-ngku.
I-ABS PRES-1sg see-NPST child-ERG
The child sees me.

(68) and (69) show that an ERGATIVE first person singular SUBJECT agrees with rna in the AUX, and not with ju:

(68) Ngajulu-rlu ka-rna nya-nyi kurdu.
I-ERG PRE-1sg see-NPST child-ABS
I see the child.

(69) *Ngajulu-rlu ka-ju nya-nyi kurdu.
I-ERG PRES-1sg see-NPST child-ABS.
I see the child.

That is, the same agreement marker rna is used for the ABSOLUTIVE nominal of an intransitive sentence, and the ERGATIVE nominal in a transitive sentence, while a different agreement marker ju is used for the ABSOLUTIVE nominal in a transitive sentence.

30. Unlike Dyrbal, Warlpiri is not a deep-ergative language in which the ABSOLUTIVE-marked nominal is always the SUBJECT.

Surface ERGATIVE case-marking is not the only instance of SUBJECTs bearing different cases. See Mohanan (1982a) for the existence of SUBJECTs with quirky case in Malayalam. See Andrews (1982c), Levin (1981) and Thrainsson (1979) for similar facts in Icelandic. See Neidle (1982) for arguments against postulating SUBJECTs with quirky case in Russian, and also Pesetsky (1982).
sentence. Furthermore, clitics such as ju always follow Clitic 1s such as rna, if both are present. I will call ju and the like Clitic 2s. Hale (1973a) suggested that the simplest account of the AUX agreement in Warlpiri is to say that rna and other Clitic 1s agree with the SUBJECT of the sentence, whereas ju and other Clitic 2s, agree with the OBJECT (and also the Adjunct DATIVE - see 2.3.2.1).

To conclude: SUBJECT and OBJECT are morphologically expressed by case markers. However, the same case – ABSOLUTIVE – can be used for both SUBJECT and OBJECT. Agreement of the pronominal clitics with the ERGATIVE and ABSOLUTIVE case-marked nominals in a sentence argues for the ERGATIVE nominal being the SUBJECT and the ABSOLUTIVE nominal being the OBJECT.\(^{31}\)

I return now to the representation of the pronominal clitics. (70) lacks both an overt OBJECT and an overt SUBJECT.

(70) Nya-nyi ka-ju.
See-NPST PRES-1sg
He/she/it sees me.

If the OBJECT is third person singular, there is no overt pronominal clitic representing it in the AUX.

---

31. In the literature on Australian languages, this split in marking is sometimes described as though the language has two systems of case-marking, NOMINATIVE-ACCUSATIVE (which corresponds to the SUBJECT-OBJECT marking of the AUX), and ERGATIVE-ABSOLUTIVE (which refers to the ERGATIVE case-marking, such as that of nominals in Warlpiri). There is no need to adopt this terminology in Warlpiri. Furthermore, it would be very difficult to express in LFG, because of Consistency. Suppose that an ERGATIVE-marked nominal is registered in the AUX by a NOMINATIVE clitic. The two will have different case-features and thus will violate consistency.

Goddard (1982) also argues against treating split-ERGATIVE systems as though there were two systems of case-marking. He gives an analysis of languages where the split cannot be treated, as in Warlpiri, by assuming that the elements without the ERGATIVE/ABSOLUTIVE case marking are caseless, and indicate grammatical functions.
The man sees the child.

Just as a non-third person SUBJECT has to be registered, so a non-third person OBJECT has to be registered in the AUX. (72) is ungrammatical because the first person OBJECT is not registered:

(72) *Nya-nyi ka ngaju kurdu-ngku.
See-NPST PRES I-ABS child-ERG.
The child sees me.

If the absence of an OBJECT is interpreted as a paradigmatic gap, understood as third person singular, (72) is ruled out by Consistency.

A third person singular OBJECT need not be represented by an overt OBJECT.

For the f-structure corresponding to this sentence to be complete, a null pronominal OBJECT must be provided. Since the OBJECT is a selected grammatical function, the verb carries the optional equation (↑OBJ PRED) = 'PRO', just as it carries the optional equation (↑SUBJ PRED) = 'PRO'.

To sum up this discussion of transitive sentences: transitive sentences behave like intransitive sentences with respect to their freedom of word-order, and the second position of the AUX. There is no evidence for a syntactic VP constituent. Therefore the grammatical functions cannot be defined in terms of a surface-structure VP. Transitive verbs can introduce null pronominals for their OBJECTs, just as verbs can introduce null pronominal SUBJECTs.

I will now present the evidence for saying that a given argument is an OBJECT, rather than an OBLIQUE. Unfortunately I have found only one test (explored in Carrier
(1976)), and it is not wholly reliable. This test involves the ability of an argument to control a particular type of non-finite clause marked with the complementizer suffix *kurra*. The simplest statement about the controller of a *kurra* clause appears to be that it is an **OBJECT**.33

(74) shows a sentence with a *kurra* complementizer:

(74) Kurdu-ngku ka karnta nya-nyi, [ngurlu yurrpa-rninjakurra]
child-ERG PRES woman-ABS see-NPST seed-ABS grind-INF-OCOMP
The child sees the woman grinding mulga seed.

(*OCOMP* stands for 'OBJECT-controlled complementizer')

*Karnta* ‘woman’ is the **OBJECT** of the verb *nyanyi* ‘to see’. It is the controller of the clause headed by *yurrparninjakurra*. *Kurdu-ngku*, ‘the child’, could not possibly be the controller of the clause.34

That **ABSOLUTIVE** case is not what determines control is shown in the following example:

(75) *Ngarrka ka-rla yuraka-nyi, marlu-ku [kuyu
Man-ABS PRES-DAT sneak.up.on-NPST kangaroo-DAT meat-ABS
nga-rninjakurra]
eat-INF-OCOMP
While eating meat, the man is sneaking up on the kangaroo. [adapted from example in Survey]

32. From some preliminary work I did in 1982, it appears that some speakers allow *kurra* complements to modify more than just **OBJECTS**.

33. This proposal was made by Hale in a mimeo "Walbiri IV: Obviation", and elaborated on by him in Hale (1982b), as well as in Carrier (1976). See also Simpson and Bresnan (1982). Hale writes: "The controller of a *kurra*-clause must, it seems, be an **OBJECT which is an integral part of the lexical argument structure of the main-clause verb." [EFW: 108]

34. There is a use of *kurra* as a complementizer on a **SUBJECT-controlled** clause – however, in this case the tense reference of the clause is not ‘simultaneous action’, as in (75), but rather ‘future action, purposive’. See Chapter 6.
In (75) the ABSOLUTIVE marked nominal is the SUBJECT, and it cannot control the kurra clause. (76) shows that a LOCATIVE argument cannot control a kurra clause.

(76) *Japanangka ka nyina-mi pirli-ngka pata-karri-nja-kurra.
    Japanangka-ABS PRES sit-NPST stone-LOC fall-INF-OCOMP
    Japanangka is sitting on the stone that is falling. [Carrier: 1976]

In 2.3.1.3 and 2.3.2. I will show that DATIVE arguments which are not OBJECTs, and ABSOLUTIVE OBJECT 2s apparently cannot control kurra clauses. Chapter 6 presents in greater detail the obviation system of which the kurra clause is a representative.

The next question is how to express in LFG the fact that the SUBJECT of an intransitive verb such as parnkami ‘run’ has ABSOLUTIVE case, while the SUBJECT of a transitive verb such as nyanyi ‘see’ has ERGATIVE case. The key problem is that it is not possible to assign case in isolation. The fact that a verb is subcategorized for an OBJECT is relevant to determining the case of the SUBJECT.

The information that a sentence has an OBJECT is expressed in two places – in the lexical entry of the matrix predicate, and in the annotated c-structure tree (and hence in the functional structure of the sentence). Case assignment can therefore be represented either as a filter on f-structures (ruling out f-structures in which the SUBJECT’s CASE is ABSOLUTIVE when the OBJECT’s CASE is ABSOLUTIVE), or it can be expressed as a redundancy rule in the lexicon, since the lexical entry of a predicate gives information on both the semantic role and the grammatical function associated with each argument.

Andrews (1982) explores the possibility that case-assignment is a filter on f-structures. I take the opposite approach, and say that the information about the case of grammatical functions selected by a predicate is expressed as part of the lexical entry for that predicate. I do this for two reasons. First, allowing case-assignment to operate in the lexicon gives us the possibility of relating cases and semantic relationships, and such a relationship seems desirable, since the case which an argument has is determined both by its grammatical function and by its semantic role. As Hale (EFW) shows, case-marking of SUBJECT and OBJECT is largely predictable from the lexical semantics and
subcategorization properties of the verb. Thus, the Subject of a two-place predicate is ERGATIVE if it has the semantic role of Actor or Perceiver, and ABSOLUTIVE if it has a non-Actor, non-Perceiver role such as Experiencer; the SUBJECT of a one-place verb is ABSOLUTIVE (but a small regular subclass takes ERGATIVE – see Hale (EFW)). A directly affected OBJECT usually has ABSOLUTIVE case, while a Goal, or intensional object has DATIVE case.

Second, in non-finite clauses with controlled PRO SUBJECTS that are never realized overtly, an ADJUNCT modifying the PRO SUBJECT can agree with it in case. (This is discussed and illustrated in Chapter 6). Allowing the lexical entry of the argument-taking predicate to express the case of the SUBJECT makes it relatively simple to account for the ADJUNCT’s case on the assumption that the PRO SUBJECT has case.

Let us consider first the assignment of case to the SUBJECT of an intransitive verb, such as parnkami ‘to run’. Recall the dictionary definition given earlier.

X moves rapidly along a path beginning at one place and ending at another place.

A general case-linking rule assigns ABSOLUTIVE case to a SUBJECT linked with the X argument of a verb of motion. (Another general case-linking rule allows Path, and the beginning and ending places to be optionally expressed as oblique-case-marked nominals — PERLATIVE for the path; and ELATIVE and ALLATIVE for the beginning and ending places). The information that the SUBJECT has ABSOLUTIVE case is expressed in the lexical entry for the verb parnkami as follows:

35. That case is not wholly predictable is shown by pairs such as kanginy-karrimi and kanginy-pinyi. Both mean approximately ‘fail to recognize’. Kanginy is a preverb. Kanginy-karrimi, formed with the intransitive verb karrimi ‘stand’, takes an ABSOLUTIVE SUBJECT and a DATIVE OBJECT, while kanginyi-pinyi, formed with the transitive verb pinyi ‘hit’, takes an ERGATIVE SUBJECT and an ABSOLUTIVE OBJECT. (For this example, however, it could be argued that the complex verbs retain the case-frame of the simple verbs karrimi and pinyi).
A transitive verb such as *nyanyi* 'see' will have the following lexical entry:

\[
\text{*nyanyi*: } \begin{array}{ll}
\text{V} & \langle\text{SUBJ}\rangle \langle\text{OBJ}\rangle \\
\text{see-er} & \text{thing seen} \\
((\uparrow\text{SUBJ PRED}) = 'PRO') & ((\uparrow\text{OBJ PRED}) = 'PRO') \\
(\uparrow\text{SUBJ CASE}) = \text{ERG} & (\uparrow\text{OBJ CASE}) = \text{ABS}
\end{array}
\]

These equations are defining equations (see 2.2.6.2). They introduce the information about CASE. They do not require that the information about CASE be present in some other form (as, say, constraint equations would.)

I assume that, in Warlpiri, lexical rules assign case to particular combinations of grammatical functions and semantic roles. These rules operate after other lexical rules, such as the diathetical Conative rule (see 2.3.1.2).

In the next section I will discuss other case-arrays for transitive verbs.

2.3.1 Other transitives

There are two other possible case-frames for transitive verbs, ABSOLUTIVE SUBJECT and DATIVE OBJECT (which is very common), and ERGATIVE SUBJECT and DATIVE OBJECT (which is restricted to a small class of verbs with intensional OBJECTs such as *seek*, and to verbs that have undergone the Conative diathetical rule – see

\[\text{36. Languages may have different ways of assigning and also checking case. For instance, B. Levin (to appear, and in preparation) shows that case assignment in Basque depends on underlying grammatical functions, not on surface grammatical relations. In Russian, the presence of an OBJECT with GENITIVE case is sanctioned by the presence of negation. (See Neidle, 1982a, and Pesetsky, 1982). In Lithuanian, it appears that the OBJECT of certain purpose clauses can have DATIVE case.}\]
2.3.1.2) The reader is referred to Hale (EFW) for a detailed account of their semantics.

2.3.1.1 The ABSOLUTIVE-DATIVE case-frame

The ABSOLUTIVE-DATIVE verbs include verbs of communication such as wangkami ‘speak’, verbs of emotion such as yulkami ‘love’, numerous verbs formed with the INCHOATIVE (INCH) verbalizer jarrimi, such as nguriju-jarrimi ‘become good (towards)’, and some verbs which, although they have volitional SUBJECTs, do not involve any noticeable effect on the OBJECT, such as rdanparni ‘accompany’, and yura-kanyi ‘stalk, sneak up on’. In other words, the verbs making up the ABSOLUTIVE-DATIVE class do not constitute the archetypical Agent-Patient transitive verbs.

(77) Karnta ka-rla kurdu-ku wangka-mi.
Woman-ABS PRES-DAT child-DAT speak-NPST.
The woman is speaking to the child. [Survey]

In (77) the DATIVE argument kurdu-ku is cross-referenced by rla, rather than by Ø, (the paradigmatic gap which is interpreted as 3rd person ABSOLUTIVE OBJECT). Rla is a special form for the third person DATIVE. All other persons and numbers are registered by Clitic 2s, for example, first person (singular or non-singular), as in (78), second person (singular or non-singular), as in (79), and third person non-singular, as in (80) – I have given an example of an ABSOLUTIVE-DATIVE construction with a non-singular 3rd person OBJECT for comparison in (81).

(78) Karnta ka-ju wangka-mi.
Woman-ABS PRES-1sg speak-NPST
The woman is speaking to me.

(79) Ngaju ka-ma-ngku wangka-mi.
I-ABS PRES-1sg-2sg speak-NPST
I am speaking to you.

(80) Karnta ka-jana kurdu-patu-ku wangka-mi.
Woman-ABS PRES-3pl child-PL-DAT talk-NPST
The woman is talking to the children. [Survey]

(81) Karnta-ngku ka-jana kurdu-patu paka-rni.
Woman-ERG PRES-3pl child-PL-ABS hit-NPST
The woman is hitting the children. [Survey]

What is the status of the DATIVE – is it an OBJECT or an OBLIQUE? Some evidence comes from the control of kurra clauses:

(82) Ngarrka ka-rla marlu-ku yura-ka-nyi, [marna
Man-ABS PRES-DAT kangaroo-DAT stalk-NPST, grass-ABS
nga-rinja-kurra-ku.]
eat-INF-OCOMP-DAT
The man is stalking the kangaroo (while it is) eating grass. [EFW: 107]

In (82), the DATIVE marlu-ku is the controller of the kurra clause. (Note that the kurra clause gets DATIVE in agreement with the case of its controller). On the assumption that kurra clauses are controlled by OBJECTs, the DATIVE in (82) is probably an OBJECT.

Some ABSOLUTIVE-DATIVE verbs require that the DATIVE OBJECT be present. These include verbs such as yulkami ‘love’, rdanparni ‘accompany’ and yura-kanyi ‘sneak up on’. But the DATIVE OBJECT of most ABSOLUTIVE-DATIVE verbs is optional. It can be omitted without the implication that there is an understood definite referent. Thus in (83) there is no understood definite person being spoken to. There is no DATIVE registered in the AUX, and hence no DATIVE OBJECT. This contrasts with ERGATIVE-ABSOLUTIVE verbs, in which a missing ABSOLUTIVE is interpreted as third person definite. However, in (84), in which a DATIVE is registered in the AUX, there is a DATIVE OBJECT, and hence an understood definite referent.

(83) a. Wakurturdu ka wangka-mi.
Loud-ABS PRES speak-NPST.
He’s talking loud. [wangkami]

(84) b. Yapa-kari ka-rla ngarrka wangka-mi(..)
person-OTHER-ABS PRES-DAT man-ABS speak-NPST
Some man is talking to her.
Whether the DATIVE argument is optional or obligatory, it is still treated as an OBJECT for the purposes of controlling a kurra clause:

(84) Karnta ka-rla wangka-mi ngarrka-ku [karli 
woman-ABS PRES-DAT speak-NPST man-DAT boomerang-ABS 
jarnti-rninja-kurra-(ku)].
trim-INF-OCOMP-(DAT)
The woman is speaking to the man trimming the boomerang. [EFW: 107]

(The DATIVE marking is optional).

This example suggests that, when the DATIVE is present, it really is an OBJECT.

The syntactic difference between the ABSOLUTIVE DATIVE verbs and the ERGATIVE ABSOLUTIVE verbs reflects a semantic difference. One lexical rule of case-assignment assigns ERGATIVE case to a certain pairing of a semantic role and the SUBJECT grammatical function. Another lexical rule assigns ABSOLUTIVE case to the pairing of a different semantic role and the SUBJECT grammatical function, (perhaps of Experiencer and SUBJECT, or Actor if there is no OBJECT assigned.)

The ABSOLUTIVE-DATIVE class of verbs is sometimes called middle, and is not considered transitive in some grammars of other Australian languages. Hale [EFW] notes that, in Warlpiri, the class differs from ERGATIVE-ABSOLUTIVE verbs in three significant ways: first, they belong with a few exceptions to the conjugation class associated with intransitive verbs; second, the SUBJECTs of these sentences do not have the archetypical transitive SUBJECT semantic role of "Agent" or "Causer"; third, the DATIVE OBJECT is optional for most of the verbs. This is in direct contrast with the ERGATIVE-ABSOLUTIVE transitive verbs, which do not for the most part allow indefinite-OBJECT deletion, except

37. The verb pardarni and synonyms meaning 'wait for' is exceptional. It takes an ABSOLUTIVE SUBJECT and a DATIVE OBJECT.

Wati ka-rla karnta-ku pardarni.
Man-ABS PRES-DAT woman-DAT wait-NPST
The man is waiting for the woman. [pardarni]

However, the DATIVE OBJECT does not normally control a kurra clause. See Chapter 6 for some discussion.
in highly-marked generic contexts.\textsuperscript{38} If there is no overt ABSOLUTIVE OBJECT, and no overt registration in the AUX, then the OBJECT is normally interpreted as third person definite (and usually singular).

However, I see no reason in Warlpiri to say that the DATIVE taken by these verbs is anything but an OBJECT.\textsuperscript{39} It patterns syntactically with ABSOLUTIVE OBJECTs (and also, as I shall show, with the DATIVE OBJECTs of verbs with ERGATIVE-DATIVE case-frames) in being able to control \textit{kurra} clauses. In doing so, the DATIVE OBJECT of an ABSOLUTIVE-DATIVE verb is set apart from another DATIVE, the Adjunct DATIVE (see 2.3.2).

\textsuperscript{38} According to Hale (EFW), the normal way to express something like \textit{I am drinking} is to use an indefinite nominal:

\begin{verbatim}
Ngajulu-rlu ka-rna pama nga-rni.
\end{verbatim}

I-ERG PRES-1sg delicacy-ABS ingest-NPST

I am drinking. [Hale, EFW: 31]

Verbs of performance are an exception. They take ERGATIVE SUBJECTs, and retain this Case even when the OBJECT is deleted.

\begin{verbatim}
Ngarrka-ngku ka (purlapa) yunpa-rni.
\end{verbatim}

Man-ERC PRES (corroboree-ABS) sing-NPST

The man is singing (a corroboree).

The equivalent verbs in English have the same property – a verb such as \textit{sing} can, but need not, have an OBJECT:

\begin{verbatim}
I sang five songs including Greensleeves
\end{verbatim}

However, the sentence \textit{I sang} does not imply that I sang a song; since one can sing wordlessly and tunelessly.

\textsuperscript{39} Andrews (1982) takes a different position. He argues that all ABSOLUTIVE OBJECTs are OBJECTs, and DATIVEs are either indirect objects (OBJECT 2s), or Adjunct DATIVEs. At various points in the discussion I will compare Andrews' analysis to mine. Calling the DATIVEs Indirect Objects makes it easier to describe the agreement with pronominal clitics. However, it complicates the account of \textit{kurra} clauses, because now both OBJECTs and OBJECT 2s can control them, and this makes the wrong prediction for ditransitives, as I show in 2.3.1.3.
I propose that the fact that most ABSOLUTIVE-DATIVE verbs correspond to one-place verbs with ABSOLUTIVE SUBJECTs should be treated as a semantic redundancy rule. Semantically the difference between the one-place verb in (82) and the two-place verb in (83) parallels the difference in English between *speak* and *speak to*, and *laugh* and *laugh at*.

(85) a. John spoke loudly.
    b. John spoke to Lucy.
    c. Never before had Lucy been spoken to so oddly.

(86) a. Lucy laughed loudly.
    b. Lucy laughed at John.
    c. Never before had John been laughed at.

As I argued in 1.3.2, the alternation between *speak* and *speak to* is simply a semantic redundancy rule relating two predicate argument structures. The two verbs *wangkami* can be treated analogously. As a one-place predicate, *wangkami* represents an undirected process, meaning something like make noise characteristic of type, e.g. *siŋ*, for birds, *speak* for humans, *howl* for wind. As a two-place predicate, *wangkami* represents a directed process.

\[
\begin{align*}
\text{*wangkami*} & \quad \text{noise-maker} \\
& \quad \langle \text{SUBJ} \rangle \\
\text{*wangkami-DAT*} & \quad \text{talker} \quad \text{entity talked to} \\
& \quad \langle \text{SUBJ} \rangle \quad \langle \text{OBJ} \rangle
\end{align*}
\]

This semantic redundancy rule merges an abstract directional predicate, (which can be expressed syntactically by a case-suffix such as DATIVE or ALLATIVE: X directed towards Y), with the predicate of a verb which represents an undirected process. The new predicate then represents a directed process. Y, the argument of the directional predicate, becomes an argument of the new predicate.
For the English example, I presented Bresnan's argument that in fact the semantic role *entity talked to* (or *thing laughed at*) has two possible function assignments, OBLIQUE$^{air}$ or OBJECT. The natural question to ask, then, is: does this alternation exist in Warlpiri? There is some evidence that it does.

The first piece of evidence comes from the fact that the *entity talked to* need not have DATIVE case, and when it does not have DATIVE case it is almost certainly not an OBJECT. Occasionally the ALLATIVE is used to express the semantic role of the *entity talked to*. (See Hale, EFW). Semantically, this is not surprising, since the semantic relationship to *wangkami* entails some directionality and while ALLATIVE is the archetypical directional case, the DATIVE case also involves an element of directionality.

(87) (..)nyampu-kurra + Iku kuja-ka-rna wangka-mi walypali-kirra
this-ALL + THEN HEL-PRES-1sg say-NPST white.man-ALL
ngula pina.
that knowledgeable
(....) and when I speak to this white-man, it is with knowledge (that what I am saying is true.) [EFW]

Observe that the ALLATIVE is not cross-registered in the AUX. This suggests that the ALLATIVE is an OBLIQUE argument and not an OBJECT. There is no evidence that an ALLATIVE can ever control a kurra clause. (Further investigation of other ABSOLUTIVE-DATIVE verbs is needed to see if they also allow an alternation between DATIVE case and some other case.)

The second piece of evidence that verbs such as *wangkami* can take either an OBJECT or an OBLIQUE argument comes from the fact that sometimes such verbs allow an alternation between a registered DATIVE and an unregistered DATIVE. Consider the verb *minyingi-jarrimi* 'get disappointed, declined'. It can have a registered or unregistered DATIVE, as (88) shows.

40. Mary Laughren pointed out to me a rare example of a cross-registered ALLATIVE.

(89) Yurlkulyu-pardimi-ja -ju ngaju-kurra
vomit-rise-PAST -1sg I-ALL
He vomited on me. [yurlkulyu-pardimi]
In (88) the inanimate DATIVEs *kuyu-rlangu-ku*, *karli-rlangu-ku* etc are unregistered. In the following example the DATIVE argument, *malypakarra-ku*, is registered.

(89) Ngatinyanu + ju -rla wangka-ja, wangka-ja. Minyingi-jarri-ja
Mother-ABS + EUPH -DAT speak-PAST, speak-PAST ignore-INCH-PAST
-rla malypakarra-ku.
-DAT sonnyboy-DAT
The mother pleaded and pleaded, but she was ignored by the little boy. [minyingi-jarrimi]

The two DATIVE arguments appear to differ primarily in animacy, not in semantic role. I assume that, in both sentences, the DATIVE represents an argument of the verb. Suppose that in (88), the DATIVE is an OBLIQUE of some sort, whereas in (89) the DATIVE is an OBJECT. Now, if DATIVES which are not registered in the AUX are OBLIVES, we would then expect that such DATIVES could not control *kurra* complement clauses. There is a small piece of evidence that this is the case. Laughren notes that the b. sentences of (90) and (91), which have registered DATIVES, are more acceptable than their a. counterparts, which do not have registered DATIVES.

(90) a. ??Nyampu + ju wati ka nyina papardi
This-ABS + EUPH man-ABS PRES sit-NPST elder.brother-ABS
karnta-ku [miyi kipi-rninja-kurra-ku.]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

b. Nyampu + ju wati ka-rla nyina papardi
This-ABS + EUPH man-ABS PRES-DAT sit-NPST elder.brother-ABS

41. Data sent to D. Nash, April 1981.
karnta-ku [miyi kipi-rinja-kurra-ku.]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

(91) a. ?Kurdu ka karri-mi wiri ngarrka-ku [rdaku-ngka
Child-ABS PRES stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole.

b. Kurdu ka-rla karri-mi wiri ngarrka-ku [rdaku-ngka
Child-ABS PRES-DAT stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole.

More work needs to be done on this area, but the evidence available so far suggests that unregistered DATIVEs are not really eligible as controllers of kurra clauses. This is readily explicable if they are not in fact OBJECTs of the verb at all, but rather OBLIQUES of some kind, (where there is an alternation between OBLIQUE and OBJECT), or else ADJUNCTS.

The evidence given above suggests that verbs such as wangkami ‘speak’ when used as two-place predicates have the option of expressing the non-SUBJECT argument either as a DATIVE OBJECT, or as an OBLIQUE\_dir with an appropriate case. I propose that these two forms are related by a relation-changing rule similar to the Verb-preposition incorporation rule in English which relates the OBLIQUE prepositional frame of laugh at and the OBJECT frame of laugh at. However, in Warlpiri, there are no prepositions to
I give below the lexical entries for the two function assignments for \textit{wangkami}:

\begin{tabular}{ll}
\textit{wangkami} & talker \\
\ & entity talked to \\
\ & \langle\textsc{subj}\rangle \\
& (\textsc{oblique}_{direct}) \\
& \textsc{absolutive} \\
& \textsc{dative}, \textsc{allative}
\end{tabular}

\begin{tabular}{ll}
\textit{wangkami} & talker \\
\ & entity talked to \\
\ & \langle\textsc{subj}\rangle \\
& (\textsc{obj}) \\
& \textsc{absolutive} \\
& \textsc{dative}
\end{tabular}

To conclude, I have shown that verbs with \textsc{absolutive-dative} case-frames behave like transitive verbs with \textsc{ergative-absolutive} frames in controlling \textit{kurra} clauses, and in having the \textsc{dative} argument registered in the AUX. I have suggested that the fact that the \textsc{dative} argument is not obligatory can be attributed to an alternation between a one-place predicate and a two-place predicate, analogous to the alternation in English between \textit{laugh} and \textit{laugh at}. I have suggested that the parallel is even closer, in that Warlpiri, like English, also has an alternation of grammatical function assignment to the \textsc{dative} argument, of \textsc{oblique}_{dir}, or \textsc{object}.

42. One might want to speculate that the obligatoriness of the \textsc{dative} case when the directional argument is an \textsc{object} is due to the \textsc{dative} predicate represented by \textsc{dative} case being incorporated into the verb in a manner analogous to Verb-preposition incorporation. This has the advantage of linking the syntactic use of \textsc{dative} as an argument-taking predicate with its case-marking use. When \textsc{dative} is an \textsc{adjunct}, its \textsc{pred} is an argument-taking predicate which is syntactically relevant. When \textsc{dative} marks an \textsc{object}, its directional meaning has been incorporated as part of a complex verb.

However, there is no morphological evidence for the \textsc{dative-incorporation} rule, in contrast to English, in which verb-preposition incorporation interacts with the morphology, allowing the formation of complex adjectivals such as \textit{It was an unheard-of proposal}; \textit{it was a much talked-about proposal}. (See Bresnan (1980b)). But the only trace of the \textsc{dative} incorporation rule in Warlpiri is the \textit{grammatical} case-marking on the nominal.
A note of caution is in order. I have claimed that kurra clauses are controlled by OBJECTs, including the DATIVE OBJECTs of ABSOLUTIVE verbs. This means that I must take a rather liberal view of what is an OBJECT. Although, as I will show in 2.3.2.2, there are DATIVE arguments registered in the AUX which cannot take kurra, most directional-type DATIVE arguments of ABSOLUTIVE verbs can take kurra clauses. I must claim that the promotion to OBJECT is a process more widespread in Warlpiri than in, say, English.

2.3.1.2 The ERGATIVE-DATIVE verbs

There are two types of verb with ERGATIVE-DATIVE case-frames, those that always have ERGATIVE-DATIVE case-frames, and those that also have an ERGATIVE-ABSOLUTIVE case-frame.

The first class is very small, consisting mainly of verbs of seeking, that is, verbs whose OBJECTs not only are unaffected by the action of the verb, but also do not have to exist at all. (See Hale, EFW). Consider the sentence She sought a unicorn. A unicorn does not have to exist to be looked for. I illustrate the Warlpiri construction below.

(92) Ngarrka-ngku ka-rla karli-ki warri-rni.
Man-ERG PRES-DAT boomerang-DAT look for-NPST.
A man is looking for a boomerang. [EFW. 44(a)]

The DATIVE in an ERGATIVE-DATIVE construction can control a kurra clause, which I take to be evidence that these DATIVEs are OBJECTs, just as the DATIVEs with ABSOLUTIVE SUBJECTs are OBJECTs.

(93) Kurdu-ku kapu-rna-rla warri-rninj-i-ni [pirnki-ngka
Child-DAT FUT-1sg-DAT seek-INF-LATIVE-NPST cave-LOC
warru-wapa-nja-kurra-ku.]
around-go-INF-OCOMP-DAT
I’ll go and look for the child while he’s walking around in the cave. [Data sent by Mary Laughren to K. Hale, May 1976.]
Exactly the same pattern of agreement is observed as with the ABSOLUTIVE-DATIVE verb: Clitic 2s agree with the DATIVE, and Clitic 1s agree with the ERGATIVE. Third person singular DATIVEs have to be registered by rla in the AUX. The SUBJECTs and OBJECTs of these verbs need not be overt.

The verbs which can have either ERGATIVE DATIVE or ERGATIVE ABSOLUTIVE case arrays, fall into two types. As well, the presence of certain preverbs may determine the choice of the ERGATIVE-DATIVE frame. The first type consists of a small class of verbs which are semantically similar to the verbs with intensional objects just described. The second type represents a productive alternation, which I will call the CONATIVE or attempted action rule. Interestingly, the operation of this lexical rule is signalled in the AUXILIARY.

The first type consists of verbs which can mean either an act of doing something to X, or an act of doing something in search of X. For example, the verb *nyanyi* can mean either 'to see', as in (94), or 'to look for', as in (95). Similarly, *pangirni* means 'to dig', as in (96), or 'to dig for', as in (97) and (98).

(94) *Pirli yali ka-npa nya-nyi kuja-ka wanta-ngku*
rock-ABS that.rem PRES-2sg see-NPST REL-PRES sun-ERG
kankarlarru-langurlu panti-rni (..)?
above-EL spear-NPST
Can you see the sun where it is shining from above that hill? [pantirni]

(95) *Nyampu ka-rna-rla warru-nya-nyi watiya-ku, yungu-rna*
Here PRES.lsg-OAT around-see-NPST tree-DAT REAS-lsg
rdilykirdilyki-paka-rni.
break-hit-NPST
I'm looking around here for a tree to chop up. [nyanyi]

(96) *Kuja-ka-lu yangka rdaku-rlangu pangirni, yapa-ngku, REL-PRES-3pl the hole-E.G.-ABS dig-NPST person-ERG
ngula -ka-lu, piki-ngki paka-rni.*
that -PRES-3pl pick-ERG hit-NPST
When people dig holes for example, they pierce it (the ground) with a pick. [pakarni]

(97) *Pangu-rnu -lpa-lu-rla milpirnpa-rla wanna-ku.*
dig-PAST -PAST-3pl-DAT burrow-LOC snake-DAT
They dug in the burrow for the snake. [milpirnpa]

loose.earth-LOC -DAT dig-IMP dirt-LOC under water-DAT.
Dig for the water in the loose earth below the surface. [milyi]

In each instance, the DATIVE is registered in the AUX.

Unlike the ABSOLUTIVE-DATIVE verbs, the ERGATIVE-DATIVE verbs do not have alternant forms consisting of just an ERGATIVE SUBJECT. If there is no overt OBJECT, and no overt registration in the AUX, the OBJECT is interpreted as third person definite (and usually singular). This suggests that the alternations are different in nature. Whereas the ABSOLUTIVE-DATIVE alternation involves an alternation between a one-place predicate and a two-place predicate, with DATIVE being assigned to the additional argument, the ERGATIVE-DATIVE/ABSOLUTIVE alternation for a verb like nyanyi represents an alternation between two argument-taking predicates, one with an object of perception which is attained, and the other with a object of perception, which is not necessarily attained. Similarly, the two case-arrays for pangirni are related in much the same way as the entries for dig up and dig for are in English. That is, the alternation is between two lexical entries which differ in meaning. In the dig up predicate, the digger directly affects the thing dug (by digging it up). In the dig for predicate, the digger does not directly affect anything because he need not necessarily find anything.

2.3.1.2.1 The Conative

Certain classes of ERGATIVE-ABSOLUTIVE verbs (mostly verbs of contact) have an alternative case-array in which the nominal marked ABSOLUTIVE is marked DATIVE instead. Hale (EFW) gives a detailed account of this alternation, calling it the Conative, a term taken from Athapaskan linguistics. Semantically, the alternation resembles the English43 alternation between verbs of contact with and without the preposition at.

43. The Conative in Warlpiri also resembles a similar alternation in Finnish, in which the PARTITIVE case is used on OBJECTS instead of ACCUSATIVE for the Attempted Action meaning. See Carlson (1979).
(99)  I kicked at/pushed at/shoved at/pulled at/punched at/shot at the door.

I kicked/pushed/shoved/pulled/punched the door.

The forms without at presuppose achieved contact. The forms with at do not presuppose achieved contact.

(100) I shot John.  

entails: John is hit by a missile.

(101) I shot at John.  

does not entail: John is hit by a missile.

The same is true of the Warlpiri counterpart:

(102) Ngarrka-ngku ka marlu luwa-rni.
     Man-ERG PRES kangaroo-ABS shoot-NPST
     A man shoots the kangaroo.

In (102) a missile must touch the kangaroo for the sentence to be appropriate. But in (103), no missile need touch the kangaroo — only the attempt to shoot is described in the sentence. (104) is a parallel example.

(103) Ngarrka-ngku ka-ria-jinta marlu-ku luwa-rni.
     Man-ERG PRES-CON-DAT kangaroo-DAT shoot-NPST
     The man is shooting at the kangaroo.

(104) Maliki-ki -ria-jinta paka-rnu watiya-rlu wirriya-pardu-rlu
     dog-DAT -CON-DAT hit-PAST stick-ERG boy-DIM-ERG
     The little boy tried to hit the dog with a stick. [pakarni]

The rule is not a relation-changing rule. Unlike the alternation of DATIVE OBJECT and DATIVE OBLIQUE that I described for ABSOLUTIVE DATIVE verbs, the Conative alternation does NOT change an OBJECT into an at OBJECT in English, or into a DATIVE in Warlpiri. There are two reasons. First, as I suggested in 1.3.2, relation-changing rules do not change meaning so radically. If the Conative rule were just a relation-changing rule, nothing would lead us to expect the entailment differences given above. Second, there is no alternation in function. The at-OBJ in English is an OBJECT, and so is the
DATIVE in Warlpiri. The at-OBJ in English is an OBJECT because it can undergo PASSIVE:

(105) John was shot at.

Similarly, the DATIVE in Warlpiri is an OBJECT, because it can control kurra clauses.

(106) Ngarrka-ngku -ria-jinta marlu-ku pantu-rnu, marna
Man-ERG. CON-DAT kangaroo-DAT spear-PAST, grass-ABS
nga-rninjka-kurra-ku.
eat-INF-OCOMP-DAT
The man speared at the kangaroo (while it was) eating grass. [EFW: 294]

In Warlpiri, there is no evidence that the Conative DATIVE is ever anything but an OBJECT. The evidence for the OBLIQUE/Object alternation with ABSOLUTIVE-DATIVE verbs was that the DATIVE did not have to be registered, and, furthermore, the argument did not even have to have DATIVE case. In the Conative construction, the DATIVE argument is always registered, and there is no alternative case-marking possible, such as ALLATIVE.

It is actually quite hard to formulate a semantic redundancy rule to express the semantic difference between the Attempted and Achieved Action verbs. At first glance the solution appears to be to add a component: X TRY. Thus, shoot at would be X TRY (X SHOOT Y). However, this cannot be correct, because the semantic component try focusses on the SUBJECT, whereas the outward morphological change representing the addition of this component focusses on the OBJECT: in English by the use of the preposition at for the OBJECT, in Warlpiri by the use of DATIVE case instead of ABSOLUTIVE case on the OBJECT, and in Finnish by the use of PARTITIVE case on the

It might be possible to argue that in English the at-OBJECT alternates between an OBLIQUE and an OBJECT, using the same arguments that Bresnan (1980a) proposed for the laugh/laugh at alternation. Marginally, the at-OBJECT can have the properties of a PP rather than of a complex verb, and so can undergo clefting and adverb insertion.

?It was at the prisoners that they shot.
?Where is the man they shot so often at?
OBJECT instead of ACCUSATIVE case.

Perhaps the solution lies, as Hale suggested to me, in the definition of the verbs that take the Conative. They consist mainly of verbs of contact. Contact implies both affecting (the thing that is affected), and motion (motion of the affecting Agent). The OBJECT is at once Goal of motion and Thing Affected. If these two semantic relationships are split up, and the OBJECT function is linked to just one of these relationships, it must be the Goal, because, while affecting entails motion, motion does not entail affecting. But arguments which are linked to the semantic role: Goals of motion, and to the grammatical function OBJECT, are normally associated with DATIVE case, not with ABSOLUTIVE. Therefore it is appropriate to assign DATIVE case to the OBJECT.

Let us now turn to another interesting property of the Conative alternation. Observe that in (106) the registration in the AUX for verbs with Conative case arrays is rla-jinta not rla. The clitic sequence rla{jinta is normally used if a verb has two DATIVE arguments. Observe what happens if the OBJECT is not third person singular, as in (107).

(107) Kurdu-ngku ka-ju-rla ngaju-ku paka-rni.
    Child-ERG PRES-1sg-CON I-DAT hit-NPST
    The child is hitting at me. [EFW: 249]

The DATIVE OBJECT is first person singular, and is registered by ju. But the clitic rla also appears, although there is no third person DATIVE argument in (107). That is, if the Conative alternation is present, the OBJECT is represented by two pronominal clitics, rather than one.45 This is an interesting case of discontinuous expressions providing the

45. Pragmatically, the double registration of the Conative in the AUX reduces ambiguity. If the DATIVE OBJECT were registered with just rla, the sentence would be ambiguous: The child hits at me; The child hits me for him/on account of him.

However, observe that this double registration is not present for the ABSOLUTIVE/DATIVE OBJECT alternation of verbs such as nyanyi. A sentence such as the one below is amL'juous.

Nyampu ka-rna-rla warru-nya-nyi (..)
Here PRES-1sg-DAT around-see-NPST
I'm looking around here for it.
I'm looking around at it on behalf of him.
same information. Both the AUX and the lexical entry of the verb reflect the choice of the
Conative or Attempted Action case-array.

The common denominator in both (106) and (107) is the clitic rla. Suppose that,
while normally the clitic rla indicates a third person DATIVE argument, it can optionally
signal that the verb has the Conative case-array. This can be expressed by saying that rla
optionally has some feature referring to the Attempted Action rule, rather than equations
of person and number. Some way of expressing the dependency between the verb and
the AUX is required. We cannot stipulate in the lexical entry of verbs with the Conative
alternation that rla be present, because rla is a morpheme, not a function or a functional
feature. But LFG does provide a way of describing long-distance dependencies by means
of constraint equations (see 2.2.6.2), which refer to features. If a plausible
sentence-feature can be found to attach to rla, then the requirement for the double
registration can be expressed by placing a constraint equation in the Conative verb's
lexical entry which demands the presence of the feature attached to rla.

Clearly, features should not be postulated without good motivation. Therefore it is
desirable to find evidence in other languages for some appropriate feature that could
encompass attempted action. My guess is that the right feature is aspectual. Carlson
(1979) shows that the Attempted Action marker in Finnish, the PARTITIVE, is also closely
associated with Aspect. Now, aspect is clearly a feature of sentences. I will assume that
the Warlpiri equivalent is also aspectual. I will call this feature conative. I assume that
both the verb and rla refer to this feature. The verb has the constraint equation:

\[ \uparrow \text{Conative} = c + \]

and rla has the defining equation:

\[ \uparrow \text{Conative} = + . \]

The constraint equation on the Verb means that the sentence must have the feature
Conative. The only way the sentence can get this feature is if the AUX, whose features

46. Obviously, more work must be done on the semantics of the interaction between the
Conative and the other aspect markers on the AUX, as well as with time adverbials, for this
aspectual feature to be properly motivated.
percolate up to the sentence, has a Conative marker.\(^{47}\) In Conative sentences, the form *rla-jinta* will be analysed as containing a Conative marker, *rla*, and a third person singular OBJECT marker *jinta*, while the form *ju-rla* will be analysed as containing the Conative *rla* and a first person singular OBJECT marker *ju*.

### 2.3.1.2.2 DATIVE preverbs

One final point should be mentioned. It appears that DATIVE OBJECTs can be introduced by a couple of preverbs. The preverb *wapal* when added to a transitive verb emphasises the fact that the OBJECT is being sought by means of the action described in the verb, and requires the ERGATIVE-DATIVE case-frame.

\[(108)\] M: Ngari *-li-rla wapalpa-rra-pangi-ka wurra-ngku + wurru*

> Just *-pl-DAT seek-THERE-dig-IMP still-ERG + EMP*

Keep on digging for it! [H59Dial: 8.81]

But this preverb can also occur on an intransitive verb, in which event it adds a DATIVE argument, but does not affect the ABSOLUTIVE case of the SUBJECT.

\[(109)\] Kala-rla *wapal-ya-nu wawirri-ki*

> USIT-DAT seek-go-PAST kangaroo-DAT

They would go after kangaroos. [H66, PSJ:1117]

One speaker allowed the DATIVE in this type of sentence to control a *kurra* clause:

\[(110)\] Ngajulu *-rna-rla wapal-ya-nu kurdu-ku yula-nja-kurra-ku.*

I *-1sg-DAT seek-go-PAST child-DAT cry-INF-OCOMP-DAT*

I went looking for the child which was crying. [JS]

He rejected a version in which the complementiser suffix *rlarni* (which cannot be controlled by an OBJECT, as I will show in 2.3.2.1.) replaced the *kurra* clause, under the same interpretation. This suggests that the DATIVE in (110) really is an OBJECT.

---

\(^{47}\) Some mechanism is also needed to block the Conative use of *rla* when the verb is non-Conative. Possibly semantics should rule this out.
There are a couple of other preverbs besides *wapal*, which apparently introduce DATIVE arguments. Nash (1982) says that DATIVE arguments introduced by the preverbs: *jangl ardu* ‘against’ and *pulpurru* ‘onto’, and perhaps also *yaarl* ‘down on’ can control *kurra* clauses. These preverbs attach to both transitive and intransitive verbs. The following examples show *jangkardu* attached to intransitive and transitive verbs. (The examples are taken from the Warlpiri Survey p.21 - 22)

(111) Ngarrka ka-rla karnta-ku *jangkardu-karri-mi.*
man-ABS PRES-DAT woman-DAT against-stand-NPST
The man is standing aggressively with respect to the woman.

Dog-ERG PRES-DAT child-DAT snake-ABS against-carry-NPST-HERE
The dog is bringing the snake up to, say, frighten the child.

It appears that the OBJECT of (111) is *karnta-ku*, and the OBJECT of (112) is *kurdu-ku*.

(113) shows the preverb *yaarlpa* on a transitive verb and an intransitive verb. (114) shows *pulpurru* on a transitive verb.

(113) Watiya *npa-ju yaarlpa-raly-paka-rnu.* Yaarlpa *ju wanti-ja.*
tree-ABS -2sg-1sg down.on-athwart-chop-PAST. down.on -1sg faii-PAST
You chopped the tree down on top of me. It fell on top of me. [HNotes: 44]

(114) Watiya *npa-ju pulpurru-raly-paka-rnu ngaju-ku.*
tree-ABS -2sg-1sg on-athwart-chop-PAST I-DAT
You chopped the tree down on me.

**Consistency** prevents there from being 2 lexical forms filling the same function. Therefore a verb cannot select two OBJECTS. Therefore if *jangkardu*, say, attaches to a transitive verb, the old object of that verb must have some other function, probably an OBJECT 2, on the LFG account. Unfortunately, the data are not clear. When asked the sentence given in (115), a sophisticated speaker gave the judgment indicated, which suggests that for this speaker, contrary to the dialect mentioned by Nash, *jangkardu* does not introduce an OBJECT, but rather a DATIVE with some other function.
The woman hit it against the other child when it was running. (underlined Nc are coreferent). [David Nash, April, 1983]

Nash reports that the speaker had difficulty with this sentence. He does not discuss whether the the reading is only for the unmarked kurru clause, or for the kurru clause with DATIVE case as well (which would be surprising).

It is worth pointing out that jangkardu at least has been found on its own, as an independent predicate, like an adposition, taking a DATIVE argument.

Observe that when jangkardu appears on its own, it can still take a DATIVE argument. But, this DATIVE is not registered in the AUX. Therefore the DATIVE cannot be an argument of the verb. That is, only by combining the preverb jangkardu with the verb as a preverb, can the DATIVE argument of jangkardu act as a DATIVE argument of the matrix

48. In the following example, the predicate jangkardu is negated by the PRIVATIVE complementizer wangu, and still has a DATIVE argument:

He was going to try and not become belligerent, to stay peaceful without aggression towards anyone. [jangkardu]
2.3.1.3 Summary

In this section, I have discussed the two unusual forms of case-linking for transitive verbs. I have tried to show in what respects these two classes differ from regular ERGATIVE ABSOLUTIVE case-linking. I have shown that, with respect to agreement in the AUXILIARY, the three classes of transitive verb behave alike (except for third person DATIVE). I have also shown that the DATIVEs can control kurra complements just as the ABSOLUTIVE OBJECT can. I have proposed lexical rules relating the unusual case-linking to its orthodox counterpart. Whereas the ABSOLUTIVE-DATIVE alternation parallels the alternation in English between talk and talk to, the ERGATIVE DATIVE alternations parallels the alternation between shoot and shoot at. Semantically, the three types of ERGATIVE DATIVE construction discussed (those with no alternation, those alternations without the double registration, and alternations with double registration – the Conative) have in common the fact that the OBJECT is not necessarily affected by the action denoted by the verb, and need not even exist. I have argued that neither type of alternation involves a relation-changing rule, since meaning is not preserved, and since the DATIVE appears to be an OBJECT. I have shown that the interesting use of the double DATIVE registration on the AUX to herald a semantic redundancy rule can be expressed in terms of a constraint equation involving an Aspect feature, although further work is needed to justify it. I have also shown that DATIVE OBJECTs can be introduced by p-em verbs.

2.3.1.4 Ditransitive verbs

Warlpiri has a small class of ditransitive verbs. Semantically, they correspond to the classes of ditransitive verbs found in well-known European languages – verbs of physical transfer: yinyi (X-ERG gives Y-ABS to Z-DAT), puntarni (X-ERG takes Y-ABS away from Z-DAT), yirrarni (X-ERG puts Y-ABS on Z-LOC/ALL/DAT), yilyami (X-ERG send Y-ABS to Z-DAT), and verbs of transfer of information: ngarrirni (X-ERG tell Y-ABS (story, words) to Z-DAT) and payirni (X-ERG ask Y-ABS (person) about Z-DAT). An
example is given in (118).

(118) Ngarrka-ngku kapi-rla kurdu puncta-rni karnta-ku.
man-ERG FUT-DAT child-ABS take.away-NPST woman-DAT.
The man will take the child away from the woman.

The Taker has ERGATIVE case, the Thing Taken has ABSOLUTIVE case, and the Person Taken from has DATIVE case. The DATIVE argument is registered in the AUX by the normal DATIVE clitic rla. Non-third person singular DATIVES are registered by Clitic 2s. The ABSOLUTIVE argument is not registered. Even if the ABSOLUTIVE is not third person singular it cannot be registered. Thus (119) cannot mean: *The man will take me away from him. (O2 stands for OBJECT 2, and O for OBJECT).

(119)

     O2  O
Ngarrka-ngku kapi-ji -rla puncta-rni.
Man-ERG FUT-1sg-DAT take.away-NPST.
*The man will take me away from him.

Consistency rules out assigning both the DATIVE and the ABSOLUTIVE the function OBJECT in (119). Andrews (1982b) argues that the DATIVE is an OBJECT 2, while the ABSOLUTIVE is an OBJECT, because he claims that most DATIVES are OBJECT 2s. Under this analysis, Warlpiri would be like French (see 1.3.1), in which it is argued that the indirect object (a OBJECT) is really an OBJECT 2 because it does not undergo passive. I claim, however, that in Warlpiri the DATIVE is the real OBJECT, and that the ABSOLUTIVE is the OBJECT 2. Under this analysis, Warlpiri ditransitives would resemble English ditransitives, which, it is argued in Bresnan (1980b), have the indirect object as the OBJECT, and the direct object as the OBJECT 2.

Under Andrews' account the kurra control facts are stated as control by an OBJECT or an OBJECT 2. This naturally leads to the question: what happens in ditransitives? Consider the following sentence, in which an ABSOLUTIVE controls a kurra clause in a ditransitive.
(120) Yu-ngu -rna-rla kurdu [parraja-rla nguna-nja-kurra] 
give-PAST 1sg-DAT child-ABS coolamon-LOC sleep-INF-OCOMP 
yali-ki. 
that.rem.-DAT 
I gave the child which was sleeping in the coolamon to that one.

Mary Laughren writes of this sentence:

"I detect a very strong tendency to interpret the dative argument as the subject 
of the INF + kurra. People are happier with yungu-rna-rla kurdu [jarda 
guna-nja-kurra-ku] [i.e. I gave the child to the one who was sleeping - shown 
by the DATIVE suffix on kurra - JS]. I asked an older more 'naive' speaker 
who certainly gave me the impression that the -kurra goes more naturally with 
the DATIVE-marked argument.... X [a linguistically sophisticated speaker] has 
thought more about the -kurra business and doesn't accept it with the ABS 
argument of yungu ('gave'), only with the DATIVE arg."49

If it is assumed that the DATIVE in ditransitives is the OBJECT, and that the 
ABSOLUTIVE is the OBJECT 2, then there is a simple explanation for the unacceptability 
of (120): kurra is controlled by OBJECTS, not OBJECT 2s.50

2.3.2 Other DATIVES

So far, I have shown that DATIVE-marked arguments can act as the OBJECTs of 
transitive sentences and ditransitive sentences. However, this is not the only use of 
arguments marked with DATIVE case. There are three other uses of arguments marked 
with suffixes homophonous to the DATIVE which deserve mention. The first type pattern 
with DATIVE OBJECTs, in that they are registered in the AUXILIARY. Following Hale 
(EFW), I will call these Adjunct DATIVES. The second type are purposives. Only 
occur regularly are they registered in the AUX. The third type denote time-periods, and they 
apparently are never registered in the AUX.

50. A cautionary note: Laughren found a couple of younger speakers of Warlpiri who 
were prepared to accept (120).
2.3.2.1 Adjunct DATIVES

Adjunct DATIVES may be introduced in isolation, or by a preverb. I will first look at Adjunct DATIVES introduced in isolation.

Almost any transitive or intransitive sentence can contain a DATIVE-marked argument, which acts semantically as an ethical DATIVE; it indicates that the action or state of the event denoted by the verb has some relation to another argument, whether the action is for the benefit or detriment of the referent of the DATIVE, or whether there is a possession relation between the referent of the DATIVE and some argument.

(121) Karnta ka-rla kurdu-ku parnka-mi.
Woman-ABS PRES-DAT child-DAT run-NPST
The woman is running for the sake (security) of the child. [Survey]

(122) Ngarrka-ngku ka-rla kurdu-ku karli jarnti-rni.
man-ERG PRES-DAT child-DAT boomerang-ABS trim-NPST
The man is trimming a boomerang for the child/the child’s boomerang. [EFW: 60]

The Adjunct DATIVE is registered in the AUX by Clitic 2s.

Adjunct DATIVES can also occur with verbs which have DATIVE OBJECTs, whether the SUBJECTs of these verbs are ERGATIVE or ABSOLUTIVE.

(123) Ngarrka-ngku ka-ju-rla ngaju-ku karli-ki warri-rni.
Man-ERG PRES-1sg-DAT I-DAT boomerang-DAT seek-NPST
The man is looking for a boomerang for me.

The following sentence shows that an ABSOLUTIVE OBJECT retains its OBJECT status in the presence of the Adjunct DATIVE, and can still control a kurra clause.

(124) Nantuwu-rlu kalaka-ju ngaju-ku marlaja-kati-rni kurdu
horse-ERG ADMON-1sg I-DAT Cause-tread-NPST child-ABS
jarda nguna-nja-kurra.
sleep lie-INF-OCOMP
The horse might tread on my child while it’s sleeping. [R. Granites]
or: The horse is liable to tread on the child because of me.
This contrasts with ditransitives, in which apparently only the DATIVE can control a *kurra* clause.

*Consistency* demands that the two DATIVE-marked nominals, *I* and the *boomerang*, be assigned different grammatical functions in (123). But why multiply functions? Why not call the Adjunct DATIVE an OBJECT 2? First, unlike the ABSOLUTIVE OBJECT 2 in a ditransitive, an Adjunct DATIVE is registered in the AUX. Second, *Consistency* rules out assigning the Adjunct DATIVE OBJECT 2 status, because ditransitives can also have Adjunct DATIVES, as (125) illustrates. (S stands for SUBJECT, and Adj.D. for Adjunct DATIVE)

(125)  

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Adj.D</th>
<th>O</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Karli</em></td>
<td><em>kapi</em></td>
<td><em>-rna -rgku -rla</em></td>
<td><em>punta-rni</em></td>
<td><em>kurdu-ku.</em></td>
</tr>
<tr>
<td>boomerang-ABS</td>
<td>FUT</td>
<td>-1sg</td>
<td>-2sg</td>
<td>-DAT</td>
</tr>
<tr>
<td>remove-NPST</td>
<td>child-DAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I'm going to take your boomerang away from the child. [Hale, p.c.]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If both the ABSOLUTIVE and the Adjunct DATIVE have the function OBJECT 2, Consistency will be violated. Therefore, the Adjunct DATIVE must have a role distinct from OBJECT 2. I assume that it is an OBLIQUE. However, the language accords this OBLIQUE special status compared with other OBLIQUES, by registering it in the AUX, and with respect to control phenomena, as I will show. Therefore, I will not commit myself as to what kind of OBLIQUE it is, and simply call it an Adjunct DATIVE.

A partial test of the difference between Adjunct DATIVES and DATIVE OBJECTs is provided by the OBLCOMP complementizer suffix *rlarni*. The SUBJECT of a non-finite clause marked with *rlarni*, as Hale (EFW) shows, is either controlled by Adjunct DATIVES, or else it has an overt unregistered DATIVE SUBJECT. It cannot be controlled by a DATIVE OBJECT.

(126)  

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Whc-DAT</th>
<th>-DAT</th>
<th>Jakamarra-ERG</th>
<th>dog-ABS</th>
<th>hit-PAST</th>
<th>boomerang-ABS</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ngana-ku</em></td>
<td><em>-rla</em></td>
<td>Jakamarra-rlu</td>
<td>maliki</td>
<td>paka-ru</td>
<td><em>karli</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>jarni-rlarni? trim-INF-OBLCOMP</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whose dog did Jakamarra hit while that person was trimming a boomerang? [Survey]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In this sentence, an Adjunct DATIVE acting as a possessor controls the SUBJECT of the \textit{rilarni} clause. The SUBJECT of the \textit{rilarni} clause cannot be the ABSOLUTIVE OBJECT \textit{maliki}. In the following sentence, the nominal \textit{lani} takes a DATIVE OBJECT (see 2.4.2 for a discussion of the OBJECT function of this DATIVE.). But, this DATIVE cannot act as the controller of the SUBJECT of the \textit{rilarni} clause. Instead the overt DATIVE nominal is interpreted as an unregistered DATIVE acting as the overt SUBJECT of the \textit{rilarni} clause:

(127) \texttt{Ngaju -rna-rla lani maliki-ki jarda-ngkarni}\n\texttt{I-ABS Isg-DAT afraid-ABS dog-DAT sleep-OBLCOMP}\n*I am afraid of the dog while it’s sleeping.\nOK:I am afraid of him while the dog is sleeping. [Mary Laughren, letter to J. Simpson]

In (128), \textit{wangkami} takes a DATIVE OBJECT, and apparently this DATIVE OBJECT cannot control a \textit{rilarni} clause.

(128) *\texttt{Ngarrka ka-rla kurdu-ku wangka-mi, [nguna-nja-rlarni(-ki)]}\n\texttt{man-ABS PRES-DAT child-DAT speak-NPST, lie-INF-OBLCOMP-(DAT)}\nThe man is speaking in the child that is lying down.

An interesting piece of evidence suggesting that the controller of a \textit{rilarni} clause cannot be an DATIVE OBJECT , but must be an ADJUNCT DATIVE, comes from the behaviour of the verb \textit{puntarni} ‘take X away from Y’. For one sophisticated speaker\textsuperscript{51} (Tim Shopen p.c.), this verb has two diatheses, one with an ABSOLUTIVE that is registered in the AUX, and an unregistered DATIVE, as in: (129), and one with a DATIVE that is registered in the AUX, and an unregistered ABSOLUTIVE, as in (130).

---------------------

51. Another speaker rejected the construction with the registered ABSOLUTIVE.
He takes money and blankets from his poor grandmother. [JS]

He takes away money from his poor grandmother. [JS]

The prediction is that an unregistered DATIVE is not an OBJECT and therefore cannot control a *kurra* clause, but can control a *rlarni* clause, while the registered DATIVE is probably an OBJECT, and so should be able to control a *kurra* clause. The speaker with the two diatheses partly confirmed the prediction, by volunteering a *rlarni* clause for the unregistered DATIVE in (131), and a *kurra* clause for the registered DATIVE in (132).

He takes money and blankets from his poor grandmother while she is sleeping. [JS]

He takes away money from his poor grandmother. [JS]

2.3.2.1.1 Adjunct DATIVE preverbs

Adjunct DATIVE Preverbs can introduce DATIVE arguments. These preverbs attach to verbs (intransitive (133), transitive (134) or ditransitive (135) to form a new verb, and
they introduce an Adjunct DATIVE argument, in contrast to the DATIVE OBJECT preverbs discussed in 2.3.1.2.2. Semantically, the argument they introduce resembles the ethical DATIVE meaning that an Adjunct DATIVE in isolation has, rather than the directional meaning associated with preverbs such as jangkardu.

(133) Kurdu ka-rla karnta-ku marlaja-yula-mi.
Child-ABS PRES-DAT woman-DAT cause-cry-NPST
The child is crying because of the woman. [Survey]
(The child is crying (now) and the woman is the cause of it, e.g. she hit him).
INTRANSITIVE VERB

(134) Ngarrka-ngku ka-rla warlpa-ku pipa marlaja-ma-ni.
Man-ERG PRES-DAT wind-DAT paper-ABS cause-take-NPST
The man picks up the paper because of the wind. [Survey]
(The wind causes the man to pick up the paper, because the wind scattered it, say).
TRANSITIVE VERB

(135) Ngarrka-ngku ka-jana-rla karnta-patu-ku kurdu-ku miyi
Man-ERG PRES-3pl-DAT woman-PL-DAT child-DAT food-ABS
marlaja-yi-nyi.
cause-give-NPST
The man gives the food to the child because of the women. [Survey]
or: The man gives the women's food to the child.
DTRANSITIVE

52. Occasionally Adjunct DATIVE preverbs appear without an accompanying DATIVE-marked argument; in i. the preverb marlaja does not introduce a registered DATIVE argument, (although it is conceivable this has been mistranscribed.)

not-PAST-2sg-3pl hit-IRR -- no. ADMON-2sg Cause
wanti tarnnga pali-mi kajika-npa.
fall-NPST always die-NPST ADMON-2sg
You wouldn't hit them. You might fall for good because of it, you might die.
[H60Dial: 7.160]

Furthermore, as I will discuss later in this section, when presented with two DATIVE ADJUNCT preverbs on one verb, one speaker would register only one DATIVE in the AUX. This suggests that one of the preverbs failed to introduce a registerable argument.
The argument introduced by an Adjunct DATIVE preverb can control a rlni clause, whether the verb is transitive, as in (136) and (137), or intransitive, as in (138).

USIT-3pl-3pl-DAT child-ABS away-hold-PAST dig-INF-OBLCOMP
They (girls) would hold the kids for them (women) while they (women) were digging. [NM]

(137) Ngarrka-ngku ka-rla kurdj-karli jari jarni-rla,
man-ERG PRES-DAT child-DAT boomerang-ABS benefactive-trim-NPST,
ngu-na-nja-rln(-ki)
lie-INF-OBLCOMP-DAT
The man is trimming a boomerang for the child lying down.

(138) Kala-rla jurnta-nyina-ja karnta-ku ju jardajarni
USIT-DAT away-sit-PAST woman-DAT + EUPH sleep-OBLCOMP
yankiri + ji,
emu-ABS + EUPH
The emu would sit opposed to the woman while she slept. [KMY]

The Preverb can be thought of as a preposition added to the verb which brings with it an additional argument. The Preverb specializes the general meaning of the Adjunct DATIVE. Thus the following preverbs specify the relation of the DATIVE to the action or state denoted by the verb:

- jurnta: away from, removal from                 Adversative
- jirrnganja: with (dependent)                  Comitative
- yirrkirnpa: for, on behalf of                 Benefactive
- kaji: on account of, made possible by        Causative
- ngayi: in danger of, under threat of         Hazard

[Data from Nash, 1982]
These DATIVES are registered in the AUX. If the DATIVES introduced by the Preverbs and the Adjunct DATIVE introduced by the verb on its own are both Adjunct DATIVES, then Consistency should rule out their co-occurrence. Consistency should also prevent a verb from having two Adjunct DATIVE preverbs attached.

Unfortunately, there is not much data available, and preverbs behave differently from each other.\(^{53}\) For instance, data from the Survey suggests that piki cannot co-occur with the preverb jurnta, but then for that speaker, piki cannot co-occur with a DATIVE OBJECT either:

\[(139) \text{ *Nantuwu ka-rla-jinta Japanangka-ku }\]
\[
\text{ horse-ABS PRES-DAT-DAT Japanangka-DAT }\]
\[
piki-jurnta-parntka-mi-rra warna-ku + ju. \]
\[
\text{ hazard-away-run-NPST-THERE snake-DAT + EUPH }\]
\[
\text{ The horse is running away from Japanangka and might get bitten by the snake. }\]

When I asked a speaker for a sentence with jurnta-marlaja-wantimi (Adversative-Causative-fall), the speaker found it difficult to imagine a plausible situation.


\(^{53}\) Different Adjunct DATIVE preverbs apparently have different co-occurrence possibilities with DATIVE OBJECTS. For instance, data from the Warlpiri Survey suggests that, for the speaker involved, the preverb piki 'in danger of' cannot co-occur with some ABSOLUTIVE-DATIVE and ERGATIVE-DATIVE verbs:

\[
\text{ *?Ngarrka ka-rla-jinta karnta-ku kurdu-ku piki-wangka-mi. }\]
\[
\text{ man-ABS PRES-DAT-DAT woman-DAT child-DAT danger-talk-NPST }\]
\[
\text{ The man is speaking to the child in danger of the woman. }\]
\[
\text{ *Ngarrka-ngku ka-rla-jinta karli-ki pirriya-ku }\]
\[
\text{ man-ERG PRES-DAT-DAT boomerang-DAT cold-DAT }\]
\[
piki-warri-rni. \]
\[
\text{ danger-seek-NPST }\]
\[
\text{ The man is looking for the boomerang in danger of the cold. }\]

Whether this is a semantic restriction or whether there is a genuine syntactic restriction is unclear. In any case, other speakers accept piki-wangkami.
and came up with the following sentence in which, although there are two preverbs, only one DATIVE is registered.

(140) Yapa-ku -rla yujuku jurnta-marlaja-wanti-ja.
    person-DAT -DAT house-ABS away-cause-fall-PAST
    The person's humpy fell down.

I then suggested the following situation: "the man's horse run away from him because l shouted". The speaker still would not use jurnta-marlaja-parnkami, but rather split it up into several sentences:

(141) Jurnta-parnka-ja -rla nantuwu ngarrka-ku.
    away-run-PAST -DAT horse-ABS man-DAT
    The horse ran away on the man.

(142) Purla-nja-warnu-ku ju marlaja-parnka-ja nantuwu,
    shout-INF-ASSOC-DAT -1sg cause-run-PAST horse-ABS
    The horse ran away because of me shouting.

    wati-ki -rla jurnta-parnka-ja nantuwu.
    man-DAT -DAT away-run-PAST horse-ABS.
    The horse ran away on the man.

More work needs to be done with other speakers, but the general conclusion appears to

54. The speaker did exactly the same with the combination marlaja parnkami piki (cause run hazard):

    Ngajulu -rna-rla marlaja-parnka-ja piki wati-ki warna-kurra
    I-ABS 1sg-DAT cause-run-PAST hazard man-DAT snake-ALL
    I ran towards the snake in danger because of the man.

(In this example the preverb follows the verb, a common occurrence.) The most plausible account appears to be that the semantic role associated with the preverb marlaja has DATIVE case, while the semantic role associated with piki is expressed by the ALLATIVE, rather than the DATIVE. This alternation of ALLATIVE and DATIVE is reminiscent of the DATIVE/ALLATIVE alternation with the verb wangkami 'speak' in 2.3.1.1.)
be that a sentence can have only one registered Adjunct DATIVE.\textsuperscript{55}

2.3.2.2 Unregistered DATIVEs

I showed in 2.3.1.1.1. that the DATIVE argument associated with the ABSOLUTIVE-DATIVE verbs is sometimes unregistered, and I suggested that it acts as an OBLIQUE argument, and not as an OBJECT. In this section I will look at two different semantic classes of unregistered arguments with suffixes homophonous to the DATIVE. Whether these suffixes actually represent the DATIVE is a matter for debate.

The first class are purposives. In (143), the ERGATIVE-ABSOLUTIVE case-frame of the verb pangirni is selected. The purpose of the digging is 'rabbits', which has DATIVE case, and is not registered in the AUX.

(143) Mujunyku-ku ka-rlipa pangi-rni ngulya.
rabbit-DAT PRES-1pln dig-NPST hole-ABS
We dig holes for rabbits. [mujunyku]

Compare the following sentence with pangirni in which an Adjunct DATIVE (a reflexive dative benefactive) is registered.

\begin{itemize}
\item 55. However, Swartz (1982), records as acceptable a sentence with two registered DATIVEs, where one is introduced by a preverb and the other in isolation, as a benefactive.
\item Wati-ngki ka-palangu-rla marlu kurdu-ku
man-ERG PRES-3du-DAT kangaroo-ABS child-DAT
\item marlaja-luwa-rni karnta-jarra-ku.
cause-shoot-NPST woman-DU-DAT
\item Because of the two women, the man is shooting the kangaroo for the child. (Swartz's (24)).
\item Assuming that the Benefactive and the DATIVE argument introduced by marlaja are both Adjunct DATIVEs, it would appear that a sentence can have two Adjunct DATIVEs. More work needs to be done to investigate such sentences.
\end{itemize}
The barking spider digs itself a hole straight down in the earth. [mamupururnpa]

The semantic role of the registered DATIVE in this example is different from the semantic role of the unregistered DATIVE in (143).

A DATIVE-marked argument corresponding semantically to a purposive can occasionally be registered in the AUX, if the argument is a nominal and not a nominalized verb.

We used to chop trees with an axe for possums. [pakarni]

Unfortunately, I do not have evidence for control of kurra or riarni clauses to determine whether this nominal is functioning as an OBJECT or as an Adjunct DATIVE. If it functions as an OBJECT, then its presence could be due to an extension of the OBJECT/OBLIQUE dir alternation to include OBLIQUE purp as well. If it functions as an Adjunct DATIVE, this would presumably be due to the rather large range of meanings encompassed by the Adjunct DATIVE.

In 2.3.1.1., I noted that the DATIVE argument of wangkami could occasionally be expressed by an ALLATIVE instead. So, too the idea of purpose can be expressed by an ALLATIVE instead of a DATIVE, as in (146).

They cut the cows' ears to make an ear-mark so as to identify them. [lanka larra]
In (147) a nominal has ALLATIVE attached, and a nominalized verb has DATIVE attached.

This brings us to the most troublesome aspect of calling the purposive use of the suffix *ku* a DATIVE, namely that if *ku* attaches to a nominalized verb, it can never be registered in the AUX. 56

(148) Wirlinyi ka-\(\check{\text{i}}\) mardukuja-patu ya-ni wardapi-\(\check{\text{k}}\) hunting PRES-3pl woman-PL-ABS go-NPST goanna-DAT paka-rninja-\(\text{ku}\), (...) kill-INF-DAT
The women are going hunting to kill goannas. [mardukuja]

Semantically, there seems no reason why a nominalized verb with *ku* used as a purposive should differ from a nominal with *ku* used as a purposive. The syntactic difference led Hale (EFW) and Nash (1980) to treat the purposive use of the DATIVE as a homophonous suffix, which attaches to both nominals and nominalized verbs, but can never be registered in the AUX. I have taken the other tack, of treating them as identical, because, as I will discuss in 3.5.2, the failure of the purposive use of *ku* to receive extra case-marking may be explained if it is actually the case-suffix, and not some homophonous suffix. However, on my account, the fact that nominals with the *ku* suffix used as purposives can be registered, but not nominalized verbs, so far has no explanation.

56. I have found one possible counterexample.

\[\text{Kala-rla-jinta} \quad \text{parnka-ja} \quad \text{marlu-ku} \quad \text{rdarri-mardi-rninja-ku}\]
\[\text{USIT-DAT-DAT} \quad \text{run-PAST} \quad \text{kangaroo-DAT} \quad \text{catch.hold-INF-DAT}\]
\[\text{marlu-ku + iku} \quad \text{mata-ku + iku}.\]
\[\text{kangaroo-DAT + THEN} \quad \text{tired-DAT + THEN}\]

He ran after the kangaroo in order to catch hold of the exhausted kangaroo. [pinyi]

In this example there are two DATIVEs in the AUX; one cross-references the DATIVE marlu-\(\text{ku}\), and it is possible, although not necessary, that the other cross-references the nominalized verb complement *rdarri-mardi-rninja-ku*. But it could cross-reference some other purpose.
The second type of unregistered DATIVE are DATIVEs of duration of time or of frequency. They are never registered. They have no particular semantic relation to the verb, and it seems likely that they have the function ADJUNCT.

(149) Marilpi jirrama-ku -lpa-ju nyina-ja-rra Lajamanu-rla
     month two-DAT -PAST-1sg sit-PAST-THERE Lajamanu-LOC
     He stayed away from me for two months at Lajamanu. [marilpi]

(150) Yapa ka-lu ya-ni warrki-wanju-rla manjiki
     person-ABS PRES-3pl go-NPST work-PRIV-LOC expedition
     ngurra-patu-ku.
     camp-PL-DAT
     When there is no work, people go camping out for a few days. [manjiki]

(151) Jirrama-ku -ju paka-rnu.
     two-DAT -1sg hit-PAST
     He hit me twice. [jirrama]

Thus, DATIVE-marked arguments can have a variety of functions. In 2.3.4 I will speculate on ways of relating the Adjunct DATIVE and the OBJECT uses by means of a feature system.

2.3.3 Reflexives

In this section I will outline the basic properties of reflexives and reciprocals in Warlpiri, and introduce the notion of antecedent feature which will prove useful in the description of the obviation system in Chapter 6.

Reflexives and reciprocals are represented in the AUX by a pronominal clitic: -nyanu, which can cross-reference an ABSOLUTIVE Object (152) or a DATIVE OBJECT or
an Adjunct Dative (153)57

(152) Jampi-rni ka-nyanu.
lick-NPST PRES-refl
She (cow) is licking herself. [H59Notes]

(153) Lirra wilji-kirli -ipa-nyanu-rla mitingi-rla + ju
Mouth stubborn-PROP-ABS -PAST-refl-DAT meeting-LOC + EUPH
wangka-ja turaki-ki.
speak-PAST truck-DAT.
He kept on and on insisting at the meeting on the truck for himself (that he should get the truck). [lirra wilji]

Since -nyanu appears in Clitic 2 position, it is not surprising that it can represent both ABSOLUTIVE and DATIVE 3rd person singular reflexive OBJECTs, as well as Adjunct DATIVEs. It can also represent third person singular DATIVES, as in (154), in which it represents a Benefactive.

57. It should be noted that the argument status of the reflexive is not always clear. There are uses where certain verbs which seem to require reflexives. In particular, these include verbs of lying and telling the truth, as the following dialogue shows.

M: Lawa-wangu ngarrpangarrpa-ma-ni ka-nkulu-nyanu!
no-PRIV lie-CAUS-NPST PRES-2pl-refl
'Bull, you're lying!'

no - POT-1sg-1sg story-ABS tell-NPST
'No, I'm telling the truth.'

M: Yijardu -lu-nyanu yimi ngarri-ka!
truth-ABS -refl story-ABS tell-IMP
'Tell the truth!' [H60Dial: 7.2]

Other examples include luurr-ungunami 'to feel sorrow in sympathy with someone'. The reflexive is also used in some idioms:

Wati-ngki -nyanu kuyu-ngku paka-rnu.
man-ERG -refl meat-ERG hit-PAST
Lit. The man hit himself with meat
i.e. The man had his fill of meat. [pakarni]

Kati-rni ka-rna-ju.
tread-NPST PRES-1sg-1sg
Lit. I tread on myself
i.e. I am submitting. [katirni]
(154) Ngulya ka-yanu pangiri-ni wiri nyanungu-rlu + ju. 
    burrow-ABS PRES-refl dig-NPST big-ABS he-ERG + EUPH 
    He digs himself a big burrow. [pangirni]

Nyanu is unmarked for Number, and so can appear with non-singular subjects, as in (155) and (156)

(155) Wirliya -rli-yanu paji-ni. 
    foot-ABS -1duin-refl cut-NPST 
    We will cut our feet. [H59Notes]

(156) Kalaka-riipa-yanu mata-rra-ma-ni? 
    ADMON-1plin-refl tired-THERE-CAUS-NPST 
    But aren’t we liable to get tired? [H60Dial: 7.10]

The reflexive also appears with abstract predicates such as to consider oneself X:

(157) Kuluparnta + ja nganta kuja-ka-npa-yanu rikini-jarri? 
    anger-ABS + EVID QUOT REL-PRES-2sg-refl reckon-INCH-NPST? 
    So, you reckon you’re a good fighter? [H60Dial: 7.23]

Nyanu is used as a reciprocal also, with transitive verbs, as in (158) and (159), and ditransitives, as in (160).

    Dog-DU-ERG PRES-3du-refl anger-ERG see-NPST 
    The two dogs are looking at each other in anger. [H59Notes]

(159) Warla-paji-ka kalaka-pala-yanu pi-nyi. 
    stop-IMP ADMON-3du-refl fight-NPST. 
    Stop them lest they fight! [H59Notes]

(160) Jarnku -rlu-yanu yi-nyi, kurlarda, karli. 
    Distributive -1duin-refl give-NPST, spear-ABS, boomerang-ABS 
    Let’s swap the spear for the boomerang. (i.e. let’s give each other the boomerang and the spear). [H59Notes]
Nyanu must be used in a reflexive/reciprocal sentence unless the SUBJECT is 1st person singular, or the sentence is imperative singular. If the SUBJECT of the sentence is first person singular, the reflexive is expressed in the AUX with the first person object pronoun.

(161) Ngajulu ka-rna-ju mapa-rni yurlpa-ngku.
I PRES-1sg-1sg rub-NPST ochre-ERG
I paint myself with red ochre. [H59Notes]

If the verb is imperative the normal second person clitic 2 pronoun is used with singular subjects, as in (162), while nyanu is used with non-singular subjects, as in (163).

(162) Yampi-ya -ngku mapa-rninja-wangu-rlu.
Leave-IMP -2sg(OBJ) rub-INF-PRIV-ERG
Don't paint yourself! [H59Notes]

(163) Yampi-ya -lu-nyanu mapa-rninja-wangu-rlu.
Leave-IMP -pl-refl rub-INF-PRIV-ERG
Don't paint yourselves! [H59Notes]

The fact that nyanu can have antecedents of different persons and number will be represented in the lexical entry for nyanu by not specifying person and number features for the reflexive clitic. To express the fact that nyanu cannot refer to a 1st person singular subject, I will assume that the morpheme nyanu has a morphological restriction that it cannot follow the morpheme -rna which happens to be the 1st person singular Subject morpheme.

Reflexive verbs are transitive. The evidence for this is first that the SUBJECT retains ERGATIVE case-marking, and second that an Object control complementizer clause can be controlled by the understood reflexive object. Both properties are illustrated in (164).

(164) Kurdu-ngku ka-nyanu nya-nyi, karri-nja-kurra.
child-ERG PRES-refl see-NPST stand-INF-OCOMP
The child sees himself standing. [EFW]
If *nyanu* created a lexically intransitive verb, as *se* does in French (Grimshaw 1980),\(^{58}\) then an OBJECT-controlled clause would not be possible.

I assume that the introduction of this null pronominal by the reflexive clitic *nyanu* is obligatory if the function represented by *nyanu* is OBJECT, because *nyanu* does not seem to co-occur with overt nominals having the OBJECT function. These are ungrammatical, as in (165).

(165) *Nyuntulu-rlu ka-npa-nyanu nyuntulu nya-nyi.*
   You-ERG PRES-2sg-refl you-ABS see-PAST
   You see yourself.

Although *nyanu* has been not been found with coreferential overt OBJECTs, it has been found with overt nominals representing the Adjunct DATIVE function.

---

58. This argument was made by Hale (1982 c), in a problem set in which he compares Warlpiri and the neighbouring language group Aranda, in terms of Grimshaw's (1980) analysis of French reflexives. He shows that, while Warlpiri reflexives do not intransitivize the verb, and therefore can control Object-controlled clauses, Aranda reflexives do intransitivize the verb, and therefore cannot control Object-controlled clauses. Furthermore, the case of the SUBJECT in an Arandic reflexive is that of the SUBJECT of an intransitive sentence.

The difference between Aranda and Warlpiri is perhaps predictable, because in Aranda, the reflexive is marked on the verb, not on a separate AUX. See Hale (to appear). Nash (1980) observes that in Nyangumarda all pronominal clitics are marked on the verb, and the reflexive also intransitivizes the verb. He quotes Edmondson as saying that in ergative languages it is very common for verbally encoded reflexives to have subjects with ABSOLUTIVE case (i.e. to undergo intransitivization). (Jerold A. Edmondson, 1978: Ergative languages, accessibility hierarchies governing reflexives and questions of formal analysis. In *Valence, semantic case and grammatical relations*, ed. by Werner Abraham., Studies in Language Companion Series, Vol. 1. Amsterdam: John Benjamins B.V.). Marantz (1981) extends the observation to languages with lexical reflexives generally.
It kills animals for itself, that type of lizard.

Let's keep those scarce things just for ourselves. [CHECK]

have no explanation for this difference. Overt nominals could be prevented from co-occurring with the reflexive clitic *nyanu* by assuming that *nyanu* introduces a null pronoun, \( \{\text{TBJ PRED}\} = \text{'PRO'} \). However, this equation \( \{\text{TPRED}\} = \text{'PRO'} \) would have to be optional when *nyanu* has the function Adjunct DATIVE.\(^{59}\)

Apart from this, the account of reflexives being developed by Bresnan, Halvorsen and Maling in recent work (Halvorsen, 1982, Malinàg, 1982) can easily be extended to Warlpiri. They suggest that most reflexivization facts can be represented by features referring to the domain of reflexivization, and to the antecedent of the reflexive. The domain of reflexivization in Warlpiri is the minimal clause - reflexivization is clause-bounded. This can be expressed with the feature \([\text{+ NUCLEAR}]\). If a pronoun is \([\text{+ NUCLEAR}]\), it must find its antecedent within the minimal clause nucleus containing both it and the predicate of which it is an argument. In Warlpiri the reflexive pronoun is \([\text{+ NUCLEAR}]\).

---

\(^{59}\) Hale (PWT) considers the Adjunct DATIVE to form a clause-nucleus, with the DATIVE as its argument-taking predicate. This option is not open to me, insofar as I have tried to argue that the Adjunct DATIVE is in some sense a selected argument of the verb, and, as such, is registered in the AUX. If the DATIVE case-suffix were acting solely as an argument-taking predicate, rather than as the indicator of a relation between an argument and an argument-taking predicate, it is not clear how this could be reconciled with the account of agreement in the AUX. Why should some ADJUNCTs (Adjunct DATIVEs) be registered in the AUX, when other ADJUNCTs (such as time-DATIVEs and most purposives) are not registered in the AUX? It is also not clear to me how a uniform account of AUX registration could be made, if the one set of suffixes registers both DATIVEs which act as argument-taking predicates, and DATIVEs which act purely as case-markers.
The antecedent of reflexive/reciprocals and normal pronouns is stated in terms of the antecedent feature \([\pm\text{SUBJECTIVE}]\). The reflexive/reciprocal pronominal clitic \textit{nyanu} has as part of its lexical entry an antecedent feature \([+\text{SUBJECTIVE}]\), meaning that its antecedent must be a SUBJECT within the domain of reflexivization. The 1st person singular pronominal clitic (clitic 2) will optionally have the antecedent feature \([+\text{SUBJECTIVE}]\). It will also be unspecified for the NUCLEAR feature. This will allow it to appear freely as an OBJECT in a non-reflexive clause, and also as a reflexive OBJECT. Ordinary Clitic 2 pronouns have the antecedent feature \([-\text{NUCLEAR}]\) (represented in the lexical entry of \textit{ngku} by the equation \(\uparrow\text{NUCLEAR} = -\)). This prevents them from having any argument of the minimal finite clause as their antecedent.

The situation with respect to null pronominals which are not represented by a pronominal clitic is interesting. It seems that in finite clauses the reflexive clitic \textit{nyanu} is required for the reflexive reading. (168) apparently means that the cow is licking something definite, other than itself.

(168) Jampi-rni ka

\text{lick-NPST} \quad \text{PRES}

\text{She (cow) is licking it.}

However, in non-finite clauses, a null pronoun can be reflexive, as in the example given in 2.2.8., repeated here for convenience.

(169) Japanangka karlarra-jarri-ja \textit{Jupurrula(-rlu)_nya-nja-ku},

\text{Japanangka-ABS west-INCH-PAST \textit{Jupurrula see-INF-DAT}}

\text{Japanangka, went west [ for Jupurrula to see PRO = himselfi]}

I assume that the default equations attached to the AUX (see 2.3.4.1 for further discussion) in the absence of overt pronominal clitics also include the feature \([-\text{NUCLEAR}]\). Therefore a null pronoun which is not associated with an overt pronominal clitic in a finite clause must find its antecedent outside the clause, and cannot be reflexive. The AUX does not appear in non-finite clause, and so its default equations also do not appear, including the \([-\text{NUCLEAR}]\) restriction. Therefore a null pronoun in a non-finite clause may be reflexive.
The lexical entry for *nyanu* is as follows:

*nyanu*

[SUBJECTIVE = + ]

[NUCLEAR = + ]

\( \neg ((\uparrow \text{SUBJ PERS}) = 1) \) and \( ((\uparrow \text{SUBJ NUM}) = \text{sg}) \)

\( \neg ((\uparrow \text{IMPERATIVE}) = 1) \) and \( ((\uparrow \text{SUBJ NUM}) = \text{sg}) \)

Category: Clitic 2

By virtue of being a Clitic 2, *nyanu* can represent both OBJECTs and Adjunct DATIVES. The first negative equation prevents *nyanu* from occurring with a first person singular SUBJECT. The second negative equation prevents *nyanu* from occurring in an IMPERATIVE sentence, if the SUBJECT is singular.

Unfortunately, not enough is yet known about the behaviour of reflexive DATIVE OBJECTs and ABSOLUTIVE OBJECT 2s to say whether more needs to be specified about disjoint reference in Warlpiri.

2.3.4 Summary of pronominal clitics

So far, we have seen that Clitic 1s agree with the SUBJECT, whether ERGATIVE or ABSOLUTIVE. Clitic 2s agree with the OBJECT, whether ABSOLUTIVE or DATIVE, and with Adjunct DATIVES. They do not agree with ABSOLUTIVE OBJECT 2s. The clitic *ra/la* agrees with third person singular DATIVE OBJECTs or Adjunct DATIVES, or else it acts as a Conative marker. I will outline some constraints on agreement, and then discuss the representation of paradigmatic gap information. The data in this section comes for the most part from Hale (1973a).

First, there are constraints which appear to be due to a limit on the number of clitics in a given position in the AUX. Thus no more than one Clitic 2 can appear. Therefore, it is not possible for the AUX to agree with an OBJECT (whether ABSOLUTIVE or DATIVE), and an Adjunct DATIVE, if neither is third person singular.
(170) O2 O
*Ngarrka-ngku ka -ju -ngku ngaju-ku nyuntu punta-rni.
Man-ERG PRES -1sg -2sg I-DAT you-ABS take-NPST
The man is taking you away from me. (or me away from you).

(171) *Ngarrka-ngku lpa -ju -ngku /lpa -ngku -ju nyuntu-ku
man-ERG PAST -1sg -2sg /PAST -2sg -1sg you-DAT
warru-rnu ngaju-ku.
seek-PAST I-DAT
The man was looking for you for me.
or
The man was looking for me for you.

Following Hale (1973a) and Nash (1980), I assume that the pronominal clitics each have their own position within a clitic template. Ju and ngku are both Clitic 2s. There is only one position for Clitic 2s, and so ju and ngku cannot co-occur. The fact that an AUX can agree with a DATIVE OBJECT and an Adjunct DATIVE if one of them is third person singular, is explained on the assumption that the third person DATIVE clitic rla is not a Clitic 2 but rather a Clitic 3.

(172)

Adj.D O
Ngarrka-ngku ka jana rla karnta-patu-ku kurdu-ku miyi
Man-ERG PRES -3pl -DAT woman-PL-DAT child-DAT food-ABS
marlaja-yyi-nyi.
cause-give-NPST
The mzi gives the food to the child because of the women. [Survey]

It is clear that Clitic 2s such as jana can co-occur with rla. But what happens when a sentence has two third person singular DATIVE arguments? I have shown that both Adjunct DATIVEs and DATIVE OBJECTS can be represented by rla. So one might expect to find the sequence rla-rla representing two DATIVE third person singular arguments. However, I have also shown that the clitics seem to have positions, and that only one element can fit into a position; thus the sequences ngku-ju and ju-ngku are ruled out. If rla also occupies one position, rla-rla should be ungrammatical. And in fact it is. Instead, another clitic, jintai, follows rla:
Ngajulu-rlu ka-rna-rla-jinta karli-ki warri-rni.
I-ERG PRES-1sg-DAT-DAT boomerang-DAT seek-NPST
ngarrka-ku.
man-DAT
I am looking for the boomerang for the man.

It is not possible to say whether jinta refers to the 'boomerang' or to the 'man'. The combination rla-jinta simply records the fact that the sentence has a third person DATIVE OBJECT and a third person Adjunct DATIVE.

The second constraint on agreement is a curious constraint on the appearance of the clitic rla which is neither purely syntactic nor purely morphological. The clitic rla cannot follow a Clitic 2 which represents an ABSOLUTIVE argument whether an OBJECT as in (174), or an OBJECT 2, as in (175).

I-ERG PRES-1sg-DAT-DAT boomerang-DAT seek-NPST
ngarrka-ku.
man-DAT
I am looking for the boomerang for the man.

(174) O Adj.D
*Paka-rni ka -ngku -rla nyuntu ngarrka-ngku karnta-ku.
Hit-NPST PRES-2sg -DAT you-ABS man-ERG woman-DAT.
The man hits you for the woman.

(175) O2 O
*Ngarrika-ngku kapi-ji -rla ngaju punta-rni karnta-ku.
man-ERG FUT-1sg -DAT 1sg-ABS take.away-NPST woman-DAT.
The man will take me away from the woman.

The ill-formedness of sentences such as (175) cannot be attributed to a purely morphological restriction on clitic positions, because, as (176) shows, ju-rla is a well-formed clitic sequence, when both clitics represent DATIVE arguments.

60. On Andrews (1982) account, the generalization is rather that rla cannot follow a pronominal clitic representing an OBJECT, because all ABSOLUTIVE clitic 2s represent OBJECTs, and DATIVE clitic 2s represent OBJECT 2s or Adjunct DATIVEs. In my account, many DATIVEs are OBJECTs. Therefore I must state the generalization in terms of CASE, not grammatical function.
(176) Adj.D O
Ngarrka-ngku ka -ju -r/a ngaju-ku karli-ki warri-rni.
Man-ERG PRES-1sg -DAT I-DAT boomerang-DAi' seek-NPST
The man is looking for a boomerang for me.

But nor can the restriction be a purely syntactic restriction such as:

No non-SUBJECT ABSOLUTIVE argument can co-occur with a DATIVE OBJECT or ADJUNCT DATIV.

Sentences such as (174) and (175) are quite acceptable with third person singular ABSOLUTIVE OBJECTs or OBJECT 2s. These of course are never overtly registered in the AUX.

(177) S O
Ngajulu-rlu kapi-rna-ngku nyuntu-ku karli-patu punta-rni.
I-FRG FU1'-1sg-2sg you-DAT boomerang-PL-ABS take-NPST
I am going to take the boomerangs away from you. [EFW: 53]

(178) Adj.D
Paka-rni ka -r/a kurdu ngarrka-ngku karnta-ku.
Hit-NPST PRES-DAT child-ABS man-ERG woman-DAT.
The man hits the child for the woman.

The next question is, do these constraints on the person and number of registered pronominal clitics affect just the morphemes in the clitic clusters, or do they also affect the person and number of nominals bearing grammatical functions? Are these constraints constraints on morphemes, or on grammatical functions? I have shown that third person singular nominals can be OBJECT 2s. If the constraints apply just to the clitic clusters, unregistered ABSOLUTIVE nominals and pronominals of any persons and number should appear freely with the function OBJECT 2. But if the constraints are actually constraints on grammatical functions, then unregistered ABSOLUTIVE OBJECT 2s should be ruled out. In this event, only third person singular ABSOLUTIVE OBJECT 2s will appear.
At first glance, it seems that both predictions are partly true. Unregistered non-singular third person OBJECT 2s appear, while unregistered non-third person OBJECT 2s apparently do not. Thus, (179), which has an unregistered plural third person OBJECT 2, is quite acceptable:

(179) Ngajulu-rlu kapi-rna-ngku nyuntu-ku karli-patu punta-rni
     I-ERG FUT-1sg-2sg 2sg-DAT boomerang-PL-ABS take-NPST
     I am going to take the boomerangs away from you. [EFW:53]

But (180), which has an unregistered second person ABSOLUTIVE, is apparently not acceptable for all speakers.61

(180) O
     *Ngarrka-ngku ka-ju ngaju-ku nyuntu punta-rni.
     Man-ERG PRES-1sg I-DAT you-ABS take-NPST
     The man is taking you away from me.

Since (180) is ill-formed, and (179) is acceptable, it appears that there is a contrast between number-agreement and person-agreement. This is not the only difference between number and person agreement. Laughren (1977) argues that in ordinary non-ditransitive sentences, registration of number is not obligatory for third person – it depends on animacy and emphasis. An inanimate or unemphatic non-singular argument is less likely to be registered as non-singular. NUMBER is not an obligatory feature of third person nominals; it is there for emphasis. Since number registration is not obligatory for SUBJECTs and OBJECTs, there is no reason why sentences with unregistered non-singular ABSOLUTIVE OBJECT 2s should be unacceptable. Since registration of the SUBJECT’s and OBJECT’s Person is obligatory, it is not surprising that sentences with

61. Laughren (1977) and Swartz (1982) report that a number of speakers do accept this. I assume that there is a dialect split; the speakers recorded by Laughren and Swartz have judgments more like those recorded in Tsunoda (1978) for Jaru. I will limit myself to the dialect described by Hale.
unregistered non-third person OBJECT 2s should be unacceptable.62

Observe that Clitics 2 and 3 express a disjunction: they represent either a DATIVE OBJECT or an Adjunct DATIVE. This disjunction will make representing agreement with pronominal clitics very awkward. Hale suggested to me that perhaps a better way of looking at grammatical functions is in terms of a feature system. This feature system should link OBJECTs and Adjunct DATIVEs as opposed to OBJECT 2s on the one hand, to capture the AUX agreement facts. A feature $\pm$OBJECT can be used to link OBJECTs and Adjunct DATIVEs. On the other hand, the feature system should link SUBJECTs, OBJECTs and OBJECT 2s as opposed to Adjunct DATIVEs, because the latter are only loosely connected with the essential meaning of argument-taking predicates. A feature $\pm$DIRECT can be used here. The feature system is given below.

\begin{tabular}{|c|c|c|c|}
\hline
 & SUBJECT & OBJECT & DIRECT \\
\hline
SUBJECT & + & - & + \\
OBJECT & - & + & + \\
OBJECT-2 & - & - & + \\
Adj.DAT & - & + & - \\
OBLIQUEs & - & - & - \\
\hline
\end{tabular}

Clitic 1s agree with elements bearing the feature $[+ \text{SUBJECT}]$. Clitic 2 and Clitic 3 agree with elements bearing the feature $[+ \text{OBJECT}]$.

62. In the closely related language of Jaru (Tsunoda 1978) it appears that if a verb is ditransitive, unregistered first and second person direct objects CAN appear in ditransitives. Tsunoda also notes that elsewhere first and second person are not always registered. If indeed registration of first and second person is not obligatory, as it is in Warlpiri, it is possible that similar factors sanction the appearance of unregistered first and second person OBJECT 2s in Jaru.
Another use that this feature system can be put to is with regard to antecedent features. Recall that, when discussing reflexives, I used the antecedent feature [+SUBJECTIVE], and I said that the reflexive pronoun nyaru has the antecedent feature [SUBJECTIVE +]. I see no reason why the same features could not be used both for decomposing grammatical functions and for antecedent features, since antecedent features describe the grammatical function that the antecedent of an anaphor has. See 6.5.

2.3.4.1 Paradigmatic gaps

In this section I will briefly discuss the expression of default agreement with pronominal clitics. I assume, as I suggested in the previous section, that the pronominal clitics form a template, and that each class of clitics has its own position.

Perhaps the simplest way of approaching the paradigmatic gap information is to take two types of sentence which I passed over earlier. These are: intransitive sentences with unregistered SUBJECTS and transitive sentences with unregistered OBJECTS. I will discuss how to express the information about an unregistered SUBJECT in an intransitive sentence, and then compare this approach with that needed for unregistered OBJECTs.

2.3.4.1.1 Unregistered SUBJECT

Consider the following sentences:

63. Bresnan (1982a) and Halvorsen (to appear) assume that antecedent features are defined in terms of the primitives SUBJECT and OBJECT. In a sense, as Bresnan pointed out to me, my proposal is the reverse: defining grammatical functions in terms of primitive features.
A man is running.

A man is running.

I am running.

I am running.

Consistency rules out (183), because the features of the third person singular SUBJECT clash with the SUBJECT features registered on the AUX – namely first person singular.

But Consistency cannot rule out (185), because there are no overt person/number features on the AUX. Completeness (see 2.2.6.1.2) cannot rule it out, because the overt pronominal ngaju provides the person/number features for the SUBJECT.

The problem is that the general constraints on the well-formedness of f-structures (completeness, consistency and coherence) merely ensure that the sources of information about functions and features provide complete, consistent and coherent information. Nothing forces the absence of a particular source of information to be meaningful, if the information is provided by some other source. Thus, since in (185) information about the SUBJECT is provided by ngaju, the f-structure for (185) is thus complete and coherent. And the f-structure will be consistent too, unless a way can be found of interpreting the absence of an overt pronominal clitic as third person singular.

One way of doing this is to assume a third person morpheme which is just like other pronominal clitics, except that it happens to be phonetically null. Alternatively, the information can be carried in the form of default equations which demand that the
SUBJECT's person be third, failing the presence of an overt clitic. Adopting either of these solutions will ensure that an AUX without any overt person/number features for SUBJECT is compatible only with a third person SUBJECT. Consistency will rule out the appearance of an unregistered first or second person SUBJECT, because the default interpretation (the interpretation in the absence of other information on the AUX) is for a third person SUBJECT.

I will adopt the default equations approach, rather than the zero morpheme approach, for reasons that will become clear in the next section. These equations are attached to a position in the pronominal clitic template. They act as an elsewhere condition on the clitic 1 position; that is, if no overt pronominal clitic is inserted, these equations will be inserted. So, filling the clitic 1 position in the template is OBLIGATORY. Otherwise of course nothing would rule out (185) – it would result from a template with an optionally unfilled Clitic 1. Since every finite clause must have a SUBJECT, then, if no overt clitic appears, the default equations must appear. Consistency will rule out unregistered first or second person SUBJECTs.

The entry for the clitic 1 column in the clitic template is given in (186).

64. The absence of a SUBJECT clitic is interpreted as third person, whether or not any pronominal clitics follow. In the following sentence there is an understood third person singular SUBJECT, even though the OBJECT clitic is present:

\[ Paka-rni \quad ka-ju. \]

hit-NPST PRES-1sg.

He is hitting me.

65. Since NUMBER registration is conditioned by animacy and salience, I will not treat it as default information.
I have made these equations defining equations rather than constraint equations. This means that information about person and antecedent features is actually carried by the AUX. The Verb simply introduces the equation (↑SUBJ PRED) = 'PRO', that is, a PRO unspecified for features. Therefore the null pronominals in finite clauses are more constrained than in non-finite clauses. First, in a finite clause, a null pronoun will have to be third person, whereas in a non-finite clause, a null pronoun will be able to acquire person and number features by control, or from a discourse antecedent. (However, the default will be third person.) Second, in a finite clause, a reflexive argument must be cross-registered in the AUXILIARY. This is expressed by assuming that the AUX specifies that default null pronouns are [- NUCLEAR]; i.e. cannot find their antecedents within the same clause nucleus. A null pronominal OBJECT in a non-finite clause may be reflexive, since there is no AUX and so no requirement that it be [- NUCLEAR]. But, since it is very unlikely that in non-finite clauses a null pronominal SUBJECT could have a non-SUBJECT "antecedent" within the same non-finite clause, we may have to assume that, whenever a lexical item introduces the equation ↑SUBJ PRED = 'PRO', it also introduces the equation ↑SUBJ NUCLEAR = -. 
2.3.4.1.2 Unregistered OBJECT/OBLIQUE

Consider the following sentences:

   1-ERG PRES-1sg-2sg you-ABS see-NPST
   I see you.

   1-ERG PRES-1sg-1sg you-ABS see-NPST
   I see you.

   1-ERG PRES-1sg man-ABS see-NPST
   I see the man.

   1-ERG PRES-1sg you-ABS see-NPST
   I see you.

(187) b is ruled out by Consistency. (188) b is not ruled out by Consistency at all, unless the absence of an overt clitic 2 morpheme is interpreted as being third person.

I will adopt the same solution proposed for SUBJECTs, of using equations to express the interpretation of absence of information as third person. However, observe a crucial difference. The absence of information about Clitic 1 is interpreted as the presence of a third person SUBJECT in EVERY sentence, because every sentence has a SUBJECT. But not every sentence has an OBJECT of course. Therefore, neither defining equations

66. This is perhaps too strong. Sentences such as the following suggest that there can be SUBJECT-less sentences in Warlpiri.

   Yali-ki ka-ria wirrinyi-jangka-ku manta-karri.
   that-rem-DAT PRES-DAT hunting-SOURCE-DAT be.absent-NPST
   That one who went hunting is still absent. [manta-karri]
   (Literally the sentence seems to mean It is absent for the person from hunting.)
If these sentences do indeed lack a SUBJECT, then one must adopt for SUBJECT clitics an analysis similar to the one which I will propose for Clitics 2s, that is, a conditional constraint equation stating: If a sentence has a SUBJECT, the SUBJECT's person is 3.
of the type I proposed for the Clitic 1 position. nor equality constraint equations (ones of the form $\dagger X = \_ Y$) will do for the clitic 2 position.

Defining equations and equality constraint equations in clitic 2 position would demand the presence of an OBJECT in the sentence. But if these equations are made obligatory, then they would prevent the appearance of intransitive sentences, since intransitive sentences do not have OBJECTs. If the equations are not obligatory, then nothing forces their appearance in transitive sentences, and so nothing blocks sentences such as (187). 67

I propose to use a conditional constraint equation to express the fact that if, in a transitive sentence there is no overt clitic 2 in the AUX, then the OBJECT must be third person. By making the equation a conditional, I allow for intransitives. Intransitive verbs have no OBJECTs, and therefore the default equations do not apply.

$$(\dagger OBJ) \rightarrow (\dagger OBJ PERS) = 3$$

This equation means that, if there is an OBJECT in the sentence, its PERSON is 3. The equation will attach to the Clitic 2 slot. Again, I assume that the Clitic 2 slot has to be filled, even if only with the default equation proposed here. That is, the equation just given will be present in the template, even in an intransitive sentence. However, since an 'if-then' structure does not assert the existence of the 'if' part, the equation will also be true if there is no OBJECT, which is the case in intransitive sentences.

Not only OBJECTS but also Adjunct DATIVES occur in Clitic 2 position. The same equations are needed for them. Since they share the grammatical function feature $[+] OBJECT$ given in (179), the default equations can be expressed in terms of this feature.

$$(\dagger OBJECT = +) \rightarrow ((\dagger OBJECT = +) PERS) = 3$$

67. Having a zero morpheme for the third person OBJECT founders at this point too. A zero OBJECT morpheme would have to be optional, so as to allow the existence of intransitive sentences. But if it is optional, then nothing forces its appearance in transitive sentence, and nothing then rules out sentences with unregistered OBJECTs.
That is, if there is no overt clitic 2, then, if there is an OBJECT or Adjunct DATIVE, or both, the person of that OBJECT or Adjunct DATIVE must be third, and the number is probably singular.

The account of default equations presented here encounters difficulties with respect to the Null Element Constraint (Principle 6).

2.3.4.1.3 Paradigmatic gaps and the null-element constraint

Normally, paradigmatic gap information appears as gaps in a paradigm of affixation – such as CASE affixation or tense affixation. Thus the absence of CASE-marking is a gap which is interpreted as NOMINATIVE case, or ABSOLUTIVE case, depending on the language. Similarly, the absence of number inflection on a nominal can generally be interpreted as singular in English. Opinions differ as to which component of the grammar is responsible for default interpretation.68 However, it is usually possible to attach default equations for CASE, say, to a nominal because the nominal is physically present in c-structure, and so the default equations have a non-null element to attach to. Similarly, default TENSE equations can be attached to a verb. Many languages (for instance Georgian) attach subject and object pronominal clitics to the verb, and make use of paradigmatic gaps to represent third person singular (see Harris (1981)). For example in Nvangumarta69 (O’Grady, 1963), a close relative of Warlpiri, the pronominal clitics are attached directly onto the verb.70

68. See Neidle (1982) for an account of Russian in which default cases are determined at c-structure, and Andrews (1982) for an account of Icelandic and Warlpiri in which default cases are determined at f-structure. Recall that I am proposing that default case for Warlpiri should be determined in the lexicon.
69. I owe this observation to K. Hale.
70. I have changed retroflexes into digraphs with /r/, and palatals into digraphs with /y/.
(189) Ruwi -nyi -rni -nti. Luwa - rnu -rna -ngku
shoot -past -1sgSUBJ -2sgOBJ shoot -past -1sgSUBJ -2sgOBJ
I shot you.

(190) Ruwi -nyi -nyi- n. Luwa - rnu -npa -ju
shoot -past -1sgOBJ -2sgSUBJ shoot -past -2sgSUBJ 1sgOBJ
You shot me.

(191) Ruwi -nyi -n. Luwa - rnu -npa
shoot -past -2sgSUBJ shoot -past 2sgSUBJ
You shot it.

[Nyangumarta sentences from O'Grady (1963: 80)]

(189) and (190) show overt pronominal clitics for first and second person SUBJECTs and
OBJECTs. In (191), however, there is no overt OBJECT marker. But in both languages
the OBJECT is understood to be third person singular. The difference between the two
languages is simply that in Nyangumarta the default equations are attached to the Verb
(probably also in the form of a clitic template), whereas in Warlpiri the default equations
are attached to the AUX, which has a particular structural position in the sentence. But,
the AUX can be zero, as in the following sentence in which the null perfect aspect has
been selected.

(192) Japanangka-rlu 0 pantu-rnu marlu.
Japanangka-ERG PERF spear-NPST kangaroo-ABS.
Japanangka speared a kangaroo.

The default equations for third person SUBJECT and OBJECT are thus attached to a
null element. But this is a clear violation of the Null Element Constraint, which forbids the
appearance of null structure in a c-structure tree. (See 1.3.4.2). I contend that the
parallels between Warlpiri and Nyangumarta with respect to default information about
pronominal clitics are sharp enough to make it desirable to have a uniform account for
both. By saying that both languages use c'tic templates and that the default information
is attached to positions in these templates, some of the similarity can be captured. I can
find no way to express this similarity which does not weaken the Null Element Constraint.
I propose adding a clause to the null-element constraint, allowing the appearance of null elements just in case the null element represents a paradigmatic gap.

(193) The Revised Null-Element Constraint

A non-terminal category cannot exhaustively dominate the empty string e, except in the case of constituent control, (where constituent control is the long-distance dependency characterizing wh-movement and similar constructions), and except in the case of null structure created in the morphology by gaps in morphological paradigms.

2.4 Nominal-headed sentences

In the previous sections I have discussed sentences headed by verbs. In this section, I will discuss sentences headed by nominals. I will first discuss general properties of such sentences, and then compare them with verb-headed sentences.

2.4.1 General properties

Nominals that head sentences mainly consist of equative predications (where one item is equated with another), or of identification predication (where one item is identified as being another element, or a member of a class), or of predications that ascribe a stative property to something.

The sentences in (194) illustrate equational predication.

(194) a. Kurnturru, nguru.
    Sky    sky
    Sky is heaven. [H59: 363]

    b. Kana, karla-ngu.
       digging-stick    dig-AG
       A digging-stick is a digger. [Hale, p.c.]

Hale informs me that equational sentences such as the preceding have a characteristic intonation:
(200) Nyuntu -npa wati.
You-ABS -2sg man
You are a (fully-initiated) man. [EFW:2(c)]

(201) Lawa -rna warlkurru-wangu
negative -1sg axe-PRIV
I have no axe. [H59: 6]

(202) Wanta + ju kankarlarra + lku.
sun-ABS + EUPH up + THEN
The sun is up now. [H59: 255]

The type of predicative interpretation which a nominal may have depends in large part on the meaning of the nominal. Some nominals, like pronominals, are almost always used as arguments of predicates. If pronominals are used as argument-taking predicates, they generally have an equative meaning: something is equated with something else. Other nominals, like kankarlarra are almost always used predicatively, with a locative interpretation; kankarlarra ascribes a position to the argument it is predicated of, namely, up. So, whether an element can be used as an argument-taking predicate, or not, depends not on the category of the element, but on the meaning of the element, as Hale (to appear) observes (see 1.3.4.1 for more discussion).

The interpretation of a nominal as an argument taking predicate or as an argument can also be affected by the suffixing of clitics and suffixes to the nominal. For example, the ubiquitous clitic ju, although often apparently used only for euphony, can be used to distinguish between an adverb and an attribute of an argument, as Timothy Shopen pointed out to me.

(203) Wirriya parnka-mi ngurrju.
boy-ABS run-NPST good-ABS
The boy runs well.

(204) Wirriya parnka-mi ngurrju + ju
boy-ABS run-NPST good-ABS + EUPH
The good boy runs. (T. Shopen, p.c.)
The suffix *pirdinypa* is especially common when an argument-taking predicate has a restrictive reading. (205) shows *pirdinypa* used in a definition.

(205) Nyarnturri ca-rnalu ngarri-rni — ngulaju walya + yijala
clod-ABS PRES-1pex call-NPST that dirt-ABS + ALSO
yangka *tardutardo-pirdinypa*.
the round-ONE-ABS
Clod is what we call that dirt, the round lumps. [Hnotes 425]

*Pirdinypa* is often used for making restrictive attributes of argument-taking predicates other than simple equational, identifying, or property-attributing nominal predicates. For instance, inherently locative predicates such as *kankarli* and *kanunju* in (206) and (207) can be made into restrictive attributes with the help of the suffix *pirdinypa*.

(206) Parrka yangka *kankarli-pirdinypa* + ju — yukuriji.
leaf-ABS the up-ONE-ABS + EUPH green
The leaves at the top are green. [jukurru]

(207) Kula-lpa-rnalu nga-njarla yangka tardu *kanunju-pirdinypa*,
not-PAST-1pex eat-IRR the round inside-ONE-ABS
We can’t eat that round thing which is inside, .. [marrkirdi]

Likewise, *pirdinypa* can be attached to argument-taking predicates formed by suffixes (see Chapters 3, 5 and 6 for discussion of these) to create restrictive attributes. (208) contains a nominalized verb *parnkanja* with a PRIVATIVE suffix *wangu* attached, meaning "without running". The suffix *pirdinypa* is used to make it into a restrictive attribute. In (209) an argument-taking predicate created by the SOURCE suffix *jangka* (itself attached to a complex word formed with the PRIVATIVE suffix *wangu*) is made into a restrictive attribute by means of the suffix *pirdinypa*.

(208) Yali kapi-rna marlu + ju panti-rni
that.rem-ABS FUT-1sg kangai oo-ABS + EUPH spear-NPST
*parnka-nja-wangu-pirdinypa*
run-INF-PRIV-ONE-ABS
I’m going to spear the kangaroo that’s running. [Hnotes 52]

(209) Kala manya kuja-ka-lu nga-rni yangka, ngurrju,
BUT tender-ABS REL-PRES-3pl eat-NPST the good-ABS
The nominal predicates in (195) attribute membership in a set to the SUBJECT. They do not have to have the characteristic intonation associated with the equational sentences.

    Napurrula I-DAT-KIN
    My sister is Napurrula. [H59:13] [is a member of the Napurrula subsection]

b. Ngaju-ku-pirdangka Jupurrula; papardi.
    I-DAT-KIN Jupurrula elder.brother.
    My brother, my older brother, is Jupurrula. [H59:13] [is a member of the Jupurrula subsection]

c. Ngati, Napaljarri.
    Mother, Napaljarri
    My mother is Napaljarri. [H59:13] [is a member of the Napaljarri subsection]

(Note that I have not marked either nominal with ABSOLUTIVE case. I will return to the question of case-marking in nominal-headed sentences in 2.5.1.)

The following sentences show nominals being used to ascribe stative properties to the Subject:

(196) Ngurrpa -rna.
    ignorant -1sg
    I don't know. [H59: 33]

(197) Nyuntu -npa wiri.
    You-ABS -2sg big
    You are big.

(198) Maliki-kirli -rna.
    Dog-PROP -1sg
    I have a dog. [H59: 311]

(199) Ngana-kurlangu maliki.
    who-POSS dog
    Whose dog is it? [H59: 37]
ngulaju yangka kurdu-warnu-rlangu -- manu marlu
that the child-ASSOC-E.G.-ABS and kangaroo
kurdu-parnta-jangka yangka wirriya-wangu-jangka-pirdinypa --
child-PROP-SOURCE-ABS the male-PRIV-SOURCE-ONE-ABS
ngula ka-lu nga-rni manya ngurirju.
that PRES-3pl eat-NPST tender-ABS good-ABS
But they eat tender meat, good stuff, the meat from young kangaroos for
example, or from kangaroos with babies, meat from female kangaroos, they eat
good tender meat. [Hnotes 795]

There is one interesting class of nominals which appear to be used primarily as
argument-taking predicates. Unlike normal nominal predicates, they are not stative, they
are active. I will call these "action nominals"; they will be discussed at greater length in
Chapter 6.

jarda asleep
kulu raging, fighting
manjiki camping-out, holiday
manyu playing
wajili chasing
warrki work
wirrinyi hunting
wurna travelling
yantarli being in camp
yinka laughing

The semantic and syntactic behaviour of these nominals is not well understood. However,
one can point to a few tendencies. They are rarely used as referential nominals. They are
also rarely used as matrix predicates. Their main use is as secondary predicates.
However, they normally act as free secondary predicates, rather than as restrictive
attributes. Needless to say, the class is not homogeneous. Some, such as manyu, are
more like ordinary nominals than the others. Some can appear as "preverbs" (see 2.5.2).
Some, such as wirrinyi, wajili and wurna seem semantically like verbs.

To conclude this discussion, one of the main properties of Warlpiri differentiating it
from European languages such as English is that

Any nominal can be used as an argument-taking predicate, allowing
for its meaning.
2.4.2 Comparison with verb-beaded sentences

Since nominals can be used as argument-taking predicates, it is important to distinguish which of the properties of verbs that we have already discussed characterize argument-taking predicates as a class, and which are particular to verbs.

First, like verbal matrix predicates, nominal matrix predicates need not have an overt subject.

(210) Mata -rna.
    tired -1sg
    I am tired.

Therefore, just as a verbal predicate can introduce a null pronominal by means of the equation \( \uparrow G \text{ PRED} = \text{'PRO'} \) (where G is just an abbreviation for selected grammatical functions) attached to a selected function, such as SUBJECT, so a nominal predicate can select a SUBJECT and give it the equation \( \uparrow \text{SUBJ PRED} = \text{'\text{PRO}'}. \)

Second, just as sentences with verbal matrix predicates can contain non-SUBJECT arguments (e.g. Adjunct DATIVES) that are only loosely connected with the argument structure of the matrix predicate, so nominal-headed sentences can also include loosely related non-SUBJECT arguments. These arguments can be equivalent to Adjunct DATIVES (e.g. possessors)

(211) Nyampu + ju nyuntu-ku warlkurru.
    t's + EUPH 2sg-DAT axe-ABS
    This is an axe for you. [H59Notes: 6]

(212) Wawirri, kanyala-ku -rla wiri.
    Kangaroo-ABS euro-DAT -DAT big
    The kangaroo is bigger than the euro. [H59: 345]
    (Presumably wawirri is topicalized here, since two constituents precede the AUX).

(213) Lawa -rna yimi-ki + ji.
    nothing -1sg language-DAT + EUPH
    I haven't any language. [H59: 137]
Third, unlike verbal predicates, the SUBJECT of a nominal matrix predicate cannot be ERGATIVE; it is normally ABSOLUTIVE.

Fourth, just as verbal predicates can have non-SUBJECT complements, so some nominal predicates have a tighter relation to a non-SUBJECT argument; the non-SUBJECT argument appears to be a complement of the nominal. Some nominal predicates, like verbal predicates, require that a DATIVE complement be registered if present. An example is *lani* 'afraid' in (214). However, some nominal predicates, unlike verbal predicates, have complements which are never registered on the AUX — this is true of *ngampurrpa* 'desirous of' as in (215), and perhaps also of *lijija* 'covetous', as in (216).

(214) Ngaju -rna *lani*.  
I-ABS -1sg fearful.  
I am afraid.

(215) Ngaju -rna ngapa-ku *ngampurrpa*.  
I-ABS -1sg water-DAT desirous  
I want water. [EFW:2(d)]

(216) Ngula+ju *lijija* wirriya-pardu nyiyakantikanti-ki.  
That + EUPH covetous-ABS boy-DIM-ABS things-DAT  
That boy is covetous of other people’s things. [lijija]

Predictably, just as verb-headed sentences with ABSOLUTIVE SUBJECTs do not in general have ABSOLUTIVE OBJECTs, nominal-headed sentences do not in general have ABSOLUTIVE complements. (See 6.6.4 for an exception.)

Fifth, some nominal predicates can appear with nominalized verb complements:

(217) *Pina* -npa kuyu-ku purra-nga-ku?  
knowledgeable -2sg meat-DAT cook-INF-DAT?  
‘Do you know how to cook meat?’ [H59: 45]
So, the nominal predicates do seem to behave like verbs in most respects. A key question of course is: Can they take OBJECTS, as verbs can? Evidence for the non-SUBJECT argument associated with lani being an OBJECT comes from control of OCOMP kurra clauses.

(218) Lani -rna-rla maliki-ki [warlkurr-ma-ninja-kurra-ku.]
Fear -1sg-DAT dog-DAT bark-EMIT-INF-OCOMP-DAT
I am afraid of the dog when it barks. [Laughren, letter, Feb., 1982]

So, (218) suggests that at least one nominal complement is an OBJECT. However, this elicited example is the only such example I have.

An important respect in which nominal-headed sentences differ from verb-headed sentences is with respect to the AUXILIARY pronominal clitics. The AUX is obligatory in verb-headed sentences, but not in nominal-headed sentences. Consider the following examples (taken from Hale [EFW, p.2 and footnote 2].

(219) a. Ngaju -rna mata.
    I-ABS -1sg tired.
    I am tired.

b. Ngaju + ju mata.
    I-ABS + EUPH tired
    I am tired.

    You-ABS -2sg man.

71. The reason that some nominals in Warlpiri can have OBJECTS undoubtedly stems from the fact in Warlpiri the category Nominal encompasses the adjectival category of English. It is well-known that adjectives can take oblique complements in English: I am afraid of the dog, He was very helpful to me. Furthermore, there is evidence from Swedish (Platzack, 1982) and Russian that a couple of adjectives can take OBJECTS. So it is not surprising that a category subsuming adjectives should include some members that can take OBJECTS.

72. I exclude Imperative sentences from the discussion here.

73. Hale notes that the b. sentences, although often found in discourse, sound rather unacceptable in isolation, but that the euphony particle ju improves their acceptability.
You are a (fully initiated) man.

b. Nyuntu + ju wati.
   You-ABS + EUPH man.
   You are a (fully initiated) man.

In the b. sentences, the SUBJECT pronominal clitic (Clitic 1) is optionally missing. To account for this, I assume that the AUX is optional in nominal-headed sentences.

The Clitic 2 clitic, like the Clitic 1 clitic, is optional in nominal-headed sentences. Compare (212), in which the DATIVE ria is registered in the AUX, with (221), in which, although the SUBJECT is registered, the DATIVE is not.

(221) Ngaju -ma wiri nyampu-ku.
   I-ABS -1sg big this-DAT
   I am bigger than this one. [H59: 345]

Since in (221), the SUBJECT pronominal clitic is present, the optionality of the Clitic 2 cannot be attributed to the optionality of the AUX. However, there is another explanation. Recall that in 2.3.1.1. I argued that verbs which allowed an alternation between a registered DATIVE argument and an unregistered DATIVE argument expressing a similar semantic role were in fact showing an alternation between an OBJECT and an OBLIQUE argument of some sort. Suppose that in nominal-headed sentences the same alternation applies, only much more freely. Then, if the DATIVE acts as an OBJECT, it will be registered on the AUX, if the AUX is present. However, if the DATIVE acts as an OBLIQUE, it will not be registered.\(^{74}\)

74. This account then makes the prediction that (217) will be ungrammatical if the DATIVE is not registered in the AUX:

\[
\begin{align*}
\text{Lani} & \quad -\text{rna} & \text{maliki-ki} & \text{warlkurr-} \text{-ma-ninja-} \text{kurra-ku.} \\
\text{Fear} & \quad -\text{1sg} & \text{dog-DAT} & \text{bark-EMIT-INF-OCOMP-DAT} \\
\end{align*}
\]

I am afraid of the dog when it barks.

This has to be tested.
Another property of nominal-headed sentences is that they cannot contain an overt aspect marker.

(222) *Ngaju ka-rna wiri.
I-ABS PRES big.
I am big.

If we suppose that the ASPECT is optional, but the Subject position is obligatory within the AUX, and that the AUX itself is optional, then we are part-way to accounting for the optionality of the AUX in nominal-headed sentences. The only difference between nominal matrix predicates and verb matrix predicates appears to be the fact that verb matrix predicates are overtly marked for TENSE. Nominal matrix predicates are not morphologically marked for tense, and are usually understood to be present or generic. Joan Bresnan suggested to me that these two differences can be used to express formally the co-occurrence restrictions on the aspect marker in the AUX, and to make the AUX obligatory in finite clauses in the following way.

The TENSE inflections will have as part of their lexical entries the existential constraint equation ↑ ASPECT, meaning that an ASPECT marker must be present. (Individual tense inflections specify still further what the aspect marker may be, thus -mi/rni/ni ‘non-past tense’ specifies that it appears with PERFECT or PRESENT IMPERFECT aspect). This will force the appearance of an AUX in verb-headed but not in nominal-headed sentences, since there are no overt tense markers in nominal-headed sentences. Thus my account relies on the fact that TENSE entails ASPECT.

But I also claim that certain aspeсtual markers require the presence of an overt TENSE marker, in order to rule out the appearance of overt ASPECT markers in nominal-headed sentences. The ASPECT ka and -lpa markers will have as part of their lexical entry the annotation TENSE. This means that for these ASPECT markers to be present, a TENSE marker must be present. Suppose that there is NO understood Tense
marker in Nominal-headed sentences. Then, these ASPECT markers will not be able to appear in a nominal-headed sentence.

I follow Laughren (1981b) in assuming that there are in fact three aspect markers, the two overt aspect markers already discussed (ka (Present Imperfect) and -/pa (Past Imperfect)), and a null aspect marker 0. The 0 marker is PERFECT in verbal sentences. But a nominal matrix predicate describes either the present state of affairs or a general state of affairs, neither of which is semantically compatible with a perfect aspect marker. Either there is no ASPECT marker in nominal sentences, or else there are two zero ASPECT markers. One appears in verbal sentences and is interpreted as PERFECT aspect. The other appears in sentences with a nominal matrix predicate, and is interpreted as PROGRESSIVE or GENERIC.

There are two reasons to prefer the former account. First, this second 0 morpheme would be the only aspect marker that can appear in nominal sentences. Second, since nominal-headed sentences have no overt TENSE marker, a general biconditional constraint equation on the phrase structure rule can be placed to account for this distribution of overt TENSE and ASPECT markers.

75. The same account can probably be extended to IMPERATIVE sentences, in which the ASPECT ka and -/pa markers cannot appear either. We could assume that the IMPERATIVE inflection is a mood inflection, not a tense inflection.

76. Restrictions on ASPECT and TENSE in nominal-headed sentences also extend to account for some of the distribution of sentential particles in the AUX. Sentential particles usually give information about the mood of the sentence. Not surprisingly, there are, as Laughren (1981b) reports, very strict co-occurrence restrictions between sentence particles and tense and aspect markers. The lexical entry for each sentence particle will specify whether it requires a tense-aspect combination, and, if so, what sort. Only those sentential particles which do not specify tense-aspect combinations, such as the NEGATIVE particle, will be able to appear in nominal-headed sentences.

\[ Kula \ ngaju-ku \ ngulaju \ yuwarli. \]

NEG 1sg-DAT that house

That house is not for me. [Laughren, 1981b]
S → (AUX) α • α = N, V, Particle

Assign grammatical functions freely

↑ASP if and only if ↑TENSE

In conclusion, I have shown that nominals in Warlpiri may act as matrix predicates. They differ semantically from verb predicates in stativity. Syntactically, they share a number of properties with verbs, some of which I assume as general properties of argument-taking predicates in Warlpiri. These include: the ability to select a SUBJECT and the ability to introduce a null pronominal for subcategorized arguments. Nominal predicates are more restricted than verbs in the functions their arguments may have; for instance there are no ditransitive nominals. However, they do seem able to select OBJECTs. Nominal matrix predicates differ from verb matrix predicates in that the AUX is not obligatory. I have suggested that the AUX is obligatory in verb headed finite sentences because there is a dependency between TENSE and ASPECT, represented by a biconditional constraint equation on the phrase structure rule. I have claimed that nominal-headed sentences have no TENSE and hence cannot have ASPECT markers. By making the AUX optional in the phrase structure rule, we can account for the fact that the SUBJECT is not always registered. To account for the fact that DATIVE arguments are not always registered, I assume that nominal predicates show the same alternation as ABSOLUTIVE-DATIVE verbs, namely that a DATIVE argument may be realized either as an OBJECT or as an OBLIQUE; differences in obligatoriness of registration depending on animacy and the meanings of individual argument-taking predicates.

2.5 Phrase structure

In this section, I look more closely at constituent structure in Warlpiri. I show the need for an N constituent. Then, I briefly describe several complex verb structures in Warlpiri, presenting some of their important semantic properties. After that, I discuss the vexed problem of whether the complex verb structures should be generated as V.
2.5.1 Projection of N

A constituent $\bar{N}$ is needed, because a sequence of nominals can precede the $\bar{AUX}$, provided that they either all have the same case: $[N\text{-Case}^*, N\text{-Case}_i]$, or else consist of a coordinate structure: $[N\text{-Case}^*, manu N\text{-Case}_i (N \text{ and } N)]$, or else form a sequence of nominals without case-marking followed by case-marked nominals. I will call an uninflected nominal in such a structure $N^-$, and a nominal with case-marking $N$.77 So the structure has the following form: $[N^- \text{ N-case}^* \text{ N-case}_i]$. Since these sequences of nominals can precede the AUX, they form a single constituent, (on the hypothesis that the AUX follows the first constituent). In (223) an ERGATIVE and an ERGATIVE-marked modifier precede the AUX, while in (224) a LOCATIVE and a LOCATIVE-marked modifier precede the AUX.

\[ N\text{-Case}^* \text{ N-Case}_i \]

(223) Warlpa-ngku jurdu-ngku ka mirri-mi wirliya.  
wind-ERG sand-ERG PRES obliterate-NPST track-ABS  
The sand storm is wiping out our tracks. [mirrimi]

(224) Kirri-ngka wiri-ngka -riipa nyina-ja.  
large camp-LOC big-LOC 1pln sit-PAST  
We sat in the large camp. [H66PSJ:1106-7]

In (225), an ERGATIVE-marked modifier and a caseless nominal maliki, which is functionally the head, precede the AUX.

\[ N^- \text{ N-Case}^* \]

77. The notation $N^-$ was introduced in Selkirk (1982). However, she uses it for roots and stems which can take further derivational suffixes. (See Mohanan (1982d) for a comparison between Selkirk’s theory and Lexical Phonology.) I am using $N^-$ to refer just to nominals which have no case-inflection. In terms of Lexical Phonology, an $N^-$ is either a nominal which acts as input to Level 2 (the Level at which case-inflection takes place in Warlpiri), or a nominal which, after going through Level 2, fails to receive any case-inflection.
(225) Maliki wita-jarra-rlu ka-pala wajili-pi-nyi.
   Dog small-DU-ERG PRES-3du chase-NPST
   The two small dogs are chasing it. [PWTB:(34a)]

In (226), two coordinated ERGATIVE nominals precede the AUX. One of them, yapa-ngku turaka-rlu, consists of two ERGATIVE nominals, while the other consists of an caseless nominal and an ERGATIVE nominal:

   Co-ordinated nominals:
   N-Case*, manu N-Case, (N and N)

(226) Kardiya yurrkunyu-rlu manu yapa-ngku turaka-rlu
   European policeman-ERG AND Aborigir.al-ERG tracker-ERG
   kalaka-ngku-pala muru-pi-nyi.
   ADMON-2sg-3du arrest-NPST
   A white policeman and an Aboriginal police aid can arrest you. [MKJ:3]

[N* N-Case*] (a sequence of caseless nominals followed by one or more case-marked nominals) and [N-Case*, N-Case] (a sequence of identically case-marked nominals) differ only in whether or not all the elements are case-marked. Since syntactically they do not behave differently otherwise, it seems reasonable to call them both $\overline{N}$. It also seems reasonable to consider coordinate structures as $\overline{N}$. However, in the discussion that follows I will ignore the coordinate structure.
The phrase structure rule expanding \( \bar{N} \) is as follows:\(^{78}\)

\[
\bar{N} \rightarrow N^{-1}\ast \quad N^* \quad N
\]

To express the fact that a caseless nominal can form part of \( \bar{N} \), I propose that both case-marked and caseless nominals can be lexically inserted. I assume the existence in syntax of a category \( N^{-1} \), which is a caseless nominal, an uninflected nominal root. The morphological structure of a case-marked nominal, and the syntactic c-structure tree created by the \( \bar{N} \) rule are given below.

- **a. Morphological**
  - N
  - N^{-1}
  - Af
  - pirli
  - rock
  - -ngka
  - -LOC

- **b. Syntactic**
  - N
  - N^{-1}
  - N
  - pirli
  - rock
  - wita-ngka
  - small-LOC

---

78. The \( \bar{N} \) rule as given does not conform to the traditional \( \bar{X} \) schema of:

\[
\bar{X} \rightarrow (Y_{\max}) X
\]

(See Jackendoff (1977)). First, \( N^{-1} \) is not a maximal category. Second, the final \( N \) is not necessarily the functional head, although, since it is the only nominal that has to have Case features, it could be considered the structural head.

The divergence between functional and phrase structure heads is essentially the reason Nash (1980) gives for not using a one-bar expansion:

"there are no structures with syntactic heads — heads imposed, that is, by a PS-component." (Nash, 1980: 5.2)

However, in LFG the functional head is a major category with the equation \( \uparrow = \downarrow \) and a PRED feature. Several elements within a category may be assigned the equation \( \uparrow = \downarrow \) (although only one of them may have a PRED equation). It is quite possible, then, for phrase structure rules to accord special status (by means of the \( \uparrow = \downarrow \) annotation) to an element which is not the functional head, creating in effect a phrase structure head.
I distinguish an unmarked $N^f$ which forms part of a case-marked expression as in b., from an unmarked $N$ which is interpreted as having ABSOLUTIVE case. I assume that in the syntax a default rule assigns to $N$ and $\overline{N}$ the case ABSOLUTIVE if it has no case. (See 3.5.2.3).

According to the $S$ and $\overline{N}$ rules, $N^f$ and $N$ cannot occur as a daughter of $S$, but only as daughters of $\overline{N}$. Therefore, a nominal matrix PREDICATE, such as *wita* in *ngaju wita: I am small*, has to be treated as an $\overline{N}$ with ABSOLUTIVE case. *Wita* can be construed as agreeing with *ngaju*, the SUBJECT, in having ABSOLUTIVE. This solution is viable because SUBJECTS of nominal clauses have ABSOLUTIVE case, and ABSOLUTIVE Case is morphologically unmarked.

The structure given in the $\overline{N}$ rule is intended to allow any number of caseless $N^f$s to precede any number of case-marked $N$s within a single constituent, but not to allow the alternation of caseless with case-marked $N$s. The rule will allow the following structures as single constituents:

Possible single constituents

```
Kurdu-ngku wita-ngku nyampu-rlu. Kurdu wita nyampu-rlu
```

But the rule correctly disallows the following as single constituents:
Impossible single constituents

In Chapter 4, I will explain the annotation of functions to parts of an $\bar{N}$. In Chapter 6 I will show that this expansion of $\bar{N}$ is not sufficient to cover all instances of $\bar{N}$, and that another $\bar{N}$ rule is needed for the non-finite clauses.

2.5.2 Projection of V

In this section, I will examine the need for $\bar{V}$ as a constituent in Warlpiri, basing the discussion on the detailed description of Warlpiri complex verbs given in Nash (1982). As I mentioned in 2.3, I assume, following Hale (1973), that there is no syntactically relevant projection of V which contains the OBJECT or other complements to V. However, there are three types of complex verb which can precede the AUX as a single unit. These are:

[1] infinitive + Verb, as in (227), in which the infinitive of the verb $wangkami$ combines with a verb of motion $yani$ 'go'.

[2] Noun + INCHOATIVIZER or CAUSATIVE, as in (228) and (229), in which a noun is formed into a verb by the addition of a verbalizing suffix (which could be thought of as a dependent verb.)
[3] Preverb + Verb, as in (230) and (231). In (230) the verb yani 'go' is modified by the preverb pina meaning 'back'. The combination means 'go back, return'. (231) shows the same preverb pina modifying the verb kanyi 'to carry'. Pina kangu precedes the AUX.


(228) (..) Kirrkarlanji-jarri-mi-rlangu ̋ kajika. Kite-INCH-NPST-E.G. POT ..or it [evil being] can turn into a kite for example. [marramarra]

(229) Liwirn-ma-ni + jala ̋ kapi-ngalpa hungry.for.meat-CAUS-NPST + CLEARLY FUT-1plin miyi-pardu-rlu + ju. food-DIM-ERG + EUPH Vegetable food will make us hungry for meat. [muurl-ngarni]

(230) Nguurra-kurrala ka-rna ̋ pina-ya-ŋi camp-ALL PRES-1sg back-go-NPST I'm going back home. [H59Notes: 31]

(231) Pina-ka-ngu ̋ kala-jana ̋ - mungalyurr + Iku. back-carry-PAST USIT-3pl - morning + THEN They would carry them back - when it was morning. [H66, PSJ: 1119]

The fact that these three complex verb structures can precede the AUX indicates that either the structures are lexical words, or else that there is a projection of V, V̅, which includes the structures, or else that both options are taken. I will consider the structures in turn.

The infinitive + V structure forms a lexical word, since the whole has the
case-structure of the infinitive, and not of the tensed verb.\textsuperscript{79} Direct syntactic encoding prevents adding arguments in the syntax. Therefore if an infinitive when added to an intransitive verb, makes that verb transitive, the addition of the infinitive must be a morphological process. But, if the infinitive is transitive, the resulting compound is transitive, and also has the optional directional complements of the verb of motion. Thus in (232) the infinitive is nyanyi ‘look for’ with an ERGATIVE-DATIVE case-frame. The verb of motion is yani ‘to go’. The combination has a DATIVE-marked OBJECT. (It would have an ERGATIVE-marked SUBJECT too, but in the example it is not overt.)

\textbf{(232)} Yuwayi -- karli-ki -rlipa-rla nya-nja-rra-ya-ni.

Yes boomerang-DAT 1plii::LAT see-INF-THERE-PROG-NPST

Yes, we’ll go along along there looking for boomerangs. [H60Dial: 7.12]

The infinitive and the verb always occur as a unit in the syntax. I assume that the combination is formed in the morphology and is lexically inserted as a verb.

\textsuperscript{79} Some suggestive morphological evidence that the infinitive + verb combination must be generated in the morphology comes from the fact that the combination can in turn act as an infinitive and have a complementizer suffix attached to it. The complementizer suffixes are inflectional suffixes very similar to case suffixes. They can precede case-suffixes (see 6.3.2.1). e.g.

\texttt{yula-nja-kurra-ku}

cry-INF-OCOMP-DAT

while someone is crying – controlled by DATIVE argument of matrix.

Since case-suffixes have to be attached in the morphology, complementizer suffixes must also be attached in the morphology, because all inflection is done in the morphology. The combination of infinitive + verb can itself be an infinitive with a complementizer suffix attached. But, if complementizer suffixes are suffixed in the morphology, and if they can attach to the combination infinitive + verb, this suggests that the infinitive and the verb are compounded in the morphology.

\texttt{Walya kala-lu pangu-rrnu warrka-rninia-va-ninia-kg --}

earth-ABS USIT-3pl dig-PAST climb-INF-PROG-INF-DAT

They dug out the earth (in the sides of a well) to climb up [warrkarni]
However, the status of the Nominal + CAUS/INCH, and Preverb-Verb structures is somewhat more debateable. Nominal + INCH/CAUS constructions can act as infinitives in infinitive + Verb structures. Since the compounding of the nominal and the suffix presumably precedes the compounding of the infinitive to the verb, and since the latter is a morphological process, it follows that the compounding of the nominal and the suffix should be a morphological process.

(233) M: Manu ngula-jangka + ju ka-npa nyarrpa-rni-ja*ri-nja-ya-nu?  
AND that-SOURCE + EUPH PRES-2sg  
what-HERE-INCH-INF-PROG-PAST  
What did you do(?) when you came this way (after hunting)? [H60Dial:7.30]

(234) (.) ngula ka kankarlarra-jarri-nja-ya-ni + lki  
that PRES high-INCH-INF-PROG-PRES + THEN  
It (the pile) gradually gets higher. [yani]

Some Preverb and Verb combinations have to be generated in the morphology, because otherwise the Principle of Direct Syntactic Encoding would be violated. Recall that in 2.3.2.1.1. and 2.3.1.2.1, I showed that Adjunct DATIVE preverbs and DATIVE OBJECT preverbs can add arguments to verbs. Direct Syntactic Encoding prevents any change of argument structure taking place outside the lexicon. If the Preverb and Verb are only combined in the syntax, and the Preverb adds a DATIVE argument, then Direct Syntactic Encoding is violated.

However, neither Nominal + INCH/CAUS, nor Preverb-Verb structures have to form constituents in the syntax. The AUXILIARY complex can intervene, as illustrated below.

(235) Kulu -lu-nganpa jarri-ja.  
angry -3pl-1plex INCH-PAST  
They got angry at us. [overheard by Hale at Yuendumu in 1966]

(236) A: Nyarrpa -manu-nkulu jarri-ja?  
What AND-2pl INCH-NPST  
And what were you doing? [H60Dial:7.65]

Compare a previous snippet in the conversation, in which the AUX does not break up
nyarrpajarrija:

(237) A: Manu-npa nyarrpa-jarri-ja?
     AND-2sg what-INCH-PAST
     And what did you do then?

In (238) the preverb *jarngajarnku* is separated from the verb by the AUX.

(238) Jarngajarnku + Iku -lu pirri-karrka.
     distributive + THEN -3pl scattered-proceed-NPST
     Now they each go their separate ways. [H66:1106-7]

If the nominal-INCH/CAUS structures, or the preverb-verb structures are generated as a lexical item, then the *Lexical Integrity Hypothesis* prevents the insertion of the AUX in between the two.

The preverb-verb structures show another violation of adjacency. In (239) the Preverb *wurulypa* follows the verb *kangu*, rather than precedes it.

(239) A: Kapi-rna-ju ka-nyi wurulypa nantuwlra.
     FUT-1sg-1sg carry-NPST hiding horse-LOC
     I will carry her off for myself on horseback. [H60Dial: 8.136]

All sorts of productive preverbs can undergo inversion. 80

---

80. The only meaning difference found so far associated with the positional differences is a scopal distinction which is not well-understood. Nash (1980) observes a difference in scope with inversion and AUX placement with Preverbs such as *puta* which have a negative element in their meaning.

i. *Puta* -rna nya-ngu
    some -1sg see-PAST
    I saw some of it

ii. *Nya-ngu* -rna puta
    see-PAST -1sg some
    I saw it some more, again.

Presumably this scopal fact is related to the general Warlpiri constraint that the negative particle *kula* must precede the verb.
This inversion of preverb and verb is most plausibly a syntactic rule, not a morphological rule. First it would be a very odd kind of morphological rule that could attach a preverb either to the left of a verb root or to the right of a tense-inflected verb stem. Second, if the combination Verb Preverb were generated as a word in the lexicon, this would predict that it could precede the AUX, just as the combination Preverb Verb can.

(240) a. PREVERB VERB AUX X* 
   b. ?? VERB PREVERB AUX X* 

But in fact while a. is very common, b. is hardly ever found, and, so Nash and Hale claim, is often rejected. Observe that the unacceptability of this structure also blocks the generation of the inverted structures by means of a phrase structure rule expanding VP. A phrase structure rule such as (241)

(241)  \( V \rightarrow (\text{Preverb})^* V (\text{Preverb}) \)

would also predict that (240)b. VERB PREVERB AUX is a possible expansion.

To allow the structure (240)a. PREVERB VERB AUX, the combination PREVERB + VERB must be a V or an \( \bar{V} \). But to allow the inverted structure, and to prevent it preceding the AUX, the inverted VERB and PREVERB must be daughters of S, not of V. Some kind of pruning rule, or "liberation" meta-rule (Pullum, 1982), will be needed.

Preverb-Verb inversion interacts with AUX placement, as in (242), in which the preverb marlaja appears on the other side of the AUX from the verb.

(242) Kiwinyi-riji pu-ngu, rdilypirr-karri ka-rna-rla 
   mosquito-ERG -1sg bite-PAST, wounded-stand-NPST PRES-1sg-DAT 
   marlaja cause 
   The mosquito bit me, I am wounded because of it. [quoted, Nash: 51]
So, Warlpiri allows the following structures:

NOMINAL-INCH/CAUS AUX
NOMINAL AUX -INCH/CAUS

PREVERB VERB AUX
PREVERB AUX VERB
VERB AUX PREVERB
??VERB PREVERB AUX

The INCH/CAUS suffix is not free to appear anywhere else. Certain preverbs can appear separated from the verb, but then they seem to act as independent adverbs, and get case-marking according to the case of what they modify (usually the SUBJECT).  

The problem is that what seems to be a lexical word can be, in a very limited way, discontinuous in the syntax. Lexical insertion, as conceived of so far, maintains a direct relation between lexical categories (categories created in the morphology), and terminal nodes. A single lexical item is inserted under a single node. Either lexical insertion of discontinuous expressions under different sister nodes must be allowed, or else stylistic movement rules must be permitted to insert the AUX between the Preverb and the verb, or the nominal and the INCH/CAUS and invert the Preverb and the Verb. (This solution would also require maintenance of brackets around the nominal and the INCH/CAUS, and the Preverb and Verb. Otherwise, Bracket Erasure, from which the Lexical Integrity

81. For instance, in i. manyu is used as an independent word with ALLATIVE case, as well as a preverb with the verb karrimi. In ii. julyurl is used as a preverb, while in i. it is used as an adverb with LOCATIVE case.

   fun-ALL 1plin go-NPST REAS-1plin fun-stand-NPST water-LOC
   Let's go and play in the water for fun. [manyu]

   water-put-NPST PRES-3pl mikawurru water-ALL, dish-E.G.-ALL
   They put the mikawurru stone into water, into a wooden water dish for example. [mikawurru]
Hypothesis is derived, would render the brackets invisible, and thus inaccessible to movement rules.) The output of the stylistic movement rules would have to be available for semantic interpretation. Otherwise, the scope facts mentioned in Footnote 81 would be inaccessible.

Choosing either solution has strong repercussions for the LFG theory, since it has provision neither for discontinuous lexical items, nor for stylistic movement rules. These repercussions are beyond the scope of this thesis. I leave the representation of the placement of the AUX with respect to these complex verbs as an unsolved problem.
3. Case

3.1 Introduction

A central feature of Warlpiri grammar (and, indeed, of many Australian languages) is the importance accorded to the case-marking system. Case-suffixes have many uses in Warlpiri, which illuminate the importance of morphology in determining predicate-argument relationships. This demands an account of an issue central to any theory of the interaction of morphology and syntax, namely the existence of words which are both morphologically and functionally complex.

The morphologically and functionally complex words that I refer to are nominals with case-suffixes that are used as argument-taking predicates. A word marked with such a case-suffix combines within itself the functions of a preposition and the object of that preposition. I will show that, by allowing the assignment of functional equations in the morphology, as well as in the syntax, the parallels between case-marked nominals and prepositional phrases can be captured, without a major violation of the Lexical Integrity Hypothesis.

Previous work on Warlpiri (Carrier (1976), Hale (EFW), Nash (1980)) has revealed the existence of three types of case-suffix, which I shall call 'grammatical', 'semantic' and 'derivational'. The distinction between grammatical and semantic cases corresponds roughly to differences in the use made of nominals bearing these cases at the syntactic level. Grammatical cases are primarily used to show that the nominal to which they attach bears a particular grammatical function: SUBJECT, OBJECT, OBJECT 2, or ADJUNCT DATIVE. The primary use of semantic cases is to create argument-taking predicates (ATPs). These are approximately equivalent to the argument-taking predicates created by

1. The distinction between grammatical and semantic case-suffixes corresponds to the traditional distinction between 'syntactic' and 'local' case-suffixes. See also Carlson (1978) for an account of a similar distinction in Finnish.
English prepositions\(^2\) in some of their uses, such as \textit{by} in the following sentence:

(1) Lucy kissed John \textit{by the willow}.

I want to claim, however, that the intuition that a case-suffix such as \textit{ERGATIVE} is used to indicate a grammatical relation, and that a case-suffix such as \textit{LOCATIVE} is used to denote an \textit{ATP}, should NOT be expressed as a morphological property of two different classes of case-suffix. Grammatical case-suffixes such as \textit{ERGATIVE} can be used not only as grammatical relation-indicators but also as \textit{ATPs}, and similarly, semantic case-suffixes can be used both as \textit{ATPs} and as grammatical relation-indicators. Since both classes of suffix can have both uses, it is not possible to represent the difference entirely as a difference in morphological class. I will argue that the difference in use should be expressed as a property of the lexical entry of a given case-suffix, namely, whether or not it has a syntactically relevant meaning (PRED feature). However, the morphological distinction between grammatical and semantic case-suffixes is still necessary in order to account for differences in the transmission of CASE features in double case-marking.

The distinction between \textit{semantic} and \textit{derivational} case also corresponds to different morphological properties of the two types of suffix, and I will discuss this in 3.6, as well as in Chapter 4. I will illustrate the three types of case-suffix, before discussing the semantic and syntactic functions of case-suffixes in Warlpiri. More detailed accounts of case-marking can be found in Hale (PWT) and (EFW), and Nash (1980).

The \textit{grammatical cases} are listed below.

\textbf{Grammatical Cases:}

\begin{tabular}{lll}
ABS & ABSOLUTIVE & $\emptyset$
\end{tabular}

2. Carlson (1978) makes a similar point with respect to Finnish. He suggests that the Finnish semantic cases share a feature \([P]\) with postpositions and particles, where \(P\) is 'identical with the syntactic category \(P\) (postposition or particle)'.
The alternant forms for the ERGATIVE are allomorphs determined by the number of morae in the nominal. The forms in ngk follow bimoraic morphemes; the forms in rl are used otherwise. (There are no monosyllabic nominals). See Nash (1980). High vowels assimilate in backness to a back vowel in the preceding syllable. I will call nominals with grammatical case GCNs.

The semantic cases in Warlpiri are:

<table>
<thead>
<tr>
<th>Semantic Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL ALLATIVE  -kurra</td>
</tr>
<tr>
<td>COM COMITATIVE: 'with' -ngkajinta, -rlajinta</td>
</tr>
<tr>
<td>EL ELATIVE     -ngurlu</td>
</tr>
<tr>
<td>LOC LOCATIVE   -ngka, -rla</td>
</tr>
</tbody>
</table>

The alternant forms for the COMITATIVE and LOCATIVE, like those of the ERGATIVE, are allomorphs determined by the number of morae in the nominal. I will call nominals with semantic case SCNs.

Derivational cases are suffixes which show properties both of case-inflection and of derivation. I will call nominals with derivational case DCNs. I list the major derivational cases below.

<table>
<thead>
<tr>
<th>Derivational Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSOC associative, perfective -warnu</td>
</tr>
<tr>
<td>DENIZ denizen of        -ngawurrpa</td>
</tr>
<tr>
<td>INHAB   inhabitant of    -wardingki</td>
</tr>
</tbody>
</table>

1. I have omitted from this list some suffixes such as the PERLATIVE, which have been classed as semantic cases, but which have more in common with derivational cases.
Like derivational suffixes, they can create nominals which are referential: e.g. ngangkayi-kirli ‘shaman, medicine-man’ (lit. healing-powers-PROP), pangki-kirli ‘orange’ (lit. skin-PROP). Such nominals can have any function that a normal nominal has – SUBJECT, OBJECT etc. However, like semantic-case suffixes, derivational case-suffixes can themselves act as argument-taking predicates. In (2), kurlu means, roughly, X HAS Y. Its OBLIQUE_{sub} “Y” is mirnirri, and its SUBJECT, X, is kurdurkurdu.

(2) Kurdu-kurdu ka-lu warrarda manyu-karri-mi
   children-ABS PRES-3pl always play-stand-NPST
   mirnirri-kirli.
   mountain.devil-PROP.
   Children always play with mountain-devils [lizard sp.]. [mirnirri]

The mixed nature of these suffixes will become clearer when the properties of grammatical and derivational suffixes have been discussed. See 3.6.

3.2 Uses of case in Warlpiri

Case-suffixes in Warlpiri have three main uses:

[1] argument-relater (ARG use) to show the relation between an argument-taking predicate and one of its arguments.


[3] attribute-relater (ATT use) to show that an argument-taking predicate acts as an attribute of some argument.

Syntactically, the first and third uses have much in common, and I will suggest that they
should be treated as a single use, the 'agreement' use (AGR). I will refer to nominals whose case-suffixes are used as argument-taking predicates or argument-relaters or attribute relaters as nominals with ATP or ARG or ATT case-suffixes, respectively. It should be remembered however, that this term refers to the use of a particular case-suffix, not to a morphological class. In the next three subsections, I outline the salient features of each use.

3.2.1 Argument-relaters

(3) illustrates the use of case-suffixes in determining the relation between an argument and an argument-taking predicate. The verb luwarni requires that the nominal expressing its SUBJECT have ERGATIVE case. The ERGATIVE case-suffix on Japanangka shows that Japanangka can express the SUBJECT of luwarni.

(3) Japanangka-rlu luwa-rnu marlu
    Japanangka-ERG shot-PAST kangaroo-ABS
    Japanangka shot the kangaroo.

Grammatical case-suffixes such as the ERGATIVE are most often used to indicate the presence of a relation between the argument-taking predicate and an argument. Occasionally, however, semantic case-suffixes have this use too, as (4) illustrates.

(4) Ngarrka-patu ka-lu karti-ngka manyu-karrimi ..
    Man-PL-ABS PRES-3pl cards-LOC play-stand-NPST ..
    The men are playing cards... [EFW: (94)]

The LOCATIVE suffix on karti-ngka does not attribute to the SUBJECT location with respect to the cards; it simply signals that the cards are a participant in the event denoted by the verb manyu-karrimi. I assume that this LOCATIVE-marked nominal expresses an argument of the verb; the verb would mean something different if the LOCATIVE argument were absent. This LOCATIVE argument can co-occur with a LOCATIVE

2. The PROP suffix -kurlu has been found with the same verb, referring not to a 'game', but to the object which is being played with, as in (2).
indicating the location in time or space of the entire event, as in (5).

(5) *Kitayi-rla ka-lu manyu-karri-mi + Iki wati-patu -
guitar-LOC PRES-3pl play-stand-NPST + THEN men-PL-ABS
*parra-ngka manu munga-ngka.
day-LOC and night-LOC
The men play their guitars day and night. [manyu]

I suggest that the LOCATIVE argument is a selected grammatical function *OBLIQUE*.

Observe the parallelism between ARG case-suffixes, and the English preposition *at* in (6).

(6) *Cupid and my Campaspe played at cards for kisses.*

Here *at* does not act as a locational predicate. Instead all it does is to indicate the presence of a particular semantic relation between the verb and the object of the preposition, *cards*. A second example is *on John* in the sentence: *Lucy dotes on John*, in which *on* indicates a relation between *dotes* and the prepositional object *John*. A third example is *of his principles*, in the sentence *Lucy robbed John of his principles*. In none of these examples does the preposition appear to have an independent meaning in the same way that it does in sentences such as *Lucy found the cat in a tree*.

3.2.2 Argument-taking predicates

The second use of case-suffixes is as argument-taking predicates comparable to those created by prepositions in English. I will first illustrate the English usage.

---

3. Another instance of a semantic case-suffix on an OBLIQUE argument is the use of the ALLATIVE with verbs of communication mentioned in 2.3.1.1.

A: *Kajika-rna-jana nyanungu + ju yimi-ngarri-rni walypali-kirra + Iku.*

POT-1sg-3pl them-ABS + EUPH word-tell-NPST European-ALL + THEN
I'll tell on them to the European. [H60Dial: 7.195]
Lucy kissed John under the willow.

Here, the preposition under acts as an argument-taking predicate, which expresses a relation of location between the willow-tree, and the event of Lucy kissing John. It is a two-place predicate meaning roughly \textit{X IN POSITION BELOW THAT OF Y}. X can be the action as a whole, as in (7). Or X can be a particular argument of a sentence, as in (8), in which location with respect to the willow is attributed to the OBJECT, John.

Lucy saw John under the willow.

In terms of grammatical function assignment, I assume, for reasons that I will discuss later, that X has the function SUBJECT, and Y, the function \text{OBLIQUE}_\theta (where \theta stands for some semantic relationship, such as goal, location etc.).

Case-suffixes can be used in Warlpiri in a manner exactly parallel to the use of the preposition under in (7) and (8).

Japanangka-{rlu luwa-rnu marlu pirli-ngka.}
Japanangka-ERG shot-PAST kangaroo-ABS rock-LOC
Japanangka shot the kangaroo on the rock.

In (9), \textit{rla} acts as an argument-taking predicate in the same way that its English translation \textit{on} does. It attributes \textit{location at a place} either to the whole event or to an argument of the sentence.

Most commonly, semantic case-suffixes and derivational case-suffixes are used to create argument-taking predicates. However, occasionally grammatical case-suffixes can be used as argument-taking predicates. Thus the \textit{ERGATIVE} can be used as an Instrumental ADJUNCT, illustrated in (10).

Kala-rnu-rla watiya paka-rnu janganpa-ku mayingka-rlu.
USIT-1plex-DAT tree-ABS hit-PAST possum-DAT axe-ERG
We used to chop trees with an axe for possums. [pakarni]

Here, the \textit{ERGATIVE} suffix on \textit{mayingka} acts as an argument-taking predicate meaning roughly \textit{X by means of Y}, which relates the SUBJECT (X), and an instrument (Y) – the
I will discuss the ATP use of the ERGATIVE in 3.5.2.1, and the ATP use of the DATIVE in 3.5.2.2. The ABSOLUTIVE cannot be used as an ATP, but, so I will claim in 3.5.2.3, there is a principled reason for this.

3.2.3 Arguments and attributes

So far, I have shown that the ARG and ATP uses of case-suffixes parallel the use of prepositions in English. The third use of case-suffixes in Warlpiri, case-concord, has no counterpart in English. Case-suffixes can simply indicate the existence of a relation between an argument and some attribute. Thus in (11), the presence of DATIVE case on wiri 'big' indicates that wiri attributes a property to the DATIVE OBJECT marlu-ku.

(11) Japanangka-rlu rla-jinta luwa-rnu marlu-ku wiri-ki
Japanangka-ERG CON-DAT shot-PAST kangaroo-DAT big-DAT
Japanangka shot at the kangaroo, a big one.
Japanangka shot at the big kangaroo.

(As the two translations indicate, wiri-ki 'big', can modify marlu-ku 'kangaroo' appositively, or restrictively.)

In the example given, the case-marked nominal being modified, marlu-ku, is the OBJECT of the verb. The DATIVE case-suffix on marlu-ku simply indicates a relation between an argument, marlu, and an argument-taking predicate, luwarnu. But, in fact the modified nominal can itself be an ADJUNCT; the case-suffix on the nominal can act as an

---

4. 'Instrumental' is a very loose term even in English. Observe that neither English nor Warlpiri demand that the SUBJECT intentionally use an instrument. For instance, in the following example, the use of the English preposition with corresponds quite well to the use of the Warlpiri ERGATIVE case-suffix. What is important is that the meaning of the verb implies the existence of an instrument, not that the SUBJECT intentionally uses that instrument.

Jiwinypa-rlu ka-ngalpa luwa-luwa-rni yinirnti
chip-ERG PRES-1plin shoot-shoot-NPST beantree-ABS
wirijaru paka-rninjai-karra-rlu.
big-ABS hit-INF-SSCOMP-ERG
He’s hitting us with (flying) chips as he chops down the big bean-tree. [luwarni]
argument-taking predicate, (rather than as a relater of argument and argument-taking predicate.) Consider the following example:

(12) Karli ka nguna-mi pirli-ngka wita-ngka.
    Boomerang-ABS PRES lie-NPST rock-LOC small-LOC
A boomerang is lying on the small rock.

In this example, the two nominals pirli-ngka and wita-ngka together form an ADJUNCT (or possibly an XCOMP) expressing location. The LOCATIVE suffix acts as an argument-taking predicate. The nominal wita-ngka 'small' is an attribute of pirli, the OBLIQUE\textsubscript{theta} of the LOCATIVE suffix. (13) shows a similar example with a derivational case-suffix instead of a semantic case suffix. The PROP suffix, kurlu, acts as an argument-taking predicate, which takes as OBLIQUE\textsubscript{theta} jangarnka 'beard'. Yuulyku, 'luxuriant', attributes a property to jangarnka, and so receives the PROP case-suffix kurlu, too. (The ERGATIVE is attached, because the whole kurlu phrase attributes a property to the ERGATIVE SUBJECT).

(13) Yuwayi, wakurlu-kurlu-rlu kajika-lu-ngalpa panti-rni. Manu
    Yes head.hair-PROP-ERG POT-3pl-1pln spear-NPST. And
    jangarnka-kurlu-rlu yuulyku-kurlu-rlu.
    beard-PROP-ERG luxuriant-PROP-ERG
Yes, those long haired people, the ones with the luxuriant beards, might spear us. [wakurlu]

Different kinds of argument-taking predicates can act as attributes: in particular, nominals, case suffixes, and nominalized verbs can all act as the ATPs of attributes, which agree in case with the argument they modify. (11), (12) and (13) illustrate the use of nominals as argument-taking predicates meaning roughly: X has the property denoted by N. In 3.2.3.1, I illustrate the use of nominalized verbs as the ATPs of attributes, and in 3.2.3.2, I illustrate case-suffixes used as the ATPs of attributes.
3.2.3.1 Nominalized verbs

A nominalized verb can act as an argument-taking predicate attributing a property to some argument. Case concord will determine which argument the nominalized verb is attributing a property to. For example, ERGATIVE case can mark a nominalized verb whose SUBJECT is controlled by an ERGATIVE argument of the verb.

(14) Ngurrju-ngku -ipa-ngku payi-karla purla-nja-wangu-rlu manu
     Good-ERG -PAST-2sg ask-IRR shout-INF-PRIV-ERG and
     paka-rinja-wangu-rlu.
     hit-INF-PRIV-ERG
     He (the police) must ask you gently, without shouting or hitting you. [MKJ:9]

In (14), the ERGATIVE on purla-nja-wangu-rlu and paka-rinja-wangu-rlu shows that the SUBJECTs of the nominalized verbs purlanja and paka-rinja-wangu-rlu are coreferential with an ERGATIVE argument of the matrix predicate (this argument does not happen to be overtly realized in (14)). (Note that in (14) there is also a nominal predicated of the ERGATIVE SUBJECT, namely ngurrju-ngku).

In general, only arguments with grammatical case can control nominalized verbs. However, arguments with semantic case can control nominalized verbs created with the derivational case-suffixes warnu and wangu. See Chapter 6 for further discussion.

3.2.3.2 Case suffixes

If a case-suffix is used as an argument-taking predicate that attributes a property to some argument of the matrix sentence, then that case-suffix receives an additional case-suffix identical to that of the argument being modified. This is the phenomenon known as double case-marking. (13) contains an expression with a derivational case-suffix followed by an extra ERGATIVE case, indicating that the derivational case phrase attributes a property to the SUBJECT. Below, I illustrate double case-marking with SCNs. In (15), location is predicated only of the SUBJECT, and the LOCATIVE-marked nominal receives additional ERGATIVE case:
In the first clause of (16), an ELATIVE is predicated of the SUBJECT, which differs from the SUBJECT of the second clause. A LOCATIVE is predicated of the non-overt SUBJECT of the second clause. But knowledge of the world indicates that the OBJECT must also be in the clearing.

(16) Nya-ngu-rnu pina -lpa yuwurruk-ngurlu-rlu nga-rnu see-PAST-HERE back -PAST scrub-EL-ERG copulate-PAST -lpa-rla-jinta yarl-

From the scrub he looked back at him (the other man) copulating with the woman out in the open. [jajarni]

In the tree.top, I watched for emus coming, to the water. [nyanyi]

---

5. This example is also interesting because it contains the structure ‘Verb Preverb AUX’, (nya-ngu-rnu pina-lpa) which is very rare.

6. The DATIVE OBJECT also has a kurra (OBJECT-control complementizer) clause predicated of it. It would be possible to interpret the kurra suffix on the word ngapa as an OBJECT-control complementizer instead of as an ALLATIVE suffix.
So, of the three uses of case-suffixes in Warlpiri, two parallel the use of prepositions in English. Of the two uses they share, Warlpiri makes far greater use of the argument function of case-suffixes than English does of the argument function of prepositions. This is not surprising, since case-marking is the major means of identifying argument-ATP relations in Warlpiri, whereas in English configurational position is the major means. The use of configurational position in English also accounts for the lack of the ATT case-concord. In English, the primary means of identifying argument-attribute relations are syntactic structure and word-order, (e.g. adjectives normally precede their heads).7

In the last chapter I discussed the ARG use of case-suffixes in determining argument-ATP relations. In this chapter I will first discuss the ATT use of case-suffixes (case-concord), then elaborate on the functions that a nominal with an ATP case-suffix may have, and finally outline the representation of all three uses of case-suffixes, showing that, for the purposes of function assignment, the ATT and ARG uses act alike, and the ATP use is rather different.

3.3 Case as a concord marker

A nominal with a case-suffix acting as a concord marker can have at least four uses. If it selects a SUBJECT, then it can be the matrix predicate, as in (18).

(18) Ngarrka murrumuru.
man-ABS sick.
The man is sick

The matrix predicate option was discussed in 2.4.

---

7. English also makes greater use of lexical entries to determine certain types of argument-attribute relationships than Warlpiri does. For instance, the lexical entries of verbs in English state which argument an XCOMP is predicated of. See Chapter 5.
A nominal which selects a SUBJECT can also be a secondary predicate (attributing a property to some argument of the sentence), in which case it can either be an ADJUNCT, an XCOMP, a COMP, or an XADJUNCT. In fact, Warlpiri often employs ADJUNCTs, rarely employs XCOMPs, and, so I claim, has no COMPs or XADJUNCTs. (19) illustrates a nominal acting as an ADJUNCT.

(19) Nya-ngu -rna murrumurru.
   see-PAST -1sg sick-ABS
   I saw him sick.

In order to account for the appearance of nominals as matrix predicates, I proposed that it is a general property of Warlpiri nominals (semantics permitting), that they can be used as argument-taking predicates, and can select SUBJECTs. I also argued, in order to account for null anaphora in finite clauses, that any argument-taking predicate can introduce null pronominals for functions which it selects. Thus any argument-taking predicate can introduce the equation $\uparrow G \text{ PRED} = \text{'PRO'},$ where $G$ is a function selected by the argument-taking predicate. Therefore any nominal, (semantics permitting), can introduce the equation $\uparrow \text{SUBJ PRED} = \text{'PRO'}. \text{ This null pronominal can either be free, in which case the nominal acts as a matrix predicate, or it can be anaphorically controlled by an argument of the sentence, in which case the nominal can act as an ADJUNCT.}$

The interpretation I saw him sick is obtained when murrumurru acts as a secondary predicate with the function ADJUNCT, and introduces a null pronominal as its SUBJECT (by means of the equation $\uparrow \text{SUBJ PRED} = \text{'PRO'}. \text{ The PRO SUBJECT of murrumurru is anaphorically controlled by the OBJECT of the sentence (another null pronominal, introduced this time by the matrix verb), because the CASE of the OBJECT, and the case of the ADJUNCT are identical, namely ABSOLUTIVE. It is a general property of ADJUNCTS in Warlpiri (with the exception of nominals with the TRANSLATIVE suffix karda) that they agree in case with their controller. The f-structure for this interpretation is given below.
So, nominals which select SUBJECTs can be used as matrix predicates or as secondary predicates. If the nominal does not select a SUBJECT, then there are, I claim, two options. First, the nominal can be used referentially, in which event the case-suffix has the ARG use. For instance, in (19), instead of interpreting murrumurrū as a secondary predicate, we could have interpreted it as a referential nominal, *I saw the sick one*. This interpretation is obtained when murrumurrū is assigned the equation (↑OBJ) = 1, and does not select a SUBJECT. The f-structure is given below.

Second, a nominal which does not select a SUBJECT may be interpreted as a *sentence-attribute*. I make this proposal as a way of representing the difference between ADJUNCTs which attribute properties to particular arguments (such as murrumurrū 'sick', in (19)), and ADJUNCTs which act as sentence-attributes. I claim that the former have
null pronominal SUBJECTs. However, it makes very little sense to suppose that a sentence-attribute has a null pronominal SUBJECT. I assume that the latter do not select SUBJECTS, and that semantic interpretation rules interpret an ADJUNCT without a SUBJECT as a sentence-attribute.\(^8\)

In (20), *nyurr* acts as a sentence-attribute which locates the event described by the sentence with respect to a time. It does not select a syntactic SUBJECT, although semantically it attributes a property to an event.

(20)  

\[
\textit{Nyurr}u\quad\text{-}lu\quad\text{rduul-pardi-ja}\quad\text{mangarrayi}\quad\text{ji} \\
\text{already}\quad\text{-3pl}\quad\text{emerge-PAST}\quad\text{bush.coconut}\quad\text{ABS}\quad\text{EUPH} \\
\text{milpa-wana}\quad\text{juju}.\quad\text{hole-PERL}\quad\text{STILL} \\
\text{They have already emerged from the bush coconut, through the hole. [milpa]}
\]

Observe that *nyurr* has no case-suffix, and, indeed, cannot have one. This is not true of all sentence-attributes. Some may appear with case-suffixes, and some types of

---

8. An alternative proposal, suggested by Avery Andrews, is to say that the uses of nominals as sentence-attribute and argument-attribute, do not differ syntactically, as I have proposed, but rather that they differ semantically, along the lines proposed in Halvorsen (to appear). The fact that some nominal may be an attribute of a sentence or of an argument can be expressed by saying that it has either the semantic type of a modifier which combines with a sentence to form another sentence, or else the semantic type of a modifier which combines with a nominal to form an argument. The advantage of Andrews' proposal is that it does not require the postulation of null pronominal SUBJECTs for nominals used as secondary predicates. While there is clear evidence in the verb-headed ADJUNCTS that the PRO SUBJECT has a Case feature independent of the Case of its controller, and that it engages in anaphoric reference (see Chapter 6), there is no such evidence for the nominal ADJUNCTS. These PRO SUBJECTs never occur in contexts where they could bind anaphors such as reflexives. Nor do they show evidence of independent case features. The PROs introduced by nominal ADJUNCTs serve no purpose other than to express the fact that a nominal ADJUNCT is predicated of an argument of the sentence, and not of the sentence itself. However, I have adopted this null pronominal account, because null pronouns need to be introduced for nominal-headed sentences anyway, and because postulating these null pronouns allows for a unified account of ADJUNCTs that are nominals, and ADJUNCTs that are nominalized verbs.
sentence-attribute even require case-suffixes. The representation of case-suffixes on sentence-attributes creates an interesting problem, for which I do not have a good explanation.

3.3.1 Case on adverbs

Case-suffixes appear on nominals which indicate the place, time, or manner of an action. These three types of ADJUNCT differ semantically and syntactically. Semantically, it is plausible to assume that location can be predicated of the event denoted by a sentence, or of an argument, whether that argument has the SUBJECT function, or some other function. Syntactically, however, languages vary as to which
arguments can be non-restrictively modified by locational adverbs. In Warlpiri, this freedom is constrained by the fact that an ADJUNCT, including locatives, must not disagree in case with the argument to which it attributes a property. A LOCATIVE nominal (denoting spatial location) can have ERGATIVE or DATIVE case (or ABSOLUTIVE); it cannot have a semantic case-suffix attached. (See 3.5.2). I illustrate the appearance of grammatical case-suffixes on LOCATIVES below. In (21), DATIVE case on the LOCATIVE shows that the location is predicated of the DATIVE OBJECT janganpa.

9. For instance, in English it is possible to attribute location restrictively to any argument, because NPs can have PP complements: The man on the hill. It is possible to attribute location non-restrictively to the SUBJECT, as in i., or the OBJECT in a transitive sentence, as in ii.

i. High up on the hill, John watched Lucy kissing Paul in the garden.
ii. They carried John's head in on a platter.

In ditransitives, location may be attributed non-restrictively to the OBJECT 2, as in iii. but not to the OBJECT, as in iv.

iii. They brought Salome John's head on a platter.
iv. *John sent Lucy flowers in bed.

Warlpiri, as I show in 3.5.2, allows location to be attributed non-restrictively to the OBJECT 2 in ditransitives. Chinese however, while allowing location to be attributed to the OBJECT of a transitive, does not allow location to be attributed to either the OBJECT or the OBJECT 2 in a ditransitive, but does allow it to be attributed to the event.

i. Wo kanjian Zhangsan zai tushuguan-le.
   I see Zhangsan at library-PERF
   I saw Zhangsan in the library. (Zhangsan is in the library)

ii. Wo zai tushuguan kanjian-le Zhangsan.
   In the library I saw Zhangsan. (The event is in the library)

iii. Wo zai tushuguan gei-le Zhangsan yi-ben shu.
   I at library give-PERF Zhangsan one-CLASS book
   In the library I gave Zhangsan a book. (The event is in the library)


v. *Wo gei-le Zhangsan yiben shu zai tushuguan.

Apparently the phrase structure rules of Chinese rule out the post-verbal position for locatives in ditransitives, thus making it impossible to predicate location of the direct or indirect object in a ditransitive (except, of course, by means of a prenominal modifier). (I am grateful to James Huang for help with this material). Thus languages can vary as to which arguments location may be attributed to, and in which way.
    tree.hollow-LOC-DAT meet-PAST possum-DAT.
He came across a possum in a hollow in a tree. [mani]

Only the possum is plausibly located in the tree hollow. In (22), the same verb appears with a LOCATIVE (pirnki-ngka 'cave-LOC') without extra DATIVE case-marking. Although the DATIVE argument, 'child', undoubtedly is in the cave, the ABSOLUTIVE SUBJECT argument 'I' is also in the cave, and, in order to focus on this latter relation, pirnki has no overt case-marking (or, alternatively, has ABSOLUTIVE case). (I am grateful to Mary Laughren for pointing this example out to me).

(22) Kurdu ngajunyangu yuka-ja pirnki-ngka.
    child-ABS mine-ABS enter-PAST cave-LOC
Yi-lpa-rna-rla ngari rdipi-yarla kurdu ngajunyangu-ku
REAS-PAST-1sg-DAT JUST go-IRR child mine-DAT
    pirnki-ngka.
    cave-LOC
My child went into the cave. So I should probably find my child there in the cave. [rdipimi]

In (23) and (24), ERGATIVE case on the LOCATIVE shows that the location is predicated of an ERGATIVE SUBJECT (unexpressed in (23)).

(23) Karli, pikirri, kurduju-pinki ka-lu-nyanu
    boomerang-ABS spear.thrower-ABS shield-SET-ABS PRES-3pl-refl
    jamti-rni yunta-ngka-rlu + juku.
trim-NPST wind.break-LOC-ERG + STILL.
While in the wind-break they make themselves boomerangs, spear-throwers and shields and the like. [purlka]

(24) Pikirri ka purlka-ngku paka-rni ngurra-ngka-rlu
    spear.thrower-ABS PRES old.man-ERG hit-NPST camp-LOC-ERG
    wirlinyi-jangka-rlu.
hunting-SOURCE-ERG
An old man is carving a spear-thrower in camp after hunting. [pakarni]
(This example also contains an ERGATIVE-marked SOURCE nominal, used as a temporal adverb, wirlinyi-jangka-rlu).
Manner adverbs differ from location adverbs, in that they must always modify the event. However, manner adverbials, so it has been claimed (Jackendoff, 1972, Zubizarreta, 1982), also have a special relationship with the SUBJECT, as the possibility of paraphrasing certain manner adverbials with copula + adjective constructions suggests. If someone does something carefully, then he is careful in doing that thing. This orientation is maintained under passivization in English:

*The doctor carefully examined John.*

*John was carefully examined by the doctor.*

Both of these can be paraphrased by: *The doctor was careful in examining John.*

In Warlpiri, the semantic relationship between the SUBJECT and manner adverbials is reflected in the syntactic case concord between the two. The manner adverbial, *yaruju*, 'quickly' in (25) and (26) has ERGATIVE or ABSOLUTIVE case, depending on the case of the understood SUBJECT.

(25) (..)ngulaju yinga-lu *yaruju* ya-ni.
that REAS-3pl quick-ABS go-NPST
(..)so that they can go quickly. [munga]

(26) Janyungu paji-ka *yaruju-rlu*
tobacco-ABS chew-IMP quickly-ERG
Chew the tobacco quickly. [yaruju]
Manner adverbials can only receive ERGATIVE case or the default ABSOLUTIVE case. \(^{10}\) They cannot receive DATIVE case, say. This is not surprising, considering that it is hard to find a semantically plausible sentence in which a manner adverbial is predicated of a non-SUBJECT argument.

However, time adverbials can also receive additional case-marking. In (27), the ERGATIVE case on *jalangualangul* shows that the sentence has an ERGATIVE SUBJECT.

\[(27)\] Manu kala-lu-nyanu karnta-ngku + ju ngapa + ju ka-nyi and USIT-3pl-refl woman-ERG + EUPH water-ABS + EUPH carry-NPST kartaku-rla *jalangualangul-rlu + ju* billycan-LOC now-ERG + EUPH
And nowadays women carry water for themselves in billycans. [WNJ]

Like manner adverbials, time adverbials can only agree in case with the SUBJECT of the sentence. But, whereas it seems natural to suppose that locational adverbs can modify particular arguments, and that manner adverbs also attribute properties to SUBJECTs (or perhaps arguments with the semantic relationship of Agent/Perceiver/Experiencer), it seems less likely that there is a special relationship between the SUBJECT of a sentence, and a time adverbial. If location in a particular time is attributed to the SUBJECT, it is also attributed to the event, and to the OBJECT, if the existence of the OBJECT is presupposed (thus, if a verb is intensional, such as *seek*, a sentence such as *I sought a*...

---

10. There is a small class of nominals which are almost always used predicatively, as manner adverbials. (See Hale 1982b). Examples include: *muurlpa* and *wurra*, as illustrated below.

i. (...) *ngulaju-palangu* *muurlpa-rlu* warrawarra-ka-ngka
   (...)that-ascend.kinsman-ABS careful-ERG look.after-IMP
   *nyuntu-ku-palangu* ngati-nyanu manu kukurnu-purajj*
   2sg-DAT-ascend.kinsman mother-kin-ABS and younger.brother-kin-ABS
   (...)Look after your mother and younger brother carefully. [muurlpa]
   (Manner adverb *muurlpa* with ERGATIVE)

ii. *Nyanungu-patu-rlu + ju -lu wurra-ngku + juku nga-rnu ngapa.*
   he-PL-ERG + EUPH -3pl continue-ERG + STILL eat-PAST water-ABS
   Those ones still went on drinking the water. [wurra]
   (Manner adverb *wurra* with ERGATIVE)
unicorn yesterday does not entail that unicorns existed yesterday). Observe also that while agreement in case with the SUBJECT is apparently obligatory for manner adverbials, it is optional for time adverbials.

How then should we represent the appearance of case on ADJUNCTs which modify an event rather than an argument, such as the time adverbials, certain uses of locatives, and perhaps manner adverbials? If it can be shown that, when a time adverbial has ERGATIVE case, there is some sense in which the sentence focuses on the location of the SUBJECT in that time, and that when the time adverbial does not agree in case with the SUBJECT, the time adverbials is focused only on the event, then time adverbials that agree in case can be treated in the same way as other ADJUNCTs which attribute properties to arguments. That is, they can select SUBJECTs which are expressed as null pronominals. This approach expresses the optionality of the ERGATIVE case-suffix on time adverbials when the SUBJECT has ERGATIVE case.

Lacking any semantic evidence for supposing that time adverbials can be predicated of arguments, rather than of events, I propose that time adverbials and those locative adverbials which clearly modify the event, rather than a particular argument, should have lexical entries which do not select SUBJECTs. With manner adverbials, there are two main choices: either they are syntactically ADJUNCTs which are non-restrictive attributes of the SUBJECT, and semantic interpretation rules have the option of interpreting such ADJUNCTs as manner adverbials. Or else, like time adverbials, manner adverbials have no SUBJECT. The disadvantage of the latter approach is that it does not express the difference in freedom of case-marking. Manner adverbials MUST agree in case with the SUBJECT. Time adverbials do not have to do so. I conclude that the former option is more satisfactory.

On this account, how can one express the fact that time adverbials can, but do not have to, have the CASE of the SUBJECT of the sentence? P-K. Halvorsen suggested to me that this concord could be linked with the assignment of the ADJUNCT function. Suppose that when the equation ↓ ε (↑ADJUNCTS) is added to a node of the c-structure tree, another equation can optionally be added:
This is interpreted as follows:

If ↓ (the ADJUNCT) has no SUBJECT, then the ADJUNCT's CASE is identical to that of the SUBJECT of the matrix (↑).

I do not consider this an enlightening account of the case-marking of adverbs in Warlpiri.

3.3.2 Concord of ADJUNCTS

In this section I will discuss the problem of representing the fact that an ADJUNCT agrees in case with the argument it is predicated of. Let us start by considering a simple case of an ADJUNCT and the argument it is predicated of.

    Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
    (The) two children are chasing the dog and they are small.

In this sentence, kurdu-jarra, 'two children', acts as the SUBJECT, and the ERGATIVE suffix rlu confirms this. The ERGATIVE is acting as an argument-relater. The PRED of the SUBJECT is kurdu-jarra. Wita-jarra acts as an ADJUNCT, and the ERGATIVE suffix indicates that it is predicated of the SUBJECT. Here, the ERGATIVE is acting as an attribute-relater. The PRED of the ADJUNCT is wita-jarra, which selects a SUBJECT, and introduces a null pronominal to represent the SUBJECT. This null pronominal is controlled by the matrix SUBJECT. A simplified annotated c-structure tree is given below for (28).
The general rule: Assign grammatical functions freely, allows the assignment of the SUBJECT function to *kurdu-jarra-rlu*, and the assignment of the ADJUNCT function to *wita-jarra-rlu*, (in the form of the functional equation \( \downarrow \epsilon (\uparrow \text{TADJUNCTS}) \) which is read as ‘Ego (the NP) is a member of the set of ADJUNCTS of Mother (the Sentence)’ – see 2.2.5).

Consistency rules out incorrect assignments of \( \downarrow \epsilon (\uparrow \text{TADJUNCTS}) \) and \( \uparrow \text{SUBJ} = \downarrow \) to *kurdu-jarra-rlu* and *wita-jarra-rlu*. For instance, if both *kurdu-jarra-rlu* and *wita-jarra-rlu* are assigned the function SUBJECT, and both Ns have the equation \( \uparrow = \downarrow \), the f-structure is ill-formed, because the function SUBJECT has two PREDs (two lexical forms), which is a violation of Consistency. If, however, *kurdu-jarra-rlu* is assigned the function ADJUNCT and *wita-jarra-rlu* is assigned the function SUBJECT, the f-structure is well-formed. A plausible interpretation might be:

*The two small ones are chasing the dog, they are two children.*

Both *kurdu-jarra-rlu* and *wita-jarra-rlu* can be assigned the function ADJUNCT, without violating Consistency, because the function ADJUNCT can have as its value a set of f-structures, rather than a unique f-structure. Both *kurdu-jarra-rlu* and *wita-jarra-rlu* are
then ADJUNCTs of an understood null pronominal introduced by the verb with the
equation ↑SUBJ PRED = 'PRO'. The interpretation of the sentence might be:

*They two are chasing the dog, the kids, the little ones.*

The normal method of forming an f-structure described in Chapter 2 produces the
f-structure in (30) from the annotated c-structure given in (29).

(30)

```
SUBJ [ CASE ERGATIVE ]
PRED 'kurdu'
NUM du
PERS 3

ADJ [ CASE ERGATIVE ]
NUM du
PRED 'wita' <(SUBJ)>
SUBJ [ PRED 'PRO' ]

ASP Present Imperfect
TENSE Non-past
PRED 'wajili-pinyi' <(SUBJ) (OBJ)>

OBJ [ CASE ABSOLUTIVE ]
PRED 'maliki'
NUM sg
PERS 3
```

Although the f-structure for the ADJUNCT contains a PRO SUBJECT which can be
anaphorically controlled by some argument, the fact that the CASE of the ADJUNCT
determines what can be a controller of the ADJUNCT is not expressed. 11

Agreement of the ADJUNCT with its controller does not follow from the formal representation. Consistency cannot rule out case clashes between the ADJUNCT and its controller for several reasons:

1. ADJUNCTS of the type discussed here are not generated within the f-structure of their controllers. (If they were, then it would be possible to force agreement by means of transmission of case from the ADJUNCT to the immediately dominating node).

2. The controller of an ADJUNCT cannot be referred to directly in a functional equation because the relation “antecedent of X” is not a grammatical function. Equations of the following type are ruled out. \( \uparrow \text{ADJ CASE} = \uparrow \text{ADJ ANT CASE} \) or \( \downarrow \text{CASE} = \uparrow \text{ANT CASE} \).

3. Andrews' (p.c) suggestion that the PRO SUBJECT of the ADJUNCT has the same case as the ADJUNCT and receives its CASE from the controller, cannot be used, because the PRO SUBJECT of nominalized verb ADJUNCTS in Warlpiri can have a different case from that of its controller, and, ideally, nominal ADJUNCTS and nominalized verb ADJUNCTS should receive the same account. (See Chapter 6).

I have been unable to find any way of representing the agreement of ADJUNCTS with their controllers in terms of functional equations. The only alternative that I can see, is to place a condition on the well-formedness of f-structures. Recall that in Chapter 2 I described three conditions on the well-formedness of f-structures which have been generally accepted within LFG. These are consistency, completeness and coherence. I propose a condition on agreement analogous to these conditions.

11. In this example, the ADJUNCT also agrees in NUMBER with its antecedent. NUMBER agreement is a complex phenomenon which raises several difficulties for my analysis, since it probably cannot be treated in the same way as case agreement, although the two types of concord share some properties. See Hale (PMW), (PWT), Laughren (1977, 1981a), Nash (1980) and Swartz (1982) for information about, and analyses of, different aspects of number in Warlpiri.
Adjunct Agreement Convention

Adjuncts must not disagree in case with the arguments they attribute properties to.

I assume that, if an ADJUNCT has an argument which is anaphorically controlled by some argument of the matrix, then that ADJUNCT attributes a property to that argument. Normally this anaphorically controlled argument will be the SUBJECT, but in Chapter 6 I will show that certain types of ADJUNCT have anaphorically controlled OBJECTs. The anaphorically controlled argument and its controller will be coindexed, according to the mechanism of anaphoric control. The agreement convention can be viewed as a constraint on that indexing.

I use the double negative in stating this convention in order to allow for certain situations in which the ADJUNCT has no case-suffix. Something further needs to be said about the use of special predicative cases for ADJUNCTS, such as the Finnish ESSIVE and TRANSLATIVE, the Abkhaz PREDICATIVE, and the Warlpiri TRANSLATIVE, and perhaps the use of the Russian INSTRUMENTAL in (32), in which a INSTRUMENTAL ADJUNCT attributes a property to the NOMINATIVE SUBJECT.

(32) Molodym on vsegùa chital knigi.
    Young-INST he-NOM always read books.
    When young he used to read a lot.

It is clear that predicative cases are free to agree with nominals in different cases, but exactly how this generalization should be stated is debateable. One alternative is to propose that the predicative case is not a case in the sense that other case-suffixes are, and so does not disagree with any case feature.

It is a deficiency in my account of case that the agreement of adjuncts and their controllers does not follow from other principles of the theory, but must be expressed by a convention. However, the representation of case-concord is a general problem for syntactic theories, not merely for LFG. I know of no treatment of concord in other theories, which does not have equally powerful conventions.
3.4 Case as an argument-taking predicate

Now that the uses of case as a concord marker have been outlined, I will examine the ATP use of case-suffixes. I will do this by drawing parallels with English prepositions wherever possible. The two main ATP uses of English prepositions are as the argument-taking predicates of XCOMP s (John found Lucy in a good mood) and ADJUNCTs (In an oddly cheerful mood, Lucy left the house.). They cannot act as matrix predicate; a copula is required (*Lucy on the rock).

This section is organized as follows. I will first look at the XCOMP use of ATP case-suffixes, then at the appearance of case-marked nominals as matrix predicates, and finally at the use of ATP case-suffixes in ADJUNCTs, both those that act as sentential attributes and those that act as argument ADJUNCTS.

3.4.1 XCOMP

Nominals with semantic case often appear as arguments that are optionally selected by a particular verb. Thus, verbs of motion can appear with an Endpoint or Goal, and a Source. ALLATIVES (endpoint) and ELATIVES (sources) are the most obvious cases for arguments with these semantic roles. These will be assigned the functions XCOMP or ADJUNCT, depending on the meaning of the verb.

It is necessary to distinguish XCOMPs from ADJUNCTs and OBLIQUES. I will first compare them with OBLIQUES, and then with ADJUNCTs. Semantically, an XCOMP differs from an OBLIQUE in that the XCOMP is both an argument of the verb and an ATP predicated of some other argument of the verb. An OBLIQUE, on the other hand, is simply an argument of the verb. Thus the LOCATIVE argument of the verb manyu-karrimi 'play' discussed in 3.2.1 does not attribute location, either literally or metaphorically, to any argument.

Bresnan (1979) also provides a couple of tests to distinguish XCOMPs from
OBLIQUEs. Only one is clearly applicable to Warlpiri. OBLIQUEs in general only permit one type of preposition, whereas XCOMPs can be realized by different prepositions:

(33) Possums sit in/on trees /near the trunk/ inside hollow logs/under leafy boughs. XCOMP

(34) They sat on the proposal for months./*next to the proposal for months, (except in the literal sense) OBLIQUE

(35) She went to Jerusalem/into the cave/up the mountain/down the pass. XCOMP

(36) I handed the olive to him /*into him/*near him/*under him/*around him/*behind him. OBLIQUE

12. Another test concerns reflexivization. Bresnan (1979) accounts for the well-known contrast in reflexivization given in i. and ii. by using the XCOMP/OBLIQUE difference.

i. Susan informed John about her. her ≠ Susan
   Susan informed John about herself.

ii. Susan kept John about her. her = Susan
   ??Susan kept John about herself.

She assumes that ordinary pronouns (non-reflexive/reciprocal pronouns) cannot refer to members of the same clause nucleus. An OBLIQUE argument is in the same clause nucleus as the SUBJECT. But, an XCOMP is a clause nucleus. Therefore a pronoun in an XCOMP can refer to an element outside the XCOMP. Bresnan gives independent tests to show that about her is an OBLIQUE in i, but an XCOMP in ii., and so the contrast is predicted. Because Warlpiri adopts a different strategy for reflexivization, and because little is known about disjoint reference in Warlpiri, it is difficult to construct a comparable test. However, there is some suggestive data. The demonstrative pronoun nyanungu cannot be used as the OBJECT if that OBJECT is reflexive. But, if nyanungu has an ATP case-suffix attached, it can refer to the SUBJECT in some instances, as iii. shows:

iii. Ngatinyanu-rlu ka kurdu wita jarda-yirra-rni
    mother-ERG PRES child-ABS small-ABS sleep-put-NPST
    nyanungu-wana.
    her-PERL

The mother puts the baby down to sleep beside her. [jarda-yirrarni]
If nyanungu-wana is an XCOMP, as, by hypothesis, the complements of verbs of motion usually are, then the fact that disjoint reference does not apply here is easily explicable.
Underlying this test for XCOMPs and OBLIQUES is the intuition that, in the OBLIQUE use, the preposition is acting as a kind of case-marker, not as an argument-taking predicate.

In Warlpiri, while End-points are normally expressed by the ALLATIVE, they can sometimes be expressed by the DATIVE and even the LOCATIVE. Sources can be expressed by the ELATIVE case-suffix (ngurlu) or the SOURCE case-suffix (jangka). However, this test is not as clear as in English, because Warlpiri has far fewer semantic case-suffixes than English has prepositions. Semantic intuition remains the chief reason for considering Sources and End-points to be XCOMPs in Warlpiri, rather than OBLIQUES.

It is also difficult to show a distinction between ADJUNCTS and XCOMPs with respect to verbs of motion in Warlpiri. SCNs often express the location of an event in time or space, and, when doing so, they normally have the ADJUNCT function. Since events and states presuppose a time and place, it can justifiably be asked if they are not arguments of verbs, and if so, how are they distinguished from XCOMPS. There is no simple answer to these questions, which raise the fundamental issue in lexical semantics of whether there can be optional arguments of ATPs, and if so, what tests distinguish them from attributes.

I adopt the working hypothesis that if the meaning of a verb makes specific reference to location or time, then the location/time element is probably a syntactically relevant argument of that verb. So, verbs of position, whether intransitive, such as lie, sit and stand, or transitive, such as keep, and hold, specifically refer to location. Verbs of contact, such as hit, kiss, or verbs of emotion, such as love, hate, worry do not refer to

13. Sometimes the location/time is actually contained in the verb, as I mentioned in Chapter 1. Examples such as tree, corral, yard and jail contain locative arguments, which can usually be expanded by an overt locative in the sentence. Fido treed the cat (in a poplar). Shane corralled the cattle (in the OK corral). Toprail yarded the bullocks (in the Banka yards). The police jailed the mugger (in the Middlesex county jail). I assume that, in such examples, the overt locative is an XCOMP. Verbs such as jail have two lexical entries, one with an XCOMP, and one without the XCOMP.
location or time or reason, except by virtue of a general principle that states and events are located in time and space.

Apart from general principles that range over events, there are also general principles applying to particular classes of verbs. It is a fact about motion, for instance, that some place is left and some place is arrived at. But only some verbs, such as go, come, descend, arrive, ascend, leave, enter, actually have as part of their meaning the place left or the place arrived at. I call this class change of location verbs. Verbs such as run, jump, swim, fly describe the manner in which one moves. They do not make reference as part of their meaning to the place left or the place arrived at. I call this class manner of motion verbs. I assume that manner of motion verbs differ from change of location verbs in that the latter have specified directional arguments, whereas the former do not. Arrive always has a semantic role place arrived at, whether or not it is linked to a

14. The place left and the place arrived at can of course be the same place, as in running up and down on the spot, or flying round in circles.  
15. These are a subset of the class Halliday (1967) calls process-oriented verbs.
particular grammatical function. Run, on the other hand, does not have as part of its meaning a place run to. Run can co-occur with a place run to, because the ability to appear with Goals (place to) and Sources (place from) is a general property of verbs of motion.

In Warlpiri, a verb like wilypi-pardimi 'emerge, exit, come out of' is a change of location verb. It focuses on the place left, or Source, but implies an End-point. I assume that this focus is reflected in the subcategorization; wilypi-pardimi takes an XCOMP linked to the semantic role of Source (37) b., and, if an End-point is expressed, it has the function ADJUNCT. Yukami 'enter' (which focuses on the place entered, or End-point, but implies a Source) has an XCOMP linked to the semantic role End-Point (37) a. The Source, if expressed, is assigned the function ADJUNCT. On the other hand, manner of motion verbs like wapami 'move' or parnkami 'run' focus on neither the End-point nor the Source,

16. Showing the difference between change of location and manner of motion verbs is not always easy, because most tests are only partial. Three useful tests in English are: entailment, duration and result.

A verb such as arrive entails a place arrived at. Therefore the sentence He arrived, but at no particular place is ill-formed. Contrast this with He didn't run to any particular place; he just ran round and round the oval.

Duration attributes can occur with manner of motion verbs because they focus on the process: I ran for five hours. Compare *I arrived for five hours. I attribute the ill-formedness of this example to the fact that arrive always has an inherent end-point, while run does not have an inherent end-point. As soon as run has an expressed end-point, the sentence is ill-formed: *I ran for five hours into Jerusalem. (The test is only partial because some other change of location verbs CAN co-occur with duration adverbs: The balloon ascended/rose/fell/descented for four hours before exploding.)

In Simpson (1982) I show that change of location verbs in English can be distinguished from manner of motion verbs by the ability of the latter, but not the former, to appear with reflexives and resultative attributes.

I danced myself tired.
*I came myself exhausted.
He fell himself dead.

This difference is attributed to the obligatoriness of the semantic role of Source/End-point for change of location verbs. See also L. Levin (in progress) for an account of AUXILIARY selection by Icelandic motion verbs which requires a similar semantic classification.
but imply both, as in (38). In sentences with such verbs, the End-point and the Source are assigned the function ADJUNCT. The XCOMPs of direction are not obligatorily expressed in either Warlpiri or English; *wilypi-pardimi* and *emerge* do not always appear with an overt Source, and *yukami* and *enter* do not always appear with an overt End-point.

(37) a. Pulalypa *yuka-ja ngulya-ngka.*
    perentie-ABS enter-PAST hole-LOC
    The perentie went into the hole. [H59: 43]
    (endpoint focused)

    cave-EL emerge-HERE-rise-PAST kangaroo-ABS
    A kangaroo came out of the cave. [H59: 44]
    (source focused)

(38) a. Mata-jarri-ja *rna wapa-nja-warnu.*
    tired-INCH-PAST -1sg move-INF-ASSOC-ABS
    I’m tired of walking around. [H59: 37]
    (no intended source or endpoint of motion)

    b. Kaji-rna *parnka-mi, kapi-rna mata-jarri.*
    IF-1sg run-NPST, FUT-1sg tired-INCH-NPST
    If I run, I will get tired. [H59: 37]
    (no intended source or endpoint of motion)

If the verb is intransitive, such as *parnka* 'run', *wapami* 'move' and *yani* 'go', the XCOMP will be obligatorily controlled by the SUBJECT. If the verb is transitive, such as *kanyi* 'carry', the prediction is that the XCOMP should be controlled by the OBJECT, as it is in English.

However, sometimes, a verb which seems to select an XCOMP can appear in a sentence with a directional argument expressing roughly the same semantic role, but controlled by the SUBJECT. The evidence for the argument being controlled by the SUBJECT comes from double-case-marking of directionals with verbs of motion. (See Hale (EFW) and Granites (1976) for discussion of this issue.) Consider a simple sentence with the verb *kanyi* 'carry'.
(39) Wati-ngki kuyu ka-ngu *ngurra-kurra.*
   man-ERG meat-ABS carry-PAST camp-ALL
   The man carried the meat to the camp.

*Ngurra-kurra* expresses a direction. If it is an inherent argument of the verb *kanyi*, it must be an XCOMP, functionally controlled by the OBJECT. Now consider the following sentence.

(40) Ngarrka-ngku ka kuyu *ngurra-kurra-rlu* ka-nyi.
   Man-ERG PRES meat-ABS camp-ALL-ERG carry-NPST
   The man is carrying meat all the way to the camp. [Survey]

Both (39) and (40) entail that the OBJECT comes to be at the camp, but (40) entails the SUBJECT being at the camp as well. *Ngurra-kurra-rlu* has ERGATIVE case, agreeing with the SUBJECT, because the antecedent of the SUBJECT of *ngurra-kurra-rlu* is the SUBJECT of the sentence. *Ngurra-kurra-rlu* cannot be an OBJECT-controlled XCOMP here, because functional control of an argument precludes simultaneous anaphoric control. This suggests that in (40), the *ngurra-kurra-rlu* is in fact an ADJUNCT and not an XCOMP. Let us review the possibilities. First, if *ngurra-kurra-rlu* in (40) is an ADJUNCT, and *ngurra-kurra* in (39) is an ADJUNCT, then the fact that they both seem to bear almost the same semantic relationship to the verb *kanyi* is merely an accident due to the fact that the direction of movement of the entity denoted by the SUBJECT usually depends on the direction of movement depicted by the verb. Second, *kanyi* could be a manner of motion verb, which does not in fact have an XCOMP argument of direction in (39). On this account, the End-point can be expressed by an ADJUNCT which is either controlled by the SUBJECT or the OBJECT. The third possibility, that the XCOMP can be either SUBJECT-controlled or OBJECT-controlled, amounts to positing two lexical entries for the verb *kanyi*, each with a different complement. I have not been able to find evidence within Warlpiri to distinguish these alternatives.

More work needs to be done on the syntactic status of the directional complements. I have given no syntactic arguments for distinguishing XCOMPs and ADJUNCTs in Warlpiri. I have simply based this assignment on a semantic difference, namely whether or not the verb focuses on change of location.
3.4.2 Matrix predicates

Nominals with case-suffixes used as argument-taking predicates can only marginally be used as matrix predicates. Locatives are the type most commonly found. Even so, it is preferred to use a verb of stance such as *nyinami* 'sit' together with a locative in order to express the location of some entity at or in a place. Thus, while (41) a. is acceptable, (41) b is preferred.

(41) a. Ngaju *pirli-ngka*.
   I-ABS rock-LOC
   I am on the hill.

b. Ngaju ka-rma nyina-mi *pirli-ngka*.
   I-ABS PRES-1sg sit-NPST rock-LOC
   I am sitting on the hill.

I suggest that the reason for the unacceptability of most SCNs as matrix predicates has to do with dependent tense. The time reference of the state denoted by a semantic case suffix is dependent for its interpretation on the time reference of the higher clause. Usually, the time reference of a semantic case suffix has to be the same as that of the matrix clause. As a matrix predicate, the time reference of a semantic case suffix cannot be interpreted, because it has no antecedent. The marginal acceptability of the LOCATIVE as a matrix predicate has to do with other properties of the LOCATIVE which link it with *derivational* case-suffixes, rather than semantic case-suffixes. Derivational case-suffixes, I claim, form nominals which, like other nominals, are tenseless, and so do not have this dependent tense constraint preventing them from appearing as matrix predicates. See Chapters 4 and 6 for further discussion.

When an nominal with a semantic case-suffix such as LOCATIVE acts as the main argument-taking predicate of the sentence, the case-suffix is the functional head of the sentence. However, in contrast to normal nominals acting as matrix predicates, the lexical form of the matrix argument-taking predicate will be the lexical form of the *case-suffix*, and not the lexical form of the *nominal* to which the case-suffix attaches. In (41)a, the matrix predicate is *ngka*, which selects a SUBJECT, *ngaju*, and an OBLIQUE,
pirli. This contrasts with a sentence such as (42), in which the argument-taking predicate is pirli, which selects a SUBJECT nyampu + ju.

(42) Nyampu + ju – pirli.
this rock.
This is a rock.

The matrix predicate use of case-suffixes provides some evidence that an ATP case-suffix selects an OBLIQUE argument, rather than an OBJECT. If an ATP case-suffix selects an OBJECT, this makes the prediction that, when a semantic case acts as a matrix predicate, the Object of the semantic case is the OBJECT of the sentence. However, pirli shares no properties with the OBJECTs of transitive sentences that I can find. LOCATIVEs have never been found registered in the AUXILIARY, and nor have they been found controlling kurra clauses.\(^\text{17}\) All indications suggest that sentences such as (43) and (44) are ungrammatical.

(43) *Japanangka -jana pirli-patu-rla
Japanangka-ABS -3pl stone-PL-LOC
Japanangka is on the stones. [made-up]

(44) *Japanangka pirli-ngka wanti-nja-kurra(-rla).
Japanangka-ABS stone-LOC fall-INF-OCOMP
Japanangka is on the stone which is falling. [made-up]
(.e.g when rock-climbing during a rock-slide)

It is misleading to call the complement of a case-suffix used as an argument-taking predicate an OBJECT. I will treat it as an OBLIQUE\(_\text{theta}\) of that argument-taking predicate, (where theta stands for the name of a class of semantic roles). This weakens the parallelism between prepositions and semantic case-suffixes, if prepositions are considered to be transitive (as in the categorial feature systems proposed by Jackendoff

---

\(^\text{17}\) One might be able to argue that the LOCATIVE suffix rla cannot attach to the kurra OCOMP complementizer and so a LOCATIVE nominal cannot control a kurra clause, since there is no agreement in case. However, this does not seem a very strong argument, since agreement of kurra clauses with DATIVE arguments is only optional.
(1977) and Bresnan (1982)), but I see no alternative. The object of a case-suffix used as a matrix predicate does not behave like the object of a Verb. However, the parallelism between the objects of prepositions and the objects of verbs is probably overstated. In Russian, the normal case for an OBJECT is ACCUSATIVE, and there are many prepositions which take ACCUSATIVE-marked arguments. But the ACCUSATIVE argument of a preposition does not seem to share any properties with objects of transitive verbs.18

18. For instance, an ACCUSATIVE OBJECT can usually be substituted for by a GENITIVE in negative contexts:

\[
\begin{align*}
\text{Ja } & \text{ ne } \text{ videla } \text{nǐ } \text{ odu} \text{n} \text{ zhenshchinu.} \\
\text{l-NOM } & \text{not } \text{see-PAST-FEM } \text{nǐ } \text{one-FEM-ACC woman-ACC} \\
\text{I didn't see one woman.} \\
\text{Ja } & \text{ ne } \text{ videla } \text{nǐ } \text{o} \text{doj } \text{zhenshchiny.} \\
\text{l-NOM } & \text{not } \text{see-PAST-FEM } \text{nǐ } \text{one-FEM-GEN woman-GEN} \\
\text{I didn't see a woman.}
\end{align*}
\]

However, the ACCUSATIVE object of a preposition does not alternaevtive with GENITIVES.

\[
\begin{align*}
\text{Ja } & \text{ ne } \text{ smotreļa } \text{nǐ } \text{nā odu} \text{n} \text{zhenshchiniu.} \\
\text{l-NOM } & \text{not } \text{look-PAST-FEM } \text{nā } \text{one-FEM-ACC woman-ACC} \\
\text{I didn't look at one woman.} \\
\text{*Ja } & \text{ ne } \text{ smotreļa } \text{nǐ } \text{nā odoj } \text{zhenshchiny} \\
\text{l-NOM } & \text{not } \text{look-PAST-FEM } \text{nā } \text{one-FEM-GEN woman-GEN} \\
\text{I didn't look at a woman.}
\end{align*}
\]

I have been unable to find a clear example of a preposition with ACCUSATIVE case used as a matrix predicate, because ACCUSATIVE case is normally used for direction in PPs, and directionals rarely appear as matrix predicates. Certainly gapping does not license a substitution:

\[
\begin{align*}
\text{*On } & \text{poexal } \text{nā Moskvy, } \text{a } \text{ja } \text{ni } \text{v} \\
\text{He-NOM } & \text{go-PAST-MASC in Moscow-ACC and } \text{l-NOM } \text{not } \text{in} \\
\text{odnoj } & \text{Evropejskoj } \text{stolitsy.} \\
\text{one-FEM-GEN European-FEM-GEN capital-GEN.}
\end{align*}
\]

He went to Europe, but I, not to a single European capital.

(I am grateful to Boris Katz and Beth Levin for help with this data. See also Neidle (1982), and Pesetsky (1982).)
3.4.3 ADJUNCTS

In 3.3 I suggested that there are two types of nominal ADJUNCT, those that select SUBJECTs, and those that do not. The former attribute properties to arguments, and the latter attribute properties to sentences. The distinction is even clearer with the ATP use of case-suffixes. I will first look at sentence attributes, and then turn to argument attributes.

3.4.3.1 Sentential ADJUNCTs

A nominal with an ATP case-suffix can be used to give the location in space (45), and (46), or time (47) c.f an event, as well as the reason for, or the manner of an event.

(45) Yuwarli ka-lu-jana panu nganti-mi Yurntumu-rla
House-ABS PRES-3pl-3pl many-ABS build-NPST Yuendumu-LOC
They are building lots of houses at Yuendumu. [EFW]

(46) Jurlarda + iku ka ngurru-ma-mi wilypiri-rla
honey-ABS + THEN PRES make-NPST hollow.in.tree-LOC
minikiyi-rl + ji.
bee-ERG + EUPH.
The honey bee makes the honey inside the tree-hollow. [minikiyi]

(47) Kala-lu mangi rdarri-marda-rnu kurdiji-rla + iku.
USIT-3pl boy-ABS catch-PAST initiation-LOC + THEN
Then they caught the youths at initiation time. [mangi]

Almost any matrix predicate can be modified by an adjunct denoting location or time, or reason. The appearance of such adjuncts is not determined by the nature of the verb. The functional head of the ADJUNCT is the case marker itself. A LOCATIVE used as a sentence-attribute has the lexical entry:

LOCATIVE <(OBLtheta)>

The OBLIQUE theta is the nominal to which the case-suffix attaches.

For example, in (47), kurdiji-rla modifies the whole proposition by setting it in a time. The LOCATIVE suffix contributes the location relation and the nominal, kurdiji, contributes the time. Kurdiji-rla is assigned the function ↓ ε (†ADJUNCTS). Since it does not select a SUBJECT, it does not introduce the equation (†SUBJ PRED) = ‘PRO’.
Therefore, semantic interpretation rules will interpret it as a sentence-attribute rather than an attribute of an argument.

3.4.3.2 Argument ADJUNCTs

Nominals with ATP case-suffixes can be used as secondary prédicates attributing some property to an argument of the verb. They receive an additional case-suffix, agreeing with the case of the argument they are predicated of, as I mentioned in 3.2.3.2 and 3.3.19

These nominals function as ADJUNCTs. Unlike the sentence-attribute ADJUNCTS described in the previous section, they both select a SUBJECT and assign it the equation (\text{$\uparrow$SUBJ PRED}) = ‘PRO’. This PRO SUBJECT is anaphorically controlled by some argument of the sentence. Which argument controls the ADJUNCT is determined by the extra case added to the nominal.20 As I showed in 3.3.2, ADJUNCT-antecedent concord does not follow from the formal representation of functional structures. Consistency cannot rule out case clashes between the semantic case ADJUNCT and its controller.

19. See Hale (1982 b) for an account of double case-marking. The Warlpiri Survey contains a useful set of examples of double case-marking with different semantic cases.
20. An ADJUNCT modifying an ABSOLUTIVE argument has no overt case-suffix, of course.

\text{Muju-nya ka-rnalu yangka-ju kuna-ngka kutu ngarri-rni.}
coccyx-EMPH PRES-1plex the-ABS anus-LOC close call-NPST

‘Muju’ is what we call that which is near the anus. [muju]

Case-marked nominals without extra case-marking can thus be ambiguous – as to whether the whole event takes place at a particular location, say, or as to whether location is predicated just of an ABSOLUTIVE argument.

Location can be unambiguously predicated of the OBJECT with the help of the OBJECT-control complementizer kurra.

\text{Janganpa ka-rnalu paka-rni wilypiri-kirra.}
possum-ABS PRES-1plex hit-NPST hollow.in.tree-OCOMP

We kill possums in the hollows of trees. [mangarli]

\text{Pararri, .... nya-nyi ka-rlipa wurnturu-kurra.}
rainbow-ABS, see-NPST PRES-1plin distance-OCOMP

A rainbow ... is what we see in the distance. [pararri]
Therefore, the *Agreement Convention* or some equivalent proposal is required.

### 3.5 Representation of case-marked nominals

Having shown that case-suffixes act like prepositions in English, I will now discuss the representation of case-suffixes, in particular the assignment of functions to case-marked nominals, because it presents difficulties for the *Lexical Integrity Hypothesis*. I will argue that assigning functions in the morphology is the best way around this. The difference between using case as an agreement marker and case as an argument-taking predicate will be reduced to whether or not the case suffix has a syntactically relevant meaning (represented as a PRED value), and whether the nominal acts as the functional head.

Let us now consider the morphological structure of the nominals *kurdu-jarra-rlu* and *wita-jarra-rlu* in (48), which was discussed in 3.3.2. As I mentioned there, *kurdu-jarra-rlu* is the SUBJECT, and *wita-jarra-rlu* is an ADJUNCT predicated of the SUBJECT. Thus, on *kurdu*, the ERGATIVE has the ARG use, and on *wita* it has the ATT use.

Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
(The) two children are chasing the dog and they are small.

The morphological structures of *kurdu-jarra* and *wita-jarra* is given in (49). (I will justify using functional equations in the morphology in 3.5.1).

\[(49)\]

<table>
<thead>
<tr>
<th>a. Argument use</th>
<th>b. Attribute use</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

\[\uparrow\text{PRED} = 'kurdu' \quad \uparrow\text{PRED} = 'wita' < \text{(SUBJ)} >\]
(49)a. and b. differ only in that wita-jarra selects a SUBJECT.

The ARG and ATT uses of case-suffixes share the property that the case-suffix acts principally as an indicator of a relation, rather than having a syntactically relevant meaning. This contrasts with the ATP use of case-suffixes, where the semantic contribution of the case-suffix is clear.\(^{21}\) I will call the ARG and ATT uses of case-suffixes together the agreement use of case-suffixes, or AGR use, in contrast to the ATP use.

As I have already suggested, the distinction between the ARG and ATP uses of case-suffixes parallels the different uses of the preposition \textit{at} in English:

\begin{align*}
(50) & \quad \text{Cupid and Campaspe played at cards.} \\
(51) & \quad \text{They were sitting at a very large oak table.}
\end{align*}

Let us review how the difference between these two uses of the preposition \textit{at} can be represented in LFG. Bresnan (1980b) has argued that this semantic distinction is represented not in constituent structure but in functional structure; the two uses of PPs may have the same constituent-structure, but they have different functions. The distinction between the ARG and the ATP uses is two-fold: in the ATP use, the functional head is the preposition, which provides the PRED feature, and the whole nominal has the function ADJUNCT or XCOMP; in the ARG use, the functional head is the nominal, and the whole nominal has some function such as C/BLIQUE.

\(\text{---}\)

21. There is, as I said in Chapter 2, a close connection between semantic role and case-suffixes, and similarly between the meaning of a preposition and its use as a relation-indicator. It is no accident that the ERGATIVE expresses a SUBJECT with the Agent role, and, when used as an argument-taking predicate, denotes "means", or "instrument". Likewise, it is no accident that the preposition to is used both for OBLIQUEs such as the Recipient in the sentence \textit{She handed the baby to Lucy}, and for the directional argument-taking predicate in \textit{How many miles is it to Babylon?}. By saying that in OBLIQUEs, the preposition or case-marker has no PRED feature, I do not mean to claim that the preposition or case-marker is meaningless. I merely want to claim that its meaning is not relevant at the syntactic level. We may think of a verb such as \textit{hand} as a complex predicate which includes the meaning of the preposition to as well. (I am grateful to Mark Gawron for discussion of this point.)
These functions are assigned to phrase structure positions, by means of an annotated phrase structure rule.

\[(52) \quad VP \rightarrow V (NP) (NP) PP^* PP^* \quad OBJ OBJ2 OBLIQUE_{\theta} \text{ADJUNCT} \]

The difference between the ATP use of PPs and the ARG use of PPs can be represented by different annotations of $\uparrow = \downarrow$ in the phrase structure rule expanding PP, together with the difference in meaningfulness. In the phrase structure rule, the P may be the functional head, when it is assigned the equation $\uparrow = \downarrow$, and the NP is assigned an OBLIQUE function, as in (53).

\[(53) \quad PP \rightarrow P \quad NP \quad \uparrow = \downarrow \quad (\uparrow OBL_{\theta}) = \downarrow \]

Alternatively, both the P and the NP may be assigned the equation $\uparrow = \downarrow$, as in (54). However, in this instance only the NP has a meaning (PRED feature), and so acts as the functional head.

\[(54) \quad PP \rightarrow P \quad NP \quad \uparrow = \downarrow \quad \uparrow = \downarrow \]

From these phrase structure rules, together with the lexical form information, (represented by a PRED feature), an annotated c-structure tree can be created, as shown in (55).
The equation \((\uparrow \text{OBL}_{loc}) = \downarrow\) attached to the PP indicates that the information about the PP is information about the \(\text{OBLIQUE}_{loc}\) of the VP. Since the VP is the functional head of the sentence, information about the PP is also information about the \(\text{OBLIQUE}_{loc}\) of the sentence. The functional head of this PP is the NP, and so the lexical form of the NP is the lexical form of the \(\text{OBLIQUE}_{loc}\) of the sentence. The equation \(\downarrow \epsilon (\uparrow \text{ADJUNCTS})\) attached to the second PP provides the information that this PP is one of the ADJUNCTs of the sentence. The functional head of this PP is the P. The lexical form of the ADJUNCT is the lexical form of the P. Since the ATP denoted by the P selects an \(\text{OBLIQUE}_{\text{theta}}\), the ADJUNCT must contain an \(\text{OBLIQUE}_{\text{theta}}\). This function is expressed by the NP.

As I have attempted to show, the uses of case-suffixes in Warlpiri parallel the uses of prepositions in English. Ideally, a theory of grammar should capture this parallelism. But, extending the analysis of PPs in English to Warlpiri encounters several problems.
First, case-suffixes have a concord use which prepositions do not have. This difference can be disposed of by assuming that, whereas English only allows the ARG use of prepositions to occur with OBLIQUEs (and perhaps also OBJECTS), Warlpiri allows the ARG use to occur with every function (as befits a language in which case-marking is the primary way of indicating grammatical functions). These grammatical functions also include ADJUNCTs, thus creating a general agreement use, which I call AGR.

Second, allowing case-suffixes to act as functional heads does not jibe with Bresnan (1982a)'s definition of functional head given in Chapter 2. Bresnan restricts functional heads to major categories annotated with the equation $T = 1$. But clearly a case-suffix is not a major category. I shall argue, however, that the $T = 1$ equation must be assigned to the case-suffix within the morphology, not within the syntax. In both morphology and syntax, N, V, A and perhaps P will be major categories. I propose that in morphology, a case-suffix can also be treated as a major category.

The third problem is not so easy to dispose of. It has to do with the Lexical Integrity Hypothesis. Observe that the assignment of functions to the prepositions and the nominal in English is a syntactic process, because the preposition and the nominal are separate words, each with their own position in constituent-structure. But in Warlpiri, the case-marked nominal is a morphological word. LFG and LPM both assume that inflection, including case-affixation, is done in the lexicon, not in the syntax. Therefore, the only information available in the syntax is the case-feature, which does not distinguish between the uses of a case-suffix.

---

22. The LFG functional features on their own do not provide a way of expressing the difference between AGR and ATP case-markers. An ERGATIVE-marked nominal which indicates the SUBJECT relation will have the CASE feature ERGATIVE, just as an ERGATIVE-marked nominal used as an instrumental argument-taking predicate will have the CASE feature ERGATIVE. Thus the presence of the CASE-feature alone is insufficient to distinguish between ATP and AGR uses of case-suffixes.
Recall that in Chapter 1 I showed that the strongest form of the **Lexical Integrity Hypothesis** is derived from LPM, and that this prevents any c-structure process from having access to the internal structure of words. Now, the assignment of functional equations such as $\uparrow = \downarrow$ and $\uparrow\text{OBLIQUE}_{\text{goal}} = \downarrow$ to the parts of a PP, as I described it, is a c-structure process. It cannot apply to the parts of a nominal with a case-suffix used as an argument-taking predicate. Why not? Because Bracket Erasure has erased the brackets between the case-suffix and the nominal before lexical insertion. A nominal such as 'rock-LOC' *pirli-ngka* in (56) is a single unanalysable unit from the point of view of the syntax. This predicts of course that *pirli* in *pirli-ngka* is an incorporated argument which is not syntactically relevant; it should behave like the incorporated locative in *Fido treed the cat*. No anaphoric processes should be able to refer to the nominal ‘rock’ *pirli*. This prediction is false. It also predicts that the nominal ‘rock’ cannot be modified. But (56) and (57) show that this prediction too is false.

(56) Kar'li ka nguna-mi *pirli-ngka* wita-ngka.
    Boomerang-ABS PRES lie-NPST rock-LOC small-LOC
    A boomerang is lying on the small rock.

(57) Japanangka-rlu rla-jinta luwa-rnu marlu-ku *pirli-ngka-ku
    Japanangka-ERG CON-DAT shot-PAST kangaroo-DAT rock-LOC-DAT
    wiri-ngka-ku
    big-LOC-DAT
    Japanangka shot at the kangaroo on the big rock.
    Japanangka shot at the kangaroo on the rock, a big one.

At this point, a proponent of a theory in which inflection is done in the syntax, and derivation in the lexicon might claim that this provides evidence for such a theory. Suppose case-suffixes are really postpositions which cliticize to the nominal in the syntax. Then the boundaries will be visible to c-structure processes, and the nominal can be assigned the function $\text{OBLIQUE}_{\text{\theta}}$. However, there is evidence showing that case-suffixes have to be attached before at least one type of derivational suffix. The verbalizing suffixes **INCHOATIVE** and **CAUSATIVE** can be suffixed to case-marked nominals as well as to uninflected nominals.
The fact that inflectional markers can precede derivational suffixes suggests that inflection should be done in the morphology, and not in the syntax.\(^\text{23}\) So, although the ATP use of case-suffixes does not cause difficulties for theories that claim inflection is not subject to the Lexical Integrity Hypothesis, such theories are then left without an explanation for the fact that in Warlpiri (and a number of Australian languages) case-suffixes can precede derivational suffixes.

Furthermore, dismissing the ATP use of case-suffixes by allowing inflection to take place in the syntax fails to capture the insight that there are other analogous difficulties with the Lexical Integrity Hypothesis for which such a solution is not available. Sadock (1980) points out that a derivational process of noun-incorporation in Greenlandic Eskimo

\(^{23}\) The argument is not as strong as it could be, because of the fact that the AUXILIARY complex, whose position is determined syntactically, can intervene between the nominal and the INCH or CAUS suffix, suggesting that the INCH and CAUS are very loosely bound derivational suffixes. See 2.5.2.
appears to violate the *Lexical Integrity Hypothesis*. Since the process is clearly derivational, and not inflectional, only abandonment of the distinction between morphology and syntax would permit a proponent of a theory in which inflection is done in the syntax to capture the resemblance between noun-incorporation and the ATP use of case-suffixes. Let us briefly examine the noun-incorporation problem.

In Greenlandic Eskimo, a nominal in a word formed by derivation can be anaphorically referred to, and modified, as Sadock (1975) shows. Verbs can be formed by incorporating nominals with one of two hundred or so verbal suffixes which mean things like *have, buy, eat* etc. The incorporated nominal acts semantically as an argument of the verb – Sadock calls it an OBJECT. These incorporated OBJECTs can be modified by independent words denoting attributes. Furthermore, they can be referred to by anaphoric processes. Thus in (59) (Sadock’s (37) and (38)), the incorporated object *airplane* of the first verb is the understood SUBJECT of the second two verbs.

(59)  
\[
\text{Suulut} \quad \text{timmisartuliorpoq} \quad \text{Suluusaqarpoq} \\
\text{Søren-ABS} \quad \text{airplane-make-INDIC-3sg} \quad \text{wing-have-.NDIC-3sg} \\
aquteqarilunilu. \\
rudder-have-.INF-4sg-and \\
\text{Søren made an airplane. It has wings and a rudder.}
\]

In (60), the attribute has instrumental case, the usual case of an indefinite unin incorporated nominal acting as OBJECT. The attribute also agrees with the incorporated OBJECT in number – ‘sled’ is a nominal which is morphologically plural when syntactically singular.

(60)  
\[
\text{Angisuunik} \quad \text{qamateqarpoq.} \\
\text{big-NOM-PL-INST} \quad \text{sled-have-INDIC-3sg} \\
\text{He has a big sled.}
\]

Observe that if these structures are formed in the morphology, then Bracket Erasure will have taken place before lexical insertion. Therefore the fact that there is an incorporated object will be invisible to the syntax. No anaphoric or modifying processes can affect it.
I contend that the nominal to which a semantic case-suffix attaches has a morphological and syntactic status similar to that of the incorporated objects. The structures for both are given in (61). The structures are quite parallel, with the exception that the Greenlandic example contains a derivational suffix, and the Warlpiri example an inflectional suffix.

(61)

<table>
<thead>
<tr>
<th>Greenlandic</th>
<th>Warlpiri</th>
</tr>
</thead>
<tbody>
<tr>
<td>[N - VERB]_V</td>
<td>[N - CASE]_N</td>
</tr>
<tr>
<td>OBJECT ATP</td>
<td>OBLIQUE_{theta} ATP</td>
</tr>
</tbody>
</table>

In short, the problem for the *Lexical Integrity Hypothesis* is that words can be *functionally complex*: different parts of a word may have different syntactic functions, but cannot be assigned those functions in the syntax. Simple feature-percolation is unable to capture this, unless an enriched theory of features which encompasses functions is devised. However, to the extent that a feature system incorporates functions, it will also mimic the existing theory of functions in LFG. This is a redundancy which the theory can do without.

3.5.1 Solution

Since, as I showed in 1.3.3, the *Lexical Integrity Hypothesis* is derived in LPM from Bracket Erasure, there are at least two possible ways of expressing the fact that nominals with ATP case-suffixes are functionally complex. One way is that Bracket Erasure could exceptionally fail to apply to nominals with case-suffixes. Let us call this "Bracket Retention." The syntax will have access to the brackets, and will be able to assign functions accordingly. Alternatively, Bracket Erasure can be maintained, but functional equations will be allowed to appear in the morphology.
The first solution must be treated with caution, because, unconstrained. Bracket retention will render the Lexical Integrity Hypothesis vacuous. A plausible constraint might be that it can fail if the elements do not form a semantic unit. For instance, if a discourse-relevant clitic, such as a FOCUS clitic, must, for phonological reasons, be attached in the morphology, the brackets between the clitic and its host would be kept, because they do not form a semantic unit. However, such a constraint would not apply to a nominal and a case-suffix, which seem clearly to be a single unit. Another difficulty with the Bracket retention account is that there is no independent evidence (such as maintenance of brackets on the next level) for supposing that Bracket Erasure has failed to apply between the nominals and the case-suffix.

The second solution has already been anticipated in the discussion of pronominal clitics in Chapter 2. If pronominal clitics have to be assembled in the morphology, then information about the functions they represent must also be provided in the morphology. I suggested that this be done in the form of functional equations, identical to those used in syntax. This is only possible in a theory which posits an autonomous level of functions, independent of visible phrase structure positions. Such theories include LFG, Relational Grammar, and those versions of Government-Binding which accept the need for a lexical or virtual structure in terms of which grammatical functions can be defined, as for instance in Zubizarreta (1982). Since this level is autonomous, information about functions can appear attached to morphological positions, just as they are attached to phrase structure positions. Thus, when a case-suffix is attached in the morphology to a nominal, information about the case-suffix's functions, and the function of the nominal to which it attaches, can also be attached. The formalism provided by LFG for representing functional information attached to phrase structure positions can readily be transferred to represent functional information provided in the morphology.

Some functions, such as PRED equations, are inherent to the particular lexical item (nominal or suffix). Others will be attached as part of the word-formation rule adding a case-suffix to a nominal, (or perhaps more generally in the morphology: see Chapter 4). These functional equations must be realized on the word when it emerges from the lexicon. Clearly, the equations must be consistent; otherwise no consistent f-structure will be constructable. For instance, a word cannot be assigned two conflicting
case-values, or number values.\textsuperscript{24} Similarly, a word cannot have two PRED equations. I adopt the constraint that the functional equations assigned in the morphology have the same form as those assigned in the syntax. That is, they must use the same sets of features and functions, and they must also be subject to the principle of functional locality (Principle 10, in 2.2.7) preventing more than two function and functional feature names on either side of an equation.

Let us look at the \textit{AGR} and \textit{ATP} uses of case-suffixes.

I assume that, just as the lexical form, represented by a PRED feature, is optional for prepositions, so it is also optional for case-suffixes. When the option is taken, the \textit{ATP} use of a case-suffix is given. When the option is not taken, the case-suffix has the \textit{AGR} use.

Just as a nominal in a PP can act either as an \textit{argument} of the predicate denoted by the preposition, or as the \textit{functional head}, so too, the nominal to which a case-suffix attaches can act either as the \textit{functional head}, or as an \textit{argument} of the predicate denoted by the case-suffix. Likewise, just as a nominal in a PP acting as an argument of the preposition has the function OBLIQUE\textsubscript{\textit{theta}}, so a nominal acting as an argument of a case-suffix will have the function OBLIQUE\textsubscript{\textit{theta}}. Examples are repeated in (62) and (63).

(62) Japanangka-rlu luwa-rnu marlu pirli-ngka. 
Japanangka-ERG shot-PAST kangaroo-ABS rock-LOC 
Japanangka shot the kangaroo on the rock.

(63) Ngarrka-patu ka-lu karti-ngka manyu-karri-mi .. 
Man-PL-ABS PRES-3pl cards-LOC play-stand-NPST .. 
The men are playing cards... [EFW: (94)]

The morphological structure of \textit{pirli-ngka}, a nominal with the \textit{ATP} use of the LOCATIVE in (62), is represented in (64). The morphological structure of \textit{karti-ngka}, a nominal with the \textit{AGR} use of the LOCATIVE in (63), is represented in (65). In each instance I have circled the functional head.

\textsuperscript{24} Exactly \textit{which} functional equations can be attached, and exactly what constraints on their attachment are needed other than \textit{consistency}, is a matter for further investigation.
How are these equations transmitted to the c-structure? Technically, one could apply the instantiation procedure to the morphological tree. The instantiated equations attached to the lexical category would be inserted at lexical insertion. The instantiation procedure is described in detail in Kaplan and Bresnan (1980). I have assumed it in the building of f-structures described in Chapter 2. Nodes of the annotated c-structure tree are labelled with actual variables, and these variables are substituted for meta-variables in the equations attached to nodes, to form "f-description" statements, which are used to construct the f-structure.

Consider the tree resulting from labelling (64) with actual variables.

(64) Argument-Taking Predicate Use

\( (\uparrow \text{OBL}_{\text{theta}}) = \downarrow \)

\( \uparrow = \downarrow \)

\( \text{Af} \)

\( \text{T}_{\text{PRED}} = '\text{piril}' \)

\( \text{piril} \)

\( \text{Af} \)

\( \text{ngka} \)

(65) Agreement use

\( (\uparrow \text{OBL}_{\text{theta}}) = \downarrow \)

\( \uparrow = \downarrow \)

\( \text{Af} \)

\( (\uparrow \text{PRED}) = '\text{LOC} < ((\text{SUBJ}), (\text{OBL}_{\text{theta}})) \)

\( \text{loc} \)

\( \text{ngka} \)

\( (\uparrow \text{PRED}) = '\text{karti}' \)

\( \text{karti} \)

\( \text{ngka} \)
Substituting the actual variables for the meta-variables \( \uparrow \) and \( \downarrow \) results in the following set of f-descriptions.

\[
(f, \text{OBLIQUE}_{\theta}) = f_2 \\
(f_1) = f_3 \\
(f_2 \text{PRED}) = 'pirli' \\
(f_3 \text{PRED}) = 'LOC' < ((\text{SUBJ}) (\text{OBL}_{\theta}) >
\]

Manipulating these equations results in the following set:

\[
(f_1 \text{PRED}) = 'LOC' < ((\text{SUBJ}) (\text{OBL}_{\theta}) > \\
(f_1 \text{OBL}_{\theta} \text{PRED}) = 'pirli'
\]

Alternatively, words could appear at lexical insertion with the equations solved to form a partial f-structure. That is, the annotated c-structure would contain some partial f-structures.

Adding equations with variables, or adding partially built f-structures, both detract from the comprehensibility of the c-structure tree. I have chosen therefore to represent this instantiation process by simply combining the equations into larger, derived equations. These larger equations will appear to violate functional locality (Principle 10, 2.2.7), by having more than two names on either side of the equation. However, I assume that functional locality does not apply to derived equations. The N will have equations of both the nominal and the case-suffix, as (66) illustrates:
That is, \( N_j \) will carry information about two different functions, namely their lexical forms. Here, the importance of NOT identifying a node with the function that labels it becomes apparent. Otherwise \( N_j \) would be inconsistent.

Since the lexical forms of the parts of the word are now visible, it is possible both to attribute properties to, and to refer to, the OBLIQUE\( _\theta \) argument of the predicate denoted by the case-suffix.

So far, I have assumed the following rules for assigning functional equations in the morphology.

*Assign the case-suffixes the equation* \( \uparrow = \downarrow \).

*Assign the nominal to which a case-suffix attaches either the functional head status (by means of the equation* \( \uparrow = \downarrow \), or the function OBLIQUE\( _\theta \).

As it stands, these rules do not cover the use of a case-marked nominal as an attribute of the OBLIQUE\( _\theta \) of a case-suffix, as for example, the \( \theta \) of \( \text{wita-ngka} \) 'small' in (56).
A first step is to allow the nominal to which a case-suffix is attached to have the function $\text{OBLIQUE}_{\theta} \text{ADJUNCT}$, meaning that it is an ADJUNCT of some argument bearing the $\text{OBLIQUE}_{\theta}$ grammatical function. This is given in (67).

(67) Agreement use: modifying an $\text{OBLIQUE}_{\theta}$

\[
\begin{array}{c}
\text{ADJUNCT} \\
\text{N} \\
\downarrow \varepsilon (\uparrow \text{OBLIQUE}_{\theta} \text{ADJUNCTS}) \\
\text{N-1} \\
\uparrow = \downarrow \\
\text{Af} \\
(\uparrow \text{PRED}) = \text{"wita"} < (\text{SUBJ}) > \\
\text{wita} \\
\text{ngka}
\end{array}
\]

The whole N will have the function ADJUNCT, because it modifies an argument (with the function $\text{OBLIQUE}_{\theta}$) of an ADJUNCT. The case-suffix acts purely as an agreement marker. In functional structure the two ADJUNCTs will merge to form a single ADJUNCT, containing a modified argument. (This process will be discussed at greater length in Chapter 4.)

The next step involves the representation of case. Recall that it is a general property of attributes in Warlpiri that they agree in case with the nominal they attribute a property to. Therefore the syntax must be provided with the information that in (67) the case of the OBLIQUE ADJUNCT is LOCATIVE. I propose that when a case-suffix C is attached to a nominal, the nominal has the case-feature of the suffix, represented by the equation $\downarrow \text{CASE} = C$.

The assignment by a case-suffix of a case-feature to the nominal to which it attaches parallels in the morphology the syntactic assignment of a case-feature to a nominal by a preposition. However, while prepositions allow their OBLIQUE OBJECTS to have different
cases, a case-suffix cannot assign a case other than itself to the nominal which it attaches to. This property of assigning a case-feature to the nominal does not differentiate semantic-case suffixes from grammatical case-suffixes, because both can be used as argument-taking predicates selecting OBLIQUE\textsubscript{theta}s.

In (38) through (70) I present the structures resulting from the operation of the rule assigning the case-feature. On the righthand side I show the morphological structure of the nominal, on the lefthand side I show the nominal as it appears in the syntax with its equations attached. (68) and (69) show the morphological structure of nominals bearing the function ADJUNCT. In (68), the nominal to which the case-suffix attaches has the function OBLIQUE\textsubscript{theta} ADJUNCT. By virtue of the equation \( \downarrow \text{CASE} = \text{LOCATIVE} \) the OBLIQUE\textsubscript{theta} ADJUNCT has LOCATIVE case. The whole ADJUNCT has no particular case.26

---

25. For instance, the preposition \textit{v} 'in, into' in Russian takes either ACCUSATIVE or PREPOSITIONAL case-marked arguments, while the preposition \textit{in} 'in, into' in German takes either ACCUSATIVE or DATIVE case-marked arguments. In such languages, it is the combination of the case and the preposition which determines the semantic role, and sometimes the grammatical function of the prepositional Object. Thus in the German sentence: \textit{Ich gehe im Garten} (DATIVE), the PP is a locative ADJUNCT, \textit{I walk about in the garden}. In the sentence \textit{Ich gehe in den Garten} (ACCUSATIVE), on the other hand, the PP is a directional XCOMP: \textit{I go into the garden}.

26. In fact, the whole ADJUNCT will get ABSOLUTIVE case by a default assignment that takes place in the syntax. See 3.5.2.3.
I will explain in Chapter 4 the assignment of $\uparrow = \downarrow$ to $N$ within $\bar{N}$. Observe that an equation such as $(\uparrow \text{OBL} \theta \text{ADJ PRED}) = 'piri'$ apparently violates functional locality. However, it is a derived equation, and so there is no violation.

In (69), the nominal to which the case-suffix attaches has the function $\text{OBLIQUE}_{\theta}$. By virtue of the equation $\downarrow \text{CASE} = \text{LOCATIVE}$, the $\text{OBLIQUE}_{\theta}$ has LOCATIVE case. Again the whole ADJUNCT has no particular case.
(69) Syntactic

\[
\begin{align*}
\downarrow & \varepsilon (\uparrow \text{ADJUNCTS}) \\
\downarrow & = \downarrow \\
N & = \downarrow
\end{align*}
\]

\[
\begin{align*}
\uparrow & = \downarrow \\
\uparrow & = \downarrow
\end{align*}
\]

\[
\begin{align*}
N & \quad \text{(TPRED)} = \text{LOC} < ((\text{SUBJ})), \text{(OBL\theta)} > \\
[\downarrow \text{CASE}] & = \text{LOC} \\
\text{Af} & = \text{loc}
\end{align*}
\]

\[
\begin{align*}
\text{pirli-ngka} & \quad \text{(OBL\theta) PRED} = \text{‘pirli’} \\
\text{pirli} & \quad \text{(OBL\theta) CASE} = \text{LOC}
\end{align*}
\]

(70) shows a nominal which has an OBLIQUE function in the syntax. By virtue of the equation \( \downarrow \text{CASE} = \text{LOCATIVE} \), and the functional head equation \( \uparrow = \downarrow \), the whole OBLIQUE argument has LOCATIVE case.

(70) Morphological

\[
\begin{align*}
\uparrow & = \downarrow \\
\downarrow & = \downarrow \\
[\downarrow \text{CASE}] & = \text{LOC} \\
N & = \downarrow \\
\text{Af} & = \text{loc}
\end{align*}
\]

\[
\begin{align*}
\text{ pirli-ngka} & \quad \text{(TPRED)} = \text{‘karti’} \\
\text{ karti} & \quad \text{(TPRED) = ‘karti’} \\
\text{ ngka} & \quad \text{(TPRED) = ‘karti’}
\end{align*}
\]
This way of representing functions in the morphology extends naturally to Greenlandic Eskimo. As part of word-formation in Greenlandic Eskimo, when a verb-suffix is attached to a noun, the noun is annotated with the function OBJECT (or possibly \( \text{OBL}_{\text{theme}} \) = \( \downarrow \)), since they behave like OBJECTS which have been put in the instrumental case as a result of a grammatical function changing rule, rather than like OBJECTS with ABSOLUTIVE case). Since the verb is the functional head of the sentence, a nominal attached to the verb and bearing the functional equation (\( \text{OBJ} \) = \( \downarrow \)) will provide information about the OBJECT of the sentence.\(^{27}\) At this point it is worth commenting on the distinction between functional head, and morphological head. In some morphological theories, (for instance, Lieber (1980), Williams (1981)), case suffixes are assumed to be the morphological head of the word, no matter what the use of the case-suffix.\(^{28}\) Under these accounts, the morphological head has two important properties. First, the category of the morphological head is claimed to be non-distinct from the category of the word. This is of course true of the case-suffixes; whether they have the ATP use or the AGR use, the resultant form is still a nominal. Second, features of the head take priority over features of the base. The case-suffix, whether ATP or AGR, still assigns the equation \( \downarrow \text{CASE} = \text{C} \) to the nominal to which it attaches. However, in order to account for double case-marking, as I will show in 3.5.2, I need a somewhat richer theory of feature percolation than Lieber and Williams adopt. Moreover, since I am expressing the difference between the AGR and ATP uses of case-suffixes, as a difference between whether the nominal or the case-suffix is the head of the whole N, it is clear that for my

\(^{27}\) It is conceivable in languages such as Icelandic, that, when a resultative attribute is compounded with a verb, the resultative should have the function \( \uparrow \text{XCOMP} = \downarrow \), as in

\[ \text{Henni dauð-brá.} \]

she-DAT death-brought

She was scared to death.

If, as I speculate, no other resultative can occur together with \( \text{dauð-brá} \), this could be explained on the assumption that \( \text{dauð} \) has the function \( \uparrow \text{XCOMP} \). Consistency would prevent any other argument being assigned the function XCOMP.

\(^{28}\) Selkirk (1982), however, claims for independent reasons that, while a derivational affix is the head of the word which it forms, an inflectional affix, such as a case-suffix, is not.
account to be compatible with the view of morphology espoused by Lieber and Williams, a distinction must be made between functional heads, and morphological heads. Unlike a morphological head, a functional head provides information about function interpretation, rather than categorial information.

I briefly summarize the rules for assigning functions within the morphology to the parts of a case-marked nominal:

Assign the case-suffixes the equation $\uparrow = 1$.29

Assign the nominal to which a case-suffix attaches either the functional head status (by means of the equation $\uparrow = \downarrow$), or the function $\text{OBLIQUE}_{\theta\text{eta}}$, or the function $\text{OBLIQUE}_{\theta\text{eta}}\text{ADJUNCT}$.

Assign the nominal to which a case-suffix $C$ attaches the equation $\downarrow\text{CASE} = C$.

In the next section, I will examine double-case-marking structures.

3.5.2 Double case-marking

In a word such as 'rock-LOC-DAT' [pirli-ngka-ku] in (71), the LOCATIVE acts as an argument-taking predicate, and the DATIVE as a concord marker.

(71) Japanangka-rlu rla-jinta luwa-rnu marlu-ku pirli-ngka-ku
     Japanangka-ERG CON-DA1 shot-PAST kangaroo-DAT rock-LOC-DAT
     wiri-ngka-ku
     big-LOC-DAT
     Japanangka shot at the kangaroo on the big rock.
     Japanangka shot at the kangaroo on the rock, a big one.

The innermost suffix has to act as an Argument-Taking Predicate. The order could not be reversed. But how is this to be captured? First, saying that the nominal has two features of case is impossible in LFG, (and probably in most theories) because the

29. This rule is unnecessary if we assume that the case-suffix is always the morphological head of the word, and that the morphological head is always assigned the equation $\uparrow = \downarrow$, as a way of capturing Williams' and Lieber's insights about the feature transmission properties of morphological heads. Of course, the case-suffix is only the functional head of the word, if it has a meaning, i.e. a PRED feature.
well-formedness convention of Consistency rules it out. Even if we could allow two case-features, how can we capture the ordering facts, that the LOCATIVE has to be the Argument-Taking Predicate, and the DATIVE the concord-marker? Feature percolation doesn't preserve derivational history. The end result will just be two unordered features of case. Suppose one stipulates that the DATIVE and LOCATIVE are just two types of suffix, with different features; that is, that there are two types of feature: ATP case features, and AGR features, and that ATP features must precede AGR features. If semantic case-suffixes such as LOCATIVEs were always used as argument-taking predicates, and grammatical case-suffixes such as DATIVEs were always used as AGR case-suffixes, this might have some value. But they are not. These features do not correspond directly to the morphological classes I have called grammatical and semantic case. Although LOCATIVEs are predominately ATPs (or attributes of arguments of LOCATIVE ATPs), they can be ARGS, as I noted in 3.2.1. And the grammatical case-suffix ERGATIVE can be used as an argument-taking predicate, as I noted in 3.2.2. Moreover, saying that LOCATIVEs optionally have an AGR feature, and that DATIVEs optionally have an ATP feature is simply to recapitulate the functional information.

So, to capture the order of the case-suffixes in double case-marking, we need something like the assigning of functions in the morphology, (or the building up of logical form in the morphology described in Muysken (1981)). The account I have given so far of function assignment will easily extend to double case-marking structures. The annotated morphological structure of a Warlpiri double-case-marked nominal is given in (72).
Observe that $N_j$ has the case feature DATIVE by virtue of the DATIVE case-suffix $ku$. Therefore the whole ADJUNCT has the case-feature DATIVE, and so can modify a DATIVE nominal. $N_k$ has the case-feature LOCATIVE by virtue of being attached to the LOCATIVE case-suffix $rla$. Therefore the OBLIQUE$_\theta$ has the case-feature LOCATIVE, and so can be modified by a LOCATIVE-marked ADJUNCT. At the syntactic level the nominal will have the equations given in (73).

If the case-suffix attached to $N_k$ had been an AGR suffix, rather than an ATP suffix, the nominal would have had the equation $\uparrow = \downarrow$, the case-suffix would have percolated,
and the whole nominal would have violated consistency,\textsuperscript{30} as (74) illustrates:

\textsuperscript{30} William Poser pointed out to me, that my account does not extend easily to certain other instances of double case-marking, notably those found in the Australian languages Ngarluma, Yinjibarndi and Lardil, in which all the elements of a subordinate clause are marked with the case of the controller. On my account, an element which requires its case checked by its governor, e.g. an OBJECT, or an OBLIQUE, cannot appear in a double case-marking construction, because, if the OBLIQUE case were visible in syntax, it would conflict with the additional agreement case. But consider the following examples from Ngarluma. In i. all elements of a subordinate clause, including the SUBJECT \textit{palu}, are marked LOCATIVE, to show that the clause functions as a LOCATIVE.

\begin{enumerate}[i.]
\item \textit{Ngayi nyurnti-ka-rna mangkuru-ku ≠ palu-la mirta-ngka + lyi}
\begin{itemize}
\item I-NOM dead-CAUS-PAST kangaroo-ACC he-LOC not-LOC + TIME
\item \textit{milpa-nguru-la}
\item come-ACT.PARTIC.LOC
\item I killed the kangaroo before he came up.
\end{itemize}
\item \textit{Ngayi jimpayi-ka-rn,ku kurla-ku marrparnta-nha yarnta-yi yintala-ku}
\begin{itemize}
\item I-NOM 'lose'-CAUS-PASS.PARTIC-ACC find-PAST day-ACC
\item \textit{nyintala-ku}
\item you-LOC-ACC
\item I found the watch which you lost.
\end{itemize}
\end{enumerate}

As is clear, the fact that double case-marking can attach to a SUBJECT (which would otherwise be NOMINATIVE), or to an oblique agent (which would otherwise just have LOCATIVE marking) means that the account of double case-marking given for Warlpiri does not extend to Ngarluma. But, since the parts of a subordinate clause in Warlpiri do not in general receive the case of the controller (see 6.6.6. for some possible examples), this does not invalidate the account of Warlpiri. It is possible that in Ngarluma one may have to resort to the device of having different types of case-features. (The Ngarluma data is taken from Simpson (1980), which is based on Hale's fieldnotes.)
In (74), by virtue of the equations $\uparrow = \downarrow$ on $N_{i,k}$ and on $N_j$, the node which dominates it, the whole $N, N_j$ has two case equations, DATIVE and LOCATIVE, which clash. Therefore an f-structure built from this c-structure will be inconsistent.

In the account of case-percolation given in Lieber (1980), the case-suffix is the head of a word, and percolates its features to the word. Under such an account, $N_i$ has DATIVE case, and $N_j$ has LOCATIVE case. If $N_j$ also has LOCATIVE case, consistency is violated. If $N_i$ does not have LOCATIVE case, it is not clear how the fact that $\text{pirli} (N_k)$ must have LOCATIVE case is to be captured. This can be verified by looking at (75). (I represent the standard view of feature percolation by the equation $(\uparrow \text{CASE}) = C$ for convenience.)
Therefore, in order to avoid such clashes, I assume that case-suffixes such as LOCATIVE do not percolate their case-feature.

I want now to turn to another issue in the representation of double case-marking. This is the fact that only grammatical case-suffixes can attach to semantic case-suffixes. Semantic case-suffixes cannot attach to grammatical case-suffixes, or to other semantic case-suffixes. 31

31. A natural question to ask is: how then is dependence among SCNs represented? For instance, how does one represent on the table in the garden, where in the garden could be predicated of the table, or of the whole event? As far as I can tell, such a sentence would have two LOCATIVEs in Warlpiri, and whatever principle of semantic interpretation is needed to represent the ambiguity in English presumably could carry over to Warlpiri.

Kajika-npa nyuntu yangka warlu-ngka nyina-karla, wuu
POT-2sg you-ABS the fire-LOC sit-IRR interjection
miyi-rlangu nga-njarla warlu-ngka-rlu, ngurra-ngka-rlu,
food-ABS + E.G. eat-IRR fire-LOC-ERG camp-LOC-ERG

If you are sitting near the fire say, or eating by the fire in your camp, [jintirrjintirpa] In this example, location by the fire warlu, and in the camp, ngurra, are both predicated of the SUBJECT. However, the fire is understood to be in the camp.
Leaving aside for the moment the question of whether grammatical case-suffixes can attach to other grammatical case-suffixes, I will first look at what prevents semantic case-suffixes from attaching to other semantic case-suffixes, or to grammatical case-suffixes.

A first guess at why semantic case suffixes cannot attach to grammatical case-suffixes might be that the function of an SCN is such that it cannot control another predicate. However, a look at the behaviour of nominals with DATIVE case suggests that nominals with DATIVE case can act as the controllers of secondary predicates no matter what the function of the DATIVE. This argues against using the controller’s function as the basis of an explanation for why semantic case-suffixes do not attach to other case-suffixes. The examples below illustrate the variety of functions that a nominal with DATIVE case which controls a secondary predicate with semantic case may have. In (76), the LOCATIVE is predicated of a DATIVE OBJECT:

(76) Ngarrka-ngku ka-rlajinta yankirri-ki luwa-rni ngapa-ngka-ku.
Man-ERG PRES-CON-DAT emu-DAT shoot-NPST water-LOC-DAT.
The man is shooting at an emu at the waterhole.
[The emu is at the waterhole] [Hale, EFW]

In (77), however, the LOCATIVE is predicated of an Adjunct DATIVE, the benefactive:

(77) Purlka-ngku ka-rla yapa-ku miyi marda-rni ngurra-ngurlu-ku.
old man-ERG PRES-DAT man-DAT food-ABS hold-PRES camp-EL-DAT
The old man is holding food for the person (who is on his way) from camp.
[Survey]

In (78), the LOCATIVE is predicated of a DATIVE directional in an intransitive verb:
(78) Marna-ngka-ku -rla yanu-rnu mirnrri-ki.
   Grass-LOC-DAT -DAT go-PAST mountain-devil-DAT
   He came across a mountain-devil in the grass. [Kesteven: ex.42]

In (79) the LOCATIVE is predicated of a DATIVE representing purpose or reason in an intransitive sentence:

   mouse-DAT 1sg-pl-DAT run-IMP-HERE hole-LOC-DAT
   Run here over to me for the mouse which is in the hole. [Survey]

In (80), the LOCATIVE is32 predicated of a DATIVE purposive which is not even registered in the AUX:

(80) Nyurrnuwarnu-patu -lpa wapa-ja ngari manyu-ku -
   old-PL-ABS -PAST go-PAST just play-DAT -
   purlapa-rla-ku.
   corroborree-LOC-DAT
   The people in the old days would go for fun at corroborrees. - [H66PSJ: 1165]

Furthermore, whereas in English, there is a restriction against predicating location of the indirect object of a ditransitive (*I sent John the money in his wheelchair), in Warlpiri, location is freely predicated of DATIVES in ditransitives.

(81) Yurrkunyu-rlu -lpa-ngku yu-ngkarla mangarri manu nali-ja
   police-ERG PAST-2sg give-IRR food-ABS and tea-ABS
   rdaku-ngka-ku + ju.
   jail-LOC-DAT + EUPH
   The police must give you food and tea in jail. [MKJ]

(82) Karnta-ngku ka-rla kurdu-ku miyi yi-nyi
   Woman-ERG PRES-DAT baby-DAT food-ABS give-NPST
   parraja-rla-ku.
   coolamon-LOC-DAT
   The woman is giving food to the baby (who is) in the coolamon [carrying dish].

32. Mary Laughren suggests an alternative interpretation in which purlapa-rla is the OBLIQUE_locative argument of manyu, and the ku is the purposive use of the DATIVE attached to an action nominal.
In (82), the DATIVE shows that only the child is in the coolamon. If there is no extra case-marking on \textit{parraja-rla}, the direct object \textit{miyi}, ‘food’, is understood to be in the coolamon.\textsuperscript{33}

\textbf{(83)} \text{Karnta-ngku ka-rla kurdu-ku miyi yi-nyi parraja-rla.}
\begin{tabular}{llll}
Woman-ERG & PRES-DAT & child-DAT & food-ABS \ 
& give-NPST & coolamon-LOC \ 
\end{tabular}
The woman is giving the child food which is in the coolamon [carrying dish].

These examples show that the fact that only GCNs can control SCN secondary predicates does not stem from a restriction on \textit{functions}, (say, that the controller has to have a certain type of function, perhaps a \{ + DIRECT \} function). I claim, following Hale (EFW) and Nash (1980), that the restriction is rather a \textit{morphological} restriction on which cases can receive additional case-marking.

Recall that an SCN secondary predicate has to agree with its controller in CASE, by virtue of the \textit{Agreement Convention}. If adding a semantic case-suffix creates an N, and if semantic case-suffixes can only attach to N\textsuperscript{-1}s, then no word can have two semantic case-suffixes. Therefore, an SCN secondary predicate cannot be controlled by an argument with semantic case, because the secondary predicate cannot be marked with its controller’s case.

What shape could this morphological restriction take? At worst, the lexical entry for each semantic case-suffix would have to list all the case-suffixes it \textit{can} attach to. However, it may be possible to simplify this restriction in terms of the \textit{type} of the category to which suffixes attach, given the following assumptions. First, a case-suffix attaches to a root of type \textit{n} to form a stem of type \textit{n + 1}. In particular, a case-suffix attaches to an N\textsuperscript{-1} to form an N, (as I have been tacitly assuming in the morphological structures given). On this assumption, both grammatical case-suffixes, such as the DATIVE \textit{ku}, and semantic

\textbf{33.} If \textit{parraja-rla} has ERGATIVE case-marking, the sentence has the outlandish interpretation that the woman is in the coolamon.
case-suffixes, such as the LOCATIVE rla, will be able to attach to $N^{-1}$s to form Ns.

Second, grammatical case-suffixes have the further property that they can attach to $N^{-1}$ or Ns, that is, they are not restricted as to the type of what they can attach to. Thus, while semantic case-suffixes can only attach to uninflected roots (which rules out their appearance on nominals with either semantic case or grammatical case), grammatical case-suffixes can appear on nominals already inflected for semantic case.\(^{34}\)

The entry for the LOCATIVE case-suffix follows:

\[
[N^{-1} \text{ rla } N]
\]

This is read:

*The LOCATIVE suffix attaches to an element with the categorial feature N and the type -1.*

The entry for the grammatical case-suffix DATIVE on the other hand, will specify the category, namely $[+N]$, but not the type. DATIVE can attach to an N or an $N^{-1}$.

\[
[+N \text{ ku } N]
\]

It may be a general property of Warlpiri morphology that certain affixes can attach to N as well as $N^{-1}$, since, as was shown in 3.5, the INCH and CAUS can attach to uninflected nominals or to case-marked nominals. Presumably these derivational suffixes, like the grammatical case suffixes, have the property that they attach to elements with the categorial feature $[+N]$, but with no specification of the type of the category. This property could well be be parametric: languages will vary as to whether suffixes must attach to elements of a lower type. This parameter will distinguish languages such as Warlpiri and Ngarluma, which allow double case-marking in Warlpiri, from languages such as Finnish and Russian, which do not.

---

\(^{34}\) It can legitimately be objected that allowing nominals to specify the type of the element to which they attach is a back-door way of introducing boundary information into Lexical Morphology. However, Kiparsky (to appear) makes use of a distinction between root categories and lexical categories for the application of phonological rules which may cover the same ground as the distinction I am proposing here.
I will now turn to the question of whether grammatical case-suffixes can attach to grammatical case-suffixes. The evidence is divided. The behaviour of the ERGATIVE, and the purposive use of the DATIVE suggests that grammatical case-suffixes cannot attach to other grammatical case-suffixes, while the behaviour of the temporal use of the DATIVE suffix suggests that grammatical case-suffixes can attach to other suffixes. Let us consider the ERGATIVE first.

3.5.2.1 ERGATIVE

The normal morphological assignment of functions to a nominal with ERGATIVE case is as follows:

\[ \begin{align*}
\uparrow = \downarrow \\
\downarrow \text{CASE} &= \text{ERGATIVE} \\
N^{-1} &= \text{ERGATIVE}
\end{align*} \]

In the ATP use of an ERGATIVE, the nominal has the following assignment of functions.

\[ \begin{align*}
(\uparrow \text{OBL} \theta) &= \downarrow \\
\downarrow \text{CASE} &= \text{ERGATIVE} \\
N^{-1} &= \text{ERGATIVE}
\end{align*} \]

(\uparrow \text{PRED}) = 'ERG' \cdot ('\text{SUBJ}(\text{OBL} \theta)')

An example was given in 3.2.2 which I repeat for convenience.
Kala-rnalu-rla watiya paka-rnu janganpa-ku mayingka-rlu.
USIT-1plex-DAT tree-ABS hit-PAST possum-DAT axe-ERG
We used to chop trees with an axe for possums. [pakarni]

A simplified c-structure for (84) follows, omitting AUX information about overt arguments.

Nash (1980) observes that the *Instrumental* use of the ERGATIVE is only possible in a transitive sentence, when the SUBJECT is ERGATIVE, as in (84). He proposes to explain the distribution by assuming that the *Instrumental* use is an attribute predicated of the SUBJECT, which must agree in case with what it is predicated of. It is a fact about the ERGATIVE case-suffix that no other case-suffixes can follow it. Therefore, the *instrumental* attribute can only be controlled by an ERGATIVE argument, and so can only appear in a clause with an ERGATIVE SUBJECT. This insight can be captured by assuming that the *instrumental* is an ADJUNCT, because of the Adjunct Agreement
Of relevance to this discussion is the fact that DATIVE-marked nominals can act as the SUBJECTs of non-finite clauses with the OBLCOMP suffix *riarni*, as I illustrate in Chapter 6. A speaker with very strong intuitions about the case of SUBJECT-controlled ADJUNCTs in non-finite clauses produced the following judgments (recorded by David Nash).

(85) *Ngarrka-ngku nya-ngu kurdu, karnta-ku*  
man-ERG see-PAST child-ABS woman-DAT  
i. *watiya-ku wirriya paka-rninja-riarni*  
stick-DAT boy-ABS hit-INF-OBLCOMP  
ii. *watiya-rlu*  
stick-ERG  
iii. *watiya-kurlu*  
stick-PROP  
iv. *watiya-kurlu-ku*  
stick-PROP-DAT  
v. *watiya-kurlu-rlu*  
stick-PROP-ERG  
The man saw the child while the woman was hitting the boy with a stick.

i. shows that the DATIVE on its own cannot convey the meaning of an instrumental predicate. ii. shows that the ERGATIVE cannot be used in such a clause. As iii. and iv. show, the way to express an instrument in such clauses is to use the PROP suffix. v. shows that an argument modifying the SUBJECT in a clause with a DATIVE-marked SUBJECT cannot have ERGATIVE case. (There is some fluctuation over this). The

---

35. However, Mary Laughren informs me that the Instrumental use of the ERGATIVE is restricted to certain classes of verbs; notably, but not exclusively, the verbs of contact. By hypothesis, verbs cannot place restrictions on ADJUNCTs. It may be necessary to assume that, in certain classes of verbs, a lexical rule introduces the Instrumental as an XCOMP which is obligatorily predicated of the SUBJECT. The presence of the ERGATIVE case perhaps could be made to follow from this obligatory predication.
speaker remarked that older speakers would prefer iv.\textsuperscript{36} He himself preferred iii.

Under the analysis of case I have given so far, Nash's generalization is not captured, because, as can be seen by inspecting the c-structure tree, the equation \( \downarrow \text{CASE} = \text{ERGATIVE} \) belongs to the OBLIQUE\(_\theta\), not to the ADJUNCT as a whole. I propose to express Nash's generalization by assuming that, unlike semantic case-suffixes, the ERGATIVE case-suffix always percolates its case-feature to the whole nominal. That is, the ERGATIVE case-suffix not only causes the equation \( \downarrow \text{CASE} = \text{ERGATIVE} \) to attach to the nominal; it itself has the equation \( \downarrow \text{CASE} = \text{ERGATIVE} \), whether it has the \text{AGR} use or the \text{ATP} use as an instrumental. Therefore the ERGATIVE case will be visible, and will block an ERGATIVE instrumental from being predicated of an argument with any other case. Adopting this approach suggests that other grammatical case-suffixes will have the same property. For independent reasons, ABSOLUTIVE, I claim, cannot have other case-suffixes attached. The evidence for the other grammatical case-suffix, DATIVE, is mixed, as I show below.

3.5.2.2 DATIVE

As I mentioned in 2.3.2, DATIVES used as argument-taking predicates of ADJUNCTs fall into two main classes: purposives and frequency adverbs. They differ with respect to case-marking. The purposive DATIVES never receive additional case-marking, even if they are controlled by an ERGATIVE, as (86) shows, while the frequency adverbs, like other time adverbials, do receive additional case-marking, as (87) and (88) show.

\textsuperscript{36} iv. is predicted by the account of case-marking I have given, which requires ADJUNCTs to agree in case with the argument they attribute a property to. iii. is less explicable, because the rule of default case assignment will assign it ABSOLUTIVE, which conflicts with the DATIVE of the SUBJECT. (See 3.5.2.3.).
(86) Wati-ngki kurlarda pikirri-rla yirra-rnu, marlu
man-ERG spear-ABS speartrower-LOC put-PAST kangaroo-ABS
panti-rinja-ku.
spear-INF-DAT
The man put the spear on the speartrower, to speart the kangaroo. [Survey]

(87) Luwa-rnu rla-jinta marnkurrpa-ku-rlu kuyu-ku
shoot-PAST -CON-DAT several-DAT-ERG meat-DAT
He shot at the animal several times [marnkurrpa-ku]

(88) Yangka purika ngaju-piya-rlu kala para-ja - wirrkardu-ku
the old.man I-LIKE-ERG USIIT follow-PAST few-DAT
ngurra-patu-ku-rlu.
camp-PL-DAT-ERG
That old man like me followed it -- for several days. [parami]

(This last example is unusual in that the ERGATIVE is only marked on the nominal ngurra-patu-ku-rlu, contrary to normal practice with double case-marked nominals.) So, the purposive use behaves like ERGATIVES, while the frequency use behaves like a semantic case-suffix.

I propose that the purposive use, which is very common, be treated as a genuine use of the DATIVE as an argument-taking predicate, and that it, like the ERGATIVE, has the equation TCASE = DATIVE attached, so that no case-suffix can attach to it. In contrast, I propose that the frequency time adverbial be treated as a derivational case-suffix, as a very restricted use of the DATIVE which does not have the equation (TCASE) = DATIVE attached. Unlike the regular DATIVE, the time DATIVE creates an N\textsuperscript{-I} not an N, I assert this, because derivational case-suffixes can attach to the frequency DATIVE, as (89) shows. I assume that derivational case-suffixes, like semantic case-suffixes, can only attach to N\textsuperscript{-I}s.

(89) Purra-nja-rla kala rdipi-ja wirrkardu-ku-warnu ngurra-ku-warnu.
cook-INF-SEQ USIT go-PAST several-DAT-ASSOC camp-DAT-ASSOC
After cooking it, he would arrive after several days. [rdipimi]
3.5.2.3 ABSOLUTIVE

ABSOLUTIVE case, unlike the other grammatical case-suffixes, is never used as an argument-taking predicate. Unmarked nominals can be used as ADJUNCTS, e.g. nyurrwiyi 'in the old days'. I claim that they have ABSOLUTIVE case, but that the functional head (i.e. the element which provides the PRED feature) is the nominal, and not the ABSOLUTIVE case. Intuitively, the inability of ABSOLUTIVE case to act as an ATP, that is, as though it had a meaning, seems quite understandable. ABSOLUTIVE case is not a lexical item in the sense that DATIVE or ERGATIVE are; it is just the name given to the absence of a case-suffix on nominals bearing certain grammatical functions.

This restriction can be derived if it is assumed that ABSOLUTIVE is a default assignment of case. Suppose that ABSOLUTIVE is assigned to N in the syntax. Any N without a CASE feature will be assigned the equation (↑CASE) = ABSOLUTIVE. But this, of course, is assignment of a functional feature. There is no meaningful argument-taking predicate (represented by a PRED feature) associated with such a feature. Nor can a rule of syntax insert such a PRED feature, if the suggestion made by Bresnan and Halvorsen, that PRED features must be introduced by lexical items, is taken up. But, if there is no argument-taking predicate associated with the case-feature, then the sentence (90) cannot be interpreted with an Instrumental reading of watiya, in which the ABSOLUTIVE is used as a case-suffix and provides the functional head.

(90) *Watiya ka purika wapa-mi.
    stick-ABS PRES old.man-ABS walk-NPST
    The old man walks with a stick.

Watiya can only be predicated of purika, if watiya itself is the argument-taking predicate: The old man, being a stick, walks. Viewing ABSOLUTIVE in this way as simply an elsewhere case-feature captures the sense that treating ABSOLUTIVE on a par with other case-suffixes is an unwarranted reification.
Assigning ABSOLUTIVE as a default case in syntax to N means that case-marked nominals such as *pirli-ngka* 'rock-LCC', in which the case-suffix is used as an Argument-Taking Predicate will also receive ABSOLUTIVE case (because the LOCATIVE case equation is attached to the OBLIQUE, not to the ADJUNCT).

\[
\text{(\dag \text{CASE}) = \text{ABSOLUTIVE (default)}}
\]

\[
\begin{array}{c}
\text{N} \\
\text{OBLIQUE}_{\text{theta}} \\
\text{\dag \text{CASE} = \text{LOCATIVE}} \\
\text{pirli} \\
\text{ngka}
\end{array}
\]

This allows a LOCATIVE nominal, say, to be predicated of other nominals with ABSOLUTIVE case. Default assignment will not apply to ERGATIVE or purposive DATIVES, because they have their own visible case-suffixes provided by the equations \((\dag \text{CASE}) = \text{ERGATIVE}\), and \((\dag \text{CASE}) = \text{DATIVE}\).

Allowing ABSOLUTIVE to be assigned in the syntax to N obviates the difficulty about assigning ABSOLUTIVE case in the morphology, namely that some uninflected nominals can emerge from the lexicon and form part of an N with some other case. If default assignment were done in the morphology, it would be rather hard to allow some N's to escape it.

Occasionally situations may arise in which all the daughters of \(\overline{N}\) have case, \(\overline{N}\) itself has no case. I will assume that default assignment of ABSOLUTIVE case applies both to \(\overline{N}\) and to N. I will show in Chapter 4, that assigning ABSOLUTIVE case as a default case to both N and \(\overline{N}\) obviates the need for case concord rules, because Consistency will rule out most of the offending structures.
3.5.3 Summary of case representation

In this section I have proposed a representation for case-suffixes. I have shown that the ATP and the AGR use of case-suffixes can be distinguished by whether or not the case-suffix has a syntactically relevant meaning (represented by a PRED feature). In this way, the difference between the two uses of case-suffixes parallels the distinction made in English by Bresnan (1980b) for the uses of prepositions in English. The distinction between the syntactically meaningful use of case, and the agreement marker use of case is also analogous to the distinction made by Grimshaw (1980), and Montalbetti (1981) between pronominal clitics which have PREDs (and therefore do not permit clitic-doubling), and pronominal clitics which do not have PREDs (and therefore do allow clitic-doubling). (I owe this observation to Joan Bresnan).

I have argued for the assignment of functions in the morphology in order to prevent a violation of the Lexical Integrity Hypothesis. Only this way can we express the fact that a case-marked nominal may be functionally complex, containing both an argument-taking predicate and an OBLIQUE[theta] of that predicate. I have shown that assigning functions in the morphology leads to a simple account of double case-marking. There are, however, constraints on which case-suffixes can undergo double case-marking that are morphological in nature, rather than derivable from functional assignment. On the basis of these constraints I have argued for two morphological distinctions between grammatical and semantic case-suffixes: first, whether or not the suffix can attach to a category of type N, and second, whether or not the suffix obligatorily percolates its own case-feature up. In the final section I will discuss the status of derivational case-suffixes, and their position with respect to these morphological distinctions.

3.6 Derivational Case

The derivational cases are an interesting topic, in part because they have no counterparts in familiar European languages, which make a much sharper division between inflectional and derivational morphology. I repeat the list of major derivational cases given in 3.1.
Derivational

ASSOC  associative, perfective  -warnu
DENIZ  denizen of  -ngawurrpa
INHAB  inhabitant of  -wardingki
LIKE  as, like, simile-former  -piya
PERL  perative: 'along'  -wana
POSS  possessive  -kurlangu
PRIV  privative, negative  -wangu
PROP  proprietive, having  -kurlu, -parnta
SOURCE  elative of source  -jangka

This is a rather heterogenous group, and the criteria for classifying suffixes as derivational cases rather than as semantic cases on the one hand, and derivational clitics on the other, are vague. I have taken the properties listed below to be the defining properties of derivational case-suffixes. (I will ignore the default assignment of ABSOLUTIVE case in most of the examples.)

1. The ability to act as a seemingly independent secondary predicate. In (92) the POSS suffix kurlangu creates an ADJUNCT which gives a cause, while the SOURCE suffix jangka in (93) indicates the material from which something is made.

(92) Yapa ka-lu mirrmirr-karri pirriya-kurlangu.
    Person-ABS PRES-3pl shiver-stand-NPST cold-POSS
    People shiver from the cold. [mirrmirr]

(93) Purdurru-jangka + jala majardi ka-lu ngurrju-ma-ni.
    hairsting-SOURCE + CLEARLY pubic.tassle-ABS PRES-3pl make-NPST
    They make pubic tassles from hairstring. [majardi]

37. Derivational clitics include suffixes such as rlangu E.G., which can occur on nominals and verbs, like other clitics, but which either precede or follow case-suffixes.
(94) and (95) show that a DCN can control another DCN.

(94) Kala-lu  
\textit{rdaka-kurlu + ju}  
\textit{miyalu-wana-kurlu}  
\textit{purla-ja.}

USIT-3pl  
hand-PROP + EUPH  
stomach-PERL-PROP  
shout-PAST

They would cry out with their hands across their stomachs. [Nyurnu-kurlangu]

(95) Nyampu ka-rna  
\textit{yirra-rni}  
\textit{manngi-nya-nja-karra-rlu}

\textit{this}  
PRES-1sg  
put-NPST  
think-see-INF-SSCOMP-ERG

Jilpirli-wana-kurlu,  
Jakamarra-kurlu.

Jipirli-PERL-PROP  
Jakamarra-PROP

Thinking about him, I am telling this (story) about the one (buried) at Jilpirli, about Jakamarra. [MLJ]

Clearly, in (94) and (95), \textit{Jilpirli-wana} and \textit{miyalu-wana}, whether or not they are in the same \textit{N} as the other \textit{kurlu} nominal (since neither appears \hbox{have} the AUX, there is no evidence for their constituency), must be interpreted as ADJUNCTs of some nominal with the case-suffix \textit{kurlu}.

2. The ability to be followed by a semantic-case suffix, a complementizer suffix, or another derivational case-suffix. In (96), the SOURCE suffix \textit{jangka} is attached to the PRIV suffix \textit{wangu}. In (97), the semantic case-suffix ALLATIVE is attached to the SOURCE suffix \textit{jangka}. In (98), the PROP suffix \textit{kurlu} attaches to the POSS suffix \textit{kurlangu} (which is in turn attached to a possessive kinship nominal). In (99) the LOCATIVE suffix \textit{rla} attaches to the POSS suffix \textit{kurlangu}.

38. The semantic case-suffix \textit{rla} has also occasionally been found in such structures, as i. illustrates.

i. ‘\textit{Yurnungenja + ju’}  
\textit{ka-rnalu-jana}  
\textit{ngarri-rni}  
\textit{karnta + nya}

pregnant + EUPH  
PRES-1plex-3pl  
call-NPST  
woman-ABS + EMPH

\textit{yi-ka-lu}  
\textit{wapa-mi}  
\textit{kurdu-kurlu}  
\textit{miyalu-rla-kurlu.}

REAS-PRES-3pl  
walk-NPST  
child-PROP  
stomach-LOC-PROP

We call ‘pregnant’ women with babies in their stomachs. [yurnungka]

In this example the LOCATIVE acts as an attribute of a nominal with derivational case. See Chapter 4 for more discussion.
(96) Jurru ka-lu maljarlawurlawu karri ngapa-wangu-jangka. hair-ABS PRES-3pl sticks.out-ABS stand-NPST water-PRIV-SOURCE Their hair gets stiff and sticks out from lack of water, (from not being washed). [maljarlawurlawu]

(97) Ngari ka kutu-yuka-mi ngulya-pardu wardapi-jangka-kurra. just PRES anyway-enter-NPST burrow-DIM goanna-SOURCE-ALL It simply enters any old goanna's burrow. [marakata]


(99) Panu ka-lu wangka ngajukupalangu-kurlangu-rla. mob-ABS PRES-3pl talk-NPST I-DAi-term-POSS-LOC There's a big group of them talking at my father's place. [yani]

This property distinguishes derivational cases from semantic cases. For instance, whether or not the PERLATIVE should be included as a derivational suffix is doubtful, because it is primarily used as an ADJUNCT, as in (100).

(100) Manja-wana ka nyina jurlpu manirtirrpirtirrpi mulga-PERL PRES sit-NPST bird-ABS bird sp.-ABS wita-nyayirni. small-VERY-ABS The "manirtirrpirtirrpi" is a very small bird found in the mulga. [manirtirrpirtirrpi]

But, by this suffixation test, wana must be a derivational case-suffix, as it can be followed by a derivational case-suffix, or a complementizer.

(101) Kurdu yaliji ka karri-mi miirnta-kurlu child-ABS that-REM PRES stand-NPST1 mucus-PROP mulyu-wana-kurlu. nose-PERL-PROP That child is standing there with mucus coming through his nostrils. [miirnta]

(102) Wardapi ka nga-ri lingka-ngku -- ngulya-wana-kurra. goanna-ABS PRES eat-NPST snake sp.-ERG burrow-PERL-OCOMP The King Brown eats goannas in their burrows. [lingka]
3. Case-concord. This property distinguishes derivational cases from derivational affixes in languages such as Icelandic and Russian. In these languages nominals agree in case, but not with respect to derivational suffixes. (103) illustrates concord with *kurlu*. It is clear that *panu* ‘many’ is interpreted as an attribute of *jilkarla* ‘prickle, spine’. (104) is a more complex example involving a number of PROP-marked nominals.

(103) Yinarlingi ka karri *jilkarla-kurlu* *panu-kurlu*.
   echidna-ABS PRES stand-NPST prick-PROP many-PROP
   The echidna has many spines. [jilkarla]

(104) Manja ngulaju watiya *ngurlu-kurlu* manu *miyi-kirli*
   mulga-ABS that-ABS tree-ABS seed-PROP and fruit-PROP
   yirdi-kirli larrunka-kurlu, manu pama-kurlu + yijala kurnpu-kurlu.
   name-PROP larrunka-PROP, and sweet-PROP + ALSO sap-PROP
   The mulga is a tree with seeds and fruit called ‘larrunka’ and edible sap too. [manja]

A concomitant ability is the ability to form a single constituent with an N-I. In 2.5.1 I showed that *N* could consist of uninflected nominals (N-Is) followed by case-marked nominals. Such an *N* can have a derivational case-suffix as its case-marker. (105) shows a PROP-marked nominal followed by an unmarked nominal followed by a PRCP-marked nominal. The PROP suffix is acting as an Argument-Taking Predicate, and the unmarked nominal is clearly an attribute of the OBLIQUE

(105) Watiya *miyi-kirli* *wita-wita* yalyu-yalyu-kurlu.
   tree-ABS fruit-PROP small-small blood-blood-PROP
   The tree has small edible red berries. [marntayiki]

This test also suggests that *piya* is a derivational case. As a clitic meaning *like*, *piya* can occur on any category, as in (106). But, because of examples such as (107) and (108), I assume it has a double subcategorization, as a clitic and as a derivational case.
(106) Kari  ya-nu-piya.
   ASSERT go-PAST-LIKE
   Maybe she went. [H60Dial: 7.8]

(107) --yangka  kuja  ya-ninjak-ya-nu  maljarawurlawu  --  kuyu
   the-ABS REL go-INF-go-PAST outstretched-ABS meat
   pulalypa-piya.
lizard sp.-LIKE-ABS
( ..) like when he (dingo) went along with them (claws) outstretched like a perentie. [maljarawurlawu]

(108) Pinti  ka nyina  ngapurlu  wiri-jarra-piya.
skin-ABS PRES sit-NPST breast big-DU-LIKE-ABS
The husk is iike two big breasts. [mungilypa]

By this test, the PROP suffix *parnta* is in fact a derivational case in the Lander and Eastern Warlpiri dialects.\(^\text{39}\) In (109) *kulu* and *wiri* form a single constituent marked with *parnta* and the ERGATIVE.

---

\(^{39}\) That *parnta* is also a derivational suffix is shown by the following lexicalized examples taken from the *Warlpiri Dictionary*.

- **jinti-parnta**  
  vulva-PROP: fungi sp.

- **jilka-parnta, jiri-parnta**  
  prickle-PROP: spiny anteater, echidna

- **majardi-parnta**  
  pubic.tassle-PROP: person wearing a pubic tassle.

- **para-parnta**  
  subincision-PROP: subincised boy

- **parnka-parnta**  
  (?run-PROP): murderer

- **wanya-parnta**  
  down-PROP: emu

- **karlangu-jarra-parnta**  
  diggingstick-DUAL-PROP: scorpion

I do not know for certain whether all of these are also to be found in Lander and Eastern Warlpiri. It appears that *parnta* corresponds more to a derivational suffix in Southern Warlpiri, and *kurlu* takes over its role as a PROPRIETIVE derivational case.

An interesting lexicalized use of the suffix *parnta* occurs when the PROP is suffixed to a *body-part*. Instead of meaning that someone *has* a particular bodypart, it receives the interpretation that the bodypart is *defective* in some way.

- **lirra-parnta**  
  mouth-PROP: sore mouth

- **paniya-parnta**  
  eye-PROP: blind

- **milpa-parnta**  
  eye-PROP: impaired eye(-sight), bad eye, blind,

- **mirdi-parnta**  
  knee-PROP: person with injured knee
POT-1plin spear-NPST stirred.up-ERG anger big-PROP-ERG 
He is liable to spear us in anger as he is very stirred up. [lalji-lalji]

4. Like derivational suffixes, and unlike semantic case-suffixes, the derivational case-suffixes can appear as attributes of a head in a single nominal constituent. (This failure of SCNs to appear as ADJUNCTs within an $\tilde{N}$ will be discussed more in Chapter 4). Warlpiri does not in general have constituents corresponding to the English The man from Yuendumu, where the English from translates a semantic case-suffix in Warlpiri: *ngarrka Yurmumu-ngurlu. However, if the argument-taking predicate of the ADJUNCT is a derivational case-suffix and not a semantic case-suffix, then it can occur within an $\tilde{N}$ as an ADJUNCT, as the examples below illustrate. In (110) a nominal with the SOURCE derivational case (which overlaps in meaning with the ELATIVE), appears as part of a single constituent with an ERGATIVE nominal.

(110) Kurlarni-jangita-rlu payi-ngki ka-ngalpa mirrmirrmarli-yi-nyi.
 south-SOURCE-ERG wind-ERG PRES-1plin shiver-give-NPST 
The wind from the south makes us shiver. [mirrmirrmarli]

In (111), the N$^3$ malpa and its attribute milpa-kurlu form a single pre-AUX nominal constituent. Similarly, in (112), yapa-kurlangu and jurnarrpa-rlangu-ku form a single constituent, shown by the DATIVE case on jurnarrpa-rlangu-ku which has scope over yapa-kurlangu.

(111) Malpa milpa-kurlu ka-lu waraly-waraly-karri-mi watiya-rla 
Pod-ABS seed-PROP PRES-3pl hang-stand-NPST tree-LOC 
pirliyi-rlangu-rla. 
acacia-E.G.-LOC 
Pods full of seeds hang down all over trees like the Acacia cuthbertsonii. [malpa]

(112) Yapa-kurlangu jurnarrpa-rlangu-ku ka-jana-rla liji-yirra-rni 
person-POSS thing-E.G.-OAT PRES-3pl-OAT covet-NPST 
nyanungu-rlu milpa-nyangu-rlu. 
the-ERG greedy-ERG 
That greedy person is always coveting people’s things for example. [milpa-nyangu]
Let us now turn to the representation of these properties. The first property, the use of derivational case-suffixes as ADJUNCTS, in which the derivational suffix itself acts as the functional head, will be represented in the same way as the ATP use of other case-suffixes is represented, namely by allowing the suffix optionally to introduce a predicate which selects an OBLIQUE\textsubscript{theta}.

$$
\begin{array}{c}
\text{N} \\
\text{OBLIQUE}_{\theta} \\
\downarrow \quad 1 = 1 \\
\text{N-1} \\
\downarrow \quad \text{Af} \\
\text{milpa-} \\
\end{array}
$$

Observing that, like other case-marked nominals, a DCN acting as an ADJUNCT agrees in case with its controller. The two sentences in (113) show agreement of a DCN with SOURCE case, first agreeing with an ERGATIVE SUBJECT, then agreeing with the same referent expressed as a DATIVE argument.

FUT-3pl PROB meat-ABS carry-NPST + HERE. hunting-SOURCE-ERG.
They probably carry game back here. From hunting.
sit-NPST REAS-1plin-3pl here-LOC + STILL. hunting-SOURCE-DAT
We sit here for them, (returning) from hunting. [Hale notes (typed): 0315]

The second property, the fact that the derivational case-suffixes can have semantic, grammatical or derivational case-suffixes attached, suggests that they can form an N\textsuperscript{-1} rather than an N. (Recall that I claimed that semantic and grammatical case-suffixes create Ns, not N\textsuperscript{-1}s). However, in order for the derivational case to act as the predicate of a free ADJUNCT, it must also be an N, since the \( \tilde{N} \) expansion rule does not allow for an \( \tilde{N} \) to exhaustively dominate an N\textsuperscript{-1}. Therefore the addition of a derivational case-suffix creates either an N or an N\textsuperscript{-1}. In this, derivational case-suffixes contrast with semantic case-suffixes, which can only create Ns. When a derivational case suffix is an N, a
grammatical case suffix can attach to it, (in particular, it can receive default ABSOLUTIVE case). But when it is an N-1, semantic case-suffixes as well as other derivational case-suffixes can attach to it. Further evidence for the ability of derivational cases to be N-1's comes from the fact that they can act as real derivational suffixes in forming nominals which are then used referentially, such as ngangkayi-kirli/parnta: healing-powers-PROP 'shaman, doctor'. The representation of derivational case as either N-1 or N is essentially the solution presented in Nash (1980: 23).

The third property is the ability of derivational case suffixes to appear on several nominals and to form single constituents in which one nominal acts as an attribute to the OBLIQUE of the predicate denoted by the derivational case-suffix. This follows in part from the ability of derivational case-suffixes to act as Adjuncts which subcategorize OBLIQUE, just as other case suffixes do. The fourth property is the ability of DCNs to co-occur with GCNs in the same constituent. These two properties will be discussed in the light of the proposals for assigning functions to parts of N in the next chapter.
4. Discontinuous expressions

4.1 Introduction

Observe that in (1) the attribute wita-jarra-rlu, construed with the SUBJECT nominal kurdu-jarra-rlu, appears separated from kurdu-jarra-rlu. This attribute can be interpreted in at least two ways, which correspond roughly to restrictive and non-restrictive readings.

(1) Kurdu-jarra-rlu ka-pala maliki wajili-pi-nyi wita-jarra-rlu.
    Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG
    (The) two small children are chasing the dog.
    (The) two children are chasing the dog and they are small.

However, the ERGATIVE case-marker on wita-jarra ensures that it is construed as an attribute of the ERGATIVE SUBJECT kurdu-jarra-rlu, rather than of the ABSOLUTIVE OBJECT maliki.

Hale (PWT:1) claims that, in a sentence such as (1), all possible ways of combining SUBJECT Nominal (kurdu-jarra-rlu), ADJUNCT of SUBJECT Nominal (wita-jarra-rlu), OBJECT Nominal (maliki) and Verb (wajili-pi-nyi) are acceptable (provided that the AUX is in second position.)

Furthermore, with the exception of the situation in which the two nominals kurdu-jarra-rlu and wita-jarra-rlu form a single constituent, the ADJUNCT wita-jarra-rlu may have either interpretation. The two types of interpretation are called the *merged* and the *unmerged* interpretations in Hale (PWT) and Nash (1980). They are illustrated by the two glosses given to (1). The *merged* interpretation (a.) covers at least restrictive modification, and perhaps some types of non-restrictive modification. The *unmerged* interpretation (b.) covers non-restrictive attribution of properties (e.g. *The philosophical Greeks*), apposition (My friend, Mr Leakey), as well as a number of other types (See Chapter 5).
Hale calls the first interpretation merged because it appears to be the only interpretation available for nominals forming an N. For example, in (2) kurdu and wita-jarra-rlu form a single N.

(2) Kurdu wita-jarra-rlu ka-pala maliki wajili-pi-nyi
Child small-DU-ERG PRES-2du dog-ABS chase-NPST
The two small children are chasing the dog.

It seems that in such a situation, wita-jarra-rlu must have the merged interpretation.

Similarly, since, by the AUX second constraint, a sequence of nominals with the same case-suffix preceding the AUX must form an N, the claim is that only the merged interpretation will be available for these too.

(3) Kurdu-jarra-rlu wita-jarra-rlu ka-pala maliki wajili-pi-nyi.
Child-DU-ERG small-DU-ERG PRES-2du dog-ABS chase-NPST
The two small children are chasing the dog.

The intuition is that non-adjacent ADJUNCTs can have the same semantic interpretation as the normal interpretation of ADJUNCTs within an N, and that ADJUNCTs within an N can only have that interpretation. In more familiar languages, attributes normally have the merged interpretation if they occur within the same constituent as the

1. As Hans Uszkoreit pointed out to me, this makes the prediction that, if Warlpiri has intensional adjectives such as former and alleged, these should be generable either within the N or as separate constituents. Thus Warlpiri would contrast with English, in which such adjectives must appear prenominally:

the alleged counter-examples. *The counter-example is alleged.
The former Queen. *The Queen is former.

Further work is needed to discover such adjectives in Warlpiri. Hale suggests that the demonstratives yangka and nyanungu may be considered intensional adjectives, in which case, since they can appear separated from the nominals they modify, Uszkoreit's prediction may be borne out. However, further investigation of the semantics of yangka and nyanungu is required before this can be treated as more than speculation. Note that the meanings of certain English intensional adjectives can be expressed in Warlpiri using clitics attached to nominals, or particles, which appear to have to be adjacent to the nominal in order to have scope over it (See Laughren (1982a) for a discussion of such particles.)
element to which they attribute a property (unrestrictive attributes such as the philosophical Greeks being assumed exceptional). If modifiers are not in the same constituent as the argument to which they attribute a property, they normally have an unmerged interpretation. There is a close association between phrase structure position and type of interpretation. However, Warlpiri shows an asymmetry in interpretation, since, although only one interpretation is open to members of a single constituent, non-adjacent ADJUNCTs can receive either the merged or the unmerged interpretation.

How is the relation of constituent-structure position to interpretation to be expressed in Warlpiri? Suppose that a rule of semantic interpretation, sensitive to constituency, always interprets ADJUNCTs within an $\bar{N}$ as merged, and interprets non-adjacent ADJUNCTs as unmerged in English, but as either merged or unmerged in Warlpiri. Such a rule is difficult to express in Lexical Functional grammar, since the input to semantic interpretation is functional structure, not constituent structure, and $\bar{N}$ is a c-structure category not reflected in the functional structure. An alternative way of capturing these intuitions, and one, moreover, adopted by other scholars working on Warlpiri, is to assume that at some level the non-adjacent ADJUNCT and the element it modifies form a constituent. This level will be the level relevant for semantic interpretation, (whether it actually is the level of semantic interpretation, or whether it provides the input to semantic interpretation). Thus, for the purposes of semantic interpretation, both an ADJUNCT within the same constituent as the nominal it modifies, and a non-adjacent ADJUNCT can be treated alike. Essentially, this approach considers merged non-adjacent attributes and the elements that they modify to be discontinuous nominal expressions.

Scholars differ as to the level at which these expressions form a single constituent. Hale (PWT), and Nash (1980) suggest that the right level is the level of logical form, or semantic interpretation. They propose two sets of rules, a set of labelling rules which operate at the level of syntax, and provide words with a categorial signature (composed of

2. It is possible to encode linear precedence in the f-structure, and so it would probably be possible to express the difference between a ADJUNCT within an $\bar{N}$, and a non-adjacent ADJUNCT. But I doubt that this could lead to an elegant or natural description.
features such as case and number), and a set of rules optionally merging non-adjacent nominal constituents with identical categorial signatures at the level of logical form (or semantic interpretation). These rules cover both constituents, and discontinuous expressions. On Hale's and Nash's accounts, kurdu-jarra-rlu and wita-jarra-rlu are labelled ERGATIVE and DUAL in the syntax, and optionally merge into a single constituent at the level of logical form. Single constituents, it is suggested, receive the merged interpretation.

Van Riemsdijk (1981) argues that having two distinct types of syntactic representation (X theory on the one hand, and labelling together with a logical form process of merger on the other) complicates universal grammar. He suggests instead the possibility of forming constituents from non-adjacent elements by projection onto another tier, along the lines of autosegmental phonology. Kurdu-jarra-rlu and wita-jarra-rlu both have the features ERGATIVE and DUAL. These features are projected onto another tier, and at this tier the two can form a single constituent.

\[
\begin{align*}
\text{ERG} & \quad \text{ERG} \\
\text{Kurdu-jarra-rlu} & \quad \text{ka-pala maliki wajili-pi-nyi wita-jarra-rlu}.
\end{align*}
\]

Observe that separate tiers will be required for each case-suffix. What prevents the projection of the feature DUAL only, to form a constituent which consists of all the DUAL-marked nominals, regardless of their case-features? This is prevented by the assumption that what is projected is the categorial signature, rather than individual features. The categorial signature may consist of several features (case and number). (This restriction contrasts with the use of autosegmental theory in phonology, in which

---

3. He suggests that all languages make use of both X theory and projection, but have different trade-offs. Warlpiri makes limited use of the resources of X theory, but great use of the projection possibilities.
single features may readily project). Presumably logical form has access to constituents formed at all tiers. The interpretation rule must obligatorily assign a merged interpretation to ADJUNCTS within $\tilde{N}$. If projection is optional, then the interpretation rule can be written so as to apply obligatorily to ADJUNCTS within any constituent, whether formed by projection or not. ADJUNCTS which are not within the same constituent as the argument they attribute a property to will receive the unmerged interpretation.

In LFG, the relevant level for semantic interpretation to operate on is assumed to be functional structure. I shall argue that it is possible to derive from the constituent structure, functional structures which represent the distinction between ADJUNCTS which must receive the merged interpretation, and ADJUNCTS which may receive the merged interpretation. Most of the rules in this derivation have already been justified.

At this point, a note of caution is in order. As Hale (PWT) points out, there are gaps in our knowledge of Warlpiri word-order. For instance, we do not have much information about complex crossings of discontinuous nominal expressions. Can one scramble completely freely, getting b. from a. for instance?

(5) In the faded picture, the small man is looking from a dead tree at a fat bullock in the big river.

   picture-LOC-(ERG) AUX man-ERG tree-EL faded-LOC-(ERG) big-LOC look dead-EL bullock-ABS small-ERG river-LOC fat-ABS.

And if (5) is unacceptable, is this due to processing difficulties, or is it a real fact about the grammar of Warlpiri? Will it be possible to write rules stating the degree of complexity in discontinuity? Van Riemsdijk, for instance, notes that his account does place a constraint on scrambling, by virtue of the autosegmental thesis. An important tenet of autosegmental theory is that lines associating tiers cannot cross. Applying this to the syntactic projection, this predicts that, if there are several constituents $C_1$, $C_2$, $C_3$, marked with the same case, the parts of $C_1$, $C_2$ and $C_3$ cannot be interspersed. Thus consider the following sentence:
Van Riemsdijk claims that it can only mean *The dog bites the child with its small teeth*, and that it cannot mean *The small dog bites the child with its teeth*. However, the status of (6) is not known for certain. Moreover, Van Riemsdijk also notes that if a sentence has two DATIVES, one being a DATIVE OBJECT, and the other an Adjunct DATIVE, interspersion is known to take place, which is not predicted by his account:

    dog-ERG PRES child tooth-ERG bite-NPST small-ERG

Van Riemsdijk claims that it can only mean *The dog bites the child with its small teeth*, and that it cannot mean *The small dog bites the child with its teeth*. However, the status of (6) is not known for certain. Moreover, Van Riemsdijk also notes that if a sentence has two DATIVES, one being a DATIVE OBJECT, and the other an Adjunct DATIVE, interspersion is known to take place, which is not predicted by his account:

(7) Karli-ki ka-rna-rla-jinta rgajuku-pirdangka-ku warri-rni
    boomerang-DAT PRES-1sg-DAT-DAT I-KIN-DAT seek-NPST
    kiriparnta-ku.
    hoarse/fluted-DAT

I am looking for a boomerang for my brother who has a sore throat.
(\textit{kiriparnta} = 'hoarse') \textit{predicted} by Van Riemsdijk.
I am looking for the fluted boomerang for my brother.
(\textit{kiriparnta} = 'fluted') \textit{not predicted} by Van Riemsdijk.

The account I will present cannot capture the locality effect in (6). I allow complete freedom of interspersion, as do Hale's and Nash's accounts. Our accounts claim then that, if there are constraints on interspersion, these will be attributable to factors external to the grammar. There is some support for this claim of freedom. David Nash informs me that his preliminary work suggests that double and triple crossings are quite possible, and, moreover, that one speaker reacted to questioning about sentences involving such crossings, as though they were quite obviously acceptable.

I will show that the representation of \textit{discontinuous expressions} follows from the interaction of three rules of Warlpiri grammar, together with the conventions on the well-formedness of f-structures discussed in Chapter 2. The first two rules have already been introduced, namely the general rule assigning grammatical functions freely at the level of S, and the general rule allowing argument-taking predicates to introduce null pronouns to represent selected grammatical functions. The third is a rule assigning the equation $\uparrow = \downarrow$ freely at the level of $\overline{N}$. The ADJUNCT Agreement Convention, introduced in the last chapter, together with the general conventions on the well-formedness of f-structures, rule out most incorrect assignments created by the free
assignment of functions. I will also address the question of why other non-configurational languages, such as Malayalam, do not have discontinuous nominal expressions. I attribute the difference to parametric variation with respect to the annotation of c-structures with functional equations. In languages such as Warlpiri, a node annotated with a function G may dominate exhaustively a node which is labelled with information about some other function. That is, a node labelled with the function G does not have to dominate a node labelled with G's PRED feature. In languages such as Malayalam, a node labelled with a function G must dominate a node labelled with G's PRED feature, i.e. must have a functional head.

The chapter is organized as follows. First, I discuss the assignments of functions within N to nominals with Argument-Taking Predicate and Agreement case-suffixes. Then, I show how to represent discontinuous expressions sharing an Agreement case-suffix. Then I show how to represent discontinuous expressions sharing an ATP case-suffix.

4.2 ADJUNCTS within N

I will first look at attributes within N which have AGR case, and then look at attributes with ATP case.

4.2.1 ADJUNCTS within AGR nominals

An attribute within an N with AGR case can be an N or an N*. In both instances it can act semantically as an attribute of the head. I assume it has the syntactic function ADJUNCT. How does it acquire this function? Syntactic assignment of functions to the N* and N within N could be done by annotations on the phrase structure rule for N given in 2.5.1.

\[ N \rightarrow N^{*} \quad N^{*} \quad N \]

4. The solution for discontinuous expressions described here derives from the one presented in Bresnan (1982a).
A preliminary rule for the syntactic assignment of functions within \( \bar{N} \) (which will be revised in the discussion of the ATP use of case-suffixes) follows:

(8) **Preliminary rule for assigning functions within \( \bar{N} \)**

Assign the function **ADJUNCT** and the unmarked equation \( \uparrow = \downarrow \) freely to daughters of \( \bar{N} \).

This rule allows any \( N \) or \( N' \) in \( \bar{N} \) to be an **ADJUNCT**.

In the structure *kurdu wita-ngku*, ('child small-ERG'), *kurdu*, which is an \( N' \), can act as the functional head, and *wita-ngku*, which is an \( N \), can act as an **ADJUNCT**. Equivalently, in the structure *wita kurdu-ngku*, ('small child-ERG') the \( N' \) *wita* can be an **ADJUNCT**, and the \( N \) *kurdu-ngku* can be the functional head. Observe that **Consistency** will block \( \uparrow = \downarrow \) from being assigned to more than one nominal, within \( \bar{N} \), whereas there is no restriction on the number of **ADJUNCTs**.

This assignment of functional equations does not express the fact that Warlpiri prefers heads to precede modifiers in \( \bar{N} \), a preference observed in Hale (PWT). It seems clear for instance, that within an \( \bar{N} \), the preferred place for the determiner and **ADJUNCT** is after the noun, while possessives may appear before or after the nominal.\(^5\) The preference is so strong that in the Survey a speaker considered violations to be ill-formed in pre-AUX position:

---

5. Interestingly, the preference for head-first is also seen in certain types of noun-noun compounds, where the second noun is interpreted as an attribute of the first noun.

- **milpa-puunpa**: (lit. eye-reddish) spectacled hare-wallaby
- **munga-wiri**: (lit. night-big) from sunset to sunrise
- **mulyu-rlinji**: (lit. snout-dry) perantie lizard
- **mulyu-nyarnarrku**: (lit. nose-upturned) of person with ski-jump nose.
- **mulyu-maru**: (lit. nose-black) person with very dark black skin.

This contrasts with compounds involving agentive deverbal nominals, which are head-final:

- **marna-nga-ru**: grass-eat-AGENT grass-eater.

See Nash, 1980: 37 for a sketch of compounding possibilities in Warlpiri.
This preference could be encoded in the phrase structure rule, either in terms of categories, or in terms of functional feature annotations. Let us consider categorial encoding first. There is no real evidence for a syntactic category 'attribute' or 'determiner', or 'possessive' distinct from nominals in Warlpiri. Determiners and possessives can all occur in isolation, having the functions of full nominals. Therefore it would be unmotivated to encode this preference in terms of an expansion of $\overline{N}$ into categories DET, POSS, ADJ etc. An alternative to categorial encoding is functional equation encoding. The $\overline{N}$ expansion could contain initially an optional $N$ with the features [+ SPEC], [+/- NEAR] etc. However, I suspect that the resulting phrase structure would have to be very complicated in order to account for all the different combinations of determiner, possessive, attribute and head. I have chosen, therefore, to accept Hale’s statement that the order within $\overline{N}$ is merely a preference which need not be encoded in the phrase structure.\(^6\) This choice has implications for the internal structure of the $\overline{N}$, but, as far as I can tell, the account of discontinuous constituents which I give is not affected by whether one stipulates that, if there are both a head and a [+ SPEC] element, the latter follows the former, or whether one allows some principle of semantic or pragmatic interpretation to represent this preference.

I will now turn to the representation of ADJUNCTs within $\overline{N}$. Consider the following example:

---

6. It is possible that semantic scope enters into the order of the elements of a noun-phrase, as has been demonstrated for Japanese (Whitman (1981)), and for Chinese (Huang (1982), Simpson (1981)).
(10) Kurdu-ngku wita-ngku ka wajili-pi-nyi.
    child-ERG small-ERG PRES chase-NPST.
    a. The small child is chasing it.
    b. The childish small thing is chasing it.

The nominal kurdu-ngku can be assigned the equation (↑SUBJ) = ↓, in which case the sentence will have the a. interpretation. Or it can be assigned the equation ↓ (↑ADJUNCTS), in which case, if the nominal wita-ngku is assigned the equation (↑SUBJ) = ↓, the sentence will have the b. interpretation. On either interpretation, the case-suffix is no more than an agreement-marker. The ADJUNCT agreement convention ensures that they cannot disagree in case.

On the a. interpretation, (10) will have the annotated c-structure tree given in (11), and the f-structure given in (12).

(11)
In this section I have discussed a nominal with an AGR suffix (ERGATIVE), which acts as an ADJUNCT predicated of an argument. The ATP of the ADJUNCT is provided by the nominal. The nominal selects a SUBJECT and introduces a null pronominal to represent that SUBJECT. The null pronominal is anaphorically controlled by some argument of the matrix.

4.2.2 ADJUNCTs within ATP nominals

Suppose that an \( \tilde{N} \) acts as an ADJUNCT, and that a case-suffix provides the argument-taking predicate for the ADJUNCT. Now suppose that the \( \tilde{N} \) consists of several case-marked nominals: \( \text{pirli ngka wita-ngka} \) 'rock-LOC small-LOC'. Only one of the case-suffixes can provide the argument-taking predicate for the ADJUNCT. Otherwise consistency would be violated. The other case-suffixes must act just as AGR suffixes.
A nominal within an $\bar{N}$ bearing an ATP case-suffix can act either as an OBLIQUE$\theta$ of the argument-taking predicate denoted by the case-suffix, or as an ADJUNCT of that OBLIQUE$\theta$. I have shown in 3.5.1 how the assignment of OBLIQUE$\theta$ and OBLIQUE$\theta$ ADJUNCT can be done in the morphology, creating the following structures:

(13)

1. OBL$\theta$; ATP case-suffix

2. OBL$\theta$; AGR case-suffix

3. OBL$\theta$ ADJ; ATP case-suffix

4. OBL$\theta$ ADJ; AGR case-suffix

Morphological assignment accounts for the assignment of the functions OBLIQUE$\theta$ and OBLIQUE$\theta$ ADJUNCT to case-marked nominals (Ns) within $\bar{N}$. However, it does not account for the assignment of these functions to non-case-marked nominals (N$^{-1}$s) within $\bar{N}$, e.g. the assignment of OBLIQUE$\theta$ to pirli in pirli wita-ngka ('rock small-LOC'). Morphological assignment as discussed in 3.5.1 only operated in the context of a
word-formation rule adding a case-inflection to an N-\(^f\). It did not operate on bare N-\(^f\)s.

Loosely, the semantic logical structure of the \(N\) \textit{pirli wita-ngka} (rock small-LOC) is as follows:

\[
\begin{array}{llll}
\text{OBL}_{\theta} & \text{OBL}_{\theta} & \text{ADJ} & \uparrow = \downarrow \\
\text{[pirli} & \text{wita} & \text{ngka} & \text{‘on the small rock’}
\end{array}
\]

How should this modification be represented? The syntactic rule (8) which I proposed for determining function-assignment within grammatically-case-marked \(\bar{N}\)s will not suffice. A nominal in an \(\bar{N}\) containing an \(ATP\) case-suffix acts as an OBLIQUE\(\theta\)etas or an OBLIQUE\(\theta\)eta ADJUNCT, not as a functional head or an ADJUNCT, which are the only functions mentioned in (8).

Suppose the assignment of functions to daughters of \(\bar{N}\) is extended, so that a daughter of \(\bar{N}\) can also have the function OBLIQUE\(\theta\)eta or the function OBLIQUE\(\theta\)eta ADJUNCT. In that event, there are three levels of function assignment:

1. Assign GFs freely to the daughters of \(S\).
2. Assign \(\uparrow = \downarrow\), ADJUNCT, OBLIQUE\(\theta\)eta, and OBLIQUE\(\theta\)eta ADJUNCT freely to the daughters of \(\bar{N}\).
3. Assign OBLIQUE\(\theta\)eta and OBLIQUE\(\theta\)eta ADJUNCT to N-\(^f\) in the morphology when a case-suffix attaches to that N-\(^f\).

As is apparent from the list, the assignment of functions involves some redundancy. Let us consider how it could be reduced.

First, OBLIQUE\(\theta\)eta and OBLIQUE\(\theta\)eta ADJUNCT are assigned both in the morphology and to daughters of \(\bar{N}\). Perhaps this redundancy can be eliminated. It is clear that OBLIQUE\(\theta\)eta and OBLIQUE\(\theta\)eta ADJUNCT must be assigned in the morphology, as I argued in 3.5.1. Can we eliminate assignment of OBLIQUE\(\theta\)eta and OBLIQUE\(\theta\)eta ADJUNCT to daughters of \(\bar{N}\)? Suppose we claimed that in the morphology any N-\(^f\), whether or not it has a case-suffix attached, can be assigned the function OBLIQUE\(\theta\)eta or OBLIQUE\(\theta\)eta ADJUNCT. This amounts to claiming that assignment of functions in the morphology is independent of affixation, which perhaps allows too much freedom for
function assignment. However, as I will show, it has advantages over the multi-level assignment.

On this approach then, a caseless nominal, such as pirli, in the structure pirli wita-ngka, is labelled with information about the OBLIQUE theta by virtue of morphological assignment. If a case-marked nominal, such as wita-ngka in pirli wita-ngka, is assigned $\uparrow = \downarrow$ as a daughter of $\overline{N}$, and is morphologically assigned the function OBLIQUE theta ADJUNCT, the correct result will also be obtained. The information attached to N as a result of morphological assignment is given in (14).

(14)

\[
\begin{array}{c}
N \\
\overset{\uparrow = \downarrow}{\text{N-1,i}} \\
\overset{\uparrow = \downarrow}{\text{N}_j}
\end{array}
\]

OBL theta PRED = 'pirli' \\
OBL theta CASE = LOC \\
OBL theta ADJ SUBJ PRED = 'PRO' \\
pirli

OBL theta PRED = 'LOC' \langle \langle \text{SUBJ} \rangle \rangle \rangle (OBL theta) \rangle \\
OBL theta ADJ PRED = 'wita' \langle \langle \text{SUBJ} \rangle \rangle \\
OBL theta ADJ CASE = LOC \\
wita-ngka

(Recall that an equation such as OBL theta ADJ SUBJ PRED = 'PRO' is a derived equation, representing two distinct equations, $\uparrow \text{OBLIQUE theta ADJUNCT} = \downarrow$, and (\uparrow \text{SUBJ PRED}) = 'PRO'. On their own, the two equations do not violate functional locality. The derived equation would violate functional locality, except that derived equations are not subject to functional locality – see 3.5.1.)

The equation $\uparrow = \downarrow$ attached to $\overline{N}_j$ exhaustively dominates information about the OBLIQUE theta ADJUNCT. Therefore information about the OBLIQUE theta ADJUNCT dominated by $\overline{N}_j$ is also information about the OBLIQUE theta of the whole $\overline{N}$. This permits the construction of a corresponding well-formed f-structure, as in (15).
(15)

\[
\begin{align*}
\text{ADJUNCT} & : \quad \text{PRED} = \text{'LOC'} < (\text{(SUBJ)}), (\alpha) > \\
\text{OBL} & : \quad \text{PRED} = \text{'pirli'} \\
\text{CASE} & = \text{LOC} \\
\text{ADJ} & : \quad \text{PRED} = \text{'wita'} \\
\text{SUBJ} & [\text{PRED} = \text{'PRO'}] \\
\text{CASE} & = \text{LOC}
\end{align*}
\]

This leaves us with only the functional head and ADJUNCT equations being assigned to the daughters of \( \bar{N} \). Since an \( N^{-1} \) can be an ADJUNCT, as for example \textit{wita} in \textit{wita pirli-ngki} ‘small rock-ERG’, we could assume that the function ADJUNCT is also assigned in the morphology to \( N^{-1} \)s. What, however, of case-marked nominals acting as ADJUNCTs within \( \bar{N} \)?

Consider the \( \bar{N} \text{ pirli wita-ngku} \) ‘rock small-ERG’. \textit{Pirli} acts as the head, and \textit{wita-ngku} as the ADJUNCT. \textit{Wita-ngku} consists of an \( N^{-1} \) and ERGATIVE case. The \( N^{-1} \) is the functional head. Suppose that this \( N^{-1} \) receives the ADJUNCT function in the morphology. In (16) I give 2 trees, one in which the \( N \) has been labelled as an ADJUNCT in the syntax (a.), and the other in which the \( N \) has been labelled as a functional head in the syntax, but the \( N^{-1} \) of that \( N \) has been labeled ADJUNCT in the morphology (b.).

---

7. Recall that this order with the head following the attribute is highly marked.
From the information provided in the abbreviated trees above, these structures will create the same f-structures, given in (17).

There is an empirical difference between the two proposals which favours assigning the ADJUNCT function to N-1 in the morphology. Consider the annotated tree structures for an Npirli wita-ngku 'rock small-ERG' acting as the SUBJECT under the two proposals.
The morphological and syntactic assignments of ADJUNCT differ as to whether or not the whole N acquires case. If the function ADJUNCT is assigned to N-1 morphologically, then there are two sets of equations attached to a case-marked nominal with a grammatical case such as ERGATIVE. One set of equations gives information about the ADJUNCT. This includes the information that the ADJUNCT’s case is ERGATIVE. It is ERGATIVE by virtue of the equation ↓CASE = ERGATIVE which is attached to the N-1 as part of the word-formation rule which attaches a case-suffix such as ERGATIVE to an N-1. The other equation is the equation (↑CASE) = ERGATIVE attached to the case-suffix. This is information about up, NOT about the ADJUNCT. Up in this instance happens to be the SUBJECT. If on the other hand, the N is assigned ↓ε (↑ADJUNCTS) in the syntax, then the information that its case is ERGATIVE applies ONLY to the ADJUNCT, and not the N. But if the N has no case-feature, then, by virtue of the default case assignment rule discussed in 3.5.2.3, the whole N will have ABSOLUTIVE case. Therefore the SUBJECT of the sentence must have ABSOLUTIVE case. But this is an undesirable result, since no nominal with ERGATIVE case can ever appear in a sentence with an ABSOLUTIVE SUBJECT. (19) shows the f-structures derived from (18).
Syntactic assignment of ADJUNCT

SUBJECT

- PRED = 'kurdu'
- CASE = ABSOLUTIVE (default)
- ADJ γ PRED = 'wita' <(SUBJ)>
- L CASE = ERG

Morphological assignment of ADJUNCT

SUBJECT

- PRED = 'kurdu'
- CASE = ERGATIVE
- ADJ γ PRED = 'wita' <(SUBJ)>
- L CASE = ERG

I conclude therefore that, at the level of \( \bar{N} \), only the equation \( \uparrow = \downarrow \) is assigned, and that in the morphology, the functions ADJUNCT, OBLIQUE\( \theta \) and OBLIQUE\( \theta \) ADJUNCT are freely assigned. One may consider \( \uparrow = \downarrow \) to be a default assignment in the morphology.

Assigning ADJUNCT in the morphology, rather than the syntax, also provides a first step towards a solution to a rather difficult problem; namely why some semantic case-suffixes cannot occur as ADJUNCTs in \( \bar{N} \), that is, why (20) is apparently ill-formed as a single constituent.

(20) "Ngarrka-ngku Yurntumu-ngurlu-rlu AUX
man-ERG Yuendumu-EL-ERG
the man from Yuendumu

If ADJUNCTS are assigned freely at the \( \bar{N} \) level, then nothing blocks assigning the ADJUNCT function to Yurntumu-ngurlu-rlu in (20), and assigning functional head status to ngarrka. The c-structure is given in (21).
There is a well-formed f-structure corresponding to (21). Therefore some other means is needed to block (20). The problem stems from free assignment of the ADJUNCT function. If, however, only $\uparrow = \downarrow$ can be assigned in the syntax, then the assignment depicted in (21) does not arise. For, suppose that a nominal with a semantic case-suffix such as the ELATIVE ngurlu is generated in the same $\bar{N}$ as a nominal with ERGATIVE case. Then there are three possible situations. First, as depicted in (22), the nominal Yurntumu of Yurntumu-ngurlu-rlu acts as the functional head, in which event consistency of case-suffixes will rule the structure out. Yurntumu-ngurlu-rlu has two case equations, one asserting that the case is ERGATIVE, the other that it is ELATIVE.
Second, the N\textsuperscript{1} has the function OBLIQUE\textsubscript{meta}, or OBLIQUE\textsubscript{meta} ADJUNCT, and the case-suffix merely acts as an agreement marker, in which case coherence will rule the f-structure out: the SUBJECT function does not contain an argument-taking predicate selecting the OBLIQUE\textsubscript{meta}.

(23)

\begin{center}
\begin{tikzpicture}
  \node (n) at (0,0) {$\overline{N}$};
  \node (n1) at (0,-1) {$N$};
  \node (n2) at (0,-2) {$\text{CASE} = \text{ERG}$};
  \node (n3) at (0,-3) {$\text{PRED} = 'ngarrka'$};
  \node (n4) at (0,-4) {$\text{ngarrka-ngku}$};
  \node (n5) at (0,-5) {$\uparrow = \downarrow$};

  \node (n6) at (1.5,0) {$\overline{N}$};
  \node (n7) at (1.5,-1) {$N$};
  \node (n8) at (1.5,-2) {$\text{CASE} = \text{ERG}$};
  \node (n9) at (1.5,-3) {$\text{PRED} = 'yurntumu'$};
  \node (n10) at (1.5,-4) {$\text{Yurntumu-ngurlu-rlu}$};
  \node (n11) at (1.5,-5) {$\uparrow = \downarrow$};

  \node (n12) at (0,-1) {$\uparrow = \downarrow$};

  \node (n13) at (0,-2) {$\text{CASE} = \text{ERG}$};
  \node (n14) at (0,-3) {$\text{PRED} = 'ngarrka'$};
  \node (n15) at (0,-4) {$\text{ngarrka-ngku}$};

  \node (n16) at (1.5,-1) {$\uparrow = \downarrow$};

  \node (n17) at (1.5,-2) {$\text{CASE} = \text{ERG}$};
  \node (n18) at (1.5,-3) {$\text{PRED} = 'loc' \langle \text{SUBJ} \rangle \text{(OBL\textsubscript{theta})}$};
  \node (n19) at (1.5,-4) {$\text{OBL\textsubscript{theta} CASE} = \text{EL}$};
  \node (n20) at (1.5,-5) {$\text{Yurntumu-ngurlu-rlu}$};

\end{tikzpicture}
\end{center}

Third, the case-suffix acts as the functional head, in which event the $\overline{N}$ will have two PREDs, the PRED of the case-suffix, and the PRED of the ERGATIVE nominal. In this situation the f-structure will be inconsistent.

(24)
Why doesn't the same structure arise with the free assignment of ADJUNCT in the morphology? The answer is that the corresponding situation could only arise if the whole N Yurntumu-ngurlu were assigned the ADJUNCT function, as in (25). But I claimed that the functions are assigned only to caseless nominals, i.e. N-Is, in the morphology, not to case-marked nominals, i.e. Ns.

(25)

4.2.2.1 Derivational case-suffixes

An interesting problem arises with derivational case-suffixes. Unlike most semantic case-suffixes, DCNs apparently CAN occur as attributes of a nominal within an N, as (26) illustrates. (My impression is that, with the exception of the POSS suffix kurlangu, these are much less frequent than examples in which the DCN is a free attribute modifying an argument not in the same constituent.) The ambiguity of (26) is discussed in Hale (PWT), and Nash (1980).

(26) kurdu  wita-kurlu

child  small-PROP
  with a small child
  child with something small.

Further examples are given in (27) through (30). The fact that in (27) both the kurlu nominal and the nominal it modifies appear before the AUX suggests that they form a single constituent. Similar remarks hold of (28) and (29). The fact that in (28) only the last
element is marked with ERGATIVE case provides further evidence that the DCN and the nominal it modifies form a constituent, as does the fact that in (30) only the last element is marked LOCATIVE.

(27) Kurlarda yangka ngarnggu-kurlu ka-lu pikirri-kirra
spear the hook-PROP-ABS PRES-3pl spear.thrower-ALL
yirra-rni...
put-NPST
They put the hunting spear with that hook onto the spear thrower. [mangulpa]

(28) Yangka purlka ngaju-piya-rlu kala para-ja - wirrkardu-ku
the old.man i-LIKE-ERG USIT follow-PAST few-DAT
ngurra-patu-ku-rlu.
camp-PL-DAT-ERG
That old man like me followed it -- for several days. [parami]
(Note that this example is unusual in that the DATIVE-marked time adverbial has ERGATIVE on the last element and not on the first.)

(29) Kuyu yalyu-parnta + wiyi kala pi-nja-ya-nu.
meat blood-PROP-ABS + BEFORE USIT hit-INF-PROG-PAST
He killed an animal with (fresh) blood in it. [yalyu]

(30) Yiji-pu-ngu minjirnpa maliki-rli jururrpa
urinate-PAST urine-ABS dog-ERG belongings
yapa-kurlangu-rla.
person-POSS-LOC.
The dog urinated on the people’s things. [minjirnpa]

It seems that the $\bar{N}$ rule must be modified so as to allow one N to be assigned the function ADJUNCT. (I do not know of examples where more than one DCN appears in an $\bar{N}$ and both are used as ADJUNCTs)

(31) Revised $\bar{N}$ expansion rule

\[
\bar{N} \rightarrow N \cdot l^* \quad N^* \quad \left\{ \begin{array}{l}
N \\
\downarrow e (\uparrow \text{ADJUNCTs}) \\
N
\end{array} \right. \quad N^*
\]
I have had to use the disjunction of an $\overline{N}$ annotated with the function $\text{ADJUNCT}$ and an ordinary $N$ to capture the facts that the $\text{ADJUNCT}$ can be, but need not be final, and that an $\overline{N}$ must have a case-marked $N$ finally. (Recall that $N^*$ means "as many $Ns$ as desired, including none").

However, if one $N$ can be assigned the function $\text{ADJUNCT}$, nothing prevents an SCN from acting as an $\text{ADJUNCT}$, thus permitting structures such as *$\text{Ngarrka Yurntumu-ngurlu-rlu}$*. I suggest in Chapter 6 that semantic case-suffixes are distinguished from both derivational case-suffixes, grammatical case-suffixes, and ordinary nominals by a feature of dependent tense, and that, among other properties, this prevents SCNs from acting as $\text{ADJUNCTs}$ within $\overline{N}$. As a first approximation, we can represent this by a negative constraint equation accompanying the equation $\downarrow{}e (\uparrow \text{ADJUNCTS})$.

$\neg (\downarrow \text{TENSE})$

This constraint equation requires that the $N$ have no tense feature, thus preventing SCNs from appearing as $\text{ADJUNCTS}$ within $\overline{N}$.

The next section is a speculative digression. I suggest that this ability of DCNs to appear as an $\text{ADJUNCT}$ within an $\overline{N}$ correlates with two other somewhat marginal properties of DCNs, the ability to have $\text{ADJUNCTs}$ of their own within $\overline{N}$, and the ability to sanction a limited violation of category order in the $\overline{N}$ rule.

4.2.2.1.1 Speculations

(32) shows the first marginal property of DCNs, that a DCN acting as an $\text{ADJUNCT}$ in an $\overline{N}$ may occasionally have its own $\text{ADJUNCT}$. Consider the following elicited examples from the Warlpiri Survey:

(32) $\text{Maliki kurdu yali-kirlangu-rlu ka wajili-pi-nyi mutukayi.}$  

$\text{dog child that.rem-POSS-ERG PRES chase-NPST car-ABS}$  

The dog of that child is chasing the car.

(33) $\text{Kurdu yali-kirlangu maliki-rli ka wajili-pi-nyi mutukayi.}$  

$\text{child that.rem-POSS dog-ERG PRES chase-NPST car-ABS}$  

The dog of that child is chasing the car.
In both (32) and (33), the SUBJECT *maliki-rli* ‘dog-ERG’ is modified by a possessive attribute, which consists of the possessor *kurdu* ‘child’, and a demonstrative *yali*. The fact that the whole complex precedes the AUX, and the fact that in both examples the ERGATIVE case is present only on the last item, show that the whole complex is treated as a single constituent.

Another less clear case is given in (34).

(34) \*\*Wati-ngki yali-rli karnta jirrama-kurlu-rlu, ngulaju\*\*  
\*\*man-ERG that.rem-ERG woman two-PROP-ERG, see\*\*  
\*kinki + ji nya-ngu jukurrpa-rlu\*\*  
\*devil-ABS + EUPH see-PAST dream-ERG\*\*  
That man with the two wives saw the devil in a dream. [jirrama]

In (34) two nominals with ERGATIVE case, *wati-ngki* and *yali-rli*, are modified by a DCN *karnta jirrama-kurlu-rlu*. In turn, the OBLIQUE theta of the derivational case-suffix *kurlu*, namely *karnta* (‘woman’), is modified by the attribute *jirrama* (‘two’). It is not absolutely clear that *Wati-ngki yali-rli karnta jirrama-kurlu-rlu* is acting as a single constituent, but if it is, then this is an example of a DCN with an ADJUNCT of its own acting as an ADJUNCT in an N.

(35), which was elicited, is apparently also a single constituent, and contains an ADJUNCT of an ADJUNCT.

8. Observe that in each instance the head of the ADJUNCT, *kurdu* ‘child’, precedes the demonstrative *yali*, in accordance with the the head-first principle. This preference allows for the disambiguating of the following sentence, also from the Survey.

\*\*Maliki yali kurdu-kurlangu-rlu ka wajili-pi-nyi mutukayi.\*\*
\*\*dog that.rem child-POSS-ERG PRES chase-NPST car-ABS\*\*
That dog of the child is chasing the car.

The demonstrative *yali* follows *maliki*, and precedes *kurdu*, and is therefore interpreted as an ADJUNCT of *maliki* rather than of *kurdu*.
(35) \textit{yuluku} \textit{maliki-kirlangu} \textit{kurdu-kurlangu-kurlangu} \\
shelter dog-POSS child-POSS-POSS \\
The child's dog's shelter. [Survey]

Such double POSS case-marking has not been recorded in natural speech, and so the status of the construction is in doubt. Presumably (35) has the semantic logical structure given below.

\[
[ \textit{yuluku} [ \textit{maliki-kirlangu} [ [ \textit{kurdu-kurlangu} \textit{kurlangu}] ] ] ]
\]

That is, \textit{kurdu-kurlangu-kurlangu} is acting as an ADJUNCT of \textit{maliki} which is in turn acting as an ADJUNCT of \textit{yuluku}.

The second type of exceptional behaviour that DCNs show is illustrated in (36).

Recall that the \( \bar{N} \) rule as given does not allow for the interspersion of case-marked nominals with \( N^+ \)s. But, as Nash (1980) points out, such interspersion can occur just in case the \( \bar{N} \) has a derivational case-suffix.

(36) \textit{karnta-kurlu} \textit{wita} \textit{kurdu-kurlu} \\
woman-PROP small child-PROP \\
'with a small girl'

The PROP derivational case-suffix, \textit{kurlu}, acts as an ATP for the whole \( N \).

It seems that a limited amount of recursion is needed within the \( \bar{N} \) rule.\(^9\) Tentatively, I suggest that an \( \bar{N} \) can contain one \( \bar{N} \), and that this \( \bar{N} \) is optionally assigned the function ADJUNCT, unlike other daughters of \( \bar{N} \) which are only assigned \( \uparrow = \downarrow \).

(37) Speculative revision of the \( \bar{N} \) rule

\[
\begin{align*}
\bar{N} &\to N.1^* \\
N^* &\left\{ \begin{array}{l}
\bar{N} \\
(\downarrow \in (\uparrow \text{ADJUNCTS})) \\
N
\end{array} \right. \\
\end{align*}
\]

9. Whether recursion can extend to ADJUNCTs of ADJUNCTs of ADJUNCTs is a matter for investigation. The rarity of ADJUNCTs of ADJUNCTs makes it seem improbable.
Thus, the fact that a DCN can apparently act as an ADJUNCT within an \( \bar{N} \) will be expressed by assuming that DCNs can be generated under an \( \bar{N} \) which can have the function ADJUNCT within another \( \bar{N} \). Allowing \( \bar{N} \) to expand to another \( \bar{N} \) with the function ADJUNCT also permits the representation of ADJUNCTs which have their own ADJUNCTS. Finally, this \( \bar{N} \) may also be assigned \( \uparrow = \downarrow \), to account for the apparent violation of the order of \( N \)'s and \( N \)s within \( \bar{N} \). In the next section I will outline the c-structures and f-structures created by the speculative \( \bar{N} \) rule.

4.2.2.1.2 Application of the N-bar rule

In this section the c-structures and f-structures for several of the \( \bar{N} \)s containing other \( \bar{N} \)s are given in order to show the effect of these rules. (38) and (39) show the c-structure and f-structure for (34) \( \text{watingki karnta jirramakurluralu} \), 'the man with two wives', in which an ADJUNCT 'with a wife', is further modified by the numeral jirrama 'two'.

(38) C-structure for an ADJUNCT of an ADJUNCT

\[ \text{wati-ngki karnta jirrama-kurlu-rlu} \]

'The man with two wives.'
The N is assigned the function ADJUNCT by (37). The argument-taking predicate of the ADJUNCT is provided by the derivational case-suffix *kurlu*. This argument-taking predicate selects a SUBJECT, which is filled by an anaphoric null pronominal, and an OBLIQUE: *theta*, which is satisfied by the nominal *karnta*. The nominal *jirrama* acts as an ADJUNCT of *karnta*. The whole ADJUNCT *karnta jirrama-kurlu-rlu* attributes a property to *wati-ngki*, and so has ERGATIVE case in agreement.

The f-structure derived from (38) follows:

(39) **F-structure for an ADJUNCT of an ADJUNCT**

\[
\begin{array}{c}
PRED = \text{'wati'} \\
CASE = \text{ERG} \\
\end{array}
\]

\[
\begin{array}{c}
\text{ADJ} \quad \begin{array}{c}
PRED = \text{'PROP'} \langle \text{(SUBJ)} \ (\text{OBL} \thetaeta) \rangle \\
CASE = \text{ERG} \\
\text{SUBJ} \ [PRED = \text{'PRO'}] \\
\end{array} \\
OBL \thetaeta \quad \begin{array}{c}
PRED = \text{'karnta'} \\
\text{ADJ} \quad \begin{array}{c}
PRED = \text{'jirrama'} \langle \text{(SUBJ)} \rangle \\
CASE = \text{PROP} \\
\text{SUBJ} \ [PRED = \text{'PRO'}] \\
\end{array} \\
\end{array}
\end{array}
\]

The c-structure and f-structure for (35), *yujuku malikikirlangu kurdukurlangukurlangu* which has an ADJUNCT of an ADJUNCT with two case-suffixes, are given below.
As in the previous example, the internal $\bar{N}$ is assigned the function ADJUNCT. The PRED of the ADJUNCT is the Possessive suffix kurlangu, which selects a SUBJECT and an OBLIQUEtheta. The SUBJECT is represented by a null pronominal, which is controlled by the functional head of the whole $\bar{N}$, the nominal yujuku. The OBLIQUEtheta of the ATP is the nominal maliki. This nominal is in turn modified by an ADJUNCT, kurdu-kurlangu-kurlangu. The PRED of this ADJUNCT is also the POSS case-suffix kurlangu. Kurlangu takes a SUBJECT (represented by a null pronominal), and an OBLIQUEtheta (represented by the nominal kurdu). The null pronominal is controlled by maliki. Kurdu-kurlangu-kurlangu has two case-suffixes, one which acts as the argument-taking predicate of the ADJUNCT, and the other of which acts as an agreement marker with maliki.
Observe that the internal \( \bar{N} \) has no case. I proposed in 3.5.2.3 that \textsc{absolutive} should be assigned as a default case to \( N \) and \( \bar{N} \). This of course also covers internal \( \bar{N}s \). Therefore, the internal \( \bar{N} \) has \textsc{absolutive} case. The internal \textsc{adjunct} is predicated of the N-I \( yujuku \), which has no \textsc{case}. Therefore there is no case clash, and the \textsc{adjunct agreement convention} is not violated.

The f-structure for this example is given below.

\( \text{(41) F-structure for doubly case-marked ADJUNCTS} \)

\[
\begin{align*}
\text{PRED} & = \text{`}yujuku` \\
\text{CASE} & = \text{ABS (default)} \\
\text{ADJ} \quad \text{PRED} & = \text{`}POSS` < (\text{SUBJ}) (\text{OBL}_\theta) > \\
\text{CASE} & = \text{ABS (default)} \\
\text{SUBJ PRED} & = \text{`}PRO` \\
\text{OBL}_\theta \quad \text{PRED} & = \text{`}maliki` \\
\text{CASE} & = \text{POSS} \\
\text{ADJ} \quad \text{PRED} & = \text{`}kurlangu` < (\text{SUBJ}) (\text{OBL}_\theta) > \\
\text{CASE} & = \text{POSS} \\
\text{SUBJ} & [\text{PRED} = \text{`}PRO`] \\
\text{OBL}_\theta \quad \text{PRED} & = \text{`}kurdu` \\
\text{CASE} & = \text{POSS}
\end{align*}
\]

The last example to look at is (36) \textit{Karntakurlu wita kurdukurlu}, which contains conjoined \textsc{adjuncts}: \textit{kurdu} `child' and \textit{wita} `small'.
with a small girl

The whole $\overline{N}$ acts as an ADJUNCT, whose argument-taking predicate is the suffix kurlu. Kurlu selects a SUBJECT and an OBLIQUEtheta. The SUBJECT is represented by a null pronominal. The OBLIQUEtheta is the nominal karnta. This OBLIQUEtheta is modified by two ADJUNCTs, wita and kurdu. These two ADJUNCTs form the internal $\overline{N}$, which is assigned $\uparrow = \downarrow$ rather than ADJUNCT.\(^{10}\) The f-structure is given below.

---

10. This analysis is somewhat doubtful. As it stands, one might expect to find all derivational case-suffixes in such structures, and also the semantic case-suffix LOCATIVE, which shares derivational case properties. We do not have the data on these. It may be necessary to restrict the assignment of $\uparrow = \downarrow$ just to, say, nominals with PROP case, and to assume that ADJUNCT is the normal assignment to $\overline{N}$.
As is clear, *wita* and *kurdu* can both act as ADJUNCTs by virtue of the fact that the function ADJUNCT is evaluated by a set of f-structures, and not by a single f-structure. The entire $\bar{N}$ has ABSOLUTIVE case by virtue of the default assignment of ABSOLUTIVE case, which applies to both the internal and the external $\bar{N}$.\(^{11}\)

In the next two sections, I will tie up some loose ends before summarizing the representation of function assignment within $\bar{N}$.

---

11. This predicts that a nominal such as *karnta* *wita*-kurlu *kurdu*-kurlu-rlu would be ungrammatical by virtue of consistency. *Karnta* *wita*-kurlu would receive ABSOLUTIVE case by default assignment (being an $\bar{N}$), which would clash with the ERGATIVE case of *Kurdu*-kurlu-rlu. This has yet to be checked.
4.2.2.2 LOCATIVE

In the previous section I have shown how the fact that a DCN can act as an ADJUNCT within an $\bar{N}$ can be represented. Here I will discuss the occasional use of the semantic case-suffix LOCATIVE as an ADJUNCT within an $\bar{N}$. An example follows:

\[(44)\] Pirli-ngka-rlu wati-ngki -nganpa luwa-rnu.
rock-LOC-ERG man-ERG -1plex shoot-PAST
The man on the hill shot us.

\[(45)\] Wati pirli-ngka-rlu -nganpa luwa-rnu.
man-ABS rock-LOC-ERG -1plex shoot-PAST
The man on the hill shot us. [Data sent by David Nash, April 1983.]

The SCN pirli-ngka-rlu can act as an attribute of the ERGATIVE SUBJECT wati-ngki in the same $\bar{N}$, whether it precedes or follows wati. (Thus, the LOCATIVE behaves like a possessive, rather than like a determiner, in its freedom of position). In this respect, the LOCATIVE acts like a derivational case-suffix, rather than a semantic case-suffix. Observe too that, like DCNs, nominals with the LOCATIVE are sometimes found as matrix predicates (see 3.4.2), whereas other SCNs are not. In fact, rather than there being two separate categories SCNs and DCNs, perhaps there is a continuum:

\[(46)\] Derivational

1. suffixes which are closely related to derivational affixes, such as parnta PROP and kurlangu POSS. These can act as argument attributes (i.e. provide the ATP for an argument-modifying ADJUNCTs), but rarely, if ever, act as sentential ADJUNCTs.

2. suffixes such as wana PERL and jangka SOURCE which are often found acting as the argument-taking predicate of a sentential ADJUNCT. For instance, a nominal + wana can denote the path of an action, while a nominal + jangka can denote the reason for an action. In such instances, it seems unlikely that they should be construed as modifying an argument, rather than the event.

3. the LOCATIVE. Like a semantic case-suffix, it can act as a sentential ADJUNCT. Like derivational case-suffixes, it can act as a matrix predicate or as an ADJUNCT within an $\bar{N}$,
4. the semantic cases such as *kurra* which never act as matrix predicates, or as the ADJUNCT within an *N*.

**Semantic**

In Chapter 6, I will attempt to draw together these observations about the ability of the LOCATIVE and DCNs to act as matrix predicates, and to appear in the same constituent as a nominal which they modify, and relate it to a feature [dependent tense].

**4.2.2.3 Double case-marking and concord**

There are strong restrictions on the appearance of double case-marking within *N*. The only allowable forms are:

1. *pirli*  *wita*  *-ngka*  *-rlu*
   rock  small  -LOC  -ERG

2. *pirli*  *-ngka*  *-rlu*  *wita*  *-ngka*  *-rlu*
   rock  -LOC  -ERG  small  -LOC  -ERG

The following are unacceptable:

3. *pirli*  *-ngki*  *wita*  *-ngka*  *-rlu*
   rock  -ERG  small  -LOC  -ERG

4. *Pirli-ngka*  *wati-ngki*  *-nganpa*  luwa-rnu.
   rock-LOC  man-ERG  -1plex  shoot-PAST
   The man on the hill shot us. [data sent by David Nash, April, 1983]

5. *pirli*  *-ngka*  *wita*  *-ngka*  *-rlu*
   rock  -LOC  small  -LOC  -ERG
3. is ruled out by the Adjunct Agreement Convention, because *pirili*, the OBLIQUE\text{meta} of the predicate LOCATIVE, has ERGATIVE case, whereas *wita*, the OBLIQUE\text{meta} ADJUNCT, has LOCATIVE case, and adjuncts must not disagree in case with the argument they attribute a property to. 4. and 5. are ruled out by case conflicts resulting from default case-assignment of ABSOLUTIVE. Let us examine this more closely. In 4. a LOCATIVE acts as an ADJUNCT modifying a nominal with ERGATIVE case. In 5. the whole $\bar{N}$ acts as an ADJUNCT with ERGATIVE case whose argument-taking predicate is the LOCATIVE case. Both would be acceptable if the first LOCATIVE-marked nominal had extra ERGATIVE marking. This suggests that the unacceptability of 4. and 5. is due to a clash of cases, between the ERGATIVE and the default case ABSOLUTIVE. Recall that in 3.5.2.1 suggested that semantic case-suffixes differed from grammatical case-suffixes in that, while grammatical case percolates (via the equation (†CASE) = C attached to the affix), semantic case does not percolate, unless the nominal is the functional head of the N. In neither 4. nor 5. is the nominal the functional head of the N; in 4. the case suffix is the function head of the LOCATIVE N, while in 5. the LOCATIVE N has no functional head. In 3.5.2.3. I suggested that ABSOLUTIVE case is assigned to Ns and $\bar{N}$s without case-features. The LOCATIVE Ns in 4. and 5. have no case-features, and so are assigned ABSOLUTIVE case by default. The c-structure for 4. is given in (47). (I have omitted all information about PREDs).
To be interpretable, *pirli-ngka* must be an ADJUNCT modifying *wati-ngki*. *Wati-ngki* has ERGATIVE case. By default assignment, *pirli-ngka* has ABSOLUTIVE case. By the Adjunct Agreement Convention, ADJUNCTs must not disagree in case with the element they modify. Therefore the f-structure resulting from (47) will be ill-formed.

The c-structure for 5. is given below.
Again *pirli-ngka*, being an N, receives ABSOLUTIVE case by the default assignment. The f-structure from this tree will be inconsistent, because the one function will have two case features, ABSOLUTIVE, from *pirli-ngka*, and ERGATIVE from *wita-ngka-rlu*.

That is, no case-concord rule is needed to determine agreement within nominals in Warlpiri. The independently needed principles of Adjunct Agreement, and ABSOLUTIVE case assignment provide the necessary constraints, together with the requirements of consistency, coherence and completeness. I list below the possible situations.

1. N-1 N-CASE: *Kurdu wita-ngku* 'child small-ERG (†CASE) = ERGATIVE is attached to the ERGATIVE affix. *Kurdu*, being an N-1, does not receive default CASE.

2. 2 GCNs: *Kurdu-ngku wita-ngku* 'child-ERG small-ERG' (†CASE) = ERGATIVE is attached to the ERGATIVE affixes. Therefore default assignment of ERGATIVE case does not apply.

3. 2 SCNs: *Pirli-ngka wita-ngka* 'rock-LOC small-LOC' Both are SCNs. Therefore Case does not percolate. Both are Ns, and will be assigned ABSOLUTIVE by default. The ABSOLUTIVEs do not class with each other.
2 DCNS:
If a DCN is used as an N or an $\overline{N}$ with the ADJUNCT function, it will receive ABSOLUTIVE by default. If, however, it is simply a single attribute, then it may well be generated as an N-\(i\), in which event it will not receive ABSOLUTIVE case. The prediction then is that, while Kurdu-kuru karnta-ngku (child-PROP woman-ERG) 'woman with a child' may be acceptable as a single constituent, Kurdu wita-kuru karnta-ngku (child small-PROP woman-ERG) 'woman with a small child' will not be acceptable. This has yet to be tested.

4.2.3 Summary

The rules for assigning functional equations and functional features presented so far are:

(49) \(S \rightarrow \text{AUX } X \ X^*\)
Assign grammatical functions freely in \(S\).

(50) Assign \(\uparrow = \downarrow\) in \(\overline{N}\) freely
Assign ADJUNCT optionally to one N (or possibly \(\overline{N}\)), subject to some condition on dependent tense.
Assign ABSOLUTIVE case to any N or \(\overline{N}\) without a case equation.

(51) Assign in the morphology, ADJUNCT, OBLIQUE\(\theta\)eta, or OBLIQUE\(\theta\)eta ADJUNCT, to \(N^{-1}\) freely. The default is to assign \(\uparrow = \downarrow\).
Assign \(\uparrow = \downarrow\) to all case-suffixes. (This follows if they are the morphological head of case-marked nominals).
Assign \(\downarrow \text{CASE} = C\) to an \(N^{-1}\) when a case-suffix C is attached.
Assign \(\uparrow \text{CASE} = C\) to a grammatical case-suffix C.
4.3 Discontinuous expressions

I will first look at nominals with AGR case-suffixes, and then look at nominals with ATP case-suffixes.

4.3.1 Discontinuous expressions with AGR case.

As I mentioned in the introduction to this chapter, Hale (PWT) claims that, in a sentence such as (52), the modifier \textit{wita-jarra-rlu} can have two main types of semantic interpretation.

(52) \textit{Kurdu-jarra-rlu} ka-pala maliki \textit{wajilli-pi-nyi} \textit{wita-jarra-rlu}.  
Child-DU-ERG PRES-2du dog-ABS chase-NPST small-DU-ERG  
a. (The) two small children are chasing the dog. \textit{merged}  
b. (The) two children are chasing the dog and they are small. \textit{unmerged}

Following the AUX, a sequence of nominals with the same case may either form a single \(\bar{N}\), and thus have the \textit{merged} interpretation, or else form several \(\bar{N}\)s, and have either a \textit{merged} or an \textit{unmerged} interpretation, just as non-adjacent \(\bar{N}\)s have. When \textit{wita-jarra-rlu} forms a single constituent with \textit{kurdu-jarra-rlu}, it can only have the \textit{merged} interpretation.

Since Warlpiri allows zero pronominalization for grammatical functions, no overt referential nominal has to be present for an ADJUNCT to modify. In (53), for example, \textit{wita-jarra-rlu} can be interpreted with \textit{wita} as a referential nominal, \textit{the two small ones}, or it can be interpreted as an attribute with the \textit{unmerged} interpretation of an understood null pronominal.

(53) Maliki ka-pala \textit{wita-jarra-rlu} paka-rni.  
Dog-ABS PRES-2du small-DU-ERG hit-NPST  
The two small ones are striking the dog.  
They two are striking the dog and they are small. [PWT:(33a)]

I assume that differentiating between the \textit{merged} and \textit{unmerged} interpretations is the province of semantic interpretation. However, since semantic interpretation in LFG takes functional structure as its input, and since whether an element has, or has not, a \textit{merged interpretation} depends in part on its c-structure position, it follows that
f-structures should represent elements, which appear in the same N as the argument which they modify, in such a way that semantic interpretation rules can give them a merged interpretation. This representation must be obligatory for elements in the same N, and optional for elements not in the same N as the argument; they attribute a property to. This forces the former to have the merged interpretation, and allows the latter to have either a merged or an unmerged interpretation.

I propose to use differences in the f-structure locations of ADJUNCTS to distinguish the merged and the unmerged interpretations. ADJUNCTS inside the f-structure of their controller will be interpreted as merged; ADJUNCTS outside the f-structure of their controller will be interpreted as unmerged. The difference between the two f-structures should be sufficient to allow the formalization of semantic interpretation rules creating the merged and unmerged interpretations, although I will not attempt this formalization here.12

I will first discuss the assignment of functions within N where the case-suffix has an ATP use, and where the case-suffix has an AGR use. I will then show how discontinuous expressions can be created by the general rule Assign grammatical functions freely to all daughters of S, and how ADJUNCTs can be generated inside and outside the f-structures of their controllers.

4.3.1.1 The unmerged interpretation

The c-structure and f-structure for (52) with the unmerged interpretation are given below.

(54)

SUBJ [CASE ERGATIVE]
    PRED 'kurdu'
    NUM du
    PERS 3

ADJ [CASE ERGATIVE]
    PRED 'wita' <SUBJ>
    NUM du
    SUBJ [PRED = 'PRO']

ASP Present Imperfect
TENSE Non-past
PRED 'wajili-pi-nyi' <SUBJ> (OBJ)

OBJ [CASE ABSOLUTIVE]
    PRED 'maliki'
    NUM sg
    PERS 3

Kurdu-jarra-rlu ka -pala maliki wajili-pi-nyi wita-jarra-rlu.
The regular algorithm for building f-structures from annotated c-structures causes the ADJUNCT to have its own f-structure which is immediately contained within the f-structure of the sentence. Since it is outside the f-structure of the SUBJECT, semantic interpretation rules can assign it an unmerged interpretation.

4.3.1.2 The merged interpretation

In this section, I will show how the merged interpretation is obtained. I will start by looking at nominals forming a single constituent which must have the merged interpretation, and then turn to non-adjacent nominals which receive a merged interpretation.

A sentence containing an $\bar{N}$ which can be construed as containing a SUBJECT and an ADJUNCT of that SUBJECT is given below.

(55) Kurdu wita-ngku ka wajili-pi-nyi.
     child small-ERG PRES chase-NPST.
     The small child is chasing it.

In 4.2.1, I gave the c-structure and f-structure for (55) (namely (11) and (12)). I repeat the f-structure here. In the c-structure given, the function SUBJECT labels an $\bar{N}$, inside which there is a head (with the equation $\uparrow = \downarrow$) and an ADJUNCT. The nodes within $\bar{N}$ are labelled by the $\bar{N}$ rule. Because the node labelled ADJUNCT is dominated by a node labelled SUBJECT, the f-structure built from this tree must have the ADJUNCT inside the f-structure of the SUBJECT. This contrasts with the f-structure for the unmerged interpretation, in which the ADJUNCT appears outside the subject's f-structure.
I will now show how non-adjacent nominals can receive a merged interpretation.

Consider the following sentence:

(57) *Kurdu-ngku* ka *wajili-pi-nyi wita-ngku.*

The small child is chasing it.

The element *wita-ngku* has been given the merged interpretation in the translation.

The unmerged interpretation, *The child is chasing it, and he is small*, is obtained by assigning *wita-ngku* the function ADJUNCT. *Wita-ngku* is then generated outside the f-structure of what it modifies. An ADJUNCT assigned to an N-1 within N labelled with a function F, by contrast, is generated within the f-structure of F.
A non-adjacent attribute can appear inside the f-structure of a function \( F \) if the attribute is assigned as its label the function \( F \).\(^{13}\) The rule Assign grammatical functions freely allows this.

This assignment of SUBJECT to two nominals does not violate consistency, because one of the nominals is an ADJUNCT. As I showed in the \( \overline{N} \) rule, \( \overline{N} \) not only can dominate \( N \) and \( N^{-T} \) with the equation \( \Uparrow \text{PRED} = 'Y' \) but can also dominate an \( N \) or an \( N^{-T} \) with the equation \( \Uparrow \text{ADJUNCT PRED} = 'Z' \) etc. If that \( \overline{N} \) has itself the function SUBJECT, the node labelled \( \Uparrow \text{SUBJ} = \downarrow \) can dominate nodes labelled with the equations \( \Uparrow \text{PRED} = 'Z' \), and \( \Uparrow \text{ADJ PRED} = 'Z' \). This creates structures of the form in (58).

(58)

```
\begin{center}
\begin{tikzpicture}
  \node (subject) {\textbf{SUBJECT}};
  \node (n) at (subject |- subject node) {\textbf{N}};
  \node (nup) at (n |- subject node) {\textbf{N}};
  \node (kurdu) at (nup |- subject node) {kurdu};
  \node (wita) at (nup |- subject node) {wita};
  \draw (subject) -- (n);
  \draw (n) -- (nup);
  \draw (nup) -- (nup |- subject node);
  \draw (nup) -- (nup |- subject node);
  \node (tup) at (subject |- nup node) {\Uparrow = \downarrow};
  \node (tadjud) at (subject |- nup node) {\Uparrow = \downarrow};
  \node (predkurdu) at (kurdu |- subject node) {\Uparrow \text{PRED} = 'kurdu'};
  \node (predwita) at (wita |- subject node) {\Uparrow \text{ADJ PRED} = 'wita' \text{<}(\text{SUBJ})\text{>}};
\end{tikzpicture}
\end{center}
```

Non-adjacent nominals with the merged interpretation are simply \( \overline{N} \)s with some grammatical function, such as \( \Uparrow \text{SUBJ} = \downarrow \), exhaustively dominating an \( N \) labelled with information about the ADJUNCT function.

(59)

```
\begin{center}
\begin{tikzpicture}
  \node (subject) {\textbf{SUBJECT}};
  \node (n) at (subject |- subject node) {\textbf{N}};
  \node (nup) at (n |- subject node) {\textbf{N}};
  \node (predwita) at (subject |- nup node) {\Uparrow \text{ADJ PRED} = 'wita' \text{<}(\text{SUBJ})\text{>}};
\end{tikzpicture}
\end{center}
```

13. The solution given here was suggested to me by Ronald Kaplan, and was suggested independently in Andrews (1982b), although Andrews does not consider it necessary to make a syntactic difference between the merged and unmerged interpretations.
The c-structure tree for (57) follows:

(60)

Naturally, information about an ADJUNCT attached to a node labelled SUBJECT will be treated as information about the ADJUNCT of that SUBJECT, and will therefore be placed inside the f-structure of the SUBJECT. From such a c-structure, an f-structure will be built which is identical to that created from a c-structure tree in which the attribute is adjacent to the head (e.g. for kurdu wita-ngku), and forms a single constituent with it. That is the f-structure will be identical to the f-structure given in (56).

Hence, both non-adjacent nominals, and adjacent nominals, can have the same form in functional structure for semantic interpretation to operate on. Non-adjacent nominals, however, do not have to appear in the same functional structure as the nominal they are predicated of, while nominals forming a single constituent must do so.
Whether in c-structure a node labelled with any grammatical function G, (such as SUBJECT, OBJECT etc.) has to dominate a node labelled with the PRED of the functional head of that G, or whether it can exhaustively dominate a node labelled with information about an ADJUNCT of G, may be a parameter distinguishing languages. In languages with discontinuous expressions, such as Warlpiri, a node labelled SUBJECT can exhaustively dominate a node labelled with information about an ADJUNCT of the SUBJECT. In English, on the other hand, a node labelled SUBJECT must dominate a node labelled with information about the PRED of the SUBJECT. A language may even have free constituent order by virtue of a rule assigning grammatical functions freely to daughters of S, but still disallow discontinuous nominal expressions, by virtue of requiring a functional head for each N. Such a language might be Malayalam (Mohanan, 1981a, 1982c).

In conclusion, I have shown that the semantic difference between merged and the unmerged interpretations of discontinuous constituents can be reflected in functional structure by the difference between whether an ADJUNCT is generated within the f-structure of its controller (the merged interpretation) or outside the f-structure of its controller (the unmerged interpretation). The existence of unmerged attributes follows from the general rule assigning functions within S (Assign grammatical function freely) which allows any nominal to be an ADJUNCT, together with the principle that allows any argument-taking predicate to introduce a null pronominal representing a grammatical function selected by that argument-taking predicate. The existence of the merged attributes follows from the general rules of function assignment within N which allow any N or N-1 to have the equation $\uparrow = \downarrow$, and from allowing an N labelled with a function F to exhaustively dominate nodes which contain no information about F's PRED.

14. This proposal is due to Avery Andrews.
4.3.2 Discontinuous expressions with ATP case-suffixes

I now turn to the situation in which a nominal \( N_i \) with an ATP case-suffix is predicated of a nominal with the same case which is not in the same constituent. I will only examine the situation where \( N_i \) has the function ADJUNCT; I believe that the solution can extend to nominals with ATP case-suffixes used as XCOMP s, although some modifications are necessary.

Consider the following sentence:

(61) Karli ka pirli-ngka nguna-mi wita-ngka.

Boomerang-ABS PRES rock-LOC lie-NPST small-LOC.

A boomerang is lying on a small rock.

merged

A boomerang is lying on a rock, a small one.

unmerged

Wita-ngka can be a merged or unmerged attribute of pirli-ngka.

I will assume here that ngunami in Warlpiri does not subcategorize an XCOMP of location, and that therefore pirli-ngka is a locative ADJUNCT. I will further assume that pirli-ngka is a sentential ADJUNCT, and therefore that the argument structure for the LOCATIVE ATP contains no SUBJECT: ngka < (OBLtheta) >

The merged reading on the small rock is obtained in essentially the same way as the merged reading of a nominal with an AGR case-suffix. Both pirli-ngka and wita-ngka are assigned the function ADJUNCT. But one of these adjuncts (say, wita-ngka) is NOT an ADJUNCT of the verb. Rather, it attributes a property to an argument internal to the other ADJUNCT, the OBLIQUE\( \theta \) of the argument-taking predicate of that ADJUNCT.

Free assignment of grammatical functions allows the assignment of the ADJUNCT function to \( \bar{N} \). Free morphological assignment of the function OBLIQUE\( \theta \) ADJUNCT allows an \( N^I \) to be an OBLIQUE\( \theta \) ADJUNCT. Since any case-suffix can act as an agreement marker, the \( \bar{N} \) can dominate exhaustively a nominal which is labelled only with information about an OBLIQUE\( \theta \) ADJUNCT.
A abbreviated annotated tree for (61) follows:

(63)

An f-structure corresponding to this c-structure which is constructed according to the normal algorithm for constructing functional structures will be incoherent, as can be seen by looking at (64).
The structure is incoherent because there is an ADJUNCT containing an OBLIQUE \( \theta \) ADJUNCT which has nothing to modify. For a sentence containing the annotated tree just given to have a coherent f-structure, there must be an available OBLIQUE \( \theta \) in the f-structure for the OBLIQUE \( \theta \) ADJUNCT to modify. Suppose the sentence has an OBLIQUE \( \theta \). The OBLIQUE \( \theta \) ADJUNCT cannot be predicated of an OBLIQUE \( \theta \) of the sentence, because the OBLIQUE \( \theta \) ADJUNCT is contained within an ADJUNCT. The OBLIQUE \( \theta \) ADJUNCT can only be predicated of an OBLIQUE \( \theta \) of that ADJUNCT. But that ADJUNCT has no OBLIQUE \( \theta \). However, in the set of ADJUNCTS in (64), there is another ADJUNCT present, with an OBLIQUE \( \theta \), namely \( \text{pirli-} \text{ngka} \). The OBLIQUE \( \theta \) and the OBLIQUE \( \theta \) ADJUNCT have the same case, LOCATIVE, and so the Agreement Convention is not violated.

We need therefore to be able to construct an f-structure like the one given in (65), which combines the two ADJUNCTS into a single ADJUNCT.
This f-structure is not derived by the normal algorithm for creating f-structures given in Kaplan and Bresnan (1980). However, it is a valid f-structure corresponding to the c-structure given. I will assume that the algorithm can be modified to accommodate the derivation of this f-structure.

Essentially, I am claiming that, given two ADJUNCT f-structures within the set of f-structures that provide a value for the ADJUNCT function, those two ADJUNCTS can be combined to form a single f-structure. They must be so combined, if the f-structure would otherwise violate the coherence condition.

Two ADJUNCTS can combine only if one of them has no predicate – otherwise consistency is violated. In the c-structure given in (63), only one of the ADJUNCTS immediately dominates a predicate – namely pirli-ngka, which has a LOCATIVE predicate subcategorizing an OBLIQUE\textsubscript{theta}. Wita-ngka dominates an ADJUNCT predicated of an OBLIQUE\textsubscript{theta}. In this example, since wita-ngka is generated inside the f-structure of the OBLIQUE\textsubscript{theta}, it must have the merged reading. But wita-ngka can also have an unmerged reading. The unmerged reading is also derived when pirli-ngka and wita-ngka are assigned the function ADJUNCT.
Pirli-ngka has pirli as an OBLIQUEtneta. For wita to receive the unmerged interpretation as an attribute of pirli-ngka (on a rock, a small one) it must appear outside the f-structure of the OBLIQUEtneta. An annotated c-structure tree is given in (66).

\[(66)\]

\[
\begin{array}{c}
\text{ADJUNCT} \\
\text{N} \\
\downarrow \\
\text{\textquotedblright} = \text{\textquotedblleft} \\
\text{N} \\
\text{\textquotedblright (morphology)} \\
\downarrow \in (\uparrow \text{ADJUNCTS}) \\
\downarrow \text{CASE = LOCATIVE} \\
N \rightarrow \\
\uparrow \text{PRED} = 'wita' \langle \text{SUBJ} \rangle \\
\uparrow \text{SUBJ PRED} = 'PRO' \\
\mid \\
wita \\
\mid \\
\text{ngka}
\end{array}
\]

In effect this allows for the generation of an ADJUNCT within an ADJUNCT. The internal ADJUNCT has LOCATIVE case. The Case-marker on the internal ADJUNCT is not the predicate for the whole; the nominal is. The nominal has a PRO SUBJECT. In (67), I give a simplified annotated c-structure for the unmerged interpretation of (61), to show both the ADJUNCT pirli-ngka, and the ADJUNCT's ADJUNCT wita-ngka.
Because the function ADJUNCT is evaluated by a set of f-structures, all the instances of ADJUNCTs are generated within a single large f-structure labelled ADJUNCT.

Two ADJUNCTs are given in the set of f-structures. Both are complete and coherent. The PRO SUBJECT of ADJUNCT-2 can be anaphorically controlled by some argument with LOCATIVE case. The OBLIQUE$\theta$ argument of ADJUNCT-1 is such an argument. Therefore ADJUNCT-2 can be interpreted as an attribute of this argument. Since it is
generated outside the f-structure of the OBLIQUE\textsubscript{\theta} of ADJUNCT-1, it must be given an unmerged interpretation.

4.3.2.1 ATP nominals as merged attributes.

One loose end needs to be tied up. In 4.2.2. I noted that SCNs could not in general appear in the same constituent as the argument they modify, unlike DCNs. So they cannot have a merged interpretation from being in the same constituent as the argument they modify. The question then is, can they have a merged interpretation when they appear as non-adjacent modifiers of a nominal? Unfortunately, the evidence is unclear. It seems likely that LOCATIVE ATP nominals can have the merged interpretation, as (69) through (71) show. But then, the LOCATIVE CAN behave like a DCN in appearing in the same constituent as the nominal it modifies. No evidence has been found to determine whether non-LOCATIVE semantic case-suffixes, such as ALLATIVE and ELATIVE, can have a merged interpretation.

(69)  
Mirinya ka-rnalu mawu-ngka kankarlni + ji  
pubis-ABS + EMPH PRES-1plex bladder-LOC-ABS above + EUPH  
garri-rni.  
tell-NPST  
The pubis is what we call the part above the bladder. [miri]

Here mawu-ngka kankarlni + ji is predicated restrictively of a null pronominal, the OBJECT of ngarirni.

(70)  
Muju + nya ka-rnalu yangka + ju kuna-ngka kutu  
tailbone-ABS + EMPH PRES-1plex the-ABS anus-LOC-ABS close-ABS  
garri-rni.  
tell-NPST  
Tailbone is what we call that which is near the anus. [muju]  

15. A restrictive interpretation for certain argument-taking predicates can be obtained by suffixing the suffix pirdinypa, as I illustrated in 2.4.
Here, *kuna-ngka kutu* is predicated restrictively of the demonstrative *yangka + ju* which acts as the OBJECT of the verb *ngarrirni*.

(71) Kula-lpa-lu-jana yirdi-ma-ntarla wirriya-wirriya yuwwurku-rla
    not-PAST-3pl-3pl name-CAUS-IRR boy-boy-ABS bush-LOC-ABS
    karnta-karnta-rlu.
    woman-woman-ERG.
Women cannot say the names of the boys in the bush (for initiation). [mamiji].

It seems likely that even this use of LOCATIVE as a *merged* attribute is highly restricted. I return to the discussion of the interpretation of semantic case in Chapter 6.

4.4 Summary

In this chapter, I have outlined a way of expressing the fact that in Warlpiri non-adjacent attributes may have the same type of semantic interpretation as attributes within the same *N* as the argument they modify. To do this, I first showed how to represent the assignment of functions within *N*, and argued that this is best captured by extending the morphological assignment discussed in Chapter 3. Attributes occurring within the same *N* as the argument they modify will automatically be placed within the f-structure of that argument. I proposed that this position could form the basis for distinguishing between the *merged* interpretation, (which attributes within the same *N* as their head must have), and the *unmerged* interpretation (which non-adjacent attributes may have). I then showed how to represent non-adjacent attributes (whether attributing properties to *ATP* nominals or to *AGR* nominals), so as to allow them to have either the *merged* or the *unmerged* interpretation.

In the course of this discussion, I showed how case-concord within an *N* falls out of the default rules for assigning ABSOLUTIVE case. I also speculated that certain properties of derivational case-suffixes stemmed from a limited amount of recursion in the *N* rule.
From the discussion, it is clear that most properties of the representation of discontinuous expressions follow straightforwardly from other properties which I claim Warlpiri has. These include:

[1] The free assignment of grammatical functions to daughters of S, which permits any N to have any function F, including the ADJUNCT function.

[2] The ability for any nominal to select a SUBJECT, and introduce a null pronominal to express that SUBJECT. This permits any nominal to act as the ATP for an ADJUNCT.

[3] Morphological assignment of functions, which allows a word to carry information about several functions.

What distinguishes Warlpiri from free word-order languages which do not allow discontinuous nominal expressions is that Warlpiri allows non-adjacent attributes to be generated inside the f-structure of the argument which they modify. In a language such as Warlpiri, a node labelled SUBJECT need not dominate a node labelled with the SUBJECT’s PRED feature. In a language such as Malayalam, it appears that a node labelled with a function F must dominate a node labelled with F’s PRED.
5. Nominal predicates

5.1 Introduction

Secondary predication is a widespread process in Warlpiri grammar, with few syntactic and semantic constraints. In this chapter I will illustrate the freedom of secondary predication in Warlpiri in contrast to English. I will suggest that a number of properties of Warlpiri grammar interact to create this freedom. These include: the free introduction of null pronominals; the use of case rather than phrase structure position to determine what may be a secondary predicate, or what may be the controller of a secondary predicate; the fact that Warlpiri only has two major categories, N and V; and finally, different strategies in word-formation, and different lexical rules.

I will start by briefly reviewing the account of secondary predication given so far. In the preceding two chapters, I have shown two types of secondary predicate: nominal predication, and case-suffix predication. When the nominal itself acts as the functional head of a secondary predicate, it attributes some quality or property to an argument of the sentence, as in (1), in which nyurnuJarra ascribes the state of being dead to the SUBJECT of the sentence.

(1) Jarnku-wanti-ja -pala nyurnu-jarra + ju.
    each-fall-PAST -2du dead-DU-ABS + EUPH
    They each fell down dead. [ML: Num. 45]

Following Hale (PWT) and Nash (1980), I claimed that nominal predicates could have either a merged or an unmerged interpretation.

In the second type of predication, a suffix acts as the argument-taking predicate, or functional head, of a secondary predicate. The nominal to which the suffix is attached acts as the OBLIQUE\textsubscript{theta} of the argument-taking predicate represented by the case-suffix. So, in (2), wini ‘burnt-off ground’ is the OBLIQUE\textsubscript{theta} of the semantic case-suffix ngka.
(2) Ngula kala-lu wini-ngka-rlu kuyu + ju
that USIT-3pl burnt.ground-LOC-ERG meat-ABS + EUPH
kuwaly-paka-rnu.
bash-PAST
After that they'd hunt the game on the burnt-off ground. [NM:12]

Case-concord determines which argument an ADJUNCT is predicated of. In (2), the fact that \textit{wini-ngka} has ERGATIVE case indicates that the controller of the ADJUNCT must also have ERGATIVE case. Similarly, in (1), \textit{nyurnu-jarra} can be assumed to have ABSOLUTIVE case, agreeing with the understood SUBJECT of the sentence.

The representation of nominal-headed predication follows from the account of nominal-headed \textit{matrix} clauses which I gave in 2.4. In order to act as matrix predicates, nominals must optionally select SUBJECTS (depending of course on the meaning of the particular nominal). Since nominal-headed sentences can have non-overt SUBJECTS, (e.g. \textit{Ngarka} 'He is a man'), nominals selecting a SUBJECT must be able to introduce a null pronominal to fill that SUBJECT. This is exactly what the rule of PRO-introduction given in 2.2.8 allows.

(3) Rule of PRO-introduction

If an argument-taking predicate selects a grammatical function \(G\), it may optionally introduce a null pronominal to represent that function, by introducing a PRED feature equation: \(\uparrow G \text{ PRED} \) = ‘PRO’.

Therefore, any nominal can introduce the equation \(\uparrow \text{SUBJ PRED} \) = ‘PRO’.

Furthermore, the general rule of function assignment, \textit{Assign grammatical functions freely to all daughters of \textit{S}}, allows any nominal to be assigned any function. If a nominal selects a SUBJECT, and introduces a null pronominal for that SUBJECT, its SUBJECT can be anaphorically controlled by some argument of the sentence. Assigning the function ADJUNCT to a nominal which selects a SUBJECT automatically creates \textit{unmerged} ADJUNCTS. Assigning other functions, (including the function OBLIQUE\(\theta\) ADJ) to nominals selecting SUBJECTs optionally creates \textit{merged} ADJUNCTS, depending on the morphological assignment of functions to the nominal.
ATP case-suffixes, like any argument-taking predicate, can optionally introduce null pronominals for grammatical functions which they select. If the ATP case-suffix introduces a null-pronominal SUBJECT (by means of the equation (↑SUBJ PRED) = ‘PRO’), then the ATP case-suffix can be anaphorically controlled by some argument of the sentence, since, like the nominal predicates, ATP case-suffixes can have the ADJUNCT function.

To express the fact that an ADJUNCT must agree in case with its controller, I assumed a general convention on the well-formedness of f-structures, ensuring case-agreement.

These principles for the representation of secondary predication in Warlpiri predict that it should be relatively free of syntactic constraints, that is, that any nominal anywhere in a sentence should be capable of acting as a predicate, provided that the meaning of the nominal is appropriate. Position is irrelevant to determining what may be a secondary predicate, and what its controller may be.

In this chapter, I will try to show that this prediction is correct. However, I want also to claim that two other factors contribute to the lack of syntactic, and semantic, constraints on secondary predicates in Warlpiri. One factor is categorial: there are only two categories, N and V. Hence, the apparent categorial restrictions on secondary predicates visible in English do not manifest themselves in Warlpiri. The other factor concerns lexical entries. In English, secondary predicates are often expressed as XCOMPs, which form part of the lexical entry of a verb. Since they are part of the lexical entry, the verb can place semantic and syntactic restrictions on the XCOMP. Warlpiri, however, makes much less use of the function XCOMP. Secondary predicates are either realized as ADJUNCTs, or are incorporated morphologically into verbs as preverbs; i.e. verbs and secondary predicates form complex verbs.

Since secondary predication is an area which has received comparatively little attention within the literature on generative syntax,1 I will outline some important syntactic

---

1. See Chapter 1 Footnote 29 for some references.
and semantic constraints on secondary predicates in English. Only by comparison can one really appreciate the difference between Warlpiri and English.

The chapter is organized as follows. In 5.2., I outline the use of phrase structure position in English in determining certain properties of secondary predicates, and compare it to Warlpiri. I also discuss classification of secondary predicates in terms of use and meaning. In 5.3, I review apparent categorial restrictions on secondary predicates in English, which I claimed in Chapter 1 can be attributed to the semantic interpretation of categories, and show that, although Warlpiri does not have the categorial distinctions, one of the semantic restriction seems to hold. In 5.4, I discuss the different strategies in English and Warlpiri for expressing resultative and depictive attributes, including the role of the lexicon.

5.2 Phrase structure position

Phrase structure position is important in three respects in English. First, what function a secondary predicate can have, including XCOMPs and ADJUNCTS, is determined by phrase structure position. Second, position determines in part the semantic interpretation of secondary predicates acting as ADJUNCTs. Third, the controller of an ADJUNCT is determined primarily by position.

5.2.1 Phrase structure position and XCOMPs in English

The XCOMP function is assigned on the basis of phrase structure position. The position immediately following the OBJECT (or OBJECT 2 if there is one) is assigned the XCOMP function, as I mentioned in 1.3.1.2.

2. A consequence of the association of a position with a function is that elements directly following the OBJECT, such as intransitive prepositions, tend to be interpreted as XCOMPs, even though it is often unclear what the state predicated of the OBJECT actually is. In the sentence *He broke the engagement off*, there is a vague sense that the engagement is somehow off. In Warlpiri, by contrast, there is no position which gets routinely associated with predication.
This is exemplified in: *The children kept the dog amused*, where *amused* is an XCOMP predicated of the OBJECT *the dog*.

Since XCOMPs are associated with only one phrase structure position, neither their semantic interpretation nor their controller can be determined by phrase structure position. The interpretation is determined by the verb. For instance, in (4) a. the XCOMP *to be weak-willed* represents, as the thing known, the present state of an object (*the King*), while in (4) b, the XCOMP represents as the object of desire, the future state of an object (*the King*).

(4)  
   a. Strafford knew the King *to be weak-willed*.  
   b. Parliament wanted the King *to be weak-willed*.

The difference in interpretation of the XCOMP depends on the verb. Similarly, the controller of the XCOMP is determined by the verb. Thus, the verbs *promise* and *persuade* have the same c-structure representation; in both, the predicate acting as the XCOMP immediately follows the nominal acting as the OBJECT. But the lexical entry for *promise* states that the controller of the XCOMP is the SUBJECT, whereas lexical entry for *persuade* states that the controller of the XCOMP is the OBJECT.

(5)  
   a. Parliament persuaded the King *to execute Strafford*.  
   b. The King promised Parliament *to execute Strafford*.

*Warlpiri* has very few XCOMPs indeed, and position appears to be irrelevant to determining whether a secondary predicate is an XCOMP. I will return to the discussion of XCOMPs in 5.4.
5.2.2 Phrase structure position and ADJUNCTs

ADJUNCTs in English have several uses, and represent a number of different types of semantic relation, as (6) illustrates.

(6) That man, in the corner over there, is one of my closest friends.

(7) In such a run-down city, you can hardly expect her not to plan for the revolution.

(8) a. He was shot on a hill called Babylon.
    b. Solomon Grundy was born on Monday.

In each of these sentences the PP has the same type of semantic relation, namely location. However, the use is different in each example. In (6), the PP is used to identify a particular person. In (7), the PP gives the reason for an action. In (8) the PP is more transparent; it simply sets the location of the event in time or space.

I will concentrate here on ADJUNCTs which are predicated of arguments, ignoring uses such as those in (8), in which the ADJUNCT is predicated entirely of the event. The two uses that I will be most concerned with are appositional (as in (6)) and circumstantial uses (as in (7)).3 The semantic relations I will be most concerned with are equative relations, in which one element is equated with another, and attributive relations, in which a property is attributed to an element. However, in 5.2.3.3.1 I will briefly discuss certain other semantic relations which play a more important role in Warlpiri secondary predication than in English secondary predication.4

3. The term circumstantial is due to Halliday, 1967.
4. As far as I can tell, ADJUNCTs seem only to involve semantic relationships which demand some degree of identity (including class membership) between the two related items. A major type of semantic relationship mentioned in Lyons (1977) semantic opposition [antonymy (gradable opposition), converseness (non-gradable e.g. husband/wife), complementarity (non-gradable e.g. male/female), privative (absence/presence of property), equipollent (positive properties: male/female)] is apparently not used for ADJUNCTS.
Appositionals include both secondary predicates which identify referents (i.e. equate a referent with some known element), and secondary predicates which attribute properties to arguments. I call the former identifying apposition and the latter attributive apposition. They are illustrated in (9) and (10).

(9) We are sitting at a table with Jerome Zipkin, the man-about-town. The New Yorker 11/29/82

(10) (...) I had to depend on my own creative intelligence, modest though I am sure it was. The New Yorker 11/29/82

In (9) a secondary predicate identifies Jerome Zipkin as some known man-about-town, while in (10), a secondary predicate attributes a particular property to the speaker's intelligence.

Circumstantials are mostly used with attributive relations; they ascribe a property to an argument of the sentence, but at the same time qualify the proposition expressed by the sentence.⁵ They provide the time (11), reason (12), or condition (13), etc for the proposition.

---

5. Appositionals can also be used to provide new information which is indirectly relevant to the proposition expressed in the sentence. However, the relevance to the proposition is less explicit than with circumstantials. In i., the appositional something secondary in his eyes does not provide a reason, condition, time etc for the proposition. Instead, it is used to explain the use of the word contrast. The writer is contrasting the loss of the spirit of Zionism, which was primary, with the survival of the institution, which was secondary.

i. By contrast, the institutional framework of Zionism, something secondary in his eyes, survived. The Economist 20/3/82

Similarly, in ii, giving the number of the Soviet casualties allows for an evaluation of the statement that they are not high.

ii. Soviet casualties, at around 3,000 killed, have not been high. The Economist 26/12/81
(11) You shouldn't have taught John the alphabet so young.
   (John was young) time

(12) John didn't arrive, drunk as usual. (He didn't arrive at all) reason

(13) People are so strange. I couldn't sell the books *cheap*; they wouldn't buy them.
But when I jacked up the price, they bought them all up. conditional

However, the *reason* and *condition* readings\(^6\) are sufficiently peripheral not to be usable
as replies to questions about time, reason or manner. For instance, in the sentence *Fond
of Russians, Jack went to Moscow, Fond of Russians* gives an implicit reason for his
journey. But it cannot act as a answer to a question about his reason for going.

(14) a. Why did Jack go to Moscow?
   b. *Fond of Russians, he went there.
   c. *He went to Moscow *fond of Russians*.

(These examples are due to J.R. Ross).

Syntactically, *appositionals* can be predicated of any argument, whether an
argument of a verb, or an argument of a preposition.\(^7\) (15) shows an attributive
appositional *unburdened by abstract thought* predicated of the object of the preposition
by. (16) shows two identifying appositionals, Mr Johannes Virolainen, and the speaker of
the parliament predicated of the object of the preposition to.

---

6. For some reason the *time* circumstantial are more readily questioned.
   When did you teach John the alphabet?
   ?I taught him the alphabet young.

7. This distinguishes them from *depictive attributes*, which, as Williams (1980) shows,
cannot in general be predicated of the objects of prepositions:
   *I presented him with the possum dead.*
(15) (..) the dreams are not nearly so unsettling or effective as the dreams devised by Lewis Carroll, unburdened by abstract thought, for Alice.

(16) Mr Ahti Karjalainen, the man the Russians would most like to see as President, lost by a humiliating two-to-one vote to his old rival, Mr Johannes Virolainen, the speaker of the parliament. The Economist 5/12/81

Appositionals follow the argument they are predicated of (with the possible exception of the SUBJECT).

Further evidence that apposition is associated with the structural position in English comes from the fact that appositionals cannot be predicated of null pronominals. Consider the following sentences:

8. Usually appositionals immediately follow the nominal they are predicated of, but occasionally, when sentence-final, they can be predicated of arguments that do not immediately precede them.

Yesterday, Lucy kissed John for the first time, the man she had been in love with for years.

Yesterday, Lucy kissed John, the man she had been in love with for years, for the first time.

They told Tom Dooley to leave, a man who had worked for the company all his life.

They told Tom Dooley, a man who had worked for the company all his life, to leave.

9. J.R. Ross provided the following example which shows this.

Friend of many presidents, Billy Graham likes jelly beans.

*Why don’t we invite friend of many presidents, Billy Graham?

They decided to invite Billy Graham, friend of many presidents.

The following sentence is unacceptable because the appositional predicated of the OBJECT, the chairman of the company, is not adjacent to it.

*They gave the chairman of the company the bad news, John Brown.

They gave the chairman of the company, John Brown, the bad news.

Similarly, an appositional predicated of the OBJECT cannot appear initially.

*John Brown, she married your lover.

She married your lover, John Brown.

Nor can an appositional predicated of the SUBJECT intervene between the OBJECT and the OBJECT 2 in a ditransitive.

*Mary gave him, your wife, the bad news.

Mary, your wife, gave him the bad news.
(17) a. I signalled to the men, the ones in white hats, [to leave].
    b. I signalled [to leave].
    (arbitrary PRO as SUBJECT of to leave)

(18) a. *I signalled [the ones in white hats to leave.]  
    (only marginally acceptable with referential reading).
    b. *I signalled [to leave, the ones in white hats.]
    c. *I signalled [to, the ones in white hats, leave.]

(17) shows that the verb signal can have an overt argument controlling the infinitive to leave, or an understood null pronoun with arbitrary reference acting as the SUBJECT of leave. In the former case, the overt argument can have an appositional modifier, the ones in white hats. (18) shows that the null pronoun with arbitrary reference cannot have an appositional modifier. (19) shows that whereas the controller of translate can have an appositional modifier, the understood null pronoun SUBJECT of translate cannot have such an appositional modifier.

(19) a. His brother, a Presbyterian elder, wants [to translate Job].
    b. *His brother wants [to translate Job, a Presbyterian elder].
    c. *His brother wants, [a Presbyterian elder, to translate Job.]
    d. *His brother wants [to, a Presbyterian elder, translate Job].

Whether the null pronoun has an arbitrary referent as in (18), or is SUBJECT-controlled, as in (19), it cannot control an appositional. Recall that in Chapter 1 I mentioned Principle 6, the proposed Null Element Constraint, which effectively prevents there from being null elements (such as empty NPs) in constituent-structure. If, as seems likely, appositionals in English have c-structure positions dependent on some other c-structure position (the position of the nominal they modify), then it is not surprising that null pronouns, which have no c-structure position, cannot control appositionals.10

10. This remark is only intended to give a direction in which one might find a solution, because exactly how appositionals are represented in c-structure is an open question for most current linguistic theories.
Circumstantial, in contrast to appositionals, are usually predicated of the SUBJECT, as in the sentence John didn’t arrive, drunk as usual. Sometimes circumstantial can be predicated of other arguments, as in the sentence You shouldn’t have taught John the alphabet so young.

Unlike appositionals, circumstantial mainly appear initially, although they can appear finally with a more restricted range of interpretations, as the following examples illustrate.

(20) a. Ever willing to see the other point of view, John was never involved in protracted arguments.  
    b. *John was never involved in protracted arguments, ever willing to see the other point of view.

(21) a. Young, John could never stand honey.  
    b. ??John could never stand honey young.  
    (better: John could never stand honey when young.)

(22) a. A broken man, John died in a Dili gutter.  
    b. John died in a Dili gutter, a broken man.

(23) a. Cheap, the books might sell.  
    b. The books might sell, cheap.

These examples show that the CONDITION and STATE readings are possible finally, but
that REASON and TIME readings are not. I have no explanation for these differences, but the position of circumstantial ADJUNCTs is clearly important in determining their interpretation.

Position is also important for determining what argument a circumstantial can be predicated of. Sentence-initial ADJUNCTs are almost always predicated of the

---

11. As these examples show, the importance of word-order position in determining the semantic interpretation of English adjectives in all positions cannot be over-estimated. For instance, Dixon (1982b) and Teyssier (1968) observe that the order of prenominal adjectives is determined by their semantic type. Teyssier writes:

"...adjectives denoting essential qualities intrinsically part and parcel of the object described tend to stand close to the noun whereas those denoting accidental and, so to speak, 'existential' qualities are placed further from the noun, so that we normally say: a naughty little girl, a beautiful French girl, a wise old man, a rich old maid, a charming young lady." p.232-3

Another important semantic classification reflected in adjective position is the distinction observed by Bolinger (1967) between referent-modification: (The boy is eager) and reference-modification: (an eager student - 'someone who is eager qua student') (Bolinger: 15). The latter rarely occur as the complement to a copula,

That is the precise reason I refused. *The reason is precise.
He is the lawful heir. *The heir is lawful.

The ability of an adjective or participle to appear post-nominally also depends on its semantic type. Bolinger (1967), Teyssier (1968) and James (1979) observe that single adjectives or participles in post-nominal position tend to denote a temporary occasion, or action, or a quality which can suddenly be lost or acquired, as opposed to adjectives denoting characteristic qualities.

"...the only river navigable is unambiguously occasion, the only navigable river unambiguously characteristic. Similarly with Who were the guilty people? which characterizes and classifies, vs. Who were the people guilty which relates the guilt to an occasion;" Bolinger (1967) p.4.
SUBJECT, as the unacceptability of (25) shows.

(24) a. Pregnant, she refused Bill.

   b. ??Pregnant, Bill refused her.

(24)b. is unacceptable because the preferred controller of pregnant is the SUBJECT, and the interpretation is semantically incongruous. Compare (24) with the following sentences in which the ADJUNCT is sentence-final, and can be predicated of either Lucy or the gynaecologist.

12. Bresnan (1982a) argues that sentence-initial ADJUNCTS of certain categories in English, like XCOMPs, are open functions, XADJUNCTs. The relation between the SUBJECT of the XADJUNCT, and the particular function the XADJUNCT is predicated of, is considered to be functional control. The control equation expressing this functional control is attached to a phrase structure position, the adjective phrase preceding the SUBJECT.

   Williams (1980) argues that c-command is the relevant restriction – ADJUNCTS can only be predicated of nominals which c-command them. The only NP c-commanding a sentence-initial ADJUNCT is the SUBJECT, and so this provides the illusion of obligatory control. This account does not directly provide for circumstantial ADJUNCTS predicated of the OBJECT, because these circumstantial adjs, are, arguably, not in the VP. Under Williams' account, in a sentence such as the following, for the ADJUNCT exhausted etc to modify the OBJECT, it must be in the VP, despite the heavy intonation break separating it from the sentence.

   i. They showed Lucy into her room, exhausted and in need of a good night's sleep.
   In fact, the control of sentence-initial ADJUNCTS is more complex. With respect to sentence-initial adjuncts, in fact, although SUBJECT control is preferred, it is sometimes possible to get control by a non-SUBJECT. For instance, in ii. the participle is controlled by the possessor my.

   ii. But in such an event, knowing the boy as intimately as I do, my anxiety would be entirely for the snake. [P.G. Wodehouse. The Inimitable Jeeves.]

   Stump (1981) gives many examples of dangling participles, and others can be found in Visser (1970). In cases of control by a non-SUBJECT, both category and semantics are important. Participles and prepositional adjuncts are more likely to allow non-SUBJECT control than nominals and adjectives. The semantic constraints are not well understood.

   In ii. anxiety is not a possible SUBJECT for know. But in iii., car is also not a possible SUBJECT for know, and yet the sentence seems much worse.

   ii. ??Knowing the road as well as I did, my car never skidded once.

13. With heavy topicalization it is perhaps possible to have pregnant modify the OBJECT.
(25)  
a. The gynaecologist met Lucy, pregnant for the ninth time.

b. Lucy met the gynaecologist, pregnant for the ninth time.

To conclude, position is clearly important in English for determining which secondary predications may be ADJUNCTs, what the controller of an ADJUNCT may be, and what kind of ADJUNCT a secondary predicate may be. Let us now look at the situation in Warlpiri.

5.2.3 Position and ADJUNCTs in Warlpiri

In Warlpiri, there are no positional tests to determine which ADJUNCTs are used as appositionals, and which as circumstantials. It seems that any nominal ADJUNCT (allowing for semantics) can have either use. Furthermore, it seems that ADJUNCTS in Warlpiri can have a wider range of interpretations than English, although a number of these are mediated through the use of clitics. I will first look at straightforward appositional uses and circumstantial uses, which are based on semantic relationships not dissimilar to those used in English for secondary predication. Finally, I will briefly illustrate some of the more unusual interpretations of ADJUNCTS in Warlpiri, and the use of clitics.

5.2.3.1 Apposition in Warlpiri

An ADJUNCT can attribute a property to an argument, as in (26) in which a number of appositionals attribute straightness to the SUBJECT of ngurrju-ngunami. Or an ADJUNCT can identify a property, as in (27), in which an identifying property, Nujunntiri-tiri-wardingki-ki is in apposition to a coordinate NP.

crooked-PRIV-ABS straight-ABS always + STILL straight-ABS
'We straighten our spears to make them lie properly, with no bends, completely straight, straight.
(27) Nyampurra-rlu + ju ka-lu kardu-ma-ni jukurrpa yapa-ku
these-ERG + EUPH PRES-3pl make-NPST law-ABS Aboriginal-DAT
manu kardiya-ku Nujurntiritiri-wardingki-ki.
and European-DAT Northern Territory-inhabitant-DAT
These people make laws for the Aboriginals and the Europeans, for the people
living in the Northern Territory. [MKJ: 2]

ADJUNCTS used as appositionals can be predicated of any argument, just as in
English. (28) and (29) show apppositional modifiers predicated of the OBJECT. (In (29),
there are two appositionals.)

(28) Wirinkirri ka-lu yapa-ngku kiji-rni, kuja-ka-lu
spindle-ABS PRES-3pl person-ERG throw-NPST REL-PRES-3pl
purdurru luwa-rni, wirriji -- -- wirinkirri-rli.
human.hairstring-ABS shoot-NPST hairstring-ABS spindle-ERG
The people throw the spindle, when they spin human hair string, hairstring -- --
with the spindle. [luwarni]

(29) Nyurruwijyi kala-lu ngurrju-ma-nu nali yangka
olden.days USIT-3pl good-CAUS-PAST stone.knife-ABS the
kanti, junma pamarrpa yarltiri...
knife-ABS knife-ABS stone-ABS white-ABS...
Formerly they used to make a stone knife, that stone knife, a knife of white stone..
[nali]

ADJUNCTs used as appositionals are not only predicated of nominals with AGR
case-suffixes, as in the preceding examples. They can also be predicated of nominals
with ATP suffixes. In (30), the nominal ngulya is repeated with a qualifying modifier, and
this N stands in apposition to the LOCATIVE ngulya-ngka. (31) is another example of a
LOCATIVE used as an appositional. (32) and (33) show identifying appositionals
predicated of a DCN with PROP case. (34) shows an attributive appositional predicated of
a nominal with ERGATIVE case used as an instrumental.
(30) Walya-wana + mipa ka yuka, ngulya-ngka yangka ka 
ground-PERL + ONLY PRES enter-NPST burrow-LOC the PRES 
nyina, ngulya nyanungunyanungu-wangu-rla... 
sit-NPST, burrow his-PRIV-LOC 
It just goes into the ground. It stays in a hole in the ground, a hole that is not its 
own. [minyinjirri]

(31) Turaki witaardu-rla kapu-lu ya-ni, mirni-kanjayi-rla. 
truck-ABS small-LOC FUT-3pl go-NPST, this size-LOC 
They will be going on a small vehicle, one this size. [mirni-kanjayi]

(32) Nyampu ka-rna yirra-rni manngi-nya-nja-karra-rlu 
this PRES-1sg put-NPST think-see-INF-SSCOMP-ERG 
Jipirli-wana-kurlu, Jakamarra-kurlu. 
Jipirli-PERL-PROP Jakamarra-PROP 
Thinking about him, I am telling this (story) about the one (buried) at Jilpirli, 
Jakamarra. [MLJ]

(33) Ngula-jangka + ju ka-rijarra wilypi-ma-ni narnngu-kurlu-rlu 
that-SOURCE + EUPH PRES-1duex emerge-CAUS-NPST hook-PROP-ERG 
watiya wita-kurlu-rlu. 
tree-ABS small-PROP-ERG 
After that we take out the grub with a hook, with a little piece of wood. [narnngu]

(34) Pakipaki-rli. yangka wiri-ngki ka-lu jarnti-rni, 
adze.type-ERG the big-ERG PRES-3pl trim-NPST 
With the adze, the big one, they trim it, [pakipaki]

As (30), (31) and (33) show, an appositional does not have to be adjacent to the 
nominal it is predicated of. Similarly, in (35), jukurrpa intervenes between the DATIVE 
argument, and the nominal predicated of that argument.

(35) Nyampurra-rlu + ju ka-lu kardu-ma-ni yapa-ku manu 
these-ERG + EUPH PRES-3pl make-NPST Aboriginal-DAT and 
kardiya-ku jukurrpa Yajuraliya-wardingki-ki, 
European-DAT law-ABS Australia-inhabitant-DAT 
These people make laws for the Aboriginals and the Europeans, for the people 
living in Australia. [MKJ: 2]
In fact, appositionals do not even have to modify overt nominals; they can modify null pronominals. In (36), wiyarrpa-ku ‘poor thing’ is in apposition to an understood null pronominal Adjunct DATIVE ‘you’, which is registered in the AUX.

(36) Karija, yapa-kari-rii marda-ngku larra-katu-rnu
    I don’t know person-OTHER-ERG PROB-2sg split-tread-PAST
    wiyarrpa-ku.
    poor.thing-DAT
    I don’t know, somebody must have trampled and split it (spearthrower) on you, poor thing. [larra-katirni]

From these examples it is clear that an ADJUNCT does not have to be adjacent to a nominal in order to be predicated of it. Final position is a favoured position for appositionals, but it is not essential. This freedom to interpret an ADJUNCT in any position as an appositional predicated of an argument with the same case distinguishes Warlpiri from English.

5.2.3.2 Circumstantials in Warlpiri

As in English, ADJUNCTs can be used to give the reason or circumstances surrounding an event. In (37), the SUBJECT’s sickness is the cause of his vomiting. In (38), Japangardi is predicated of the non-overt SUBJECT, and is given as the reason for the use of the term ‘ngarrkapanji’. In (39) laninji ‘cowardly’ is predicated of the SUBJECT, and is given as the reason for the SUBJECT’s failure to ride a horse. In (40), the fact that the SUBJECT has not eaten meat for a long time is given as the reason for an action.

(37) Nyurrriu ka-npa yurlkulyu-pardi-mi.
    sick-ABS PRES-2sg vomit-rise-NPST
    Being sick you are vomiting. [yurlkulyu-pardimii]

(38) Japangardi-rii + nya ka-rna-jana ‘ngarrkapanji’-paji-rni.
    Japangardi-ERG + EMPH PRES-1sg-3pl ‘ngarrkapanji’-call-NPST
    I, being a Japangardi, call them ‘ngarrkapanji’ [pajiini.]

(39) Kula-lpa nantuwu-rla wirriya warrka-karla laninji
    NEG-PAST horse-LOC boy-ABS climb-IRR coward-ABS
    -- wanti-nja-kujaku.

   
The boy can’t get up on a horse because he’s scared – he might fall. [laninji]

Kuyu yi-ka-rna-ju paka-karla miyi-jangka-ru
meat ABS REAS-PRES-1sg-1sg hit-IRR food-SOURCE-ERG
liwirnpa-ru.
meat-starved-ERG
I should kill some game as I’m meat-starved from (so much) vegetable food. [liwirnpa]

(41) shows two ERGATIVE nominals, (including a nominal marked with the deri-ational
case-suffix warnu (ASSOCIATIVE)), being given as a reason:

(41) (...)ngula kajika-pala-nyanu ngarri-rni ‘lampanilyka’
that POT-du-refl call-NPST cointiate-ABS
– yarlpuuru-rangu-ru yangka kurdiji
age-mate-E.G.-ERG the circumcision.ceremony
jinta-warnu-ru + yijala.
one-ASSOC-ERG + ALSO
Then they will call each other “lampanilyka” – being agemates from the same
circumcision ceremony. [lampanilyka]

In (42) the ADJUNCT wankaru-ru + wiyi, which is predicaded of the SUBJECT, gives the
time when an action took place.

(42) Kirda-nyanu-kirda-nyanu-ru kala-lu-nganpa wankaru-ru + wiyi,
father-KIN-father-KIN-ERG USIT-3pl-1plex alive-ERG + THEN.
yujuku ngurrju-ma-nu tarnnga-ngku.
house-ABS good-CAUS-PAST forever-ERG
Our fathers when they were alive used always to make shelters for us. [Nash, 1980]

These examples also show that there is no fixed position in which an ADJUNCT is
interpreted as a circumstantial, (although the sentence-final position is quite common, as
(39), (40) and (41) show). In (38) the circumstantial is initial, and in (42) it follows the AUX.
Nor does position determine which argument the circumstantial can be predicaded of.
(43) and (44) show that a circumstantial can be predicaded of an OBJECT. In the first
clause of (43), the ADJUNCT wita is sentence-medial, and in the second clause, wita is
sentence-initial. In both clauses it is predicaded of the understood OBJECT.
(43) (. .) tumaji yi-npa wita ma-nu. Wita -npa too REAS-2sg small-ABS take-PAST. Small-ABS 2sg yampi-ya. leave-IMP You took her too young. Leave her as she’s young. [BWJ]

(44) Yampi-ya + ju yakayaka ka-npa-ju murrumurru jiti-rni. leave-IMP 1sg sore-ABS PRES-2sg-1sg sore-ABS irritate-NPST Don’t touch me as I am sore and you are hurting me. [jitiirni]

These examples, (and also (41) and (40)) show that the circumstantial can be predicated of a null pronominal, just as appositional modifiers in Warlpiri can be.

More than one circumstantial can occur in a sentence. (45) has two circumstantial ADJUNCTS, one predicated of the SUBJECT and the other of the OBJECT, both giving a reason for the action.

(45) Miyalu-miyalu-rlu kurdu nyanungunyangu paka-rnu kulupanu. stomach-stomach-ERG child-ABS her-ABS hit-PAST fighting-ABS She hit her child who was fighting because she was concerned about him. [miyalu]

(The stomach miyalu is frequently used in expressions involving emotions).

5.2.3.3 Other interpretations

I have shown above that Warlpiri uses the identifying and attributive semantic relations. To give an adequate account of possible interpretations of secondary predicates in Warlpiri is well beyond my knowledge of Warlpiri. Here, I will briefly illustrate two important factors in determining interpretation. The first consists of three semantic relations which relate nominals, and the second of clitics.

5.2.3.3.1 Semantic relations
The three semantic relations I refer to are hyperonymy (and its limit, synonymy), which covers the hierarchical grouping into classes, (thus a dog is a hyponym of animal), the part-whole relation, and the actual-potential relation.

The classification of certain kinds of nominals by their membership of a larger group is very important. For instance, for animals and birds, it is very common to include the word for animal (or meat), *kuyu*, as an ADJUNCT; for delicacies, the word for delicacy, *pama*, is often included, for seeds, the generic word for seed, *ngurlu*, is often included, etc. The ADJUNCT may be unmerged, as in (46) and (47), or merged as in (48).

(46) *Wampana* -lu-ngalpa *kuyu* luwa-ka!
wallow-ABS -pl-1plin meat-ABS shoot-IMP
Shoot us a wallaby! [luwarni]

(47) -- *pama* marda ka paka-rni *jurlarda*.
delicacy-ABS PROB PRES chop-NPST native.honey-ABS
- - : he is perhaps chopping out sugar-bag. [pakarni]

(48) *Kuyu* *nyanungu* *kumulyurrku*, luwa-rni ka-rnalu
meat the budgerigar-ABS shoot-NPST PRES-1plex
watiya-rlu (...) stick-ERG
Those budgerigars, we pelt them, with sticks ... [luwarni]

(49) *Yapa-ngku* ka-lu *kuyu* jilkaparnta nga-rni.
person-ERG PRES-3pl meat-ABS echidna-ABS eat-NPST
People eat echidnas for meat. [jilka-parnta]

The generic may even be used as a reason (i.e. as a circumstantial), as in (49). Echidnas generically are classified as *kuyu* 'meat', and this sentence stresses the function of their generic classification: they are meat, and so they are eaten as meat.

A second classification that is relevant is the part-whole relation. A proper treatment of this would require an extensive account of its interaction with the syntax, in particular with the use of the DATIVE for a possessor. I refer the reader to Hale (1981, and to appear) for details.
In English, to express the idea that an action affects a bodypart of a person, one can use the possessive.

(50) a. I pinched John’s arm to attract his attention.
   b. I pinched the elephant’s trunk to awaken it.
   c. I tapped the teapot’s spout to dislodge the tealeaves.

Or, with verbs of contact such as *hit*, one can use a special locative construction:

(51) a. I pinched John on the arm to attract his attention.
   b. ?I pinched the elephant on the trunk to awaken it.
   c. ?I tapped the teapot on the spout to dislodge the tealeaves.

(The degree of animacy of the object affects the acceptability of the locative construction.) I assume that in these constructions the *whole* acts as the OBJECT of the verb, and the *part* acts as an ADJUNCT predicated of the OBJECT, which takes the form of a locative construction.

In Warlpiri, a natural way of expressing similar meanings is to use the *part* as an ADJUNCT, predicated of the whole, and thus having the same case. In (52) and (53), the action of the verb affects a *part* of a being. Both the *part* and the *whole* have ABSOLUTIVE case. I assume that the *whole* fulfils the selectional requirements of the verbs *pajirni* ‘cut’ and *parljirni* ‘wash’ for an OBJECT, and that the *part* is an ADJUNCT predicated of the whole. The analysis resembles that of the locative construction in English.

(52) *Pulu* *ku* *wirriya* *ka-lu* *kurlurpa* *paji-rni* *jakumanu-rlu*
bullock male-ABS PRES-3pl testicle-ABS cut-NPST stockman-ERG
The stockmen cut off the bulls’ testicles. [pajirni]

(53) *Kapi-rna* *ngapa* *ma-ninj-i-ni* *yungu-rna* *parlji-rni*
FUT-1sg water-ABS get-INF-LAT-NPST REAS-1sg wash-NPST
*kurdu* *rdaka*.
child-ABS hand-ABS
I am going to fetch water in order to wash the child’s hands. [parljirni]
In (54), a copula verb of stance and its complement *narntirnpari* ‘curled’ are predicated of the SUBJECT janganpa and its tail. I assume the tail has the function ADJUNCT. (55) is a similar example.

(54) Janganpa ka nyina ngirnti narntirnpari.
The possum has a curled tail. [narntirnpari]

(55) Mulunyku-karri ka wanarri-jarra wuurnpa + Iku.
He is standing with his legs together. [mulunyku]

In (56) and (57) both the part and the whole are inanimate, and have ATP semantic case-suffixes.

‘Mirrirdi’ is what we call the water which lies in the holes in trees. [mirrirdi]

(57) Ngapa ka winji-rni ngami-kirra miyalu-kurra.
She pours the water into the hollow part of the wooden water-carrier. [miyalu]

Interestingly, if the whole is animate, and the affected part does not bear a grammatical case, but rather a semantic case, the whole often receives DATIVE case. In (58), an overt DATIVE nominal is present. In (59), it is expressed by a DATIVE clitic *rla*, and in (60) by a reflexive clitic.

back-LOC
The child crouches on its mother’s back. [parntarrimi]

eye-ALL DAT throw.dirt-PAST emu-ERG Enmu threw dirt into his eyes. [milpa-parnta]
Youth girls used to put the red ants onto their own breasts, onto the nipples [mirnpirri]

This construction is difficult to analyse, because here, the part is fulfilling the selectional requirements of the verb, and the whole has a different case. This contrasts with the previous examples, in which the whole arguably fulfils the selectional requirements of the verb, and the part is an ADJUNCT to the whole. Therefore an alternative analysis is required for the DATIVE possessor construction. I have no suggestions for this.

The second semantic relation to be discussed is the actual-potential distinction. In Warlpiri, as in many Australian languages, the relation between some thing and what may potentially be made of that thing is an important classification of things. The observation that Australian Aboriginal languages make significant use of the actual-potential relation is well-known. Perhaps the first mention occurs in O'Grady (1961). He gives the following pairs:

<table>
<thead>
<tr>
<th>actual</th>
<th>potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>animal/bird</td>
<td>meat</td>
</tr>
<tr>
<td>firewood</td>
<td>fire</td>
</tr>
<tr>
<td>lie</td>
<td>sleep</td>
</tr>
<tr>
<td>hit-with-fist</td>
<td>kill</td>
</tr>
<tr>
<td>hit-with-missile</td>
<td>kill</td>
</tr>
<tr>
<td>scratch</td>
<td>dig/create-hole</td>
</tr>
</tbody>
</table>

Evans (1982) also comments on this semantic tradition. Other instances include:

<table>
<thead>
<tr>
<th>leaf</th>
<th>shade</th>
</tr>
</thead>
<tbody>
<tr>
<td>tree</td>
<td>spear</td>
</tr>
<tr>
<td>cloud</td>
<td>water/rain</td>
</tr>
<tr>
<td>sick</td>
<td>dead</td>
</tr>
</tbody>
</table>

Bodyparts often have several meanings which appear to be related in a somewhat similar fashion:
The fact that several synonyms (e.g. mawu, ngupala and pajaji) have the same dual function shows that the relationship is a real conceptual relationship.

Certain types of trees, for instance, are potentially spear, shields, water-carriers etc. In (61) manja wood is potentially a shield, and so ‘shield’ mirta is predicated of the OBJECT, manja. (62) is a similar example.

(61) Ngaju, manja ka-rna paka-rni mirta + ju.
I-ABS, mulga-ABS PRES-1sg chop-NPST shield-ABS + EUPH
As for me, I am going to cut down a mulga tree for a shield. [mirta]

(62) Kajika-rnal u kurlarda pajj-rni-rra wiinpiri.
POT-1plex spear-ABS cut-NPST-THERE spearwood-ABS
We can go and cut some spear-wood for spears. [pajiri]

5.2.3.3.2 Clitics

The type of semantic relation denoted by an ADJUNCT may be further specified through the use of clitics, as I mentioned in 2.4.1. Warlpiri has a large number of such clitics. I will briefly illustrate three types, the clitic rlangu E.G. which exemplifies, piya LIKE which creates similes (see 3.6.), and the temporal relation clitics lku THEN and wiyi BEFORE.
In the previous section I have shown how a nominal denoting the superordinate class to which a second nominal belongs can be used as an ADJUNCT of that second nominal. What if we want to represent the reverse relationship, that is, use a hyponym of a class as an ADJUNCT of a nominal denoting that class? One way of doing this is with the clitic *rlangu* ‘for example’ which is illustrated in (63). It indicates that the element to which it attaches (which need not be a nominal; it can be a verb) is an example of something.

(63) Malpa milpa-kurlu ka-lu waraly-waraly-karri-mi watiya-rla
    pod-ABS seed-PROP-ABS PRES-3pl hang-stand-NPST tree-LOC
    piriyi-rlangu-rla.
    acacia-E.G.-LOC
  Pods full of seeds hang down all over trees like the Acacia cuthbertsonii. [malpa]

Suppose that one nominal bears a relation to another nominal which is NOT a relation of hyponymy, synonymy, part-whole, or actual-potential. Occasionally, a plain nominal can act as an ADJUNCT in such circumstances. In (64) *mininirli* is predicated of *jujungku*, meaning in the shape of, under the form of:

(64) Minini-rla juju-ngku kalaka-rla yuka-mi yapa-kurra
    mouse-ERG devil-ERG ADMON-DAT enter-NPST person-ALL
    miyalu-kurra.
    stomach-ALL
  Under the form of a mouse an evil spirit can enter a person’s stomach. [minini]

(Note that in (64) it is only context which tells us that the evil spirit is in the form of a mouse, rather than that the mouse is in the form of an evil spirit.)

Normally, however, when a nominal has no semantic relation to the nominal it is predicated of, and a comparison of form or actual function is being made, the nominal formative *piya* is used. Thus in (65) the ‘whipsnake’ is neither generically nor potentially a spear; it just moves like a spear.
(65) (...)ngulaju ka *kurlarda-piya* rurruny-nguna.
that + EUPH PRES spear-LIKE-ABS speed.by-NPST
(The whipsnake) speeds like a spear. [parnkami]

In (66) the mountain devil lizard is, by classification, neither potentially nor generically a comb, and so *piya* is used.

(66) Nyurruwiyi, kala-lu-nyanu yapa-ngku marnilpa
old days. REM.PAST-3pl-refl aboriginal-ERG hair-ABS
rarraly-ma-nu mirrirri-rl + ji, ngulaju:
smooth-CAUS-PAST mountain-devil-ERG + EUPH that
kumu-piya-rlu-ju.
comb-LIKE-ERG + EUPH

In the olden days, Aboriginal people used to straighten out their hair with a mountain devil - like a comb. [mirrirri -m.d.]

(The *piya* nominal agrees in case with what it modifies.)

*Piya* creates nominals which are in themselves comparisons\(^{14}\) or similes.

(67) *Yuwarri*-piya kala parntarri-ja.
house-LIKE-ABS REM-PAST crouch-PAST
It (raintime shelter) would stand like a building. [parntarrimi]

(68) Wirriya ka *ngaju-piya* wangka-mi.
boy-ABS PRES I-LIKE-PBS talk-NPST
The boy talks like me. [Kesteven]

(69) Yarrkurla ka nyina *palya-piya* marna-ngka.
Yarrkurla-ABS PRES sit-NPST resin-LIKE-ABS grass-LOC
'Yarrkurla' is like a resin on the spinifex grass. [mula]

\(^{14}\) Kesteven (1975) gives some very complex examples in which the conjunction of *piya* and the PRIVATIVE is used as a comparative.

*Ngaju* -rna ngurrju-ma-nu yuwarri *wiri* wati-piya-wangu-rlu,
I-ABS -1sg good-CAUS-PAST house-ABS large-ABS man-LIKE-PRIV-ERG
I made a bigger house than the man did.
The third set of clitics to discuss are the two temporal clitics *Iku* THEN and *wiyi* BEFORE. Nominals, unlike verbs, do not have time references. Therefore, to set the time at which the state described by the nominal predicate is true, with respect to some other time period, some other mechanism must be used. The clitics *Iku* and *wiyi* are such a mechanism. *Iku* asserts that the secondary predicate is true at the time of the event or state denoted by the matrix predicate. *Iku* often implies that at some earlier stage the state described by the secondary predicate did not hold, as in (70) and (71):

(70) *Waliyka + Iku -rna nguna ngurrju-ABS + Iku.*

cool-ABS + THEN -1sg lie-NPST good-ABS + THEN

*I am cool now and feel better.* [PP: 11]

(71) *Yakarra-oardi-nja-rla ka nyina-mi warlu-wana ngurrju + Iku.*

awake-rise-INF-SEQ PRES sit-NPST fire-PERL good-ABS + THEN

*After getting up, (the sick man) sits by the fire, feeling well again.* [NK: 13]

In the following example, *kuyu wiri-kirli-lki* (note that this is a *complex* adjunct) ‘having a lot of meat’ is predicated of the OBJECT at the time of the asking.

(72) *Kula-ju kuyu-rlangu yu-ngu kuja-rna payu-rnu kuyu wiri-kirlj-Ikj,*...

NEG-1sg meat-E.G.-ABS give-PAST REL-1sg ask-PAST meat big-PROP + THEN

*She didn’t give me any meat or anything when I asked her even though she had a lot of meat at the time* [mulyu-lirrijia]

The clitic *wiyi* asserts that the state described by the secondary predicate held at some time \( t \) prior to some other time \( t_i \), which can be the time of speaking, but does not

15. See Laughren (1981a) for a discussion of these clitics with ample illustrations.
5.2.4 Summary

Phrase structure position in English is important for determining the function of a secondary predicate (ADJUNCT or XCOMP), and for determining the controller of an ADJUNCT, as well as for determining the use (appositional or circumstantial) and the semantic interpretation (reason, condition etc) which an ADJUNCT can have. (Adjacency and c-structure presence are required for appositional uses; sentence-initial or sentence-final position is required for circumstantials).

In Warlpiri, however, phrase structure position has little bearing on the function, or controller, or use, or interpretation of secondary predicates. There is no set position for XCOMPs as opposed to ADJUNCTs. The controller of an ADJUNCT is determined by case, not by position, and need not even be overt in the c-structure of the sentence. The range of possible semantic interpretations is determined by existing semantic classifications, such as part-whole and actual-potential, as well as by clitics.

16. *Lku* and *wiyi* also appear on verbs as well, with much the same meaning differences. An illustration of this is provided by the following sentences from the Survey:

\[
\begin{align*}
\text{Jarntu-ngku} & \quad \text{kardu} \quad \text{yarlku-rnu} \quad \text{yungu} \quad \text{yula-ja} + \text{wiyi}. \\
\text{dog-ERG} & \quad \text{child-ABS} \quad \text{bite-PAST} \quad \text{REAS} \quad \text{cry-PAST} + \text{BEFORE} \\
& \quad \text{The dog bit the child because he cried.} \\
\text{Jarntu-ngku} & \quad \text{kardu} \quad \text{yarlku-rnu} \quad \text{yungu} \quad \text{yula-ja} + \text{lku}. \\
\text{dog-ERG} & \quad \text{child-ABS} \quad \text{bite-PAST} \quad \text{REAS} \quad \text{cry-PAST} + \text{THEN} \\
& \quad \text{The dog bit the child so that he cried.}
\end{align*}
\]

In the first example *wiyi* sets the time of crying before the time of the matrix, while in the second, *lku* sets the time of crying as starting with the biting and probably continuing on.
5.3 Category

In English, the category of an element is intimately bound with its semantic interpretation. (See 1.3.1.2.1 and 1.3.4.1). I will discuss just one example, which is relevant to Warlpiri, because Warlpiri shows a similar semantic restriction. Only a very small number of nominals can be resultatives on their own:

(74) a. I cooked the meat *a cinder.
    b. I cooked the meat a pale shade of brown.

I claimed that this distinction is not a restriction on category, but on semantic interpretations available for categories (as the acceptability of (74)b indicates). Following Stump (1981) and Carlson (1977), I claimed that nominals cannot, in general, represent particular states, (that is, they are individual-level predicates and not stage-level predicates) and that therefore they cannot represent resultatives, because a resultative denotes a resultant state. An entity nominal such as cinder can be used in combination with prepositions such as into and to to denote a resultant state:

(75) I cooked the meat to a cinder.

Prepositions like into and to express the idea of transition and direction which is demanded by resulting states, and the presence of these prepositions sanctions the appearance of entity nominals.

A second restriction on the category of resultatives is that participles cannot appear:

(76) I cooked the meat *burning/?scorched.

I suggested that this restriction was not categorial, but semantic, namely that aspectual conflicts rule out the appearance of the participles.

In Warlpiri, the one category Nominal covers a wide range of semantic interpretations, from nominals which are almost always predicative, such as the locative nominals, experiencer predicates and active nominals, to nominals which are almost always used referentially, such as pronominals. (See 2.4). The category Verb is used syntactically only as an expression of argument-taking predicates, and, furthermore, is
restricted to finite clauses. Because the Nominal category may have many different kinds of interpretation, restrictions, whose semantic nature is blurred in English by the obviousness of the categorial restrictions, show up clearly. For instance, Warlpiri has a construction with the TRANSLATIVE suffix karda which translates constructions with the English resultative, although it is much freer. The TRANSLATIVE suffix karda in Warlpiri has no semantic restriction parallel to the English restriction on entity n:flnals, but does appear to show a restriction parallel to the aspectual restriction on participles.

Most of the examples of N + kard a that I have found, have nominals which are best translated as adjectives in English.

<table>
<thead>
<tr>
<th>Jungarni</th>
<th>Correct, right</th>
<th>Murrumurru</th>
<th>Sick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karalypa</td>
<td>Smooth</td>
<td>Ngurrju</td>
<td>Good</td>
</tr>
<tr>
<td>Kirrirdi</td>
<td>Long</td>
<td>Pinpinpa</td>
<td>Flat and thin</td>
</tr>
<tr>
<td>Kuntukuntu</td>
<td>Fat, in good shape</td>
<td>Pirrjirdi</td>
<td>Heavy, hard</td>
</tr>
<tr>
<td>Lalka</td>
<td>Dry, dessicated</td>
<td>Pulya</td>
<td>Quiet, softly</td>
</tr>
<tr>
<td>Lalypa</td>
<td>Flat, spread out</td>
<td>Rdkulpa</td>
<td>Concave</td>
</tr>
<tr>
<td>Larrlipi</td>
<td>Blade, sharp</td>
<td>Waluka</td>
<td>Cool</td>
</tr>
<tr>
<td>Linji</td>
<td>Dry</td>
<td>Wii</td>
<td>Big</td>
</tr>
<tr>
<td>Lirrirkirrri</td>
<td>Bare, leafless</td>
<td>Wita-wita</td>
<td>Small</td>
</tr>
<tr>
<td>Manya</td>
<td>Soft</td>
<td>Wurdungu</td>
<td>Silent, dumb</td>
</tr>
<tr>
<td>Mara-mara</td>
<td>Cinder, black</td>
<td>Yapulyu</td>
<td>Moist</td>
</tr>
<tr>
<td>Maru</td>
<td>Black</td>
<td>Yirnni</td>
<td>Cooked, ripe</td>
</tr>
<tr>
<td>Murnttu</td>
<td>Cooked, done</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, karda can create resultatives expressed by adjectives in English, such as He shot him dead,

(77) Kala-rnalu-nyanu mapa-rnu maru-karda marrkirdi-rli, USIT-1plex-refl rub-PAST black-TRANSL plum-ERG, purranja-warnu-rlu.
cook-INF-ASSOC-ERG
We used to paint ourselves black with the plum when it had ripened. [marrkirdi]

17. Nominalized verbs can be derived from verbs, and can act as secondary predicates.
But there are a few examples of *karda* on nominals which translate most readily as nominals in English.

\[
\begin{align*}
\text{jirrama} & \quad \text{two} & \text{rdilypirrpa} & \quad \text{hole} \\
\text{panu} & \quad \text{many} & \text{wini} & \quad \text{burnt-off ground} \\
\text{rurrpa} & \quad \text{hole, perforation. open yulyurdu} & \quad \text{smoke}
\end{align*}
\]

We split the mulga into two to make boomerangs. [jirrama]

He cuts the kangaroo into many pieces: the back, the sides, the head, the rump. [pajirni]

(80) Rurrpa-karda + ju karli-ngki luwa-ru. hole-TRANSL + EUPH boomerang-ERG hit.with.missile-PAST
He hit a hole into it with a boomerang. [rurrpa]

((80) also shows that no overt nominal is needed as a controller for the *karda* nominal). I assume that entity nominals such as *jirrama* ‘two’ or *rurrpa* ‘hole’ are able to appear in the resultative construction because the *karda* suffix acts in some respects like the prepositions *to, and into* in English, in allowing a *stage-level* or state interpretation.

Let us consider now the restriction on aspect. The syntactic and semantic analogues of participles in English are nominalized verbs. Interestingly, no instances
have been found of *karda* on a bare nominalized verb. I will argue in 6.5 that the time-reference of nominalized verbs depends on that of the matrix verb, and that the complementizer suffix determines the particular dependency — whether the action precedes, is concurrent with, or follows that action denoted by the main verb. I call this property the *dependent tense* property, and assume that it is a property both of nominalized verbs and of their complementizer suffixes. An explicit semantic representation of the time-reference of nominalized verbs has yet to be given. However, the evidence suggests that we should look for properties in common with the progressive and past participles in English, which also block resultatives.

18. Instead of using a nominalized verb with *karda*, the normal practice is to paraphrase, either with a non-finite clause with the PURPOSIVE, or with a finite clause having the AUX base *yungu* which denotes *reason, purpose*. In this case the resultant state is often expressed by a nominal compounded with the INCHOATIVE *jarrimi*.

```
Janyungu  ka-lu  wanta-kurra  yirra-rni,  wanka  yungu  
tobacco-ABS  PRES-3pl  sun-ALL  put-NPST,  raw-ABS  REAS  
linja-jarri-mi..  
dry-INC-NPST
```

They put the tobacco into the sun, so that from being unready it will dry.

19. I have found one example of *karda* following a DCN suffix, *wangu*, on a nominalized verb.

```
Purdanya-nia-wangu-karda  -jana  langa + ju  muku-paju-rnu.  
hear-INF-PRIV-TRANS  -3pl  ear-ABS+EUPH  all-cut-PAST
```

He cut off their ears so that they could not hear. [JK]

Nominalized verbs with the DCN *wangu* are somewhat freer than other complementizers; they can be used as matrix predicates, for example. In 6.5, I will suggest that, if a ATP has the feature [dependent tense], it cannot occur as the matrix predicate. I propose that *wangu* only notionally has this feature. When it does not have this feature, it is free to act as a matrix predicate, and presumably to have *karda* attached. I must assume that the negative specification of *wangu* for dependent tense takes precedence over the positive specification of the nominalized verb *purdanyanja* for dependent tense.

Notice that occasional examples of *wangu* suffixed to a nominalized verb and preceding the INCHOATIVE suffix *jarrimi* have been found:

```
guna-nja-wangu-jarrimi  'lie-INF-PRIV-INCH'  Stop lying down.
```

Semantically, the resultant state denoted by *karda* does not seem too dissimilar from the resultant state denoted by *jarrimi*, the INCHOATIVE.
5.4 The Lexicon

The third type of constraint on secondary predication consists of lexical constraints placed on secondary predicates. The only kinds of secondary predicates on which lexical constraints can be placed are XCOMPs and OBLIQUEs, because these are the only secondary predicates selected by ATPs. Using secondary predicates as OBLIQUEs is a somewhat marked phenomenon; see 6.2.2.3 for some possible examples.

English and Warlpiri differ in the range of allowable XCOMPs. In English, there are two main types: those that are idiosyncratically selected by verbs, such as *happy in They kept her happy and those that are introduced by optional general lexical rules. (See 1.3.1.2). Examples of the latter include the resultatives, the directional complements for verbs of motion, and the depictives. XCOMPs in English show a variety of lexical restrictions. Verbs may place semantic and functional constraints on their XCOMP; for instance, persuade requires an XCOMP denoting an action under the control of the understood SUBJECT: (*I persuaded John to resemble his unborn son). Similarly, lexical rules can be sensitive to semantic and functional properties of the verbs. For example, the rule adding resultative XCOMPs in English is sensitive to the semantic class of the verb: the verb must denote an action which produces an effect on the OBJECT, and it must have no inherent change of location (Endpoint). This rules out sentences such as *I shot at John dead; *Medusa saw the hero into stone and *Midas touched the trees gold. Furthermore, the resultative XCOMP rule requires the SUBJECT of the XCOMP to be an OBJECT of the verb, whether surface (as in transitives) or underlying, as in unaccusatives. This constraint rules out sentences such as *The bullocks ate the grass fat, in which the resultative attribute fat is predicated of the Transitive SUBJECT.

ADJUNCTs, by contrast, do not have similar syntactic and semantic constraints placed upon them by the matrix verb, because they are not selected by the matrix verb.

These types of syntactic and semantic constraints on secondary predicates are not apparent in Warlpiri. I claim that this stems from the comparative lack of XCOMPs in Warlpiri, and from the use of ADJUNCTs to perform some of the functions assumed in English by XCOMPs. Warlpiri has fewer classes of verbs selecting XCOMPs, and it also lacks the XCOMP-introducing rules, which introduce resultative and depictive attributes. In the next two sections, I will compare English and Warlpiri with respect to classes of verbs selecting XCOMPs, and with respect to XCOMP-introducing rules.

5.4.1 Classes of English verbs selecting XCOMPs

In English, a wide range of verbs can take XCOMPs. These fall into roughly identifiable semantic classes. The major semantic classes of verbs selecting XCOMPs in English include:

[1] Inchoative and causative verbs:
   She went mad.
   They drove him mad.
   She became happy.
   They made her unhappy.

[2] Continuous state
   She kept/stayed/remained active.
   She kept him active.

[3] Contemplative
   She considered/believed/thought him happy.

   They want/wish/need him dead.

21. Green (1973) compares English and French, arguing that while English allows both resultative and depictive attributes, French allows only depictive type attributes.
[5] **Perception**
I saw him dead.
He seems/appears happy.

[6] **Volitional causation** (i.e. the action denoted by the complement must be an action which the Causer believes the person caused has the freedom to carry out, or not to carry out)

- persuaded/asked/forced/obliged/convincd/told him to go.
- persuaded/vowed to go.
- tried/attempted/strove to leave.

[7] **Naming verbs**
I christen/name/baptize this child *Lucy*.
They call this kind of shrub ‘*oleander*’.
I call that *dastardly*.

[8] **Copula**
(Possibly this class should be linked with Class 2, *continuous state*).
He is *dead*.
He lay *dying*.
The tree stood *tall*.

5.4.2 XCOMPs in Waripiri

First, Waripiri does not have general inchoative or causative verbs (although some verbs have restricted causative usages) corresponding to the class 1 verbs in English. Instead, secondary predicates are incorporated into complex verbs with the INCHOATIVE
suffix jarrimi and the CAUSATIVE mani, as I discussed in 2.5.2.

(81) Warungka-jarri-ja + Iku -rna wiri jamulu mirniwarra + Iku.
      silly-INCH-PAST + THEN -1sg big-ABS strong-ABS great.extent + THEN
      I went silly when grown-up, (feeling) strong, tall. [mirniwarra]

(82) Miyalu -lpa kanunjukari wardinyi-jarri-ja.
      stomach-ABS -PAST inside happy-INCH-PAST
      Deep inside her, she felt very happy. [miyalu]

(83) Nyampu-rlu + ju kala-lu-jana yankirri-pinki + ji warungka-ma-nu
      this-ERG-EUPH USIT-3pl-3pl emu-SET-ABS-EUPH silly-CAUS-PAST
      kuja-lpa-lu nga-rnu ngapa warlkalpa-jangka.
      REL-PAST-3pl eat-PAST water-ABS plant.sp.-SOURCE-ABS
      With this (plant sp.) they would stupefy emus who ate the water with the narcotic
      plant species. [WK]

22. Complex verbs with the CAUSATIVE do not cover the full range of causatives such as make in English, because, while make in English allows a V complement, (in effect
      allowing for causing someone to perform an action), in Warlpiri the CAUSATIVE appears mainly on nominals (which are usually stative), and its appearance on nominalized verbs
      is very restricted:
      yula-nja-ku-manji
      cry-INF-DAT-CAUS
      'make someone cry'
      wangka-nja-ku-wangka-nja-ku-manji
      speak-INF-DAT-speak-INF-DAT-CAUS
      'oblige someone to speak'
      The verbs jinyi-jinyi-manji and jitrni are used to express the comparable idea to make + V,
      that someone causes someone else to do something.
      Nyuntulu-rlu ka-npa jiti-rni – – yula-nja-ku.
      you-ERG PRES-2sg tease-NPST cry-INF-DAT
      You are goading it (child) – to cry. [jitrni]
      In this example the complement is a nominalized verb with the purposive use of the
      DATIVE. See 6.2.2.3.
It may be possible to argue that these incorporated resultant states are assigned the function XCOMP in the lexicon, as I suggested in Chapter 3 Footnote 27 might be the case in Icelandic. Then we would expect to find semantic and functional restrictions placed on these incorporated XCOMPs comparable to those placed on XCOMPs in English. For instance, we would expect the XCOMP to have the same controller for any verb formed with the INCH (namely the SUBJECT), and for any verb formed with the CAUSATIVE (namely the OBJECT). At first glance this seems correct, but a proper examination of this is beyond the scope of this thesis.

For the second, third and fourth classes of verbs, I have been unable to find systematic counterparts. The status of perception verbs, the fifth class, is quite unclear. The sixth class of verbs, verbs of volitional causation, correspond in Warlpiri to verbs which take OBLIQUE complements rather than XCOMPs. (See 6.2.2.3).

Of the eight classes of verbs taking XCOMPs in English, only the seventh and eighth classes, verbs of naming, and copula verbs of stance, require an analysis with an XCOMP argument in Warlpiri. For verbs of naming, the 'name' is unmarked for case, and can be
treated as agreeing with the OBJECT in Case (ABSOLUTIVE). An example follows:

(84) Wita-wita pingirri-kirlangu mula ngulaji ka-rnalu
small-small ant-POSS egg-ABS that PRES-1plex
pama-yijala ngarri-rni.
delicacy-ABS + ALSO call-NPST
We call these very small ant-eggs ‘parna’ (delicacy) also. [mula]

The eighth class of verbs, copulas, are translated in Warlpiri by means of verbs of stance. The behaviour of the copula verbs of stance with respect to XCO!lfls requires an extension of the notion of functional control, which I will discuss in the next

23. Ngarrirni is the basic word for ‘call’. However, names can be incorporated into complex verbs, whether it is the actual name, or the word ‘name’. The following examples show incorporation of the nominal yirdi into a complex verb. (It is not clear whether mani is used as a CAUSATIVE, or as an independent verb: hold, get, grab)
i. Kula-lpa-lu-jana yirdi-ma-natrla wirriya-wirriya yuwwrrku-r1a
   not-PAST-3pl-3pl name-CAUS-IRR boy-boy-ABS bush-LOC
   karnta-karnta-rlu.
   woman-woman-ERG
   Women cannot use the names of the boys in the bush (for initiation). [mamiji]
   ii. is especially interesting because it includes the word yirdi ‘name’ as an independent word as well. (milki-yirdi-mani means roughly: ‘to tell, or inform someone of, the name of something’).
   ii. Yirdi ka-lu-nyanu ngapa rmilki-yirdi-ma-ni,
      name-ABS PRES-3pl-refl water-ABS show-name-CAUS-NPST
      They tell each other the names of the waters-holes, [milki-yirdi-mani].
      Pajirni ‘to cut’ can occur with an incorporated nomin11 to mean ‘call something X’.
   iii. Kala ngari ka-rnalu ngurlu-paji-rni.
      BUT JUST PRES-1plex seed-call-NPST
      But we just call it ‘ngurlu’. [pajirni]
24. Mary Laughren informs me that one verb of motion, the verb wapami which denotes ‘characteristic motion’, and does not presuppose an End-point or Source, can also be used as a copula, as in the following example:
   Maru + jala nyanungu + ju jintirrijintirpa-piya wapa-ja
   black + CLEARLY the + EUPH bird.sp-LIKE-ABS move-PAST
   maru.
   black-ABS
   That one was black, he was black like a Willy Wag-tail. [wapami]
   However, I will concentrate on the stance verbs in the discussion.
subsection. before turning to the XCOMP-adding rules.

5.4.2.1 Copula and XCOMP constructions

Verbs of stance can be used as semi-copulas, linking one nominal with another nominal which is predicated of it. Presumably this usage stems from the fact that stance verbs very commonly appear with attributes predicated of the SUBJECT:

(85) Pama ka-rna nga-rni, jurr ru ka-rna maju-jarri,
drink-ABS PRES-1sg drink-NPST, head-ABS PRES-1sg bad-INCH-NPST
nyurnu + iku ka-rna nguna.
sick-ABS + THEN PRES-1sg lie-NPST
I drink too much, my head aches, I am lying down sick now. [Hbn:68]

(86) Yinarlingi ka lani parntarri-mi (...)
echidna-ABS PRES fear-ABS crouch-NPST
The echidna crouches in fear. [lani]

25. In fact, verbs of stance also occur with preverbs that act as incorporated secondary predicates. At least a hundred different preverbs have been recorded with karrimi 'stand', sixty with nyinami 'sit', thirty with ngunami 'lie', and five with parntarrimi 'crouch'. Many of these preverbs correspond semantically to XCOMPs with copulas in English, as the following examples illustrate.

jaantarr-karrimi be big and fat
jaa-karrimi be open, agape
ngintirri-karrimi be exceptionally huge
purntuny-karrimi be swollen
kirlipil-ngunami be twisted
kurl-ngunami be constricted
wuly-ngunami be dark
lamurr-nyinami be small and round (of orifice)
liirli-nginami be shiny white
tararra-nyinami be wide-eyed
larra-nginami be split, broken
maarr-parntarrimi crouch lethargic, listless
The stance verbs place selectional restrictions on what their SUBJECT may be. For example, unlike the English copula verb be, but consonant with the stance verb origin of these verbs, for any given SUBJECT, the stance must be appropriate - thus trees typically stand, and bushes typically crouch, as illustrated below.

(87) Watiya yalumpu ka karri \textit{lirrki-lirrki} + iki
\begin{tabular}{l}
\text{tree-ABS} \\
\text{that.near-ABS} \\
\text{PRES stand-NPST} \\
\text{bare-ABS} + \text{THEN} \\
\text{yama-wangu} + \text{iku}.
\end{tabular}
\begin{tabular}{l}
\text{shade-PRIV-ABS} + \text{THEN} \\
That tree is bare, leafless now. \[lirrki-lirrki]
\end{tabular}

(8g) Pararri ka \textit{karri} kankarumpurra \textit{yukuri-yukuri},
\begin{tabular}{l}
\text{rainbow-ABS} \\
\text{PRES stand-NPST} \\
\text{UP green-ABS,} \\
\text{kanunjumpurra} \textit{yalu-yalu}.
\end{tabular}
\begin{tabular}{l}
\text{below red-ABS} \\
The rainbow is green on top and red underneath. \[yukuri-yukuri]\end{tabular}

(89) Jinjiwarnu ka \textit{wita} \textit{nyina}.
\begin{tabular}{l}
\text{crimson.chat-ABS} \\
\text{PRES small-ABS} \\
\text{sit-NPST}
\end{tabular}
The crimson chat is a small bird. \[jinjiwarnu]\n
(90) Karraya ka \textit{nyina} \textit{miirlmiirlpa} wati-ki + ji.
\begin{tabular}{l}
\text{woman that.near-ABS} \\
\text{PRES sit-NPST} \\
\text{strict-ABS} \\
\text{man-DAT} + \text{EUPH}
\end{tabular}
That woman is very strict about men. \[miirlpamiirlpa]\n
(91) Wirjarlu ka \textit{nguna} wardapi kuja-rna paka-rnu.
\begin{tabular}{l}
\text{huge-ABS} \\
\text{PRES lie-NPST} \\
\text{goanna-ABS} \\
\text{REL-1sg} \\
\text{hit-PAST}
\end{tabular}
The goanna that I killed is huge. \[ML: Num: 5]\n
(92) Ngapa \textit{palka + lku} ka \textit{nguna-mi} marluri-rla.
\begin{tabular}{l}
\text{water-ABS} \\
\text{present-ABS} + \text{THEN} \\
\text{PRES} \\
\text{lie-NPST} \\
\text{claypan-LOC}
\end{tabular}
There is water in the claypan. \[marluri]\n
(93) Yuwarl-piya kala \textit{parntairri-ja} milpingi + ji.
\begin{tabular}{l}
\text{house-LIKE-ABS} \\
\text{USIT} \\
\text{crouch-PAST} \\
\text{spinifex.hut-ABS} + \text{EUPH}
\end{tabular}
The spinifex huts were like houses. \[milpingi]\n
(94) a. Jajina manu munyupurruru, \textit{yirdi-jarra} kuja-ka \textit{nyina}
\begin{tabular}{l}
\text{mouse.sp.-ABS and mouse.sp-ABS} \\
\text{name-DU-ABS} \\
\text{REL-PRES sit-NPST}
\end{tabular}
"Jajina" and "munyupurruru" (crest-tailed marsupial mouse), it has two names.. \[jajina]
It has two names—"jarlupala" and "kuranjuru". [jarlupala]

(94) shows that the complement does not determine the selection of the stance verb—the same complement yirdi-jarra occurs with the verb nyinami 'sit' and the verb karrimi 'stand'.

While the verbs karrimi 'stand', yungami 'lie', and in particular parntarrimi 'crouch', place clear selectional restrictions on their SUBJECTS, the verb nyinami 'sit' is comparatively free. To say, as in (89), that a bird sits small does not mean that it is actually sitting. Rather, it means that the bird is small, and sit is the appropriate copula for something of its size and habits. Similarly, in (90), the emotional attribute strict is true of the SUBJECT in general, not just when she is sitting.

Nominals which, when used on their own, have DATIVE arguments, continue to have these arguments when the copula is a verb of stance. In (95) pakirdi takes a DATIVE argument which is registered in the AUX, while ngampurrpa in (96) takes an unregistered DATIVE argument. (Even when ngampurrpa is used as a predicate on its own, the DATIVE argument is not registered.) In (95), the DATIVE is semantically an argument of the nominal, but syntactically it is an argument of the sentence, as shown by the fact that it is registered in the AUX.

(95) Pakirdi ka-rla karnta nyina wati-ki.
    in.love-ABS PRES-DAT woman-ABS sit-NPST man-DAT
    The woman is yearning for the man. [pakardi]

(96) Miyi-ki ka ngampurrpa nyina manu kuyu-ku.
    food-DAT PRES desirous-ABS sit-NPST and meat-DAT
    He wants vegetable food and meat. [jirnajirna]

In these constructions, the matrix predicate is a complex expression which is not necessarily syntactically continuous, as in (95), in which pakirdi and nyina are not adjacent. The SUBJECT has selectional restrictions imposed by both the nominal (it must be a being) and the verb (it must be an entity which the copula verb is appropriate for, or else the copula must be the general copula nyinami). The DATIVE argument of the
predicate is also a DATIVE argument of the sentence. This DATIVE argument, if registered in the AUX, can function syntactically like an OBJECT, in that it can control a *kurra* clause, as the following examples show. The stance verb on its own does not select a DATIVE OBJECT.

(97) Nyampu + ju wati ka-rla nyina papardi
This-ABS + EUPH man-ABS PRES-DAT sit-NPST elder-brother-ABS
karnta-ku [miyi kipi-rninja-kurra-ku.]
woman-DAT food-ABS winnow-INF-OCOMP-DAT
This man is big brother to the woman who is winnowing the food.

(98) Kurdu ka-rla karri-mi wiri ngarrka-ku [rdaku-ngka
Child-ABS PRES-DAT stand-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku].
 sit-INF-OCOMP-DAT
The child is bigger than the man who is sitting in the hole. [Mary Laughren, p.c. to David Nash]

In (97), the relation term *papardi*, 'elder brother', selects a DATIVE argument (the person to whom someone is a brother) which becomes the OBJECT of the whole sentence, as evidenced by the fact that it can control the OCOMP *kurra* clause. In (98), the nominal *wiri* 'big' takes a DATIVE argument by virtue of a general comparative rule that allows the object of comparison to be expressed in the DATIVE. Again, this DATIVE becomes the OBJECT of the whole complex.

English differs from Warlpiri here, because it is not necessary to suppose that the argument of an adjectival predicate in a copula construction is an argument of the sentence. An English copula + predicate construction can be treated as a simple case of functional control. The lexical entry for the copula contains an XCOMP, and a control equation stating that the SUBJECT of the XCOMP is identical to the matrix SUBJECT. Consider a sentence such as *I am mad about him*. *I* is the SUBJECT of both the copula and the XCOMP *mad about him*. But the PP argument, *about him*, can be treated as the object of the XCOMP predicate *about* alone; nothing in LFG requires the PP argument to be an oblique argument of both the copula and the XCOMP.
Suppose that, in Warlpiri, a stance-verb + nominal construction is a copula + XCOMP construction. Then, in (95) *pakirdi* is the XCOMP, and *wati-ki* can be an OBJECT in the XCOMP. The SUBJECT of *pakirdi* is functionally controlled by the matrix SUBJECT, and naturally has to satisfy the selectional restrictions of both predicates. However, treating the nominal as an XCOMP with a functionally controlled SUBJECT does not express the fact that the DATIVE argument is an argument of the matrix clause, as well as of the XCOMP.

In effect, the argument-taking predicate of a nominal plus stance-verb sentence is a complex predicate consisting of two argument-taking predicates, the verb and the nominal. If each of these predicates has a PRED feature, and both are assigned the equation $\uparrow = \downarrow$, the Consistency constraint is violated. The generalization is clearly that the two predicates merge together to form a single complex predicate, and in that respect do not violate consistency. But, in the LFG theory as it has been developed so far, such mergers have to take place in the morphology.

Diathesis-changing preverbs present a rather similar problem (2.5.2). A preverb-verb complex such as *jangkardu-karrimi* ‘against-stand’ has in effect two argument-taking predicates, that of the verb, which selects a SUBJECT, and that of the preverb, which selects a DATIVE OBJECT. However, it is possible to argue that the preverb and the verb really form a lexical word, and therefore that the merger of the two predicates takes place in the morphology. But, it would be unmotivated to combine in the morphology the stance verbs with nominals such as *wiri* and *papardi*, and then split them apart in the syntax. First, the nominal and the stance verb do not have such restrictions on position as the verb and preverb do. Second, there is simply no independent morphological evidence for generating the stance verbs and the nominals in the morphology as derived lexical items.

I conclude that, to account for these examples, it is essential to be able to combine clauses in the syntax. In fact, functional control itself is an expression of partial combinations of clauses in f-structure. Functional control provides a partial combination, in that it links or identifies the SUBJECT of an XCOMP with an argument of the matrix predicate, allowing two predicates to share a single argument. Let us examine functional
control more closely, to see if it can be extended to cover total combinations as well. Functional control is of two types, which I will call raising and non-raising.

**Non-raising** functional control occurs when the matrix verb imposes selectional restrictions on the linked argument, and itself assigns it a grammatical function. For instance, the verb *try* in *Lucy tried to float* imposes animacy requirements on the *tryer* argument, and assigns it the function SUBJECT. The control equation for *try* is $\langle \text{SUBJ} \rangle = \langle \text{XCOMP} \rangle$. This expresses the fact that the one argument *Lucy* has two grammatical functions, the SUBJECT of the matrix, and the SUBJECT of the XCOMP. These requirements are equivalent to the restrictions that the verbs of stance place on the SUBJECT, for instance, the verb *karrimi* demands that its SUBJECT be something which can be thought of as standing, and requires that an XCOMP be controlled by that SUBJECT.

**Raising-type** functional control occurs when the matrix predicate imposes no selectional restrictions whatsoever on the linked argument. **Raising-type** functional control creates a grammatical function. A verb such as *consider* selects an XCOMP but does not select an OBJECT. However, the control equation on the XCOMP identifies the SUBJECT of the XCOMP with the matrix OBJECT. This identification is sufficient to create a ‘fake’ OBJECT for the verb, as shown in the lexical entry for *consider*.

(99) *consider*: considerer proposition considered
\[ \langle \text{(SUBJ)} \rangle \langle \text{(XCOMP)} \rangle \langle \text{(OBJ)} \rangle = \langle \text{XCOMP} \rangle \]

In 1.3.1 I presented the LFG concept of FORM argument, noting that a one-place verb such as *Beat it!* could introduce a fake OBJECT by means of an equation $\langle \text{OBJ} \rangle \langle \text{FORM} \rangle = \langle \text{it} \rangle$, thus giving the illusion that *beat* is a two-place predicate. **Object-Raising** is a similar process. It allows a two-place predicate such as *consider* to give the illusion of being three-place. However, in **Object-Raising**, instead of providing an OBJECT FORM, the lexical entry for the verb simply equates the OBJECT with an argument internal to the propositional argument of the verb. Understandably, the matrix verb places no selectional restrictions on the fake OBJECT. In a sense, this parallels the nominal + stance verb constructions. The nominal predicates provide the DATIVE OBJECT, which is registered
in the AUX, and treated as the OBJECT of the whole sentence, although the stance verb imposes no selectional restrictions on it.

Bresnan (1982a) discusses functional control, and places on it the constraint that there can only be one controlled argument, and this argument must be a SUBJECT. She derives the latter constraint from her definitions of categorial features – a category is \([+\) predicative] if it cannot have a phrase structure subject, and finds a SUBJECT through control.\(^{26}\)

But suppose the constraint that there can be only one controlled argument is relaxed. Nothing then prevents arguments other than the SUBJECT from being functionally controlled. Functional control can now extend to cases where more than one argument is shared, in fact to cases where all arguments are shared. These will be examples of total combination, rather than the partial combination shown by verbs such as try and consider. Instead of having control equations such as \(\uparrow\)SUBJ = \(\uparrow\)XCOMP SUBJ, which just identify one argument of the matrix with one argument of the XCOMP, the control equations for total combination predicates will equate all the arguments. Let the variable \(G\) stand for 'grammatical function'. Then the control equation for total combination will be as follows:

\[
\uparrow G = \uparrow XCOMP G
\]

The SUBJECT of the matrix clause is thus the SUBJECT of the XCOMP, the OBJECT of the matrix clause is the OBJECT of the XCOMP, the OBLIQUE\(_{goal}\) of the matrix is the OBLIQUE\(_{goal}\) of the XCOMP, and so on down.\(^{27}\)

\(^{26}\) It is true that Bresnan's categorial feature system does not immediately extend to Warlpiri. However, I assume that the basic idea that categories differ as to whether they can have controlled SUBJECTs is probably correct.

\(^{27}\) This \(G\) variable must be restricted, perhaps to closed functions, because otherwise the equation \(\uparrow G = \uparrow XCOMP G\) allows indefinitely deep embedding: \(\uparrow XCOMP = \uparrow XCOMP XCOMP\).
The nominal + stance verb construction in Warlpiri can now be treated as an example of total combination. A stance verb such as *nyinami* has the following lexical entry:

\[
\text{nyinami} \quad < \quad (\text{SUBJ}) \quad (\text{XCOMP}) \quad > \\
\uparrow G = \uparrow \text{XCOMP} G
\]

This control equation identifies all the G functions of the XCOMP with the G functions of the matrix. The matrix predicate is the stance verb, and the XCOMP is the nominal. The SUBJECT is provided by the stance verb, and so must satisfy the selectional restrictions of that verb. It is linked to the SUBJECT position of the XCOMP by non-raising functional control, just as the SUBJECT of *try* is identified by non-raising functional control as the SUBJECT of *float* in *Lucy tried to float*. The DATIVE argument of a nominal predicate such as *pakirdi* is identified with a matrix grammatical function. In contrast to the SUBJECT, the DATIVE argument of the XCOMP undergoes raising-type functional control. It creates an OBJECT or Adjunct DATIVE for the sentence, just as in Raising-to-OBJECT constructions, the SUBJECT of the XCOMP becomes the matrix OBJECT.

Below is a reduced functional structure for (95), *Pakirdi karla karnta nyina watiki*, 'The woman is yearning for the man'.
The arrows linking the empty brackets with functions represent functional control.

This use of functional control allows the combination of predicates at functional structure as well as in the morphology. No new mechanism is required in LFG theory to account for this combination. Moreover, total combination is an operation which may well be useful for the representation of constructions which have been called clause union structures, such as serial verb structures, in which two clauses appear to share more than one argument. Extending this concept of total combination to such constructions, however, is beyond the scope of this work, as is the determination of constraints on combination.

5.4.3 XCOMP-adding rules

In the previous section I compared the classes of verbs which idiosyncratically select XCOMPs in English with their counterparts in Warlpiri, and showed that Warlpiri uses different strategies to express the comparable meanings. In this section I will look at the lexical rules which English uses to create verbs with XCOMPs, and show that again Warlpiri mostly uses different strategies to convey comparable meanings.

The three major classes of XCOMP-adding rules in English are:

1. the rules allowing directional arguments of verbs of motion to be expressed as XCOMPs:
   
   * I ran; I ran to the zoo.

2. the rule which adds depictive attributes:
   
   * I ate the meat; I ate the meat raw.

3. the rule which adds resultative attributes
   
   * I hammered the metal; I hammered the metal flat.
In Warlpiri, it seems likely that verbs of motion can optionally have directional XCOMPs, just as they can in English. Presumably the same kind of lexical process allows for the realization of a directional argument optionally as an XCOMP in both English and Warlpiri. (See 3.4.1.) I claim that the second two types of XCOMP-addir.g rule, the rules adding depictive and resultative attributes, have no counterpart in Warlpiri, and that similar meanings are expressed in Warlpiri either by ADJUNCTs, or by preverbs. I will examine the evidence briefly.

5.4.3.1 Depictive-type adjuncts

There are several reasons for claiming that depictive attributes in English are
XCOMPs. First, they appear in the same syntactic position as other XCOMPs, and are in complementary distribution with them:

28. Depictive attributes must be carefully distinguished from circumstantials. Semantically, circumstantials describe the circumstances surrounding an event, whereas depictives closely resemble manner adverbials, with the difference that manner adverbials attribute properties primarily to the VP and secondarily to the SUBJECT, or Agent in passive sentences. Depictives, however, attribute properties primarily to some argument, often the OBJECT, and only secondarily to the VP. For instance: in the sentence He walked carefully down the plank, the SUBJECT is careful with respect to the action of walking, but it is not a general property of the SUBJECT at the time of walking that he is careful. He could be carefully walking, and simultaneously carelessly singing. However, in the sentence He arrived drunk, it is true of the SUBJECT at the time of arrival that he is drunk. It is not possible to say:

*He arrived sober, and lurched into the room drunk.

This cannot mean Although he was sober when he arrived, he lurched into the room as if were drunk., because the depictive attributes sober and drunk are directly predicated of the SUBJECT. Compare this example with the following acceptable example.

He waved his arms drunkenly, but all the while his eyes stared soberly at me. I did not understand the purpose of this pretence.

Functionally, circumstantials act as ADJUNCTs in English, while depictives, in Bresnan's (1982a) analysis, are XCOMPs. See Halliday (1967) and Nichols '1978) for a description of the distinctions between circumstantials and depictives. Some important tests are: complementary distribution (there can be only one depictive but several circumstantials), control by an indirect object (depictives cannot be controlled by an indirect object: I gave John the book sober), and ability of the circumstantial but not the depictive outside the VP (as shown by do so replacement as well as the scope of negation).

i. John didn't arrive drunk. (He arrived sober) depictive

ii. John didn't arrive, drunk as usual. (He didn't arrive at all) circumstantial

iii. *Fred ate the meat raw, but I did so cooked. depictive

iv. I can carry these buckets, empty, but Fred can do so full. circumstantial.

29. See Chapter 1 Footnote 36 for discussion of apparent counter-examples to this.
(100) a. *I asked John drunk to go there. [depictive, selected XCOMP]
    b. *He chopped the meat raw into little pieces. [depictive, resultative XCOMP]

Second, there are restrictions on what may be the controller of a depictive, namely that it must be an OBJECT (101) a, or an intransitive SUBJECT (101) b, or marginally a transitive SUBJECT (101) c, or, in ditransitives, an OBJECT 2 (101) d, but not an OBJECT (101) e:

(101) a. They served the meat hot/on a plate.
    b. He arrived exhausted/a hero.
    c. He met her naked/in his dressing-gown.
    d. I gave him the meat hot/on a plate.
    e. *I sent him the money in his wheelchair/smashed out of his mind.

The restrictions on the grammatical functions of possible controllers are consonant with the hypothesis that the depictive is an XCOMP, selected by the verb. The grammatical function of the controller of the XCOMP can be represented in a control equation as part of the lexical entry for the verb.

Third, the verb exerts selectional restrictions on the depictive attribute – only certain adjectives and PPs are possible as depictives. (See Randall, 1981, and Bresnan, 1982a for further discussion of these restrictions.)

(102) a. I ate the meat *nutritious/savoury.
    b. She greeted the guests *enigmatic.

These restrictions can also readily be stated if the depictive attribute is part of the lexical entry of the verb.

In Warlpiri, however, I have found no attributes that behave syntactically like the depictive attributes in English. Semantically, depictive attributes correspond either to preverbs, or to free nominals. I will discuss the preverbs first.

Whether a preverb is interpreted as a depictive attribute or a resultative attribute depends in part on the meaning of the verb. A verb of impact such as pakarni ‘hit, chop’ is more likely to combine with preverbs which can be interpreted as resultative. A verb such as mardarni ‘hold’, or parnkami ‘run’ is more likely to combine with preverbs which
can be interpreted as *depictive*. A few examples of preverbs behaving like depictive attributes follow:

(103)  
\begin{align*}
\text{jiwirlkiwijirlki-parnkami} & \quad \text{run along with appendage bouncing} \\
\text{kurdurrinkurdurripa-parnkami} & \quad \text{run along with tail bouncing} \\
\text{jirdinyjirdiny-parnkami} & \quad \text{run along keeping down low} \\
\text{(} & \quad \text{parnkami} \text{ `to run')} \\
\end{align*}

(104)  
\begin{align*}
\text{waraly-marda:ni} & \quad \text{hold something hanging} \\
\text{(} & \quad \text{mardarni} \text{ `to hold')} \\
\end{align*}

(compare the *resultative* use of the same preverb: \text{waraly-waraly-yirrarni} `put something hanging', as well as its use with the stance verb \text{karrimi} `to stand': \text{waraly-waraly-karrimi} `to be hanging')

(105) a.  
\begin{align*}
\text{luntu-pardimi} & \quad \text{to travel together in a large group} \\
\text{pardimi} & \quad \text{`to rise, set off'} \\
\end{align*}

b.  
\begin{align*}
\text{luntu-kanyi} & \quad \text{to perform a ceremony or ceremonial dance in a large group} \\
\text{(} & \quad \text{kanyi} \text{ `to carry')} \\
\end{align*}

36. Depictive attributes in English include locative expressions as well, and the same is true in Warlpiri; locative depictive attributes can also be incorporated as preverbs.

\begin{align*}
\text{kulkul-kanyi} & \quad \text{to carry something in one's mouth} \\
\text{(} & \quad \text{kanyi} \text{ `to carry')} \\
\text{kulkul-mardarni} & \quad \text{to hold something in one's mouth} \\
\text{(} & \quad \text{mardarni} \text{ `to hold')} \\
\text{julyurl-wantimi} & \quad \text{to swim} \\
\text{(} & \quad \text{wantimi} \text{ `to fall')} \\
\text{julyurl-ngunami} & \quad \text{to float in water} \\
\text{(} & \quad \text{ngunami} \text{ `to lie')} \\
\end{align*}

Compare the following examples in which the incorporated locative is used as a *resultative*:

\begin{align*}
\text{julyurl-kijirni} & \quad \text{to throw in water or fire} \\
\text{(} & \quad \text{kijirni} \text{ `throw')} \\
\text{julyurl-yirrarni} & \quad \text{to put in fire or water} \\
\text{(} & \quad \text{yirrarni} \text{ `put')} \\
\end{align*}

(The preverbs \text{kulkupa} and \text{julyurlpa} can occur as independent nominals meaning `in the mouth' and `in fire or water'.)
c. lunja-ngarni to eat in a large group
   (norni ‘to eat’)
   (compare the stance verb nyinami ‘sit’ with the same preverb: lunja-nyinami: to
crowd, swarm, be present in a large group)

d. luntuny-purrami to cook in large lot together
   (purrami ‘to cook’)

(106) jarntarrurntarru-yani to shuffle along on one’s knees
   (yani ‘to go’)
   (compare the stance verb karrimi ‘to stand’ with the same preverb: jarntarru-karrimi ‘to be kneeling’)

Independent nominals can be used as predicates. Semantically, they sometimes
 correspond to depictive attributes. But there is no way to distinguish syntactically a
nominal being used as a depictive attribute, from a nominal being used appositionally, or
as a circumstantial. There are no restrictions on position, nor, so far as I can tell,
restrictions on the controller (apart of course from the fact that the predicate must agree
in case with its controller). I give below a few sentences which contain predicates that
seem to correspond semantically to English depictive attributes. Admittedly the presence
of the THEN clitic /ku favours this interpretation.

(107) and (108) show depictive attributes being predicated of SUBJECTs,
ABSOLUTIVE in (107), and ERGATIVE in (108). In (108) there are two ERGATIVE-marked expressions predicated of the SUBJECT: it seems likely that jajinyanurlu ‘father’ is a restrictive modifier of yankirri ‘emu’ (the merged interpretation), while jintangku is a depictive attribute expressing the manner in which the action is performed.)

31. Other examples of depictive attributes modifying ABSOLUTIVE SUBJECTs follow:

```
Yapa ngulaju linji + lki jiti-ja kuja ya-nu-rrnu
man-ABS that untidy-ABS + THEN descend-PAST REL go-PAST-HERE
jalangu turaki-rla -- walya-jangka.
now truck-LOC -- dust-SOURCE
That person got off really dishevelled, the one who came on the truck today – from the dust. [linji]
```

```
Yali kuja-ka-rna nya-nyi kurdu, ngulaju ka-ju
that.rem REL-PRES-1sg see-NPST child-ABS that PRES-1sg
lani + lki jurnta-parntka.
fear-ABS + THEN away-run-NPST
Whenever I see that kid he runs away frightened. [parntkami]
```

```
Ya-ninja-rla, yankirri-jarra-kc.ri + ji -pala warungka-warungka + lku
go-INF-SEQ, emu-DU-other-ABS + EUPH 3du crazed-ABS + THEN
wanti-ja marn-a-ngka.
fall-PAST grass-LOC
Moving off, the two other emus fell down in a daze right beside the water.
```

```
Warlu-jangka ngiji-jangka -lpa purlkaj parntka-ja
fire-SOURCE firestick-SOURCE PAST old man-ABS run-PAST
maramara-lku -- Jungarrayi + ji.
schorched-ABS + THEN Jungarrayi-ABS + EUPH
That old man Jungarrayi ran away burnt all over from the firesticks. [maramara]
```

Observe that all these examples contain the simultaneous event clitic lku.
The red ants used to bite them and then the girls would jump all around in fright. [lani]

The father emu looks after the emu chicks on his own. [jaji]

Depictive-type adjuncts can not only be predicated of SUBJECTS; they can also be predicated of OBJECTS. In the following sentences the depictive-type adjunct is predicated of the ABSOLUTIVE OBJECT:

Fruits such as the bush mango are eaten soft. [manya]

Having cooked it, they are carrying it back cooked. [YK: 15]

An Aboriginal person can have a friend present when the police are asking questions. [MKJ: 8]

The Europeans take the cattle still alive to town in a big truck. [kanyi]

Depictive-type adjuncts can also be predicated of DATIVE OBJECTS.
(113) Yanmajirri -lpa-ju-lu warrarda-wangka-ja wita-ku + wiyi.
  Anmajerra PAST-1sg-3pl always-talk-PAST small-DAT + BEFORE
  When I was little, they used to always speak to me in Anmajerra. [wangkami]

(114) Nyampu -rna-nyarra wangka-mi jinta-ku + lku.
  here -1sg-2pl speak-NPST one-DAT + THEN
  I will speak to you here all together. [jinta]

They can modify the ABSOLUTIVE OBJECT 2 in a ditransitive.

(115) Wali kala-lu-rla ngulaju pina-yu-ngu ngaka + lku
  Well USIT-3pl-DAT that back-give-PAST later + THEN
  wiri-nyayirni + lki.
  big-very + THEN
  Well they gave her back to him now truly grown-up. [BWJ]

Unlike English, a depictive attribute can be predicated of a DATIVE in a ditransitive.

(116) Karnta-ngku ka-rla kurdu-ku miyi yi-nyi
  Woman-ERG PRES-DAT baby-DAT food-ABS give-NPST
  parraja-rla-ku.
  coolamon-LOC-DAT
  The woman is giving food to the baby (who is) in the coolamon [carrying dish].
  [Survey]

  Depictive attributes differ from other ADJUNCTs in Warlpiri only in their
  interpretation. There is simply no evidence to suggest that they have a different function,
  such as XCOMP, as there is in English

5.4.4 Resultatives

  I will now turn to the last example of an XCOMP-adding rule, the rule which adds
  resultative attributes to a verb. There are syntactic constraints on this rule in English,
  namely that the controller of the XCOMP must be an OBJECT, whether surface or
  underlying, as in unaccusative verbs. There is also a semantic constraint that the verb
  must denote an action which necessarily affects the OBJECT.
Warlpiri forms resultative attributes in two ways. First, a preverb denoting a resultant state can be incorporated into a verb. Second, the TRANSLATIVE suffix can be used on a nominal as an independent secondary predicate.

Let us consider the preverb-verb complexes first. A preverb denoting resulting state is usually predicated of the SUBJECT of an intransitive verb, or the OBJECT of a transitive verb, paralleling the syntactic constraint on control of resultatives in English. Similarly, it is usual for preverbs denoting resultant state to appear with verbs denoting actions which necessarily affect one argument, which parallels the semantic restriction in English. However, much more work is needed to investigate whether these tendencies generally hold up. Consider resultant state predicates with the word rdilyki ‘broken’. It can act as a matrix predicate:

(117) Karli nyamu rdilyki.
    boomerang-ABS this broken
    This boomerang is broken. [rdilyki]

32. Other examples include:

- *narntin-pakarni* to chop something into a curved shape
- *jaarn-pakarni* to chop something into a leaning or arc-like stance.
- *kirtirl-pakarni* to chop something so that it has a bend in it.

Interestingly, this last example can also be used with a depictive attribute interpretation: to chop something which already has a bend in it. This interpretation is illustrated in the following example, in which *kirtirlpari* (a nominal formed from the preverb) is used as a depictive attribute modifying the OBJECT in one clause, and in the other clause, *kirtiri* is used as a preverb with the same interpretation.

Watiya ka-rnalu paka-rni kirtirlpari – kirtirl-paka-rni
    tree-ABS PRES-1plex chop-NPST bent-ABS bent-chop-NPST
ka-rnalu.
    PRES-1plex
We chop down a tree with a bend in it – we chop one with a bend in it. [kirtirl-pakarni]
But it can also act as a preverb with verbs of impact to denote the state of the OBJECT resulting from the action of the verb.

\[
\begin{align*}
\text{rdilyki-luwarni} & \quad \text{break by hitting with missile} \\
\text{rdilyki-pajirni} & \quad \text{break by cutting} \\
\text{rdilyki-pakarni} & \quad \text{break by chopping} \\
\text{rdilyki-paltirni} & \quad \text{break by spearing} \\
\text{rdilyki-pinyi} & \quad \text{break by hitting}
\end{align*}
\]

An example in a sentence follows.

(11C) Jurlarda ka-rnalu warlkurru-rlu rdilyki-paka-rni.
-native.honey-ABS PRES-1plex axe-ERG break-chop-NPST

We break open the bee hive by chopping it with an axe. [rdilyki-pakarni]

I will turn now to resultative attributes which occur as independent words, and hence syntactically parallel the English resultatives more closely.

5.4.4.1 Translative

A typical example of a resultative attribute formed with the suffix \(karda\) follows:

(119) Kala-lu ngapa-ngka julyurl-yirra-rnu majardi-majardi
-USIT-3pl water-LOC immerse-put-PAST 'majardi-majardi'-ABS
parrka manya-karda.
leaf-ABS soft-TRANSL

They used to put the leaves of the 'majardi-majardi' in water to soften them. [majardi-majardi]

33. \(Rdilyki\) can appear with the motion verb \(yani\), predicated of the intransitive SUBJECT:

\[
\begin{align*}
\text{Murdukayi} & \quad \text{kalaka-ngalpa kulkurru rdilyki-ya-ni.} \\
\text{motorcar-ABS} & \quad \text{ADMON-1piin halfway break-go-NPST}
\end{align*}
\]

The car is liable to break down on us on the way. [rdilyki-yani]
Following Hale (to appear). I assume that karda is a case-suffix analogous to the
TRANSLATIVE in Finnish. Unlike grammatical case-suffixes, karda does not indicate the
relation of a nominal to the matrix predicate. Like semantic case-suffixes, a nominal
marked with karda is a predicate. However, unlike semantic case-suffixes, karda cannot
take further case-marking. Therefore, case does not determine what is the controller of
a karda ADJUNCT. Nor, of course, does syntactic position, since neither the karda
nominal nor its controller is restricted to a particular position, as will become clear from
the examples below:

In the majority of examples with karda that I have found, the controller is either the
OBJECT, or else an intransitive SUBJECT. I assume that this tendency has a semantic
explanation: OBJECTs and intransitive SUBJECTS are more likely to undergo change as a
result of the action described in the verb. I give a few examples below.

(120) Pina-kiji-ka warlu-kurra yungu junga janka-mi yirrmi-karda.
   back-throw-IMP fire-ALL REAS true cook-NPST cooked-TRANSL
   Put it [meat] back in the fire to cook it properly. [maramara]

(121) Mangarri ngulaju maramara-karda janka-ja, ngulaju maru + lku.
   damper-ABS that-ABS cinder-TRANSL cook-PAST, that-ABS black + THEN
   The damper was cooked to a cinder so that it is now black all over. [maramara]

(122) Minyura-rlu ka-lu-jana mapa-rni yawarra junma-jangka-rlangu,
   fat-ERG PRES-3pl-3pl rub-NPST wound-ABS knife-PROP-E.G.-ABS,
   kurlarda-jangka-rlangu ngurruj-karda, walyka-karda,
   spear-SOURCE-E.G.-ABS good-TRANSL, cool-TRANSL,
   kurnku-kurnku-paka-mlanja-kujaku.
   pain-hit-INF-ADMON
   People rub fat onto wounds from a knife cut or from a spear to make them better,

34. However, one speaker spontaneously produced ERGATIVE case-marking on karda in
the following sentence, although the same speaker also allowed karda predicates without
ERGATIVE case-marking to be predicated of an ERGATIVE SUBJECT:

   Watiya -rna paka-rnu mata-karda-rlu.
   tree-ABS -1sg hit-PAST tired-TRANSL-ERG
   I hit the tree until I was tired.

35. There is however a tendency for the karda nominal to be placed last.
to make them cool and to stop the throbbing pain. [minyura]

However, in sharp contrast to English (and also Finnish, which is perhaps a closer parallel to Warlpiri, since both languages use special TRANSLATIVE suffixes), a karda clause in Warlpiri may be predicated of arguments with other grammatical functions.

For instance, in the following example yapulyu-karda is predicated of an understood DATIVE mijilypa which is almost certainly not the OBJECT.

(123) Mijilypa kala-lu puyu-pu-ngu pirlipngka panma-ngka.
sap-ABS USIT-3pl grind-PAST rock-LOC flat-LOC.
Ngula-jangka kala-lu-rla ngapa wunju-rnu yapulyu-karda.
That-EL USIT-3pl-DAT water-ABS pour-PAST soft-TRANSL
They used to grind the sap on a flat stone. Then they used to pour water onto it to make it soft. [mijilypa]

In (124) the karda clause is predicated of a LOCATIVE.

(124) Rdarra ka-rnalu ngarri-rni kurlarda-rla yi-ka-rnalu
tip-ABS PRES-1plex call-NPST spear-LOC REAS-PRES-1plex
muru-pi-nyi -- -- kirrirdi-karda.
insert-NPST -- -- long-TRANSL
The tip is that part that we insert in the spear shaft to make it longer. [muru-pinyi]

In striking contrast to English, karda predicates can be predicated of the SUBJECT of a transitive sentence.

(125) Puluku-rlu kapu-lu marna nga-rni kuntukuntu-karda.
Bullocks-ERG FUT-3pl grass-ABS eat-NPST fat-TRANSL
The bullocks will eat themselves fat on the grass. [Hale, p.c.]

(126) Karla-mi ka-rna-rla wardapi-ki mata-karda-rlu.
dig-NPST PRES-1sg-DAT goanna-DAT tired-TRANSL-ERG
I am digging or a goanna so that I get tired. [JS]
(Note the exceptional ERGATIVE marking on karda.)

(127) Karli ka jarnti-rni, -- -- mata-karda.
boomerang-ABS PRES trim-NPST tired-TRANSL
He's making the boomerangs and gets tired. [JS]
But, unlike English, a fake reflexive *themselves* is not used in (125).

So, Warlpiri has fewer syntactic constraints on what may be the controller. Warlpiri also appears to have fewer semantic constraints on resultative attributes.

First, all sorts of verbs, not just those thought of in English as having a necessary effect on the OBJECT, can take resultative attributes. For example, the *karda* resultative can be used in contexts of *creation*; thus in (124) the literal English translation ‘insert the tip long’ is impossible, because *insert* does not allow a resultative of creation. Similarly, verbs such as *tell* in English do not allow resultatives, whereas their Warlpiri counterparts do.

\[(128) \text{Kurdu yali ngarri-ka } ngurruju-karda, \text{ yungu nyina-mi ngurruju.}
\text{child-ABS that.rem.-ABS tell-IMP good-ABS}
\text{Tell that kid so that it behaves well, so that it sits quiet.}\]

In (129), the verb of stance does not express an effect on the SUBJECT, but a *karda* clause can still be used:

\[(129) \text{Janyungu ka nguna-mi linji-karda}
\text{tobacco-ABS PRES lie-NPST dry-TRANSL}
\text{The tobacco lies in the sun to dry.}\]

Verbs of perception such as *see* cannot take resultatives in English, but can in Warlpiri.

\[(130) \text{Pina-karda nya-ngkal}
\text{knowledgeable-TRANSL see-IMP}
\text{Look at it so that you will understand. [Nash, p.c.]}\]

Second, in English, there is a semantic restriction preventing the appearance of resultatives with verbs that denote a change of location, such as *arrive, fall, go, come, descend, put, send, give*. But in Warlpiri there is no such restriction. *Karda* nominals can appear modifying the OBJECT of a change of location verb such as *yirrarni 'put'*. 
They put boomerangs in the sun to dry. [excer.946]

Resultatives can also appear in bodypart predicate situations, as in (132). The action of the subject affects a part (tongue) of the OBJECT, and, by doing so, has an effect on the OBJECT.

(132) Jarnpa-ngku ka-lu jalanypa turliny-panti-rni
Kurdaitcha-ERG PRES-3pl tongue-ABS double-pierce-NPST
wurdungu-karda.
silent-TRANS
The kurdaitcha (harmful magical person) pins his tongue back to make him silent.
[jalanypa]

The simplest account of the *karda* predicates in Warlpiri seems to be that, unlike English, they are not selected by the verb, and that they have the function ADJUNCT.36

5.5 Conclusion

In the preceding discussion, I have shown that phrase-structure position in Warlpiri is relevant neither to the determination of the function of a secondary predicate, nor to the determination of the controller of an ADJUNCT, and that it does not appear to determine the use or semantic interpretation of an ADJUNCT. I have also compared the use of XCOMP’s in English with their semantic analogues in Warlpiri. I have shown that Warlpiri makes relatively little use of the XCOMP function. Instead, the expressive burden is borne on the one hand by complex verb structures, (including both those formed with the INCH

36. Like other ADJUNCTS, the controller of a *karda* clause need not be overt, as in the following example, in which an understood whole tree in a part-whole construction, is the controller of *karda* clauses. The tree is defoliated because the caterpillars have eaten the leaves.

(131) Wanta-kurra ka-lu karli yirra-rni, *linji-karda*.
sun-ALL PRES-3pl boomerang-ABS put-NPST dry-TRANS
They put boomerangs in the sun to dry. [excer.946]

caterpillar-ERG PRES leaf-ABS bare-eat-NPST defoliated-TRANS
The caterpillar eats up all the leaves until defoliated. (the caterpillars have eaten the tree bare with respect to its leaves) [munyurr-ngarni]
and CAUS suffixes, and those formed with preverbs), and on the other by the remarkably free use of ADJUNCTs. Of the three main XCOMP-forming rules in English, only the rule allowing verbs of motion to have directional XCOMPs has any counterpart in Warlpiri.
6. Nominalized verbs and complementizer suffixes

6.1 Introduction

In this chapter I discuss secondary predication which involves non-finite verbs and nominals with a set of suffixes called complementizer suffixes (Hale (EFW), Nash (1980)). I will call this complementizer predication in contrast to the nominal predication and case-suffix predication discussed in the previous three chapters. This type of predication covers two classes: all predication involving nominalized verbs (including not only nominalized verbs with complementizer suffixes, but also nominalized verbs with case-suffixes), and all predication involving complementizer suffixes (including not only nominalized verbs, but also action nominals and ordinary nominals).

The difference between nominal predication and case-suffix predication is simply a difference as to whether the nominal itself acts as an argument-taking predicate, or whether an affix (such as a semantic case) on a nominal acts as an argument-taking predicate. I will show that the same difference can be seen in complementizer predication. In the first type, the argument-taking predicate is a nominalized verb or a nominal. In the second type, the complementizer suffix itself is the argument-taking predicate. I show that complementizer predication can be represented in much the same way as nominal predication, except that a new rule of \( \bar{N} \) expansion is needed. In fact, ultimately it is possible to argue that complementizer predication consists of a subclass of nominal predication (when a nominalized verb or nominal provides the argument-taking predicate), and a subclass of case-suffix predication (when the complementizer suffix provides the argument-taking predicate).

However, there are two major differences between nominal predication and complementizer predication. First, whereas the controller of a case-marked nominal is determined by the case of the nominal, the controller of a complementizer clause is determined by information carried by the complementizer suffix itself, and, depending on the complementizer suffix, may be identified by grammatical function, rather than by case concord alone.
Second, whereas semantic case-suffixes differ from each other primarily in the type of relation denoted, complementizer suffixes differ both in type of semantic relation and in time-reference. For instance, the LOCATIVE case suffix rla differs from the ALLATIVE case-suffix kurra in that the former denotes a location relation, while the latter denotes a directional relation. However, the SEQ complementizer suffix rla differs from the SSCOMP complementizer suffix karra primarily in that, while the former denotes an event or state completed before the event or state denoted by the matrix predicate, the latter denotes an event or state concurrent with the state or event denoted by the matrix predicate. Thus the time identified by the complementizer suffix is determined relative to the time indicated by the tense-aspect morphology in the matrix clause. The time reference of an ATP case-suffix, such as the LOCATIVE, or the instrumental use of the ERGATIVE, depends on the specific semantic relation denoted by the suffix. The LOCATIVE for instance always has a time-reference identical to that of the matrix, so that, in a sentence such as Lucy kissed John in the garden, the phrase in the garden attributes a location at the time of the action of the matrix, neither before nor after the action.

This chapter is organized in the following way. First, I will discuss the evidence for anaphoric control of non-finite clauses. Then I will give the arguments for assuming that the non-finite verb is a nominalized verb, and show how to represent the internal constituent structure of non-finite clauses. I will also illustrate the behaviour of the general rule Assign grammatical functions with respect to these clauses. Finally, I will illustrate the properties of the individual complementizer suffixes, and show how they can be represented in the lexical entries for the suffixes. This will lead us into several interesting areas of Warlpiri syntax, including the possibility for overt SUBJECTs of non-finite clauses, the case-marking of these SUBJECTs, and the possibility for anaphoric control of OBJECTs.

1. Of course, the LOCATIVE can be used as a temporal adverb in its own right, in which case it provides the time reference for the matrix clause.
6.2 Evidence for anaphoric control

6.2.1 Introduction

In Chapters 3, 4 and 5, I claimed that most nominal secondary predicates are anaphorically controlled ADJUNCTS. I propose that, in Warlpiri, most of the non-finite clauses are also controlled anaphorically, rather than functionally controlled. In the functional structure of the non-finite clauses, there is a null pronominal present, which either refers to an argument of the matrix sentence, or else is arbitrarily controlled.

This null pronominal is introduced by the general rule of PRO introduction (2.2.8), which allows any argument-taking predicate to introduce a null pronominal PRO for any argument it selects. In matrix sentences, a PRO SUBJECT, OBJECT, etc, introduced by this rule can have a discourse antecedent. However, in the non-finite clauses, the complementizer suffix places restrictions on what must be the antecedent of a PRO SUBJECT. Thus, in the kurra clauses discussed in earlier chapters, the lexical entry for the suffix kurra states that the SUBJECT of the clause is a null pronominal, and, furthermore, that the antecedent of the SUBJECT is a matrix OBJECT. It is the restrictions placed by the complementizer suffix which determine the differences in behaviour between matrix null pronominals and controlled null pronominals.

The section is organized as follows. I will argue on the basis of the behaviour of anaphors that non-finite clauses in Warlpiri have understood SUBJECTs. I will then show that the SUBJECT of a non-finite clause can have a case different from that of its controller. Since functional control demands complete identity of the controller and the SUBJECT of the controlled sentence, the non-finite clauses cannot be functionally controlled. However, they can be anaphorically controlled, because anaphoric control demands only referential identity between the controller and some argument of the controlled sentence (which argument this can be, is a language-particular fact). The controlled argument can differ in features from the controller. For instance, it can differ in case. Then I will examine the functions of nominalized verbs, and show that most of them are ADJUNCTS. There are a few cases of possible XCOMPs which I will also discuss.
6.2.2 Anaphors and disjoint reference

The behaviour of anaphors and of disjoint reference violations in non-finite clauses have often been taken as evidence for the presence of understood SUBJECTs in non-finite clauses. The anaphors normally investigated are reflexives and reciprocals. Since Warlpiri expresses these overtly only in finite clauses, (by means of reflexive AUXILIARY clitics), they provide little insight into the properties of non-finite clauses. However, there is one anaphor which does provide some insight into non-finite clauses, the nominal kariyinyanu.

6.2.2.1 Kariyinyanu

The anaphor kariyinyanu, 'another of the same kind', is illustrated in (1).

    boomerang-E.G.-DAT POT-DAT-DAT covet-NPST
    man-ANOTHER-DAT
    One man might covet the boomerang of another man. [liji-yirrarni]

(2) Turaki-rlangu-ku kajika-rla-jinta liji-yirra-rni karnta-ku.
    car-E.G.-DAT POT-DAT-DAT covet-NPST
    woman-DAT
    He/she might covet the car of the woman.

The presence of kariyinyanu on the DATIVE argument ngarrka in (1) shows that the SUBJECT is also understood to be a man, ngarrka, in contrast to (2), in which the SUBJECT can be of either sex.

(3) shows that the kariyinyanu-marked nominal does not have to be a selected argument of the verb, since the LOCATIVE nominal maliki-kariyinyanu-rla is not a selected argument of the verb 'roll'.
(3) Minjirnpa-nyayirni ka purnturr-karri-mi, maliki-kariyinyanu-rla stench-VERY-ABS PRES stink-NPST, dog-ANOTHER-LOC wardarr-wanti-ja pukulyu-rla. roll-PAST stinking-LOC He stinks badly; he rolled on another dog, a stinking one. [minjirnpa]

(4) shows that the argument to which the kariyinyanu-marked nominal refers need not be a SUBJECT.

(4) Kurlarda ka-rlalu-rla limi-yirra-rni kurlarda-kariyinyanu-ku, spear-ABS PRES-1plex-DAT put-NPST spear-ANOTHER-DAT, mangulpa ka-rna-lu-rla limi-yirra-rni mangulpa-kariyinyanu-ku. lance-ABS PRES-1plex-DAT put-NPST lance-ANOTHER-DAT. We put a spear with the other spears, and we put a lance with the other lances. [limi]

In fact kariyinyanu can even occur on a SUBJECT, as in (5), in which kariyinyanu is used on the SUBJECT to show that the SUBJECT, like the OBJECT ‘you’, is an Aboriginal. In this kariyinyanu differs from anaphors such as the reflexive pronominal clitic, which can never represent the SUBJECT.

(5) Nyampu-rla + ju kalaka-ngku-lu marda warrki yi-nyi This-LOC + EUPH ADMON-2sg-3pl probably work-ABS give-NPST yangka yapa-kariyinyanu-rlu. the Aboriginal-ANOTHER-ERG Here, another Aboriginal (community worker) might give you work. [MKJ: 17]

The kariyinyanu nominal is thus very free with respect to its antecedent; it can refer to a non-SUBJECT. It is also very free with respect to its grammatical function; on the one hand, it does not have to be a selected argument, and on the other, unlike reflexive anaphors in most languages, it can be the SUBJECT. There is, nevertheless, one major constraint on this anaphor. The domain of kariyinyanu must be the minimal clause nucleus in which it occurs. It cannot find an antecedent outside the clause nucleus, although within that clause nucleus there are no constraints on the grammatical function of its antecedent. Example (6), in which kariyinyanu appears in the subordinate clause, and refers to the SUBJECT of the matrix, and not to an argument of the subordinate clause, is unacceptable.
Example (7) is acceptable because the kariyinyanu nominal refers to the SUBJECT of the subordinate clause (which also happens to be the OBJECT of the matrix clause).

Non-finite clauses behave just like finite clauses with respect to the domain of kariyinyanu. If kariyinyanu appears in a non-finite clause, it must find its antecedent within that non-finite clause.

These sentences are well-formed, because the understood SUBJECT of the non-finite clause is the antecedent of the kariyinyanu nominal which occurs within the non-finite clause. However, the next sentences are unacceptable, because the antecedent of the kariyinyanu nominal is in the matrix clause, and not in the non-finite clause.
On the assumption that non-finite clauses have SUBJECTS that are not lexically realized, the distribution of the acceptable sentences with the *kariyinyanu* anaphor can be explained.

6.2.2.1 Disjoint reference

Further evidence that non-finite clauses must have understood SUBJECTs for the purposes of anaphor-antecedent relations comes from disjoint reference. (12) is unacceptable when the SUBJECT and OBJECT are taken to be coreferential.

   *Jampijinpa erase hit oneself.
   Jampijinpa hit him/her (someone other than Jampijinpa).

A reflexive OBJECT has to be registered in the AUX, as in (13). The verb requires an OBJECT. In (12) there is no reflexive registered in the AUX, and so disjoint reference makes the sentence unacceptable.

(13) *Jampijinpa-rlu -nyanu paka-ru.
    Jampijinpa-ERG -refl hit-PAST.
    Jampijinpa hit himself.
Reflexives cannot easily be expressed in non-finite clauses, because reflexives are represented as AUX pronominal clitics in finite clauses, and there is no AUX in non-finite clauses. Therefore, it is not possible to argue from reflexivization about the need for a SUBJECT in non-finite clauses, as is sometimes done for more familiar European languages. But it is possible to show that the SUBJECT of a non-finite clause in Warlpiri is a SUBJECT for the purpose of disjoint reference. An overt non-reflexive OBJECT pronoun in a non-finite clause must be disjoint in reference from the SUBJECT of that clause.

(14)

Jakamarra-rlu ngarru-rnu Jampijinpa nyanungu
Jakamarra-ERG tell-PAST Jampijinpa-ABS him-ABS
paka-rinja-ku.
hit-INF-DAT
*Jakamarra told Jampijinpa to hit himself (= Jampijinpa). [Survey]
OK Jakamarra told Jampijinpa to hit him/her (not Jampijinpa).

(14) cannot receive a reflexive reading, because nyanungu, a non-reflexive OBJECT pronoun, cannot be coreferent with the understood SUBJECT of the non-finite clause,

2. For instance, the contrast in acceptability between i. and ii. is often attributed to the presence of understood SUBJECTs in each, which are identical to the matrix SUBJECT and OBJECT respectively.

i. *Did John persuade you to kill himself?
ii. Did John promise you to kill himself?

3. Recall that in 2.2.8 and 2.3.3, I noted Nash’s finding that a non-overt null pronominal in a non-finite clause can be reflexive.

Japanangka karlarra-jarri-ja Jupurrulat-rlu nva-nja-ku.
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka, went west [ for Jupurrula to see PRO = himself ]

I suggested that the constraint that a null pronominal in a finite clause be non-reflexive should be expressed in terms of an antecedent feature [- NUCLEAR] which is attached as part of the default information provided by the AUX. Therefore null pronominals in finite clauses must be non-reflexive, while null pronominals in non-finite clauses are not so constrained, because there is no AUX in non-finite clauses. Overt free pronouns, on the other hand, have as part of their entry [- NUCLEAR] (although I noted a difficulty with respect to Adjunct DATIVES), and so cannot be construed as reflexive, whether the sentence is finite or non-finite.
which happens to be controlled by the matrix OBJECT, *Jampijinpa*. It seems clear then, that non-finite clauses must have understood SUBJECTs for the purposes of anaphor-antecedent relations.

6.2.2.2 The Case of PRO

Evidence that the PRO SUBJECT of non-finite clauses must bear a case comes from the fact that ADJUNCTS predicated of a SUBJECT agree in case with that SUBJECT.

Four of the main types of adjuncts that can modify the SUBJECT of a non-finite clause are: locatives, instrumentals, manner adverbials, and body parts. In finite clauses, these receive the case of the SUBJECT, by additional case-marking for the locatives, and, for the other three, by having the same case. If the verb selects an ABSOLUTIVE SUBJECT, an ADJUNCT predicated of the PRO SUBJECT can have ABSOLUTIVE case. Similarly, if the verb in a non-finite clause demands an ERGATIVE SUBJECT, an adjunct predicated of the SUBJECT will have ERGATIVE case. In (15), ‘dog’ has DATIVE case in the matrix. It is the controller of the -kurra clause. The verb in the -kurra clause, *ngarni* ‘eat’ is transitive and would take an ERGATIVE SUBJECT in a finite clause. A manner adverbial, *yarnunjuku-rlu*, ‘hungry’, predicated of the understood SUBJECT of the -kurra clause, receives ERGATIVE case.

4. The sense of this construction can be expressed in an odd construction using a loanword from English, *jalpi* (‘self’) as a kind of emphatic reflexive agreeing with the understood SUBJECT in having ERGATIVE case.

```
Jakamarra-rlu ngarru-rru Jampijinpa jalpingki paka-rninja-ku.
Jakamarra-ERG tell-PAST Jampijinpa-ABS self-ERG hit-INF-DAT
```

Jakamarra told Jampijinpa to hit himself. [Survey]

Of course, a tensed clause can also be used to express this meaning.
I sneaked up on the dog which was hungrily eating meat. [Hale, p.c.]

Another example is given in (16) b, in which the ADJUNCT already has LOCATIVE case. but also has ERGATIVE case agreeing with the understood ERGATIVE Subject of the non-finite clause. This parallels (16) a, in which the ADJUNCT has ERGATIVE case agreeing with the overt SUBJECT ngarrka-ngku.

Another elicited example with a manner adverbial follows.

In (18) and (19), an instrument has ERGATIVE case agreeing with the understood SUBJECT of the non-finite verb.
(18) Ngarrka ka wangka-mi, karli *palya-kurlu-rlu*
man-ABS PRES talk-NPST boomerang-ABS adze-PROP-ERG
jarnti-rinja-karra.
trum-INF-SSCOMP
The man is talking, while trimming a boomerang with an adze. [JS]
(The form *palya-kurlu-rlu* consists of a nominal with PROP case and additional
ERGATIVE case. PROP case is commonly used to express ‘instrument’,
especially in intransitive sentences, where the ERGATIVE case cannot appear.)

(19) Karnta-patu-kari -li ya-nu ngapa-ku ma-ninja-ku
woman-PL-OTHER-ABS -3pl go-PAST water-OAT get-INF-OAT
kartaku-rlu.
billycan-ERG
Many women went to get water in billycans. [JMK]

In (20), a bodypart, *langa-ngku*, has ERGATIVE in agreement with an understood
SUBJECT (kangaroo). (I owe this example to Mary Laughren).

(20) (...)yapa-rlangu wangka-yrarla, purla-yrarla, watiya-rlangu
person-E.G.-ABS talk-IRR, shout-IRR tree-E.G.-ABS
rdilyki-kati-karla, ngula kajika - *langa-ngku purdanya-nja-rla*
broken-tread-IRR that POT ear-ERG hear-INF-SEQ
parnka + yijala.
run-NPST + ALSO
(...)like if a person speaks or shouts or treads on and breaks a piece of wood, then
when he (kangaroo) hears this with his ear, he runs away. [langa]

The examples given show that four main types of SUBJECT-controlled ADJUNCT,
instrumentals, locatives, bodyparts and manner adverbials, can all agree in case with the
SUBJECT of a non-finite clause. In Bresnan’s (1982) theory of control, agreement of an
ADJUNCT with an understood PRO SUBJECT is a hallmark of anaphoric control, as I
mentioned in 1.3. If an ADJUNCT attributes a property to the SUBJECT of a clause, it
agrees in case with the SUBJECT, whether the SUBJECT is understood or lexical.

6. See also Neidle (1982), and Andrews (1982b. and c.)
A general cautionary note is in order. One linguistically sophisticated speaker rejected all sentences with an ADJUNCT agreeing with a non-overt SUBJECT. Another speaker accepted the case-marked ADJUNCTs hesitatingly, and used alternative strategies wherever possible. These alternatives included suffixing the complementizer suffix to the ADJUNCT, and making it an independent ADJUNCT, as well as taking the locative out of the clause and predicating it separately of the argument. However, as (19) and (20) show, such ADJUNCTs do occur in texts.

This fluctuation in judgment is not surprising when one looks at reports of speakers' judgments on case-marked attributes in other languages. In Ancient Greek (Andrews, 1971; Quicoli, 1972; Ostler, 1976; Ingria, 1978), there is fluctuation as to whether an attribute of the SUBJECT in a non-finite clause agrees in case with an understood ACCUSATIVE PRO SUBJECT, or with its controller ("case-attraction"). In non-SUBJECT-controlled clauses in Russian, an adjunct can agree with a DATIVE PRO SUBJECT in a non-finite clause, (Comrie, 1974; Neidle, 1982a, and b; Schein, 1982a). However, I have also found Russian speakers who accept agreement with the controller instead, and some speakers even reject DATIVE adjuncts altogether in non-finite object-controlled clauses, and insist on agreement with the controller. In Icelandic (Thráinsson, 1979; Andrews, 1982c and d), a case-marked adjunct in an anaphorically-controlled infinitive agrees either with the understood PRO or with its controller.

7. This speaker commented that the sentences would be acceptable without the ERGATIVE-marked ADJUNCT.
8. There are some interesting regularities. Apparently predicative nominals tend to agree with the understood SUBJECT, rather than with the controller of their clause in both Greek and Icelandic. I suspect that a better understanding of what semantic interpretation is associated with particular categories will lead to an explanation. Predicative nominals usually act as identifying predicates: John is my best friend. A predicative nominal predicated of a SUBJECT identifies the SUBJECT with some referent. It is possible that this identification interpretation is strong enough to force agreement of all features of an ADJUNCT with the understood SUBJECT, and to prevent the appearance of non-identical features, such as a case-feature provided by the controller, rather than by the understood SUBJECT.
6.2.2.3 Functions of non-finite clauses

Most non-finite clauses are used as ADJUNCTs. They are not selected by the verb, and simply act as secondary predicates, which occasionally act solely as modifiers of a particular argument, as in (21), but most commonly act as circumstantial, providing the reason (22), time (23), purpose (24), condition (25) etc for the action denoted by the matrix clause. (Complementizer suffixes differ as to which interpretation is favoured).

(21) Nyampu + ju wati ka-rla nyina papardi-nyanu
This man-ABS PRES-DAT sit-NPST brother-KIN-ABS
karnta-ku wangka-nja-kurra-ku
woman-DAT talk-INF-OCOMP-DAT
This man is the big brother to the woman who is talking. Restrictive modifier
[Mary Laughren, p.c. to David Nash]

(22) Ngarrka-ngku -nyanu paju-rnu, karli jarnti-rinja-rlajinta.
man-ERG refl cut-PAST boomerang-ABS trim-INF-COMCOMP
The man cut himself while trimming a boomerang. Reason [Survey]

(23) Ngula kala-lu ngaka jinamarda-rinja-rla pina-ya-nu.
that USIT-3pl later help-INF-SEQ back-go-PAST
After helping him (the sick person), they went back home. Time [TK]

(24) Nyuntulu-rlu + ju kalaka-npa-nyanu marda-rni witiniji + yijala
you-ERG + EUPH ADMON-2sg-refl have-NPST witness-ABS + ALSO
yimi ngarri-rinja-ku.
story-ABS tell-INF-DAT
You should also have witnesses to prove your story. Purpose [MKJ]

(25) Kurdu ka-rla karri-mi wiри ngarrka-ku rdaku-ngka
child-ABS PRES-DAT sit-NPST big-ABS man-DAT hole-LOC
nyina-nja-kurra-ku.
sit-INF-OCOMP-DAT
The child is bigger than the man when he is sitting in the hole. Condition [Mary Laughren, p.c. to David Nash]

I assume that most instances of elements with complementizer suffixes act as ADJUNCTS. Since a sentence can contain more than one ADJUNCT, several elements with complementizer suffixes may appear in one sentence.
No Warlpiri verbs obligatorily select a nominalized verb as their complement. Nor are there any verbs which obligatorily select a secondary predicate expressed by an element with a particular complementizer suffix. For instance, no verb has to appear with an argument marked with the OCOMP suffix *kurra*. However, there are some verbs which optionally appear with a nominal or nominalized verb with a particular complementizer suffix. I give here a short description of the major classes.

### Class 1: JUSSIVES

Hale (EFW) observes that a number of verbs optionally appear with ‘jussive’ complements, expressed as clauses with the DATIVE suffix *ku* in its purposive sense. These verbs fall into several classes, which I illustrate below, referring the reader to EFW for more details.

#### Verbs of ordering

child-ABS FUT-1sg order-NPST water-ABS get-INF-LATIVE-INF-DAT
I will order the child to go and get the water. [jinyi-jinyi-mani]

(28) Ngarru-rnu -rna wurnturu ya-ninja-ku.
tell-PAST ·1sg far go-INF-DAT
I told him to move away. [ngarrirni]

#### Verbs and nominals denoting knowledge and its absence.

not-PRES know-NPST go-INF-DAT water that-rem.-ALL
He doesn’t know how to get to that waterhole. [Hale tape 28 jarrwarayani]

forget-PAST 1sg-2sg money-DAT + EUPH give-INF-DAT + EUPH
I forgot to give you any money. [Hnotes]
(In this sentence, the DATIVE OBJECT of the subordinate clause is a null pronoun whose antecedent is in the matrix clause:
I forgot with respect to you, with respect to the money, to give PRO_i PRO_j.)

(31) Jalangu-rlu + ju, papa-ngku ka-ju pinapina-ma-ni + lki
br.ERG + EUPH, father-ERG PRES-1sg knowing-CAUSE-NPST + THEN
... ku luwa-rinja-ku makiti-kirli-rii.
meat-DAT shoot-INF-DAT gun-PROP-ERG
Today my father is going to teach me how to shoot game with a rifle. [WNJ]

Verbs and nominals denoting emotion.

(32) (...yi-ka ngampurrpa nyina muku-nga-rinja-ku – miyi-ki
REAS-PRES desirous sit-NPST all-eat-INT-DAT – food-DAT
manu kuyu-ku.
and meat-DAT.
(... as he wants to eat it all - both the damper and the meat. [mirrimirri]

Verbs of terminus

(33) Ngula-jangka + ju kala walya + lku jararr-pi-nja-ku
that-SOURCE + EUPH USIT ground-ABS + THEN dig-INF-DAT
rdirri-vu-ngu.
begin-PAST
Then he got ready to dig (a hole) in the ground. [jararr-pinyi]

(34) Pinii-ma-nu rlu Warlpiri-ki + ji wangka-nja-ku + ju.
finish-CAUS-PAST -1duin Warlpiri-DAT + EUPH talk-INF-DAT + EUPH
We finished talking Warlpiri.

Usually, the semantic role represented by the nominalized verb with ku can be expressed instead by a finite clause with the AUXILIARY particle yungu, as in (35), or by a nominal with a case-suffix expressing a similar meaning, as in (36), or by a nominal with the DATIVE case, as in (37). (In some of these examples the nominal corresponding to the OBJECT of the non-finite clause has the suffix ku; this is discussed briefly in 6.6.6).
(35) Yapa-ngku ka-rla jangkurdu-iinyi-iinyi-ma-ni wati-kari-ki
person-ERG PRES-DAT against-order-NPST man-OTHER-DAT
yungu paka-rni.
REAAS hit-NPST
One person incites him to hit someone else. [iinyi-iinyi-mani]

(36) Nyiya-kurra ngarrka-ngku iin-iinyi-ma-nu kurdu.
what-ALL man-ERG order-PAST child-ABS
What was the man ordering the child into? [Survey]

(37) Kurdu-ngku ngarrka kapakapa-ma-nu marlu-ku/marlu
child-ERG man-ABS hinder-PAST kangaroo-DAT/kangaroo-ABS
luwa-rinja-ku.
shoot-INF-DAT
The child prevented the man from (shooting) the kangaroo. [Survey]

Some of these verbs allow arbitrary control\(^9\) as in the following example:

(38) Japi-rni ka-rna-ngku kuyu ma-ninja-ku.
ask-NPST PRES-1sg-2sg meat-ABS get-INF-DAT
I am asking you to get the meat (i.e. that you get the meat, or that I get the meat). [japi-rni]

The question now is, should these complements be analysed as XCOMPs or as OBLIQUE arguments, or as ADJUNCTS? Semantically, the complements appear to be selected by the verb, and so the ADJUNCT reading is less plausible. The choice is then between XCOMPS and OBLIQUEs. XCOMPs are functionally controlled, whereas OBLIQUEs are anaphorically controlled. There is a piece of evidence against assigning them the XCOMP status. As (39) shows, an ADJUNCT in the non-finite clause can have a case different from that of its controller. Functionally controlled arguments agree with their controller in every respect, including case. Therefore the non-finite clause cannot be functionally controlled, and so the complement cannot be an XCOMP.

\(^9\) However, Hale (EFW) says that most of the verbs like those exemplified above seem to be structures of obligatory control.
Jahamarra-rlu ngarru-rnu Jampijinpa karli yaruju-rlu
Jakamarra-ERG tell-PAST Jampijinpa-ABS boomerang-ABS quick-ERG
jarnti-rinja-ku.
trim-INF-DAT
Jakamarra told Jampijinpa to trim the boomerang quickly. [JS]

However, this argument should be treated with caution, because the example sentence was elicited, and only one of the two people I asked accepted it.

But if the argument holds, then the complements to jussive verbs are probably OBLIQUE\text{\textsubscript{purpose}} arguments of the verbs, which can be realized as non-finite clauses with the DATIVE suffix, as nominals with the DATIVE or ALLATIVE suffixes, or as finite clauses with the REASON complementizer.

Class 2: Verbs of Emotion and Perception

The second class contains a few verbs of emotion and perception which appear to select secondary predicates marked with the Object-control complementizer kurra (OCOMP).

(40) Lawa ka-rna-jana yinka-kurra + ju maka-maka-jarri.
just PRES-1sg-3pl laughing-OCOMP + EUPH dislike-INCH-NPST
I don’t like them laughing. [maka-maka]
(Note that this example contains an action nominal yinka to which the complementizer is suffixed, rather than a nominalized verb).

back + forth-run-INF-OCOMP
I see the horses running up and down in the scrub. [jaalaparnkami]

talk-INF-OCOMP
In the early morning you can hear birds chirping. [wangkami]

(43) Kula-lpa yangka wangka-nja-kurra-rlangu purdanya-ngkarla,
NEG-PAST that speak-INF-OCOMP-E.G. hear-IRR,
warungka + ju kuja-ka-lu-jana ngarri-rni ngulaju yangka.
The complements of perception verbs and verbs such as hate in English are notoriously difficult to analyse: in a sentence such as John saw Lucy kissing Paul, is the verb see a two-place predicate taking Lucy kissing Paul as an argument, or is it a two-place predicate taking Lucy as an argument with an attribute kissing Paul? It is possible to analyse most of the Warlpiri examples given as having attributes: I dislike them when they laugh/those people who laugh etc. However, there are some examples in which what is perceived is clearly the whole action described by the OBJECT together with the kurra clause. (43) is perhaps such an example, and so is (44). (I am grateful to Ken Hale for pointing this out to me).

(44) Kula-rna ngaju-rlangu-rlu + wiyi nya-ngu pali-nja-kurra yangka
     not-1sg I-E.G.-ERG + BEFORE see-PAST die-INF-OCOMP YOU.KNOW
     puluku-rlangu manu nantuwu - nyanungu-jangka
     bullock-ABS-E.G. and horse-ABS the-SOURCE
For instance, I have never seen a bullock, say, or a horse die, you know, from that thing [praying mantis] [Excerpt. 116]

The object of perception is the event of an animal dying from eating a praying mantis.

The kurra clauses cannot plausibly be analysed as OBLIQUE arguments of the verb. Therefore they must be either XCOMP or ADJUNCTs. The same argument for anaphoric control that I made for the jussive complements is also applicable here. An ADJUNCT predicated of the SUBJECT of a kurra clause can have a different case from that of the controller of kurra clause, as in (45). From this, it follows that the the kurra clause must be anaphorically controlled, and therefore that the kurra clause cannot be an XCOMP.
From the hill the woman is looking at the man in the camp trimming a boomerang.

(The same cautionary note about elicited material is in order as for (39)).

Class 3: Verbs of Occupation

The third class consists of a couple of verbs, wirnki-jarrimi 'get busy at' and a near-synonym wartardi-jarrimi. Hale (EFW) observes that the object ofendeavour can be expressed by a nominal or a nominalized verb with the suffix rla, as in (46) and (47).

boomerang-ABS trim-INF-? -1sg busy-INCH-PAST
I got busy on trimming the boomerang. [EFW]

Nominals can appear with rla or its allomorph ngka in the same context.

(47) Karli-ngka -rna wirnki-jarri-ja.
boomerang-? -1sg busy-INCH-PAST
I got busy on the boomerang. [EFW]

The question is: is this rla the Sequential complementizer, or is it the homophonous LOCATIVE case suffix? In the latter event, the complement can be treated as an OBLIQUE_{LOC}. Now the SEQ complementizer suffix rla has prior dependent tense (the action in the rla clause precedes that of the matrix), while LOCATIVE case has simultaneous dependent tense (the action in the rla clause co-occurs with the action in the matrix). In (46) there is no sense of prior dependent tense, and so I assume that in these examples rla is the LOCATIVE, and not the complementizer. Thus the verbs wirnki-jarrimi and wartardi-jarrimi select an argument with the function OBLIQUE_{loc}, which may be expressed by a nominal or a nominalized verb.
Class 4: **Verbs of waiting**

The fourth class consists of the verb *pardarni* ‘to wait’, and its synonyms, which take a DATIVE argument,\(^{10}\) as in (48).

    Man-ABS PRES-DAT woman-DAT wait-NPST
    The man is waiting for the woman. [pardarni]

These verbs allow an Obviative-controlled complementizer controlled by the DATIVE argument, as in (49) and (50). The presence of the *rlarni* clause requires for the DATIVE being an Adjunct DATIVE, since *rlarni* clauses are never controlled by OBJECTs.

(49) *Mawu-ngkarni* -ji *parda-ka!*
    urine-OBLCOMP -1sg wait-IMP
    Wait while I urinate! [pardarni]

(50) *Parda-ka* -palangu ngarrka-jarra-ku, *karli* *paka-rninja-rlarnil*
    wait-IMP -3du man-DU-DAT, boomerang-ABS trim-INF-OBLCOMP
    Wait for the two men while they cut the boomerang (from the tree). [pardarni]

Since the *rlarni* clause is quite optional, it is possible to argue that it is an ADJUNCT predicated of the Adjunct DATIVE obligatorily selected by the class 4 verbs.

In conclusion, the behaviour of disjoint reference and of the anaphor *kariyinyanu* shows that nominalized verbs have understood SUBJECTs. Because ADJUNCTS predicated of the SUBJECT in these clauses can have the case which the SUBJECT of the corresponding finite clause would have, (and one different from that of the controller) these clauses must be anaphorically controlled. While most nominalized verbs act like ADJUNCTs, there are a few which are arguably selected by the verb. I have presented some evidence from case-marking of ADJUNCTs to suggest that these subcategorizing clauses cannot be functionally controlled (i.e. cannot be XCOMPs), but must be either

\(^{10}\) The presence of the DATIVE appears to be obligatory with *pardarni*, which implies that, if this DATIVE is indeed an Adjunct DATIVE, then Adjunct DATIVEs can be obligatorily selected functions.
OBLIQUEs or ADJUNCTs, depending on the meaning of the verb (although the evidence is not conclusive). In the next section, I will turn to the issue of the morphological and constituent structure of the non-finite verbs.

6.3 Structure of the nominalized verb

I discuss the position in phrase structure of non-finite clauses, before turning to an examination of the internal structure of non-finite clauses, which shows that non-finite verbs are really nominalized verbs. I argue that there are two types of nominal to which a complementizer suffix can attach, ordinary nominals and action nominals. I show that nominalized verbs with complementizer suffixes behave like action nominals with complementizer suffixes, rather than like ordinary nominals with complementizer suffixes.

6.3.1 External structure

Just as the controller of a nominal secondary predicate does not have to be adjacent to the nominal, so the controller of a complementizer predicate does not have to be adjacent to the complementizer clause, as (51) shows:

(51) Turaki-rlu puluku wirijarlu paka-rnu parnka-nja-karra-rlu.
vehicle-ERG bullock-ABS big-ABS hit-PAST run-INF-SSCOMP-ERG
The moving car hit a big bullock. [pakarni]

The position of the non-finite clause is also free. Very often, non-finite verbs appear at the end of the sentence, as in (52).

(52) Jiwinya-rlu ka-ngalpa luwa-luwa-rni yinirnti
chip-ERG PRES-1pln shoot-shoot-NPST beantree-ABS
wirijarlu paka-rinja-karra-rlu.
big-ABS hit-INF-SSCOMP-ERG
He’s hitting us with (flying) chips as he chops down the big bean-tree. [luwarni]

However, as (53), (54) and (55) show, the non-finite verb can intervene between the matrix verb and its SUBJECT. (56) shows a non-finite verb appearing between the matrix verb and a kurlu argument.
(53) Wanti-ja, warlkurru ma-ninja-karra yapa.
fall-PAST axe-ABS get-INF-SSCOMP person-ABS
The man fell on picking up the axe. [Hnotes 63]

(54) Ngaany-kiji-rni ka nguna-nja-karra-rlu yapa-ngku.
breathe-NPST PRES lie-INF-SSCOMP-ERG person-ERG
The man lying is breathing. [Hnotes:906]

(55) Karnta-ngku + ju -lpa lutu panti-rninja-karra-rlu + ju
woman-ERG + EUPH PAST lice-ABS spear-INF-SSCOMP-ERG + EUPH
yilpinji yunpa-ruu.
lovesong-ABS sing-PAST
The woman sang love chants as she squashed his head-lice. [pantirni]

(56) Nyampu ka-rna yirra-rni manngi-nja-karra-rlu
this PRES-1sg put-NPST think-see-INF-SSCOMP-ERG
Jilpirli-wana-kurlu, Jakamarra-kurlu.
Jilpirli-PERL-PROP Jakamarra-PROP
Thinking about him, I am telling this story about Jakamarra, the one buried at
Jilpirli. [MLJ]

Free assignment of grammatical functions will allow secondary predicates in any position
to be assigned the function ADJUNCT or OBLIQUE.

6.3.2 Internal structure

In this section, I give evidence that the [ V + INF ] structure is really a nominalized
verb. I then discuss the phrase structure rules and function assignment for obtaining the
correct functional structures for the complementizer clauses, including nominal +
complementizer as well as nominalized verb + complementizer.

6.3.2.1 Arguments for non-finite verbs as nominals.

All non-finite verbs consist of verb-roots followed by the INFINITIVE suffix followed
by some other suffix. The INFINITIVE suffix is a nominalizing suffix, which creates an N-1.
An N-1, as I claimed in 2.5.1, is an uninflected nominal root. N-1's cannot occur in
isolation, except as part of N. The [ V + INF ] may undergo lexical compounding with a
verb of motion (see 2.5.2) to appear in the syntax as a V, or else the [V + INF] may have
attached a suffix from the class of suffixes which attach to nominals. The suffix may be a complementizer suffix as in (57), or one of a restricted class of case-suffixes, (58), and derivational case suffixes, (59).

    slow-ABS -1plin tired-CAUS-INF-ADMON go-NPST
    We’ll go slowly so that it (walking a long distance) doesn’t tire us out. [[H60Dial: 7.11]]

(58) (...ngula kala-lu kunjurulu + Iku ngurrju-ma-nu - purra-nja-rlu.
    that USIT-3pl smoke-ERG + THEN good-CAUS-PAST cook-INF-ERG
    They would make it better (the rotten meat) with smoke, by cooking it. [H66PSJ: 1127]

(59) (Wirrirli) paji-rinja-parnta.
    (march-fly) bite-INF-PROP
    It (the March fly) bites a lot. [Hnotes:1722]

I will now present morphological evidence for both [ V + INF ] and [ [ V + INF ] + COMP ] being nominals.

The first piece of evidence that the INFINITIVE suffix nominalizes the verb is distributional. Complementizer and case suffixes attach to N-1's or N: manyu karra 'play-SSCOMP'. If [ V + INF ] is an N-1, the distribution of case and complementizer suffixes already given requires no change.

The second argument is based on reduplication. Nash (1980) shows that there are two types of reduplication in Warlpiri, verbal reduplication and non-verbal reduplication. Verbal reduplication reduplicates just the first two syllables of a finite tensed verb. This can even include the tense-marker, if the verb has a monosyllabic root. Nominal reduplication reduplicates the entire root, no matter how many syllables it has. Nash shows that infinitives can undergo either type of reduplication. Examples of verbal type reduplication include:
Verbal-type reduplication

\[ kiji -kiji -rninja -parnkami \quad \text{from kiji-ri 'throw'} \]
\[ \text{throw -throw -INF -run} \]

\[ parnta-parntarri -nja -mpa -yani \quad \text{from parntarri-mi 'crouch'} \]
\[ \text{crouch -crouch -INF -BY -go} \]

\[ pura -pura -nja -yani. \quad \text{from pura-mi 'go'} \]
\[ \text{follow -follow -INF -go} \]

Nominal-type reduplication

\[ ya-nir -ya -ninja -karra -rlu \quad \text{from ya-ni 'go'} \]
\[ \text{go -go -INF -SSCOMP -ERG} \]

If verbal reduplication applies before the infinitive suffix is affixed, and nominal reduplication can apply after the infinitive suffix is affixed, making the verb into a nominal, then the reduplication patterns exhibited above can be accounted for without any special stipulation.

In fact the whole complex \([ [ V + INF ] + COMP ]\)\(^{11}\) is occasionally found reduplicated:

(60) \[ nya -nja -karra -nya -nja -karra -rlu \]
\[ \text{see -INF -SSCOMP -see -INF -SSCOMP -ERGATIVE} \]
\[ \text{while looking and looking [Example due to Mary Laughren]} \]

(61) Kalaka-npa nya-nja-rla-nya-nja-rla milpa-jarra + ju
\[ \text{ADMON-2sg see-INF-SEQ-see-INF-SEQ eye-DU-ABS + EUPH} \]
\[ \text{mata-jarri-mi.} \]
\[ \text{tired-INCH-NPST} \]

11. Nominals with complementizer suffixes also undergo reduplication:

\[ warlu -karra -warlu -karra -rlu \]
\[ \text{fire -SSCOMP -fire -SSCOMP -ERGATIVE} \]
\[ \text{while involved with the fire [Hnotes 135]} \]

Observe that ERGATIVE case attaches at the end, showing that this is not a simple case of repetition.
Your eyes can get tired from looking at it (a very long train going by).

[lurru-kungunam]-j

stiff-INCH-PAST child small-ABS cry-INF-SEQ-cry-INF-SEQ

The baby went stiff and unconscious after crying and crying. [lalka]

(61) and (62) could be analysed as simple syntactic repetition. Observe however that in

(60), the ERGATIVE suffix occurs only on the last element, suggesting that this is not an

instance of syntactic repetition.

Distribution provides other evidence for the complex [ [ V + INF ] + COMP ] being a

nominal. Case suffixes can attach to such complexes too, as in (60), as well as in (63).

(63) jarnti -rninja -karra -rlu
trim -INF -SSCOMP -ERGATIVE

while trimming it.

A third argument for the [ [ V + INF ] + COMP ] construction being a nominal comes

from the fact that nominalized verbs with complementizer suffixes attached can form

complex verbs with the CAUSATIVE. Since the CAUSATIVE attaches to N or N-1

otherwise, the subcategorization frame of the CAUSATIVE requires no addition, if [ [ V +

INF ] + COMP ] is an N or an N-1. In (64) and (65), not only is there a CAUSATIVE

attached, but the [ [ V + INF ] + COMP ] has undergone nominal-type reduplication.12

Such structures, however, are rare, and may reflect the influence of languages to the east,

like Warumungu, in which nominalized verb + causative constructions are more

common.

12. Mary Laughren pointed out to me that this type of reduplication with the DATIVE

suffix in its purposive sense (or DATIVE) is occasionally found with nominals too:

kulu-ku-kulu-ku-mani ‘make angry’ > kulu action nominal
yinka-ku-yinka-ku-mani ‘make laugh’ > yinka action nominal
wanka-ku-wanka-ku-mani ‘incite erection’ > wanka ?ordinary nominal

Wanka is normally used as an attribute, meaning ‘raw, green’.
Kajika-ju juju-ngku yula -nja -ku -yula -nja -ku -ma -ni.
POT-1sg devil-ERG cry -INF -DAT cry -INF -DAT -CAUS -NPST
The evil one can make me cry. [mani]

Ngaka -lu-jana wangka-nja-wangu-rla
later -3pl-3pl speak-INF-PRIV-LOC
wangka -nja -ku -wangka -nja -ku -ma -nu.
speak -INF -DAT speak -INF -DAT -CAUS -PAST
Later, although they were not supposed to speak, they made them speak.
[wangkanjaku-wangkanjaku-mani]

However, calling the structure [ V + INF ] an N or N-¹ faces two difficulties.

First, unlike ordinary nominals, [ V + INF ]₀ cannot appear in isolation. It must have an overt suffix attached. Thus it cannot appear as N-¹ in ¹, and it cannot appear with ABSOLUTIVE case (i.e. the unmarked morphologically null case-suffix). Nor can it appear as the matrix predicate. The following uses are all unacceptable:

(66) With overt case-suffix attached
*parnka-nja ngarka-ngku
run-INF man-ERG
the running man (ERGATIVE)

(67) With default ABSOLUTIVE case
*Parnka-nja ka mata-jarri-mi
run-INF-ABS PRES tired-INCH-NPST
The running one is getting tired. [made-up]

(68) As matrix predicate
*Ngarra parnka-nja
man-ABS run-INF
The man is running.

Second, the type of function that a nominalized verb can have is strictly limited. Nominalized verbs cannot appear as sentential SUBJECTs or OBJECTs. Certain other case-suffixes, such as PERLATIVE and ELATIVE, must also be blocked. The restriction cannot be purely morphological, because, although ERGATIVE case can occur on a [ V + INF], it can ONLY do so if it bears the instrumental semantic relationship. A nominalized verb cannot appear as the ERGATIVE SUBJECT of a sentence. But the ERGATIVE
case-suffix is morphologically the same in both uses.

However, the general rule of free assignment of grammatical functions allows any \( \bar{N} \) generated in the phrase structure to have the function SUBJECT, OBJECT etc., and so produces these ill-formed constructions. Let us consider some examples. (69) illustrates a *karra clause being used as a sentential SUBJECT. To the best of my knowledge, (69) is not a possible sentence under the interpretation given.\(^{13}\)

\[(69) \quad *Parnka-nja-karra \quad ngurrju\]
\[
run-INF-SSCOMP \quad good\]

Running is good.

Observe that the problem does not lie in the fact that the argument is a nominalized verb; (69) would be equally unacceptable if the *karra were attached to a action nominal *manyu: *I like being playful.*

Both these generalizations seem to apply to action nominals and semantic case-suffixes as well. These share with nominalized verbs the feature [dependent tense]. The two generalizations can be expressed in terms of conditions on the appearance of the feature [dependent tense], but I will postpone discussion of this until after I have outlined the morphological structure of complementizer suffixes, and the assignment of functions.

6.4 Complementizer suffix structures

The following structures and assignments of functions must be accounted for:

[1] Nominal + *karra, where the nominal is an OBLIQUE\( _{\theta} \).

[2] Action Nominal + *karra, where the nominal is an argument-taking predicate.

---

13. Mary Laughren suggests that it may be acceptable with the interpretation: *He is good while running.*
Consider the sentence:

(70) Wati ka nyina-mi karli-karra.
    man-ABS PRES sit-NPST boomerang-SSCOMP-ABS
The man sits involved with a boomerang.

Semantically, karli-karra attributes the property to wati, 'the man', that he is involved in some unspecified way with a 'boomerang'. In the syntax, karli-karra will be assigned the function ADJUNCT. This ADJUNCT must have an argument-taking predicate, and I propose that in this case, the argument-taking predicate is the suffix karra. That is, I propose to treat karra like the ATP use of a case-suffix. The morphological structure of karli-karra is given in (71).

(71)

When discussing the information provided by the parts of a nominal with ATP case, I noted that this should be represented by instantiating the metavariables ↑ and ↓ by variables. For ease of exposition, however, I decided to combine the information in the form of long equations, rather than confuse the reader with variables. I will use the same device for the complementizer suffixes. In the annotated c-structure tree, then, the equations attached to the N↑ karli, and the complementizer suffix karra will appear
together as equations attached to N. N thus has the union of the features of the case-marker and the N\textsuperscript{e}. Karra selects a SUBJECT and an OBLIQUE\textsubscript{theta}, like ATP case suffixes. Karli is the OBLIQUE\textsubscript{theta} of karra. Because karra is an argument-taking predicate, it can introduce a null pronominal to act as SUBJECT, by means of the equation (\textup{TSUBJ PRED}) = ‘PRO’.

The c-structure tree for (70) follows.

(72) C-structure for nominal + complementizer suffix

The functional structure for (70) is given in (73).
6.4.2 Action Nominal + karra

In the examples discussed in the previous section, karra acts as the functional head of the structure, and provides the argument-taking predicate, while the nominal to which karra attaches acts as an OBLIQUE\_\theta of that predicate. In this section I describe the case where the nominal acts as the functional head and provides the argument-taking predicate for the structure.

Action nominals can appear with karra, predicated of the matrix SUBJECT, as the following examples show:

(74) H. Kala  \textit{wirlinyi-karra-rlu} \textit{ka-lu} \textit{yuju-ma-ni}.  \textit{But} \textit{hunting-SSCOMP-ERG \textit{PRES-3pl \textit{use-CAUS-NPST But they would use it during hunting}.}  
\textit{G. Yuwayi,} \textit{wirlinyi-karra-rlangu-rlu.}  \textit{Yes} \textit{hunting-SSCOMP-E.G.-ERG}  
\textit{Yes, in hunting for example.}  
[from: transcription and comments on a tape of Warlpiri sign language made by Judy Kegl and David Nash.]

(75) Ngapa-ngka + Iku  \textit{panu-ngku manyu-karra-rlu} \textit{nga-rni(y)} \textit{yi}.  \textit{water-LOC + THEN many-ERG \textit{play-SSCOMP-ERG eat-NPST A whole lot of them would eat at the water-hole, while playing.}  \textit{[H6PSJ: 1105]}

---

F-structure for nominal + complementizer suffix

\[
\begin{array}{l}
\text{SUBJECT} \quad \left[ \begin{array}{l}
\text{PRED} \quad \text{'wati'} \\
\text{CASE} \quad \text{ABSOLUTIVE}
\end{array} \right]
\end{array}
\]

\[
\begin{array}{l}
\text{PRED} \quad \text{'nyinami' < (SUBJ)} \\
\text{TENSE} \quad \text{non-past} \\
\text{ASPECT} \quad \text{present}
\end{array}
\]

\[
\begin{array}{l}
\text{ADJUNCT} \quad \left[ \begin{array}{l}
\text{CASE} \quad \text{ABSOLUTIVE} \\
\text{PRED} \quad \text{'karra' < (SUBJ), \text{(OBL}^{\theta})} \\
\text{SUBJECT} \quad \text{[PRED 'PRO']}
\end{array} \right]
\end{array}
\]

\[
\begin{array}{l}
\text{OBL}^{\theta} \quad \text{[PRED 'karli']}
\end{array}
\]
The morphological structure of *manyu-karra* is given in (76).

(76)

\[
\begin{align*}
& N \quad \\
& \uparrow = \downarrow & \uparrow = \downarrow \\
& N^{-1} \quad \text{Affix} \\
& \text{PRED} = \text{'manyu'} \quad \text{SUBJ PRED} = \text{'PRO'} \\
& \langle \text{SUBJ} \rangle \\
& \text{manyu} \\
& \text{karra}
\end{align*}
\]

In contrast to the example with *karli-karra*, here the action nominal *manyu* provides the lexical form (functional head) for the whole N. I express this by ascribing \( \uparrow = \downarrow \) to *manyu*, rather than the function OBLIQUE\(_{\theta} \).

For *karli-karra*, I claimed that *karra* introduced a null pronominal as its SUBJECT (represented by the equation (\( \uparrow \text{SUBJ PRED} \) = ‘PRO’), just as normal argument-taking predicates can do. Here, I also want to claim that *karra* introduces the equation (\( \uparrow \text{SUBJ PRED} \) = ‘PRO’), even though it is not the functional head for the complex. I claim that *karra* obligatorily introduces a null pronominal SUBJECT. This differentiates *karra* from case suffixes, which can, but do not necessarily, introduce a null pronominal SUBJECT. Nominals with ATP case-suffixes do not have to be predicated of an argument; they can be predicated of the sentence as a whole, in which event they do not select a SUBJECT. *Karra* clauses are always controlled, and, as far as I know, cannot have lexical SUBJECTs. If *karra* obligatorily introduces a null pronominal SUBJECT (i.e. has the equation (\( \uparrow \text{SUBJ PRED} \) = ‘PRO’ as part of its lexical entry), then it cannot appear with a lexical SUBJECT, and it must be predicated of an argument, not of the proposition.
A simplified c-structure for (75) is given in (77). Since there are two ADJUNCTs, I spell out the equation \( \downarrow \varepsilon (\uparrow {\text{TADJUNCT}}) \) in full. The AUX is null, and I have chosen only to represent the equation of the OBJECT in the AUX, because it is not represented overtly, whereas the SUBJECT is overt, \textit{panungku}. (The verb introduces a null pronominal for the OBJECT.) I also omit the clitic \textit{iku}.

(77) C-structure for action nominal + complementizer suffix

\[
\begin{array}{ccc}
\downarrow \varepsilon (\uparrow {\text{TADJUNCT}}) & \uparrow = \downarrow & \text{SUBJECT} \\
\uparrow & \downarrow \varepsilon (\uparrow {\text{TADJUNCT}}) & \uparrow = \downarrow \\
\text{N} & \text{AUX} & \text{N} \\
\text{N} & \text{N} & \text{N} \\
\text{N} & \text{N} & \text{N} \\
\end{array}
\]

\begin{align*}
PRED &= \text{'}LOC\text{' } & OBJ PERS &= 3 \\
\langle{\text{OBLtheta}}\rangle & & PRED &= \text{'}panu\text{' } & PRED &= \text{'}manyu\text{' } & PRED &= \text{'}ngarni\text{'} \\
\langle{\text{SUBJ}}\rangle & & \langle{\text{SUBJ}}\rangle & & \langle{\text{SUBJ}}\rangle,\langle{\text{OBJ}}\rangle \\
\text{CASE} &= \text{ERG} & \text{CASE} &= \text{ERG} & \text{SUBJ CASE} &= \text{ERG} \\
\text{OBLtheta PRED} &= \text{'}ngapa\text{' } & \text{OBJ PRED} &= \text{'}PRO\text{' } & \text{OBJ CASE} &= \text{ABS} \\
\text{OBLtheta CASE} &= \text{LOC} & \text{SUBJ CASE} &= \text{PRO} \\
\text{Ngapa-ngka} & & \text{panu-ngku} & & \text{manyu-karra-rlu} & & \text{nga-rni(yi)}. \\
\end{align*}

The f-structure for the same sentence is given in (78). Observe that both ADJUNCTs are generated as individual f-structures within a larger ADJUNCT f-structure, because the function ADJUNCT is realized by a set of f-structures, not by a single f-structure.
(78) F-structure for action nominal + complementizer suffix

SUBJECT [ PRED 'panu' ]
  [ CASE ERGATIVE ]

PRED 'ngarni' < (SUBJ),(OBJ) >

TENSE nonpast

ASPECT Present imperfect (gapped)

OBJECT [ PRED 'PRO' ]
  [ CASE ABSOLUTIVE ]

ADJUNCT [ CASE ERGATIVE ]
PRED 'manyu' < (SUBJECT) >
  SUBJECT [ PRED 'PRO' ]

[ CASE LOCATIVE ]
PRED 'ngka' < (OBLtheta) >
  OBLtheta [ PRED 'ngapa' ]
    [ LCASE LOC ]

6.4.3 Nominalized Verb + karra

Evidence for treating nominals and nominalized verbs with the same complementizer suffix alike comes from conjunction. A nominal and a nominalized verb can be conjoined, whether the nominal is an action nominal as in (79), or an ordinary nominal as in (80), or a nominal with another complementizer suffix attached, as in (81).
The teacher watches them writing and playing. [Witawitakurlu]

This (herb) is bad for eyes and for eating. [NN]

It has sunk in, what you told me about behaving well and doing without grog. [langa-kurra-jarrimi]

Like the Nominal + complementizer construction, they are assigned the function ADJUNCT or OBLIQUE or possibly XCOMP in the syntax. Morphologically, nominalized verb + complementizer constructions are accounted for in essentially the same way as action nominal + complementizer constructions. The argument-taking predicate of the ADJUNCT is the nominalized verb, and not the complementizer suffix. Consider a typical construction with a nominalized verb.

The argument-taking predicate of the ADJUNCT is jarntirinja. Karra, as usual, provides a PRO SUBJECT for the predicate. Additional complexity is introduced by the fact that the verb itself is subcategorized for other arguments. Furthermore, a non-finite verb can appear as a single constituent in front of the AUX with all its complements, as (83) illustrates.

By dancing a corroboree they would send away the spirit. [NK]

(The AUX cannot intervene between a complement of a non-finite verb, such as purlapa, and the non-finite verb, unless, as I will discuss in 6.6.6, purlapa is marked with the
complementizer suffix also).

Therefore, a phrase structure rule is needed which will treat the nominalized verb and its complements as a single constituent. Before discussing this, consider the simplified c-structure for (82) given below.

(84) C-structure for nominalized verb + complementizer suffix

```
\[\begin{array}{llll}
S & & & \\
\text{SUBJECT} & \uparrow = \downarrow & \text{AUX} & \downarrow = \downarrow \\
\text{N} & \text{ASP} & \text{V} & \text{N} \\
\text{PRED} = 'ngarrka' & \text{PRED} = 'wirnpirlimi' & \text{PRED} = 'karli' & \text{PRED} = 'jarnti-rinja' \\
\text{CASE} = \text{ABS} & \text{CASE} = \text{ABS} & \text{CASE} = \text{ABS} & \text{CASE} = \text{ABS} \\
\text{Ngarrka} & \text{kar} & \text{wirnpirlimi} & \text{karli} & \text{jarnti-rinja-karra} \\
\end{array}\]
```

I put ?? for the category expressing the ADJUNCT, because the normal3 \(\overline{N}\) rule (37) given in Chapter 4 cannot be used for these nominalized verb constructions. I repeat the rule here for convenience.

(85) Revised \(\overline{N}\) expansion rule

\[
\overline{N} \rightarrow N^* \quad N^* \quad \left\{ \begin{array}{l}
(N) \text{ (or perhaps } \overline{N}) \\
(\downarrow \in \uparrow \text{ADJUNCTS}) \\
N
\end{array} \right. 
\]
There are two major reasons why this rule does not apply. First, the structure can contain nominals which do not have the same case as the nominalized verb, as (86) shows.


The man is singing a corroboree while trimming a boomerang. [EFW]

In this example, the nominalized verb is marked ERGATIVE while the OBJECT of the nominalized verb is marked ABSOLUTIVE.

The second reason why the ordinary $\bar{N}$ rule is insufficient is that the daughters of the $\bar{N}$ can be $N$ or $N^\dagger$, but not $\bar{N}$. But in fact an $\bar{N}$ can appear as the object in the sentence given – e.g. karli wiri 'a big boomerang'. Since it seems clear that the nominalized verb is a nominal, I therefore propose a second $\bar{N}$ rule:

(87) Second phrase structure rule for expanding $\bar{N}$

\[
\begin{align*}
\bar{N} \rightarrow \bar{N}^* \\
N \\
\uparrow = \downarrow 
\end{align*}
\]

I am assigning the head ($\uparrow = \downarrow$) to the last element, because, although 'leaked' infinitivals (ones in which an element is leaked to the other side of the "head" – the element with a complementizer suffix) exist (and appear in some of the examples given),
they are rather rare. I assume that, apart from the head, grammatical functions are assigned freely within this structure. Thus an $\text{N}$ within this structure can be a SUBJECT, OBJECT, OBLIQUE etc. An $\text{N}$ can only be a SUBJECT if the complementizer suffix does NOT obligatorily introduce a pronominal SUBJECT. Otherwise, consistency would be violated. I will discuss later some instances of lexical SUBJECTs in non-finite clauses.

The f-structure corresponding to the c-structure (85) follows:

14. Examples of leaked infinitives are given in i. and ii. In i. the DATIVE argument of rdipimi follows the infinitive.
   i. Lawa ka-rna nyina – – rdip-i-na-wangu marlu-ku + ju.
      OK PRES-1sg sit-NPST meet-INF-PRIV kangaroo-DAT + EUPH
      I haven't come across a single kangaroo. [rdipimi]
   ii. Karn-ta-patu-kari -li ya-nu ngapa-ku $\text{ma-ninia-ku}$
       billycan-ERG
       Some other women went to get water in billycans. [JMK]
   iii. Yilya-ja -palangu ngapa ma-ninia-ku ngami-kiri.
       send-PAST -3du water-ABS get-INF-DAT water.carrier-PROP-ABS
       He sent the two off to get water with a wooden water-carrier. [yilyami]

In ii. an ERGATIVE adjunct predicated of the understood PRO SUBJECT of the non-finite clause follows the nominalized verb. It cannot be treated as an ADJUNCT predicated of the controller (i.e. the matrix SUBJECT), because the controller has ABSOLUTIVE CASE. This contrasts with iii. in which the ABSOLUTIVE ngamikiri can readily be treated as an attribute of the ABSOLUTIVE OBJECT, rather than of the understood ERGATIVE SUBJECT of the subordinate clause.
Observe that the second phrase structure rule makes the prediction that, if a nominal selects an argument, as, for example, the nominal *ngampurrpa* 'desirous' selects a DATIVE argument representing the object of desire, the nominal should be able to act as the head of a constituent containing a DATIVE-marked nominal acting as its argument. In fact, this prediction is borne out by some data collected by David Nash.
Wanting water, they hit me as I arrived from the soakage. (David Nash, January, 1983).

The ERGATIVE nominal *ngampurrpa-rlu*, which is predicated of the SUBJECT of the sentence, can appear as a single constituent in front of the AUX together with the DATIVE nominal it selects, *ngapa-ku* 'water'.

6.5 The complementizer suffixes

In this section, I outline the semantic properties of complementizer suffixes. These include their *control* properties, both what argument may be controlled and what may be a controller, and also their *time-reference*.

I first show that anaphoric control of non-finite clauses in Warlpiri can be represented, as Bresnan (1982a) suggests, in terms of the same mechanisms that are independently required to specify the antecedent relations of reflexives. I then discuss the uses of the dependent tense features, concluding that, while semantic interpretation can block some incorrect assignments of functions to elements with dependent tense, some conditions must still be placed on the assignment of functions to elements with dependent tense, both in \( \bar{N} \) and \( S \), in order to capture certain distributional generalizations about action nominals, nominalized verbs and semantic case nominals. Finally, I describe the classes of complementizer suffix in Warlpiri in terms of their antecedent properties and dependent tense features. In the course of this discussion, I examine the representation of overt lexical SUBJECTS, an instance of OBJECT control, as well as some apparent instances of discontinuous expressions marked with the same complementizer suffix.

15. Mary Laughren informs me that nominal compounds can be formed from a nominal and the DATIVE nominal it selects; for instance

sober-*ku-ngurrpa*

sober-DAT-ignorant

"Ignorant of sobriety" a nickname.

(This is used as a nickname.)
6.5.1 An account of anaphoric control

Like normal pronouns, null pronominals (PROs) can be anaphoric or non-anaphoric, that is, bound or free. PRO is free in matrix clauses, such as the following.

(90) Parnka-mi ka.
    run-NPST PRES
    He is running.

Null pronominals are normally introduced by argument-taking predicates. Disjoint reference of free PROs, and the antecedent of bound PROs are represented by the antecedent features introduced in the discussion of reflexives in 2.3.3 and 2.3.4. To represent the fact that null pronominals introduced by the verb in finite clauses must be disjoint in reference from other arguments of the verb, I assumed that the default equations introduced by the AUX contain the antecedent feature [−NUCLEAR]. This means that the antecedent of a null pronoun must be in a domain external to the minimal clause in which it finds itself. Thus a PRO non-SUBJECT argument introduced by the verb cannot be controlled by a SUBJECT; it obeys disjoint reference. Instead such an argument must be expressed by a reflexive pronominal clitic nyaru.

(91) Jampi-rni ka-nyaru.
    lick-NPST PRES-refl
    Sh2 (cow) is licking herself. [H59Notes]

This clitic introduces the equation (TPRED) = ‘PRO’, Here, the reflexive pronoun nyaru introduces a null pronominal PRO which is bound to a null pronominal SUBJECT introduced by the verb. This is expressed by assuming that the PRO introduced by the reflexive clitic has the antecedent feature [+SUBJECT].

I intend to use the same mechanisms to express anaphoric control of null pronominals in non-finite clauses. I claim that the SUBJECT of clauses with the SSCOMP suffix karra is a null pronominal. As a pronominal, it is liable to anaphoric control. But as a null element it cannot specify its antecedent features, because it has no lexical entry to contain those antecedent features. Instead, the antecedent features for the PRO must be introduced by some overt lexical item, in this case the suffix karra. I claim that the suffix
karra places the restriction on the null pronominal SUBJECT PRO that it has the antecedent feature [⁻NUCLEAR]. Therefore it has to find an antecedent outside the nominalized verb. Exactly what the antecedent can be, depends on the particular complementizer suffix. Karra places the further constraint on the PRO SUBJECT which it introduces. that the antecedent of this PRO be a SUBJECT. Let us examine this claim more carefully.

The major difference between karra and a semantic case suffix is that karra imposes functional requirements on its antecedent. Its antecedent must agree with it in case – that is only to be expected, since karli-karra has the function ADJUNCT, and ADJUNCTs agree with their antecedents in case, by the Agreement Convention. But, as Carrier (1976), Hale (1982b), Nash (1980), and Simpson and Bresnan (1982) show, case does not suffice to determine the controller of a karra clause, because, while a karra clause can be controlled by an ABSOLUTIVE SUBJECT, it cannot be controlled by an ABSOLUTIVE OBJECT, and, given ERGATIVE case-marking, it can be controlled by an ERGATIVE SUBJECT.

(92) illustrates control of a karra-marked nominal by an ERGATIVE SUBJECT.

(92) Ngarrka-ngku ka miyi nga-rni karli-karra-rlu.
man-ERG PRES food-ABS eat-NPST boomerang-SSCOMP-ERG
The man is eating food while involved with the boomerang. [EFW]

To describe within LFG the constraints on antecedents of controllers, I follow Simpson and Bresnan (1982) in extending the account of antecedent features for reflexive pronouns to controllers in Warlpiri. In that paper, it was assumed that antecedent features are independent features, (defined, however, in terms of grammatical functions) Here, I shall assume that antecedent features are simply the features used to decompose grammatical functions (see 2.3.4), with the added requirement that they specify the antecedent of an element. Thus, the reflexive in the sentence John loves himself has the function OBJECT, which may be decomposed into the features [+ OBJECT − SUBJECT], and has the antecedent features [+ SUBJECT − OBJECT], indicating that its antecedent is a SUBJECT. To represent the difference between antecedent features and grammatical function features, I shall use quotation marks around the latter: ["SUBJECT" = +].
Finally, to represent the fact that *karra* does not ever have a lexical SUBJECT, I assume that it obligatorily introduces a null pronominal SUBJECT. Then of course a lexical SUBJECT can never appear, because there would be a consistency clash between the overt lexical SUBJECT and the PRO SUBJECT.

To conclude, the lexical entry for the suffix *karra* contains the equations:

\[(\text{TSUBJ } "\text{SUBJECT}") = +.\]

\[(\text{TSUBJ NUCLEAR}) = -\]

\[(\text{TSUBJ PRED}) = \text{‘PRO’}\]

These equations represent the fact that the *karra* clause must be controlled by a SUBJECT.

In the next section I will show how differences in dependent tense can be represented within LFG, and I will show that assuming a feature of [DEPENDENT TENSE] has several useful consequences.

6.5.1.1 Dependent tense

It is sometimes assumed that finite and non-finite clauses are distinguished by tense; finite clauses are said to be tensed, and non-finite clauses to be tenseless. In languages such as English this assumption is reinforced by the existence of several morphologically distinct forms of finite verbs indicating different time-reference, which contrasts with the comparative lack of differentiation within non-finite clauses. The fact that non-finite clauses in English do have different time references (infinitives usually denote a state which has not yet been realized at the time of the action denoted by the finite verb, while participles denote a state contemporaneous with that of the finite verb) is clouded by the use of compound tenses within non-finite clauses (*to have gone, having gone*), by the use of infinitives as arguments of verbs such as *believe* (in which the unrealized sense of the infinitive is lost), and by constraints preventing certain types of verbs (modals) from appearing in non-finite clauses (their absence is sometimes attributed to an inherent
tense property). In Warlpiri, however, these obscuring factors are absent, and it seems clear that non-finite clauses do not lack a time-reference. Rather, their time-reference is dependent on that of the matrix argument-taking predicate. I call the property of having a time-reference dependent on that of a finite verb dependent tense. This property is particularly striking in languages such as Warlpiri, in which there are several different types of non-finite clause, which differ in their time references. A complementizer suffix can specify whether the action denoted by the non-finite verb to which the suffix is attached takes place before, during, or after the action denoted by the finite argument-taking predicate upon which the non-finite clause is dependent.

In a sense, a dependent tense marker is an anaphor, whose interpretation depends on the tense of the matrix argument-taking predicate. I propose to represent dependent tense by means of the features [+ TENSE] [+ DEPENDENT], which I will abbreviate for convenience to [+ dependent tense]. Certain complementizer suffixes, ATP case-suffixes and action nominals share these features. I will use the idea that the interpretation of this feature depends on the presence of a finite argument-taking predicate to represent certain properties which these suffixes and nominals have in common.

The tense suffixes which attach to finite verbs can be represented in terms of a distinctive feature system, and the differences between dependent tense suffixes can be

---

16. Stowell (1981: 40-51) suggests that the feature [+ TENSE] distinguishes NPs from S in English. This requires him to argue that to-infinitives are [+ TENSE]. He writes:

*English to-infinitives lack the morphological feature [+ PAST], but this does not mean that they have no abstract tense operator. Rather, their status as being neither present nor past has the effect of specifying that the time-frame of the clause is unrealized with respect to the tense of the matrix within which the infinitival appears.* (Stowell, 1981: 41)

In Stowell (1982) a number of interesting consequences are derived within the GB framework from assuming that infinitives have tense.
represented by a subset of these distinctive features.\(^\text{17}\) A table is presented below.

(93) Dependent Tense features

<table>
<thead>
<tr>
<th>DEPENDENT-TENSE</th>
<th>Prior action</th>
<th>Simultaneous action</th>
<th>Subsequent action</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEATURE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAST</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UNREALIZED</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

I assume that the negative values are the unmarked values, and act as a default specification. If a suffix has dependent tense but is not marked for a particular feature, then it is assumed to be negatively marked. For instance, ATP case-suffixes, unless otherwise specified, have the unmarked values for dependent tense. Thus, when they are

\(^\text{17}\) The five main tenses on finite verbs can be distinguished using the features [±PAST], [±UNREALIZED], and [±HEARER-DIRECTED]

<table>
<thead>
<tr>
<th>TENSE FEATURE</th>
<th>Non-past</th>
<th>Past</th>
<th>Imm-future</th>
<th>Imper</th>
<th>Presentnl</th>
<th>Irr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAST</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>UNREALIZED</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>HEARER-DIRECTED</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

[UNREALIZED] covers events that have not yet taken place, and groups together the Imperative, the Irrealis and Immediate Future. [PAST] opposes the Past tense to the other inflections. [HEARER-DIRECTED] opposes the Presentational Present and the Imperative to the other inflections, by using the idea that both Imperatives and Presentationalis make reference to the Hearer. The Imperative represents a speech-act directed towards a Hearer, while a Presentational directs the attention of the Hearer to some particular point.

The Irrealis is formed by suffixing the morpheme *ria* to the Imperative. If it is assumed that *ria* is the morphological head, then its features take precedence over those of the form to which it attaches. I claim that, unlike the Imperative, it is not Hearer-directed, and so the Irrealis also is not Hearer-directed. In order to distinguish the Irrealis from the Immediate Future, I have been forced to resort to a third value, namely "unspecified", for the PAST value of the IRREALIS.
used as argument-taking predicates, the time reference of the state which they denote is simultaneous with that of the finite verb. For example, when the ERGATIVE is used as an instrumental, it describes a state simultaneous with that of the main action. When case-suffixes attach to nominalized verbs, they maintain the same tense-features. 18

I claim that the action nominals described in 2.4 share this property of dependent tense, and have the unmarked values. If they are marked with a case or complementizer suffix, however, and that case or complementizer suffix has marked values for a particular tense feature, the marked values are adopted. I give a number of examples below with the action noun wirlinyi ‘hunting’.

(94) a. Prior action
Ngula-jangka -rlipa pina-rii ya-nu turaki-kirra.
that-SOURCE -1 plin back-HERE go-PAST truck-ALL
wirlinyi-jangka kuyu-kurlu.
hunting-SOURCE meat-PROP-ABS
After that, we went back to the truck after hunting, with game.
[jirrama-kari-jirrama-kari]

b. Kala nyampu + kula ka-lu nyanungu miyi-paru-parnta
BUT this + CONC PRES-3pl the veg.food-DIM-PROP-ABS

18. Hale (n.d.a and 1982b.) suggests that the differences in meaning between the spatial cases in Warlpiri hinge on the ideas of central coincidence and terminus (Source or End-point). LOCATIVE is a case positively specified for central coincidence, and ELATIVE and ALLATIVE are specified for terminus (Source and End-point respectively). Looking at central coincidence and terminus with respect to time rather than space, it is then not surprising that central coincidence should be used for simultaneous action, (as with the LOCATIVE when attached to nominalized verbs), and that terminus should be used for prior or subsequent action, (as with the SOURCE warnu, and the DATIVE ku and ALLATIVE kurra when attached to nominalized verbs).

However, the ALLATIVE, as well as having a subsequent action purposive use is also homophonous with the simultaneous action OBJECT-control complementizer (OCOMP). One could perhaps consider these two uses as differing in dependent tense features. The purposive of the ALLATIVE use has the marked positive value for the feature [UNREALIZED], while the simultaneous action use has the unmarked negative value for the feature [UNREALIZED]. (However, there are differences in control properties too, so that this feature is not sufficient to distinguish the two uses.)
wapa    wirlinyi-warr.u
move-NPST hunting-ASSOC
Well, here they are walking around with vegetable foods from hunting. [yukunjukunju]

(95) a. **Subsequent event**

Jiti-ja + Iku -rlupa wirlinyi-kingarnti.
descend-PAST + THEN -1plin hunting-PREP-ABS
Then we got down (out of the truck) to go hunting. [jitimi]

b. Watiya-rlu -jana jurnta-lalypa-ma-nu taya + ju
tree-ERG -3pl away-flat-CAUSE-PAST tyre-ABS + EUPH
wirlinyi-kijaku.
hunting-ADMON
The stake flattened their tyre so they could not go hunting. [lalypa]

c. Kaji-rna ya-ni Yurntumu-kurra, ngula + ju ngarra-ju-lu
IF-1sg go-NPST Yurntumu-ALL that FUT-1sg-3pl
wirlinyi-ki yilya-mi.
hunting-DAT send-NPST
If I go to Yuendumu they will send me out hunting. [yilyami]

Now that I have outlined the feature system for representing dependent and independent tense, I will present the problems which I hope to capture by means of this system.

First, whereas ordinary nominals can act as matrix predicates, bare nominalized verbs and most bare action nominals19, nominalized verbs and action nominals with most complementizer suffixes, and most semantic case-suffixes cannot act as matrix

19. As I mentioned in 2.4, the action nominals do not form a homogeneous class, and more work is needed to determine the relationship between their meanings, and their syntactic behaviour. For instance, *jarda* ‘sleep’, which Mary Laughren informs me is both a state and an activity, appears freely as a matrix predicate, and unlike *wirlinyi* ‘hunting’ (which is an activity) or *manyu* ‘play’ (which is an activity as well as a property), does not permit the LOCATIVE.

Kurdu jarda(*-ngka) Yuwayi, jarda.
child-ABS asleep(*-LOC) Yes asleep
Is the child asleep? Yes, asleep. [Nash, April, 1983]
I have no explanation for the difference in behaviour between *jarda* and *manyu*. 
predicates. I illustrate this below.

(96) Bare nominalized verb
*Ngaju parnka-nja
I-ABS run-INF
I am a running one.

(97) Bare action nominal
*Ngaju wirlinyi.
I-ABS hunting
I am hunting. [Nash, April 1983]

*Maliki wajili.
dog-ABS chasing
The dog is on a chase. [Nash, April 1983]

(98) Semantic case-suffix
*Ngaju Yurntumu-ngurlu
I-ABS Yurntumu-EL
I am from Yuendumu. [made-up]
(Mary Laughren points out that this would be acceptable as a gapped sentence.)

(99) Complementizer-suffix
*Ngaju parnka-nja-karra.
I-ABS run-INF-SCOMP
I am running. [made-up]

Compare these with the following acceptable sentences:

(100) Ngaju wirlinyi-rla.
I-ABS hunting-LOC
I am hunting. [Nash, April 1983]

(101) Ngaju -rna manyu-ngka.
I-ABS -1sg play-LOC
I am at play. [Nash, April 1983]

(102) Ngaju -rna pirli-ngka.
I-ABS -1sg hill-LOC
I am on a hill. [Nash, April 1983]

(103) Wirlinyi-wangu ngaju + ju.
hunting-PRIV I-ABS + EUPH
I'm not going hunting. [Laughren, p.c.]

The second problem is to account for the fact that nominalized verbs, nominals with some case-suffixes, some action nominals and elements with most complementizer suffixes cannot appear within $\bar{N}$, acting as ADJUNCTs predicated of some $N$ in that $\bar{N}$. What rules out the following structures?

\[
\begin{array}{c}
\bar{N} \\
\text{ADJUNCT} \\
N \\
parnka-nja-karra-rlu \\
\text{run-INF-SSCOMP-ERG} \\
The \text{man running}
\end{array}
\]

\[
\begin{array}{c}
\bar{N} \\
\text{ADJUNCT} \\
N \\
wati-ngki \\
parnka-nja-karra-rlu \\
\text{run-INF-SSCOMP-ERG} \\
The \text{man running}
\end{array}
\]

20. The situation with action nominals is not clear. They are rarely found in texts forming single constituents. However, an elicited example of manyu forming a single constituent with the nominal it modifies was accepted, as in i.:

i. **Kurdu**  
   *manyu-ngku* ka-ju *nya-nyi.*  
   child play-ERG PRES-1sg see-NPST  
   The child while playing is looking at me. [Nash, April 1983].
   (Mary Laughren informs me that "The playful child" may also be a possible reading.)

ii. **Ngajulu-rlu** *-rna-rla-jinta* *luwa-rlu* *wirlinyi-rla-ku*  
   1-ERG .1sg-CON-DAT shoot-PAST hunting-LOC-DAT  
   *ngarrka-ku.*  
   man-DAT  
   I shot at the man who was hunting. [Nash, April, 1983]

But ar, currently for *wirlinyi* 'hunting', the preferred strategy is to use *wirlinyi* with the LOCATIVE
The man running

The man running

The man hunting

(The unacceptability of this example was confirmed by Nash, April, 1983)

The man hunting

(The unacceptability of this example has not been confirmed.)
The man from the hill

The man on the hill

The third problem was raised in 6.3.2.1, namely, what prevents a nominalized verb, an action nominal, or an element with an ATP case-suffix, or a complementizer suffix, from acting as a sentential SUBJECT or OBJECT? What blocks (105) and (106) from having (so far as we know) the meanings given?

(105) *Parnka-nja *wirlinyi ngurrju.
     run-INF-ABS /hunting good-ABS
     Running/hunting is good. [made-up]
     (Mary Laughren suggests that the example with *wirlinyi may be acceptable. However, I have not found textual examples.)

(106) Ngaju *rna ngampurrpa *pirli-ngka-ku.
     I-ABS -1sg desirous rock-LOC-DAT
     I am desirous of being on a rock. [made-up]
     (Mary Laughren suggests that this might be acceptable if combined with a nominalized verb with DATIVE, *nyina-nja-ku.*)

Suppose we assume that this class of elements, nominalized verbs, action nominals, ATP case-suffixes, and complementizer suffixes have in common the property of dependent tense. That is, the time-reference of the event or state or property denoted by this elements is anaphoric, dependent on some other time-reference.
Then the first property, that these elements cannot act as matrix predicates, follows from the interpretation of the feature [DEPENDENT TENSE]. A dependent tense is an anaphor, and must be construed with respect to a finite verb. In a main clause, there is no finite verb for it to be dependent on. Therefore no element with the feature [DEPENDENT TENSE] can appear as the functional head of a clause.

LOCATIVE case is the exception; it can sometimes appear as a matrix predicate. However, as I showed in 4.2.2.2, LOCATIVE case has properties in common with derivational case, and may well be doubly classified. That is, it may optionally have the feature [DEPENDENT TENSE]. When the feature is missing, the LOCATIVE suffix can act as a matrix predicate. Attaching it to an element which already has dependent tense, such as wirilyi in (100), blocks transmission of dependent tense. The argument-taking predicate of the whole clause is the LOCATIVE. Wirilyi acts as an OBLIQUE\(\theta\) argument of the LOCATIVE. The SUBJECT is the SUBJECT of the sentence. A similar analysis would be given for wirilyi-wangu. The PRIVATIVE wangu, like the LOCATIVE, only optionally has a [dependent tense] feature, and so can appear as the matrix predicate. If the LOCATIVE and the PRIVATIVE are the morphological heads of the nominals, and if the features of morphological heads percolate unless otherwise specified, it is natural that their negative dependent tense specification should supersede the positive dependent tense specification of the action nominals.

The second property, that these elements may not occur within \(\overline{N}\), as an ADJUNCT of the head, can, as I suggested in 4.2.2.1, be accommodated by assuming that within \(\overline{N}\) the function ADJUNCT may only be assigned to an element which has no tense property, such as a nominal with a derivational case suffix.

\[(107) \text{Revised } \overline{N} \text{ expansion rule}
\]

\[
\overline{N} \rightarrow N^* \quad N^* \left\{ \begin{array}{l}
(N) \text{ (or perhaps } \overline{N}) \\
\downarrow \epsilon \ (\uparrow \text{ADJUNCTS}) \\
\neg \downarrow \text{TENSE} \\
N \end{array} \right\} N^*
\]
The restriction that the ADJUNCT may not have a tense feature can be expressed as shown, or else a restriction on what functions may be assigned to elements with dependent tense, may be used, such as the one in (108).

(108) If an element within $\tilde{N}$ has the feature [dependent tense], assign it $\uparrow \in \perp$.

This condition will rule out the assignment of functions which creates the ill-formed constructions given above. Again, LOCATIVE, by virtue of the optionality of its dependent tense, is allowed to appear in $\tilde{N}$s.

Observe that this restriction is language-particular. Languages such as English allow ADJUNCTS of $\tilde{N}$ to have dependent tense (the seal from Sule Skerry, the only seal to escape, the only seal shot at, the only seal still living).

Can the constraint that elements with dependent tense must be assigned the equation $\uparrow = \perp$ be extended to daughters of $S$? If it could be so extended, this would automatically take care of the third problem, that elements with dependent tense may not act as sentential SUBJECTs and OBJECTs. However, extending it to the $S$ level would also block assigning elements with [dependent tense] the OBLIQUE function, as well as the ADJUNCT function, which is the main function such elements bear. I can see no alternative to placing a condition on the free assignment within $S$ of grammatical functions to elements with dependent tense, which parallels, but is not identical to, the condition on assignment of functions within $\tilde{N}$. Within $\tilde{N}$, I observed that elements with dependent tense must act as the functional heads. They cannot act as ADJUNCTS. Within $S$, however, elements with dependent tense can only act as ADJUNCTS (or possibly as OBLIQUEs). I therefore revise the rule assigning grammatical functions within $S$ as follows:

(109) Within $S$, assign grammatical functions freely, subject to the constraint that elements with dependent tense features must be assigned either $\downarrow \in \epsilon$ (1ADVJUNCTS) or (1OBLIQUE$\epsilon_{meta}$) $\in \perp$. 

Again, observe that this constraint is a language particular requirement. English, for instance, allows sentential SUBJECTs, and perhaps also sentential OBJECTs: *They knew that he would shoot at the seal. That he would shoot at the seal was inevitable.*

It is a pity that the elegant simplicity of the rules assigning grammatical functions within S and \( \bar{N} \) has been lost, but descriptive adequacy seems to me to require these stipulations.

6.6 Overview of complementizer suffixes

From the preceding sections several parameters along which complementizer suffixes can differ can be inferred. First, complementizer suffixes differ semantically as to what dependent tense they represent. Second, they differ as to what can be the controller. The controllers of clauses with complementizer suffixes belonging to the obviation system,\textsuperscript{21} for example, are determined by the *grammatical function* of the controller. Other clauses have their controllers determined in different ways – some by *case* agreement, others by *pragmatic* factors. Third, complementizer suffixes differ as to whether or not they allow overt lexical SUBJECTs. Fourth, the suffixes differ as to whether they can receive additional case-marking.

I group the complementizer suffixes into five classes, roughly based on these four properties.

[1] *Simultaneous action obviation system:* These all describe an event occurring at the same time as the event in the matrix. The suffixes are *karra, kurra,* and *rlarni/ngkarni.*

\[\text{\textsuperscript{21}}\text{Following Hale (EFW), I use the term *obviation* to refer to the exclusion of certain arguments as possible antecedents for anaphors. For example, in an obviation system, the antecedent of a certain anaphor may be required \textit{not} to be a subject. The term was borrowed by Hale from American Indian linguistics. See Hale (1978) for an account of obviation in Modern Irish, and Bresnan (1982a) for an application to English.}\]
[2] *Subsequent action* suffixes: These are suffixes which describe events subsequent to that of the matrix clause. The basic suffix in this class is the purposive use of the DATIVE suffix *ku*; it corresponds most closely to the English infinitive. Other members of this class are formed on the basis of *ku*: *kungarti* 'prior to doing X', (PREP) *kupurda* 'desirous of doing X' (DESIR), and the ADMONITIVE *kuja*ku. The purposive use of the ALLATIVE *kurra* is also included in this class.

[3] *Circumstantial* suffixes: The two suffixes *rla* (SEQ) and *puru* (CIRC) describe attendant circumstance. *Rla* describes an event or state of affairs prior to that of the matrix clause. *Puru* normally describes the presence of a state of affairs, (for instance, the weather), concurrent with that of the matrix clause.

[4] *Derivational* suffixes: These fall into two types: derivational suffixes such as *kurlangu* POSSESSIVE, *parnta* PROPRIETIVE, *panu* CHARACTERISTIC, *witawangu* EXCESS which often create referential nominals, and two suffixes *warnu* ASSOCIATIVE, and *wangu* PRIVATIVE, which can both create referential nominals and act as secondary predicates.

[5] *Case* suffixes: The DATIVE and ALLATIVE have been discussed above. Other case-suffixes which can attach to nominalized verbs include the ERGATIVE and the LOCATIVE. I also tentatively place the suffix *rlajinta* in this class, which is homophonous with the COMITATIVE.

In the remainder of this chapter, I will discuss each of these five classes and the properties of the suffixes in the classes.

6.6.1 Simultaneous action obviation system

This class consists of a set of suffixes that Hale (EFW) has described as forming an obviation system: *karra*, *kurra* and *rlarni*. 22 Non-finite clauses formed with these suffixes

22. Hale (EFW) originally proposed that the suffix *rlajinta* also formed part of this set, and Nash (1980), and Simpson and Bresnan (1982) followed his lead. However, more evidence has been found which suggests that *rlajinta* is not part of the system. I have tentatively classified it as a case-suffix – see 6.6.5 for discussion.
have controlled SUBJECTS (with the exception of *rlarni* which allows an optional DATIVE SUBJECT). They cannot appear as matrix predicates, and nor can they have arbitrary PRO subjects. The suffixes themselves determine absolutely what may be the controller of the clause. The table given below shows this. (The top row represents the grammatical function of the controller).

<table>
<thead>
<tr>
<th>SUBJ</th>
<th>OBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>karra</td>
<td>+</td>
</tr>
<tr>
<td>kurra</td>
<td>-</td>
</tr>
<tr>
<td>rlarni</td>
<td>-</td>
</tr>
</tbody>
</table>

A clause marked with *karra* can be controlled by either an ERGATIVE SUBJECT or an ABSOLUTIVE SUBJECT. It cannot be controlled by an ABSOLUTIVE OBJECT. The examples given below illustrate *karra*.

(110) Ngarrka ka wangka-mi, *nyina-nja-karra*.
man-ABS PRES talk-NPST, sit-INF-SSCOMP
The man is talking while sitting. [Survey]

(111) Turaki-rli puluku wirijarlu paka-rnu *parnika-nja-karra-rlu*.
vehicle-ERG bullock-ABS big-ABS hit-PAST run-INF-SSCOMP-ERG
The moving car hit a big bullock. [pakarni]

A clause marked with *kurra* has an OBJECT, whether ABSOLUTIVE or DATIVE, as its controller. This was discussed at length in 2.3. I also argued in 2.3.2.1, following Hale (EFW), that, if a clause marked with *rlarni* is controlled, the controller must be an Adjunct DATIVE in the matrix clause, as in (112) and (113).

23. There are speakers who use *karra* as a more general complementizer, without requiring its antecedent to be a SUBJECT. They accept sentences such as:

*Ngarrka-ngku ka kurdu paka-rni, wangka-nja-karra*
man-ERG PRES child-ABS hit-NPST talk-INF-SSCOMP-ABS
The man hits the child while it's talking. [Survey]

I will not discuss this dialect.
(112) Ngarrka ka-rla karnta-ku marlaja-wangka, ngurlu
man-ABS PRES-DAT woman-DAT cause-talk-NPST seed-ABS
yurrpa-rinja-rlarni
grind-INF-OBLCOMP
The man is talking because of the woman who is grinding seeds. [Survey]

(113) Ngarrka-ngku ka-rla kurdu-ku karl~
man-ERG PRES-DAT child-DAT boomerang-ABS benefactive-trim-NPST,
[jarda nguna-nja-rlarni(-ki)]
sleep lie-INF-OBLCOMP-(DAT)
The man is trimming a boomerang for the child while it is sleeping. [EFW]

If the clause has an overt lexical SUBJECT, then that SUBJECT usually appears
clause-initially with DATIVE case, as in (114).

(114) Nyalali-rli ka warlu yarrpi-rni, [karnta-ku kurdu-ku
girl-ERG PRES fire-ABS kindle-NPS1, woman-DAT child-DAT
miyi yi-nja-rlarni].
food-ABS give-INF-OBLCOMP
The girl is building a fire, while the woman is giving food to the baby. [EFW]

Predictably, since nominalized verbs with obviation suffixes are ADJUNCTs, a
sentence may contain several clauses with obviation suffixes, as (115) illustrates.

(115) Wati -rna nya-ngu ngajulu-rlu marlu luwa-rinja-kurra,
man-ABS 1sg see-PAST I-ERG kangaroo-ABS shoot-INF-OCOMP
pama nga-rinja-karra-rlu.
l!iquor-ABS ingest-INF-SSCOMP-ERG.
I saw the man shooting the kangaroo while I was drinking liquor. [Laughren &
Robertson to K. Hale, May 9, 1977]

If in (116) both the clauses with obviation suffixes were XCOMPs, rather than ADJUNCTs,
Consistency would rule out such sentences.

24. This construction appears to be favoured more by older Warlpiris than by younger
speakers.
Recall that in 2.3.4 and 6.5.1 I suggested using the features used to decompose grammatical functions with the added specification of antecedency for antecedent features. I said that if X has the feature [+ "SUBJECT"] this is interpreted as meaning that X's antecedent has the grammatical function SUBJECT. If X has the feature [+ SUBJECT], this is interpreted as meaning that X has the function SUBJECT. Quotation marks distinguished the antecedent use of these features, from the non-antecedent use.

The antecedent feature [+ "SUBJECT"] will correctly express the requirement that antecedent of the SUBJECT of a karra clause must be itself a SUBJECT. Both rlarni clauses and kurra clauses require that the antecedents of their SUBJECTs not be a SUBJECT, which can be expressed by the antecedent feature [-"SUBJECT"]. To distinguish these two from each other, however, another feature is needed. In 2.3.4, I argued that both OBJECTs and Adjunct DATIVES are [+ OBJECT] (in contrast to OBJECT 2s, which are [-OBJECT]. Therefore [+ "OBJECT"] does not distinguish the antecedent of a rlarni clause from the antecedent of a kurra clause. To distinguish OBJECTs from Adjunct DATIVES I used the feature [±DIRECT]. As an antecedent feature, [±"DIRECT"] can distinguish between rlarni and kurra clauses. The antecedent feature system then is as follows.

(116) Antecedent Features Of Complementizer Suffixes

<table>
<thead>
<tr>
<th></th>
<th>&quot;SUBJECT&quot;</th>
<th>&quot;DIRECT&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>karra</td>
<td>+</td>
<td>+ (SUBJECT control)</td>
</tr>
<tr>
<td>kurra</td>
<td>-</td>
<td>+ (OBJECT control)</td>
</tr>
<tr>
<td>rlarni</td>
<td>-</td>
<td>- (oblique DATIVE control)</td>
</tr>
</tbody>
</table>

This antecedent system is sufficient to distinguish the antecedents of karra, kurra and rlarni clauses from each other. Observe that the negative specification of the antecedent features for rlarni can be interpreted as allowing a rlarni clause not to have an antecedent at all. If the feature [- "SUBJECT"] is interpreted as it is not the case that the antecedent of the rlarni clause SUBJECT is a SUBJECT, this is true, whether or not the rlarni clause SUBJECT has an antecedent. Thus a rlarni clause, but not the other obviation complementizer suffixes, may have an overt SUBJECT.
The antecedent features given in (116) are not sufficient to distinguish the antecedent of a \( rlarni \) clause from OBLIQUE arguments. To represent the fact that, if there is no overt lexical SUBJECT, the SUBJECT of a \( rlarni \) clause must be controlled by an Adjunct DATIVE, I propose to link the appearance of the antecedent feature ["OBJECT"], (which distinguishes OBJECTs and Adjunct DATIVEs from other arguments), with the appearance of a null pronominal.

\[
(\uparrow \text{SUBJ PRED}) = '\text{PRO}' \rightarrow (\uparrow \text{SUBJ "OBJECT"}) = + \\
(\uparrow \text{SUBJ U}) = +
\]

This is read as follows: if the SUBJECT is a null pronominal, then the value for the antecedent feature ["OBJECT"] of the SUBJECT is +.

The feature U (standing for morphologically unexpressed) was introduced in Bresnan (1982a) to characterize the difference between null pronominals and other pronominals. Its use is essential here, because otherwise the equation would make the incorrect prediction that free pronominals appearing as lexical SUBJECTs of \( rlarni \) clauses must have Adjunct DATIVEs as antecedents.

The lexical entries for the complementizer suffixes specify the controller of the SUBJECT of the clause-nucleus which they form by means of these antecedent features. I give complete lexical entries for \( karra \) and \( kurra \) below, and a partial lexical entry for \( rlarni \).

(117) Lexical entries for obviation system complementizers

\[
\text{Karra} \\
\text{karra: } [\text{N-1}] \rightarrow [\text{N}] \text{ attaches to N-1 to form N} \\
(\uparrow \text{SUBJ PRED}) = '\text{PRO}' \text{ obligatory null pronominal SUBJECT which prevents appearance of lexical SUBJECT.} \\
(\uparrow \text{SUBJ "OBJECT"} = -) \text{ features marking SUBJECT's antecedent as SUBJECT} \\
(\uparrow \text{SUBJ "SUBJECT"} = +) \text{ [+ dependent tense]} \\
\]
**Kurra**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(↑SUBJ PRED)</td>
<td>'PRO'</td>
<td>obligatory null pronominal SUBJECT which prevents appearance of lexical SUBJECT.</td>
</tr>
<tr>
<td>&quot;OBJECT&quot;</td>
<td>+</td>
<td>features indicating SUBJECT's antecedent as OBJECT</td>
</tr>
<tr>
<td>&quot;DIRECT&quot;</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>&quot;SUBJECT&quot;</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

The [+ "DIRECT"] antecedent feature for *kurra* distinguishes it from *rlarni*.

**Rlarni**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(↑SUBJ PRED)</td>
<td>'PRO'</td>
<td>optional null pronominal SUBJECT</td>
</tr>
<tr>
<td>&quot;DIRECT&quot;</td>
<td>-</td>
<td>features marking SUBJECT's antecedent if present, as neither SUBJECT nor OBJECT nor OBJECT 2.</td>
</tr>
<tr>
<td>&quot;SUBJECT&quot;</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

When the SUBJECT of the *rlarni* clause is controlled by an Adjunct DATIVE, *rlarni* can receive DATIVE case, in agreement with the case of its SUBJECT's antecedent, as other
ADJUNCTs do. This concludes the discussion of controlled \textit{rlarni} clauses. In the next section, I will consider the situation in which the \textit{rlarni} clause has an overt SUBJECT.

6.6.1.1 \textbf{Non-finite clauses with overt SUBJECTs: \textit{rlarni}}

A \textit{rlarni} clause with a non-finite verb can have an overt SUBJECT marked with DATIVE case, (although some speakers, especially younger speakers, (Laughren, p.c.) allow an overt SUBJECT to have the case normally required by the verb. This SUBJECT apparently has to be clause-initial. Interestingly, not only nominalized verbs with \textit{rlarni}
can take overt SUBJECTs. When \textit{rlarni} occurs on a nominal,\textsuperscript{26} it can also have an overt DATIVE SUBJECT, as the following examples show.


hunting-OBLCOMP

The children are playing in the creek while their mother is away hunting. [manyu]

(119) Yapa-kari ka-rla ngarrka wangka-mi karnta-ku,

man-OTHER-ABS PRES-DAT man-ABS speak-NPST woman-DAT,

\textsuperscript{26.} All the obviation system complementizers can occur on nominals. A few examples with \textit{kurra}, the OCOMP, follow.

i. \textit{Lirra} wanka-ngku ka-lu-ngalpa ngarri-\textit{rni} wapariku-\textit{kurra}

mouth bad-ERG PRES-3pl-1plin call-NPST unaware-OCOMP

\textit{ngula-ngku} karnta-karnta-\textit{ru} + ju.

that-ERG woman-woman-ERG + EUPH

Those women swear at us using bad words when we are innocent. [lirra wanka]

ii. \textit{Jakarrjakarr-ya-\textit{rni}}, \textit{jakarr-jakarrpa-kurra} kajika-npa

squeakingly-go-NPST-HERE, squeakingly-OCOMP POT-2sg

yapa purdanya-nyi. ... Kaji-lpa ya-ntarl\textit{a-\textit{rni}} yangka

person-ABS hear-NPST IF-PAST go-IRR-HERE the

wirliya kajika-npa purdanya-nyi -- \textit{-- jakarrjakarr-ya-ninja-kurra}.

foot-ABS POT-2sg hear-NPST squeakingly-go-INF-OCOMP

To go along squeakingly, you could hear someone being squeaking...If someone goes along, you might hear that person walking squeakingly with his feet. [Hale tape 28 jakarrjakarrayani]

iii. Larrka-luwa-\textit{rnu} -\textit{ngku} karli-ngki k\textit{aninjarni-kirra} yujuku-kurra.

midst-shoot-PAST -2sg boomerang-ERG inside-OCOMP house-OCOMP

He threw and hit you with a boomerang when you were inside the hut. [larrka-luwarni]

\textit{ii.} is rather interesting because it shows \textit{kurra} first occurring on an action nominal, and then occurring on an infinitive consisting of the verb \textit{yani} 'go' combined with the same action nominal acting as a preverb. \textit{iii.} shows that the \textit{kurra} complementizer can attach to an ordinary referential nominal, and act as an argument-taking predicate just as an ATP case-suffix can.
Some man is talking to the woman while her husband is out hunting. [wangkami]

(118) and (119) show a typical action nominal, *wirlinyi*, taking a DATIVE SUBJECT with the complementizer suffix *rlarni*. In (120), a DATIVE SUBJECT occurs with a *rlarni*-marked nominal, in which *rlarni* functions rather like a LOCATIVE suffix.

(120) Yankirri -IPA-lu ngapa-kurra ya-nu-rnu ngaju-ku
emu-ABS -PAST-3pl water-ALL go-PAST-HERE I-DAT
yirntatu-rlarni,
blind-OBLCOMP

The emus came to the waterhole while I was (hidden) in the hunting blind.

(121) shows that, even when *rlarni* provides the argument-taking predicate, and the nominal to which *rlarni* attaches acts as an argument of this predicate, a DATIVE SUBJECT can be present.

(121) Wirlinyi ka-lu mardukuja-patu ya-ni wardapi-ki
hunting PRES-3pl woman-PL-ABS go-NPST goanna-DAT
paka-rninjaku, wati-patu-ku marlu-ngkarni.
kill-INF-DAT man-PL-DAT kangaroo-OBLCOMP

The women are going hunting to kill goannas, while the men are involved with kangaroos. [mardukuja]

The fact that overt DATIVE SUBJECTs can occur with action nominals or referential nominals or nominalized verbs with the complementizer suffix *rlarni* is predicted by an account which treats nominals and nominalized verbs as essentially equivalent. Recall that the second $\bar{N}$ rule (given in 6.4.3) which expands nominalized verb + COMP can also expand nominal + COMP. Both are Ns, and so both can appear in this rule. To capture the fact that the SUBJECT of a *rlarni* clause has to be DATIVE and must be initial, I will add an optional annotation to the first element of the $\bar{N}$. 
Revised second phrase structure rule for expanding $\bar{N}$

$\bar{N} \rightarrow (N)$

$(\uparrow \text{SUBJ}) = \downarrow$

$(\uparrow = \downarrow)$

$(\uparrow \text{CASE}) = \text{DATIVE}$

Since both the action nominal and the nominalized verb can select SUBJECTs, they can have SUBJECTs by virtue of this rule. The rule allows the generation of an overt DATIVE SUBJECT in initial position. (The equation $(\uparrow \text{SUBJ PRED}) = \text{PRO}$ normally introduced by *rlarni* must be optional, so as to permit the appearance of the overt SLBJECT.) What forces the overt SUBJECT of a *rlarni* clause to be DATIVE? I propose a condition on the lexical entry of *rlarni* constraining the case of the SUBJECT to be DATIVE if the SUBJECT is overt (i.e. has a negative (unmarked) value for the feature U (unexpressed morphologically)).

$((\uparrow \text{SUBJ U}) = -) \rightarrow ((\uparrow \text{SUBJ CASE}) = \text{DATIVE})$

It seems that the fact that the overt SUBJECT of *rlarni* is DATIVE, and the fact that its controller must be DATIVE, should find a single explanation. In my account, these two facts are separated. The controller’s case is DATIVE because the antecedent features constrain the antecedent to be an Adjunct DATIVE, and ADJUNCTs agree in case with their antecedents. The overt SUBJECT’s case is DATIVE by virtue of an equation $(\uparrow \text{CASE}) = (\uparrow \text{SUBJ CASE})$ which attaches to *rlarni*. This means that the case of *rlarni* (DATIVE) is the case of the SUBJECT. However, the fact that some speakers allow *rlarni* clauses to have overt SUBJECTs with ERGATIVE case, while maintaining the generalization that only Adjunct DATIVEs can control *rlarni* clauses, suggests that a single explanation of the two instances is undesirable.

An interesting question to raise is: what case does an ADJUNCT predicated of the SUBJECT of a *rlarni* clause have? Preliminary work suggests that speakers fluctuate between assigning DATIVE case to a subject-controlled ADJUNCT, and assigning it the case that the non-finite verb selects for its SUBJECT.
6.6.2 Subsequent action suffixes

Examples (123) through (128) illustrate the five suffixes denoting subsequent action: *ku* DATIVE, *kurra* ALLATIVE, *kungarnti* PREPARATORY, *kupurda* DESIROUS, and *kujaku* ADMONITATIVE.

(123) Milpingi ngulaju kala-lu pu-ngu marna young.spinifex-ABS that USIT-3pl hit-PAST grass-ABS
yujuku-ku nganti-rninja-ku.
build-INF-DAT

They used to pull up the young spinifex to make huts. [milpingi]

(124) (.).ngaju ka-rna ya-ni kuyu panti-rninja-kurra.
PRES-1sg go-NPST meat-ABS spear-INF-ALL.
I am going off to spear game. [Hale typed notes: 0316]

(125) Yapa, marlu ka yangka kankarlu nyina-mi-rni person-ABS kangaroo-ABS PRES the upward sit-NPST-HERE
parntka-nja-kungarnti + lki.
rn-run-INF-PREP + THEN
Humans and kangaroos both sit upright before running away. [jarntarru]

The man stood up, wanting to speak. [Survey]

slow-ABS -1plin tired-CAUS-INF-ADMON go-NPST
We'll go slowly for fear of getting tired. [[H60Dial: 7.11]

All these examples show subsequent action complements controlled by ABSOLUTIVE SUBJECTs. Examples (128) through (132) show that these five suffixes can appear on complements controlled by ERGATIVE SUBJECTs.

panti-rninja-ku.
spear-INF-DAT
The man put the spear on the spearthrower, to spear the kangaroo. [Survey]

(129) (.).ngula ka yampi-mi-rra ngapa pangi-rninja-kurra -rlu + lki
that PRES leave-NPST-THERE water-ABS dig-INF-ALL-ERG + THEN
(…) he leaves it to dig for water. [ML: NUM]

(130) Muwa ka-npa yirra-rni jarra-ma-ninja-kungarnti-rli
unlit.fire-ABS PRES-2sg put-NPST light-CAUS-INF-PREP-ERG
murnma + wiyi.
not.yet + BEFORE
You set up a fire first before lighting it. [murnma]

(131) Wati-ngki kurlarda pikirri-rla yirra-rnu, marlu
man-ERG spear-ABS spearthrower-LOC put-PAST kangaroo-ABS
panti-rninja-kupurda-rlu.
spear-INF-DESIR-ERG
The man put the spear on the spearthrower, wanting to spear the kangaroo.
[Survey]

(132) Kala-lu-nyanu karnta-ngku + ju ngapa + ju wirlindyi-kirra + ju
USIT-3pl-refl woman-ERG + EUPH water-ABS + EUPH hunting-ALL + EUPH
ka-ngu ngami-ngka purraku-jarri-nja-kujaku + ju.
carry-PAST container-LOC thirsty-INCH-INF-ADMON + EUPH.
The women would take water for themselves in water-carriers for hunting so that
they would not get thirsty. [NM]

Kurra, kungarnti and kupurda all allow the affixation of ERGATIVE case. Ku and kujaku
do not. I assume that kurra, kungarnti and kupurda act like semantic case-suffixes (like
the ALLATIVE in fact), in not transmitting case. Therefore they can receive extra
case-marking. Ku, on the other hand, like the normal DATIVE case-suffix, has the
equation (LCASE = DATIVE) attached, and therefore cannot receive additional
case-marking without violating Consistency. I must also assume that the ADMONITIVE
kujaku is a case-suffix with a similar property, preventing it from receiving extra
case-marking.

(133) shows that a nominalized verb with a subsequent action complementizer forms
a single constituent together with its arguments, and can precede the AUX.
Before eating the damper I washed my hands. [parljirni]

Like other complementizers, subsequent action complementizers can occur on nominals. (134) shows a action nominal, and the remainder have an OBLIQUEθ. (136) shows ERGATIVE case-marking.

(134) Mata-parnta ka-lu panu-kari-rli yirra-rni-rra
tired-PROP-ABS PRES-3pl mob-OTHER-ERG put-NPST-THERE
wirlinyi-kirra (...) hunting-ALL
The others leave the tired person as they go on to hunt, (...) [yirrrarni]

mayi ngapa-rlangu-kujaku + ju?
WONDER water-E.G.-ADMON + EUPH
I wonder what they carry for the rain? [H60Dial: 8.67]
(Incidentally, this example shows that, like a normal case-suffix, the suffix kujaku can follow a derivational clitic attached to a nominal.)

(136) Mardukuru-rlangu ka-lu-nyanu kiji-rni palka-kurra
fluff-E.G.-ABS PRES-3pl-refl throw-NPST body-ALL
wati-patu-rlu purlapa-kungarnti-rlu.
person-PL-ERG corroboree-PREP-ERG
The men put fluff and all onto their bodies in preparation for a corroboree. [mardukuru]

(137) Mannga-jarri-nja-rla yarnka-ja kunrta-kupurda.
randy-INCH-INF-SEQ leave-PAST woman-DESIR
He got randy and then went in search of a woman. [mannga]

Subsequent action clauses are often found controlled by non-SUBJECTs,27 such as

27. I have not yet found an example of a purposive use of the ALLATIVE controlled by anything other than a SUBJECT.
OBJECTs or DATIVEs.

(138) Wati-ngki + ji -jana maliki + ji langa + juku
man-ERG + EUPH -3pl dog-ABS + EUPH ear-ABS + STILL
muurlpa-paju-rnu purdanya-nja-kujaku
care-cut-PAST hear-INF-ADMON
The man carefully cut off the dogs' ears so that they would not hear. [JK]

(139) Kala-lu karnta-ngku + ju maliki + ji ka-nja-ya-ru
USIT-3pl woman-ERG + EUPH dog-ABS + EUPH carry-INF-PROG-PAST
kuyu-ku parnti-nya-nya-ku.
meat-DAT sniff-see-INF-DAT
The women would go along taking dogs to sniff out the game. [NM]

When controlled by DATIVES, *kungarnti* and *kupurda* have DATIVE case suffixed, as (140) and (141) illustrate. When *kujaku* or *ku* are controlled by a DATIVE, of course they do not receive extra case-marking, as (142) illustrates:

(140) Ngarrka -rla wangka-ja karnta-ku, ya-ninja-kupurda-ku.
Man-ABS -DAT speak-PAST woman-DAT go-INF-DESIR-DAT
The man spoke to the woman, who was wanting to go. [Survey]

(141) Ngarrka -rla wangka-ja karnta-ku, ya-ninja-kungarnti-ki.
Man-ABS -DAT speak-PAST woman-DAT go-INF-DESIR-DAT
The man spoke to the woman, who was preparing to go. [Survey]

(142) Ngapa-ku + nya -- walyiwalyi-wanti-nja-kujaku -lpa-rla
water-DAT + EMPH -- spill-fall-INF-ADMON -PAST-DAT
jarlki-nguna-ja.
block-lie-PAST
It lay (in the coolamon) for the water to stop from spilling over. [mina]

(143) and (144) show that the DATIVE, at least for *kujaku* clauses, does not have to be an OBJECT of the verb, but can be an ADJUNCT DATIVE.
The stake flattened their tyre so they could not go hunting. [lalypa]

They trample down the holes of the goanna's burrow so that it can't get out. [katirn]

In (145), the DATIVE is not even registered.

The initiate's brothers-in-law put down all the hairstring for the family of the young initiate to see, (...) [luunkijirni]

Some of these suffixes also allow control by an arbitrary referent. This is particularly striking in the case of ku.

A spearthrower, that is for throwing spears. [Hale typed notes: 0325]

Some also allow overt SUBJECTs.

Black rainclouds come up before it rains. [EFW]

Let's be silent so the children don't wake up. [EFW]
In 2.2.8 I gave an example of a sentence (26) containing a nominalized verb with a DATIVE suffix following an unmarked nominal, and mentioned Nash’s remark that the unmarked nominal could be interpreted as the SUBJECT of the nominalized verb.

\[(149)\] Japanangka karlar-a-jarri-ja Jupurrula nya-ŋa-ku.
Japanangka-ABS west-INCH-PAST Jupurrula see-INF-DAT
Japanangka went west, for Jupurrula to see him(self). [Nash, p.c.]

Nash commented that *Jupurrula* could also have ERGATIVE case. The fact that the overt SUBJECT of a non-finite clause need not have the required case by the \( \mathbf{\Delta} \) of its SUBJECT in a finite clause is somewhat problematic for my account. I suspect that there is interference from the fact that the nominalized verb *nyanjaku* is also a nominal, as I argued in 6.3.2.1. Nominals used as matrix predicates always have ABSOLUTIVE SUBJECTS, and it is possible that when nominalized verbs are used as secondary predicates there is a tension between whether their SUBJECTs are understood as having the case-suffix required by the verb which heads the nominal, or the case-suffix required of the SUBJECT of a nominal.

In (150) I summarize the properties of the subsequent action suffixes discovered so far. This is very tentative; it is quite possible that some of the suffixes which I have said cannot have lexical SUBJECTs will turn out to have them, and also that the constraints on antecedents for some of the suffixes will be found to be too strong.

The possibility of an overt SUBJECT is expressed by the optionality of the equation \( \uparrow \text{SUBJ PRED} = '\text{PRO}' \). The possibility of arbitrary control is expressed by the lack of any constraints on the antecedent of the SUBJECT. Since I have found no clear examples of arbitrary control with *kungarni*, it is conceivable that *kungarni* has as part of its lexical entry an antecedent equation constraining the antecedent to be a SUBJECT, or perhaps an argument with the grammatical function feature \(+\text{DIRECT}\). Such an antecedent equation could be attached to the \( \uparrow \text{SUBJ PRED} = '\text{PRO}' \) equation. When that equation is present, an antecedent must be present, ruling out the possibility of arbitrary control.
(150) Lexical entries for subsequent action complementizer suffixes

Possibility of overt subject:

kurra  \( \uparrow \text{SUBJ PRED} = '\text{PRO}' \)

ku  \( \uparrow \text{SUBJ PRED} = '\text{PRO}' \)

kupurda  \( \uparrow \text{SUBJ PRED} = '\text{PRO}' \)

kujaku  \( (\uparrow \text{SUBJ PRED} = '\text{PRO}') \)

kungarnti  \( (\uparrow \text{SUBJ PRED} = '\text{PRO}') \)

Antecedents:

kurra  \ [+ "\text{SUBJECT}" ]

kupurda  \ [? + "\text{DIRECT}" ]

tu  apparently no constraints

kungarnti  \ ? [ + "\text{DIRECT}" ]

kujaku  apparently no constraints

6.6.3 Circumstantial suffixes

There are two complementizer suffixes which I have classed as 'circumstantial', because they both describe the circumstances surrounding the event described in the matrix clause. Rla clauses describe an event which precedes the event described in the matrix, and puru clauses describe a state of affairs concurrent with the event described in the matrix (usually the weather, time of day, or external environment). I therefore assume that rla has the tense features:

\[ [+ \text{PAST}] \]
\[ [+ \text{UNREALIZED}] \]

while puru has the tense features:
An example of each follows:

(151) Ngarrka-patu ka-lu yujuku-rla nyina-mi, ngapa
      man-PL-ABS PRES-3pl shelter-LOC sit-NPST rain-ABS
      wanti-nja-puru
      pour-INF-CIRC
      The men are sitting in the shelter while it is raining. [EFW]

(152) Kuyu ka nguna japi-ngka walyka-jarri-nja-rla
      meat-ABS PRES lie-NPST shop-LOC cool-INCH-INF-SEQ
      lalka + lku.
      cool-ABS + THEN
      The meat in the shop is now frozen solid from being chilled. [lalka]

*Rla and puru* differ with respect to their SUBJECT and antecedent properties.

*Rla* never appears with an overt SUBJECT, while *puru* normally has an overt
SUBJECT, as in the example given. *Rla* appears to be obligatorily controlled by the
SUBJECT, whether ABSOLUTIVE, as in (152), or ERGATIVE, as in (153).

(153) Watakiyi ka-rnalu lakarn-pi-nja-rla nga-rmi
      bush.orange-ABS PRES-1plex skin-INF-SEQ eat-NPST
      miyi + lki.
      fruit-ABS + THEN
      Having skinned it we eat the flesh of the bush orange. [lakarn-pinyi]

Observe that the SEQ *rla* does not receive case in agreement with the ERGATIVE
SUBJECT. This is one major difference between the SEQ *rla* and the homophonous
LOCATIVE suffix, which can also attach to nominalized verbs. (See 6.6.5.) I assume that
*rla* has as part of its lexical entry the condition that its SUBJECT be a null pronominal, and
that the antecedent feature of its SUBJECT is [+ SUBJECT]. This will express the
constraints on its distribution.
Since *puru* usually occurs with an overt lexical SUBJECT, it will not have this constraint. Normally the SUBJECT of the *puru* clause has the same case that the SUBJECT would have in the corresponding finite clause, as in (154) and (155) which show an ABSOLUTIVE and an ERGATIVE SUBJECT respectively:

(154) Wiri-wiri ka-lu nyina, kurdu-kurdu manyu-karri-nja-puru
big-big-ABS PRES-3pl sit-NPST child-child-ABS play-stand-INF-CIRC
The grownups are sitting while the children are playing. [Hale: typed notes 0319]

(155) Ngarrka-ngku panti-rinja-puru. kuyu-ku, ngula yi-ka-lu-rla
man-ERG spear-INF-CIRC game-DAT that REAS-PRES-3pl-DAT
kamparru + yijala nyina.
in.front + ALSO sit-NPST.
While the man is spearing, for game, they wait ahead for him. [Hale: typed notes 0319]

However, Hale (EFW) notes that DATIVE has been elicited on the SUBJECT, as in the following example:

(156) Ngarrka-patu-rlu ka-lu-jana puluku turnu-ma-ni,
man-PL-ERG PRES-3pl-3pl bullock-ABS muster-NPST
karnta-patu-ku miyi purra-nja-puru.
woman-PL-DAT food-ABS cook-INF-CIRC
The men are mustering cattle while the women are cooking the food. [Survey]

In fact, even when *puru* has no overt SUBJECT, apparently it cannot be construed as predicated of some argument in the matrix. An example follows:

sun-CIRC PRES-1sg shade-LOC sit-NPST
I sit in the shade when it is sunny. [EFW]

Examples without overt SUBJECTs mostly involve nominals. Perhaps the simplest solution is to suppose that when *puru* itself acts as the functional head (when it attaches to an ordinary nominal) it has the lexical entry *(OBLtheta)*. It does not select a
SUBJECT, but, like a temporal adverb, is predicated of the clause as a whole. A puru clause can have additional ERGATIVE case-marking just as a normal temporal adverb can.

(158) --- kala-lu ka-nja-nu ngiji. warlu,
USIT-3pl carry-INF-PROG-PAST firestick-ABS fire-ABS,
ngapa-puru-rlu + ju
rain-CIRC-ERG + EUPH
- - when it was raining they used to carry live firesticks around with them.
[parntimi]

6.6.4 Derivational suffixes

There are two major types of derivational suffix which attach to nominalized verbs, those which create derived nominals which can take any function, and those which behave more like other complementizer suffixes. The first type include the PROP parnta, the POSS kurlangu, the CAP marda, the EXCESS witawangu and the CHARACTERISTIC

---

28. Puru, when attached to a nominal, behaves just like a semantic case-suffix. Like a semantic case suffix, it can undergo spreading, as in i.

i. ngula ngapa-yati kala warrarda wanti-ja -- munga + yijala
that water-ABS USIT always fall-PAST night + ALSO
--- wanta + yijala kala warrarda wanti-ja -- yarnunjuku + lku
day + ALSO USIT always fall-PAST hungry + THEN
marda-ru nu ngapa-puru wiri-puru.
keep-PAST water-CIRC big-CIRC
The rain kept falling, all night, all day it kept falling; it kept them inside hungry, in the big rain. [H66PSJ:1120]

Wanta wiri-puru. (...)ngulaji ka ngulya-ngka yuka.
day large-CIRC, that PRES burrow-LOC enter-NPST
When the sun is high, then it goes into its burrow. [Hale Tape 28 wardapi kujaka nyina]

ii. shows that a puru nominal can also form a single constituent with an N'-I which modifies the nominal.
The second type include the ASSOC warnu and the PRIV wangu.

Derivational suffixes of the first type create nominals which can have any function (and any case-suffix). Their uses are illustrated below.

(159) "Langarrpanu" ngulaju langa wurduju purda-nya-nja-parnta
sharp-eared that ear-ABS good-A3S hear-INF-PROP
"Langarrpanu" is one who has good ears and who can hear. [langarrpanu]

(160) Warlawurruruju ka nyina panti-rinja-parnta.
eagle-ABS + EUPH PRES sit-NPST stab-INF-PROP
The wedge-tailed eagle is a stabber. [pantirni]

(161) Mardu wita. wita-nyayirni kardi-rinja-kurlangu; kamina-rlu
dish small-ABS small-VERY-ABS fet-h-INF-POSS girl-ERG
kala-lu warru ka-ngu.
USIT-3pl around carry-PAST
A small wooden dish, a very small one, for fetching water, the young girls used to carry it around with them. [mardu]

(162) "Mutunypa" ka-lu yapa-ngku ngarri-rni walypali-kirlangu
"mutunypa" PRES-3pl person-ERG call-NPST European-POSS-ABS
"file" yangka yiri-ma-ninja-kurlangu + ju.
the sharp-CAUS-INF-POSS-ABS + EUPH
"Mutunypa" is what Warlpiri people call the White man's file, that thing used for sharpening.' [mutunypa]

(163) Langa-jarra + ju ngulaju purda-nya-nja-kurlangu.
ear-DU-ABS + EUPH that hear-INF-POSS
The two ears are for hearing with. [langa]

(164) "Jalkaji" ka nguna pikirri-piya, kurlarda

29. Witawangu can also be used as an independent nominal meaning large, just as panu is used as an independent nominal meaning mob, many.

Milpirri yalumpu + ju wita-wangu rdipi-ja (...) raincloud that.near-ABS small-PRIV-ABS meet-PAST
That big rain cloud has come. [wantimi]

The suffix witawangu is semantically composite: small-PRIV. It may be more accurate to think of panu and witawangu as forming compounds with nominalized verbs, rather than as suffixes on nominalized verbs.
A "jalkaji" is like a "pikirri", it is for throwing spears. [jalkaji]

We left that bad white fellow -- the one who talked too much. [yani]

And that little child can walk too, [wapami]

And the desert goanna is harmless and cannot bite -- it has small teeth. [kartirdi]

This man refuses to speak, can't talk. [lirra pati]

Such suffixes lend themselves to further derivation, as (167) and (169) illustrate.

Dependent tense is not relevant to these suffixes; they describe a general state of affairs: thus kjirrinja-kurlangu in (164) does not describe the act of throwing with respect to any particular time. I propose therefore, that these suffixes, like ordinary nominals, should be [– TENSE]. These suffixes are the morphological heads of the derived nominals they create. Their features take precedence over those of the nominal to which they attach. Therefore, even though the nominalized verb has the features [dependent tense], when a derivational suffix attaches to it, the resulting structure is [– TENSE]. Therefore, because the whole derived nominal is [– TENSE], it is not subject to the constraints on assignment of function to elements with dependent tense. Therefore it can act as the matrix predicate, as an ADJUNCT, as a SUBJECT etc.
However, these structures cannot be considered unanalyzable words for the purposes of syntax, because, as (164) shows, they can have overt arguments. In (164) the OBJECT of \textit{kiji} 'throw' is overt. Observe that, if in the structure \textit{kiji-rninja-kurlangu}, \textit{kijirninja} is taken as the functional head, (providing the argument-taking predicate), then the Second $\bar{N}$ expansion rule will allow \textit{kurlarda} to act as the OBJECT of \textit{kijirninja}, and the correct functional structure will be obtained. (169) provides another example:

(169) Yali + nya ka-ralu ngarri-rni jintilykaji $\cdots$ marna
\hspace{2em} that.rem + EMPH PRES-1plex call-NPST grasshopper-ABS grass-ABS
\hspace{2em} nga-rninja-parnta.
eat-INF-PROP
That is what we call grasshopper $\cdots$ a grass-eater. [jintilykaji]

The second type of derivational suffix, the suffixes \textit{wangu} and \textit{warnu}, share properties both with derivational suffixes and with other complementizer suffixes. Like the other derivational suffixes, they can be lexicalized, as in (170), in which a \textit{warnu} nominal and its complement form a nominal 'betrothed'.

(170) Jakamarra ka-rla \textit{wanarri-rla} \textit{yirra-rninja-warnu} nyina
\hspace{2em} Jakamarra-ABS PRES-DAT thigh-LOC put-INF-ASSOC sit-NPST
\hspace{2em} Napaljarri-ki + ji.
\hspace{2em} Napaljarri-DAT + EUPH
\hspace{2em} Jakamarra is the betrothed of Napaljarri. [wanarri]

It is probably also the derivational suffix property which allows the occasional attachment of further derivational suffixes, as in (171).

(171) Yinjiripi ka \textit{lurlurl-karri-mi} watlya
\hspace{2em} water-ABS PRES drop-NPST tree-ABS
\hspace{2em} yurnku-yurnku-ma-ninja-warnu-jangka.
\hspace{2em} shake-CAUS-INF-ASSOC-SOURCE
\hspace{2em} The water drops off the tree which has been shaken. [lurlurl-karrimi]

Like derivational suffixes, \textit{wangu} and \textit{warnu} nominals can sometimes occur as matrix predicates, as in (172):
Observe that in this example, although the verb \textit{wajili-pinyi} requires an ERGATIVE SUBJECT, \textit{maliki}, which acts as the SUBJECT of the nominal \textit{wajili-pinja-wangu} actually is unmarked for case. However, the nominal \textit{marlu} which represents the OBJECT of \textit{wajili-pinyi} is also unmarked for case, just as the OBJECT of \textit{wajili-pinyi} in a verb-headed sentence would be. Normally the OBJECT of a nominal has DATIVE case (see 2.4). I assume that in this instance \textit{wangu} is the functional head, and \textit{wajilipinja} is the OBLIQUE argument of \textit{wangu}.

Unlike the other derivational suffixes, however, \textit{warnu} and \textit{wangu} often have a dependent tense meaning. \textit{Warnu} denotes an action or event which has been completed by the time of the event denoted by the matrix, while attaching \textit{wangu} to a clause asserts that the state of affairs described in the clause does not hold at the time of the event described by the matrix clause. Illustrative examples follow:

\begin{enumerate}
\item Kurdu -rna ka-ngu wajipitirli-kirra, watiya-ngurlu
child-ABS -Isg carry-PAST hospital-ALL tree-EL
\textit{wanti-nja-warnu}.
fall-INF-ASSOC-ABS
I carried the child to hospital which had fallen from a tree. [Survey]
\item Jarda -ipa-pala nguna-ja purdanya-nja-wangu
sleeping PAST-3du lie-PAST hear-INF-PRIV-ABS
They slept without hearing anything. [JK]
\item Wangka-nja-wangu -ipa-lu nyina-ja + Iku wanta jirrama-ku.
speak-INF-PRIV-ABS -PAST-3pl sit-PAST + THEN summer two-DAT
palyawarnu + ju
bereaved.mother-ABS EUPH
The bereaved mothers then went for two years without speaking. [jirramaku]
\end{enumerate}

I will express this by assigning to \textit{warnu} the tense features [+ PAST, - UNREALIZED], and to \textit{wangu} the features [- PAST, - UNREALIZED].
With respect to antecedency, it seems that *warnu* and *wangu* can be predicated of nominals with any case, and that when they do so, they agree in case with their antecedent. (176), (177), (178) and (179) show ERGATIVEs being modified. (180) shows a DATIVE. (181) and (182) (brought to my attention by Mary Laughren) show *wangu* and *warnu* clauses modifying a nominal in the ALLATIVE and LOCATIVE respectively. (183) shows a *warnu* clause modifying the OBJECT of an ERGATIVE instrumental.

(176) Warru -lpa walya marnpu-rnu nya-nja-wangu-rlu.
around PAST ground-ABS feel-PAST see-INF-PRIV-ERG
He felt all around on the ground without seeing it. [ML NUM]

(177) Jurnta -lpa-rla puuly-marda-rnu tarnnga-ngku + juku
away -PAST-DAT hold-PAST always-ERG + STILL
yilya-nja-wangu-rlu.
send-INF-PRIV-ERG
He held on to it and kept it from her without sending it back to her. [yarnkami]

(178) Ngarrka-ngku kuyu nga-rnu, wirlinyi-jangka
man-ERG meat-ABS eat-PAST hunting-SOURCE
ya-ninja-rni-warnu-rlu.
go-INF-HERE-ASSOC-ERG
The man ate the meat after coming back from hunting. [Survey]

(179) Maliki-rli ka marlu pi-nyi jaarl-parnka-nja-warnu-rlu.
dog-ERG PRES kangaroo-ABS hit-NPST cut.off-run-INF-ASSOC-ERG
The dog attacks the kangaroo after running to cut it off. [pinyi]

(180) Luurr-nguna-mi ka-rna-ju-rla kurdu-ku yapunta-ku
sad-lie-NPST PRES-1sg-1sg-DAT child-DAT orphan-DAT
yula-nja-warnu-ku.
cry-INF-ASSOC-DAT
I am feeling sad because of the little orphan who has been crying. [luurr-ngunami]

(181) Watiya-kurra ka-rna ya-ni paka-rninja-wangu/warnu-kurra
tree-ALL PRES-1sg go-NPST chop-INF-PRIV/ASSOC-ALL
I am going to the tree which has not been chopped/ which someone chopped.

(182) Mulju-ngka ka nyina-mi wantiki-ma-ninja-warnu/wangu-rla.
soak-LOC PRES sit-NPST wide-CAUS-INF-ASSOC/PRIV-LOC
He is sitting at the soak which he has widened, which has not been widened.
I will express this by placing no conditions on the antecedents of warnu and wangu.

Perhaps the most striking feature of the suffix warnu is its ability to take overt SUBJECTs, and the appearance of OBJECT control. Consider the following examples with overt SUBJECTs:

(184) Kurdu yula-ja, jarntu-ngku yarlki-rinja-warnu.
   child-ABS cry-PAST dog-ERG bite-INF-ASSOC
   The child cried because the dog bit him. [Survey]

(185) Maliki pali-ja warna-ngku yarlki-rinja-warnu.
   dog-ABS die-PAST snake-ERG bite-INF-ASSOC
   The dog died after being bitten by a snake.

Both these examples have overt SUBJECTs with ERGATIVE case. But, just as (172) has an ABSOLUTIVE SUBJECT, so too it is possible for the ERGATIVE to be omitted when the clause is used as a secondary predicate; thus the following sentence is ambiguous:

(186) Kurdu yula-ja, jarntu · yarlka-rinja-warnu
   child-ABS cry-PAST dog bite-INF-ASSOC
   The child cried, after biting/being bitten by a dog.

Again I must assume that because the warnu clause is a nominal, the rule governing assignment of case to SUBJECTs of nominals takes precedence. I suggest that this results from taking either the nominalized verb or the suffix warnu as the head of the clause.

What differentiates warnu clauses with overt SUBJECTs from puru clauses or ADMONITIVE kujaku clauses with overt SUBJECTs is that if a warnu clause has an overt SUBJECT, normally the verb is transitive and the OBJECT is expressed by a null
pronominal coreferential with some argument of the matrix. A further property of warnu clauses with null pronominal OBJECTs is that the warnu clause can agree in case with the antecedent of the OBJECT, as the following examples show:

(187) Karli-ki ka-rha-rla warri-rni nyuntulu(-rlu) boomerang-DAl' PRES-1sg-DAT seek-NPST you-ERG
ngurrju-ma-ninja-warnu-ku good-CAUS-IR:F-ASSOC-DAT
I am looking for the boomerang you made. [message to Hale, July 13, 1976]

Even if the SUBJECT is a null pronominal, the warnu clause can still agree with the antecedent of the OBJECT if the OBJECT is a null pronominal. In fact having a null

30. It is apparently not necessary for the warnu clause to have an explicit argument which is coreferential with an argument of the matrix. Vague semantic association is sufficient. Consider the following example.

(.,) yirra-rnu -lpa-lu-rla rurrpa-ngka + ju, put-PAST -PAST-3pl-DAT incision-LOC+EUPH
kuna-ma-ninja-warnu-rla.
gut-CAUS-INF-ASSOC-LOC
They would put it (a stick) in the incision from where the intestines had been withdrawn. [kijirni]
Rurrpa-ngka represents the LOCATIVE argument of yirrarni. Kunamaninjawarnu-rla is not predicated of rurrpa-ngka, since it is not clear that an incision can be gutted. Rather, the whole nominal kunamaninjawarnu-rla is in apposition to rurrpa-ngka, "in the incision, in the thing which has been gutted". So, kunamaninjawarnu is predicated of the OBLIQUE\theta of the LOCATIVE suffix, rla.
SUBJECT is more common than the presence of an overt SUBJECT.

31. An alternative strategy is to express the SUBJECT by means of a SOURCE-marked nominal, as in the following example.

Miirlmiirl-jarri-mi -ka wati-jangka ngarri-rninia-warnu.
angry-INCH-NPST PRES man-SOURCE tell-INF-ASSOC
She gets really angry when a man swears at her. [miirlmiirl]
The jangka nominal can appear separated from the warnu clause, as in the following example:

Manjanja rdaka karli-jangka murrumurr luwa-rninia-warnu.
crippled hand-ABS boomerang-SOURCE sore-ABS throw-INF-ASSOC
The hand is sore and crippled from being hit by a boomerang. [manjanja]
I assume that the jangka nominal does not function syntactically as the SUBJECT of the warnu clause, but rather that it functions as an ADJUNCT denoting reason or cause, whose OBLIQUE Theta argument can be understood as coreferential with the SUBJECT of the warnu clause. Thus I take a sentence like the one just given to mean something like ‘The hand is sore and crippled on account of a boomerang, on account of it hitting the hand’. It is clear that jangka must be able to denote a reason ADJUNCT, because it can occur in sentences with warnu clauses, in which it cannot possibly denote the SUBJECT of the warnu clause, as illustrated.

Mirdi jaarn-karri-mi ka wati yama-ngka
knee-ABS crossed.leg-stand-NPST PRES person-ABS shade-LOC
wirlinyi-jangka, parnika-nja-warnu.
hunting-SOURCE run-INF-ASSOC
That man is lying in the shade with one leg resting on his knee after hunting and running. [mirdi]
In this example the action nominal airlinyi is clearly not the SUBJECT of parnika. It is an attribute of the sentence, denoting a time period. (Note also the bodypart nominal preceding the AUX together with the verb. Presumably this is a topicalized bodypart.)

Jangka nominals have also been found with the SEQ complementizer. In i. the jangka nominal is coreferent with the OBJECT of the SEQ clause.

i. Kala-lu yatijarra ya-nu, jurnpurnpu-jangka + ju paji-rninja-rla.
USIT-3pl north go-PAST tobacco-SOURCE + EUPH cut-INF-SEQ
They went north after picking the tobacco. [pajirni]
ii. Warlkalpa-jangka, muku -lu wanti-ja -- yankirri + ji
poison.bush-SOURCE all -3pl fall-PAST emu-ABS + EUPH
-- nga-rninja-rla.
From the poison bush, the emus all fell down, after ingesting it. [wantimi]
In ii. the jangka nominal is separated from the SEQ clause, but it seems that the OBJECT of the SEQ clause is coreferent with the jangka nominal.
(188) Jarntu lalka-jarri-ja paka-rninja-waru.
dog-ABS hard-INCH-PAST hit-INF-ASSOC-ABS
The dog stiffened after being hit. [lalka]
(waru is ABSOLUTIVE agreeing with the matrix ABSOLUTIVE SUBJECT which is the antecedent for the warnu clause OBJECT)

(189) Yapa-kari + lki marlaja-rdip-ja marlu-ku + ju.
person-OTHER-ABS + THEN cause-meet-PAST kangaroo-DAT + EUPH
panti-rninja-war-ku + ju
spear-INF-ASSOC-DAT + EUPH
Someone came across a kangaroo that another person had speared. [marlaja]
(Warlu is DATIVE, agreeing with marlu-ku, the antecedent of the OBJECT of the warnu clause).

(190) Milpa wijini + lki ka nyina-mi watiya-nguru
eye sore-ABS + THEN PRES sit-NPST stick-EL
panti-rninja-war.
poke-INF-ASSOC
He has a sore eye as a result of being poked in the eye with a stick. [milpa]
(waru is ABSOLUTIVE, agreeing with antecedent of its OBJECT, the matrix ABSOLUTIVE SUBJECT, rather than ELATIVE agreeing with the antecedent of its SUBJECT, the matrix ELATIVE nominal)

(191) Wanta-kurra ka-ju yirra-rni pulku nga-rninja-war
sun-ALL PRES-3pl put-NPST sinew-ABS eat-INF-ASSOC
lalka-karda.
hard-TRANSL
They put the sinew which has been chewed out in the sun, so that it will harden. [lalka]
(Waru is ABSOLUTIVE, agreeing with the matrix OBJECT, which is the antecedent of the OBJECT of the warnu clause, rather than with the matrix ERGATIVE SUBJECT, which is the antecedent of the SUBJECT of the warnu clause.)

Observe that the Adjunct Agreement Convention does not prevent this agreement. It merely states that if an adjunct modifies an argument, then it must not disagree in case with that argument. It does not state that the argument which the ADJUNCT modifies must be the antecedent for the SUBJECT of the ADJUNCT. Modification (or predication) is a semantic relation; it usually corresponds to the relation between an argument and an argument-taking predicate which has an open place (or null pronominal) for one of its arguments which, syntactically, acts as the SUBJECT of that predicate. But, the evidence
from the warnu clauses suggests that the null pronominal or open place can correspond syntactically to an OBJECT. That is, the classical distinction between SUBJECTs (the argument modified), and PREDICATES (the modifier of the argument – an argument-taking predicate together with its complements – excluding the SUBJECT) does not necessarily correspond to the syntactic distinction between the grammatical function SUBJECT, and the verb or nominal together with its other complements. The modified argument can function syntactically as an OBJECT.

One could attempt to save the idea that only argument positions corresponding to syntactic SUBJECTs can be controlled by supposing that the suffix warnu optionally passivizes the verb to which it attaches. Some support could be lent to this approach by the predominance of null SUBJECTs, and the use of the SOURCE morpheme jangka to express the SUBJECT. One could also try to argue that the optional absence of ERGATIVE case on SUBJECTs corresponds to incorporation of oblique agents – as in the English compounds: mice-infested, moth-eaten. But such a passive rule would be very difficult to state, because of the optionality, and because of the possibility of lexical SUBJECTs appearing with ERGATIVE case. I conclude that, since anaphoric control of OBJECTs is permitted within LFG, (and independently motivated for Malayalam in Mohanan 1982b), and since this requires fewer additional stipulations than the passive account, it is a better account of the warnu clauses. Wangu clauses can also have

32. This approach was adopted for a similar construction in Ngarluma, a related language, by Simpson (1980), and by Nash and Simpson (1981). It was argued that a certain complementizer suffix obligatorily passivized the verb to which it attached, and that this gave the appearance of OBJECT control. Evidence for it came from the fact that the overt SUBJECT is expressed by the same case as is the oblique agent of a passive in Ngarluma. However, later fieldwork done by Alan Dench and Peter Austin provided some examples of the complementizer suffix attaching to a couple of intransitive verbs, in which case the SUBJECT is controlled.

33. However, I do not as yet have sufficient data on the appearance of warnu clauses as matrix predicates with the SUBJECT of the whole sentence acting as the OBJECT of the warnu nominal. As can be seen from my hesitancy in discussing the case-marking of SUBJECTs of such clauses, we do not have adequate data. But, whatever the outcome, it is likely that my analysis will require revision to cover these.
overt SUBJECTs, as in (192) and (193).

(192) Ngaju ka-rna kutu-wapa pirriya-rlu pi-nja-wangu(...) I-ABS PRES-1sg just-walk-NPST cold-ERG hit-INF-PRIV
I can just walk around without being affected by the cold. [miljiji]

murluru-rlu nga-rninja-wangu white.ant-ERG eat-INF-PRIV
Things like white ants cannot eat out huts made of spinifex grass, (they) are not eaten by white ants (un-white.ant-eaten) [murluru]

Although there is not very much data, it does seem that occasionally wangu clauses can have controlled OBJECTs, as in (194).

(194) Jirdi, ngulaju ngurlu yarli-rninja-warnu -- murmna seed.sp.-ABS that seed-ABS moisten-INF-ASSOC wait puyu-pi-nja-wangu.
grind-INF-PRIV
"Jirdi" are seeds which have been moistened but not yet ground. [jirdi]

However, I do not have enough data on these to put forward an account. A particularly interesting example is provided by (195).

And then the poor thing [dog] fell into the water — the flood carried him to somewhere where he could not be seen.

The structure of the wangu nominal is as follows:

[[PRO
arb see PRO
dog ] PRIV] ALL

The nominal nyanjawangu acts as the OBLIQUE_\theta argument of the ALLATIVE. It has two null pronominal arguments, a SUBJECT, which is arbitrary in reference, and an OBJECT, which is coreferential to the matrix SUBJECT.
6.6.5 Case-suffixes

Several case-suffixes can appear on nominalized verbs. In 6.6.2 I discussed the DATIVE and ALLATIVE, and noted that they have marked dependent tense when attached to a nominalized verb. The three case-suffixes to be discussed here, the LOCATIVE rla, the ERGATIVE rlu, and the COMITATIVE rlainta, all have time-references simultaneous with that of the matrix verb (i.e. the unmarked time-reference).

The LOCATIVE is homophonous with the SEQ affix ria, and much rarer than it. It differs from the SEQ in several ways. First, unlike the SEQ, it has unmarked dependent tense, and thus denotes an action taking place at the same time as the matrix clause. Second, a LOCATIVE nominalized verb clause can be controlled by an argument which is not a SUBJECT, in contrast to the SEQ, which can only be controlled by SUBJECTs. (196) illustrates this. Third, a LOCATIVE suffix appearing on a nominalized verb can, like its nominal counterpart, take further case-marking, as (196) and (197) illustrate:

(196) Ngarrka -lpa-rla karnta-ja ngurra-ngka
    man-ABS -PAST-DAT woman-DAT speak-PAST camp-LOC
    nyina-nja-rla-ku.
    sit-INF-LOC-OAT
    The man was speaking to the woman while she was sitting in camp. [R. Granites. ?message]

(197) Wapa-nja-rla-ku + juku -palangu wanta + ji yuka-ja manu
    move-INF-LOC-DAT + STILL -3du sun-ABS + EUPH enter-PAST and
    pardi-ja.
    rise-PAST
    As they walked the sun went down and came up on them. [yukami]

Now, I distinguished the use of the ERGATIVE as an AGR suffix from its use as an ATP instrumental, by assuming that in the former instance, the ERGATIVE has no syntactically relevant meaning, that is, no PRED feature, while in the latter use it has a PRED feature. It is a debateable point whether, when the ERGATIVE suffix attaches to a nominalized verb, we should consider the ERGATIVE suffix as the head (as in the instrumental use of nominals) with the nominalized verb as its argument, or whether we should consider the nominalized verb as the head. Semantically, the former is probably preferable, since the
ERGATIVE seems to have the same semantic function in both instances. Syntactically, however, the account is simplified if we assume that the nominalized verb is he head. I have no evidence bearing either way, and so will leave this point.

The ERGATIVE’s appearance on nominalized verbs has the same constraints as its instrumental use on nominals. It can only be controlled by an ERGATIVE SUBJECT, which is predicted by the Adjunct Agreement convention. An example follows:

(198) Ngarrka-ngku pirilyipirilyi pu-ngu kati-rinja-rlu.
man-ERG beetle-ABS hit-PAST tread-INF-ERG
The man killed the beetle by treading on it. [Survey]

So, again, nothing special needs to be said about the antecedent of the ERGATIVE-marked nominalized verb.

The final suffix to be discussed is the COMITATIVE rija njinta. Calling this suffix the COMITATIVE is in fact a departure from the views held in Hale (EFW), Nash (1980), Simpson and Bresnan (1982). In these works, rija njinta is considered part of the obviation system, and its homophony with the COMITATIVE is considered on a par with the homophony of the OBJECT-control complementizer kurra. One of the chief reasons for this was that rija njinta clauses were thought only to be controllable by SUBJECTS, and in particular reflexive SUBJECTS. However, further evidence has come to light, suggesting that, just as COMITATIVE nominals can be predicated of non-SUBJECTS, so can nominalized verbs with rija njinta.

I will first illustrate the COMITATIVE suffix, showing that it can be predicated of ABSOLUTIVE and ERGATIVE SUBJECTS, as well as DATIVEs, although it occurs most frequently with intransitive ABSOLUTIVE SUBJECTs.

(199) Kurdu + ju ka nyina-mi karnta-ngkajinta.
child-ABS + EUPH PRES sit-NPST woman-COM-ABS
The child is sitting with the woman. [Survey]

(200) Kurdu-ngku ka ngurlu kipi-rni karnta-ngkajinta-rlu.
child-ERG PRES seed-ABS winnow-NPST woman-COM-ERG
The child is winnowing seed with the woman. [Survey]
(201) Kurdu-ku ka-rna-rla wangka-mi karnta-ngkajinta-ku.
child-DAT PRES-1sg-DAT speak-NPST woman-COM-DAT
I am talking to the child who is with the woman. [Survey]

Rlajinta clauses never have an overt lexical SUBJECT. Rlajinta clauses can be controlled by SUBJECTs or OBJECTs. Most commonly, the controller of a rlajinta clause is a SUBJECT in a reflexive sentence, as (202) illustrates.

(202) Ngarrka-ngku -nyanu ramparl-paja-rnu, karli
man ERG -refl mistake-cut-PAST, boomerang-ABS
jarnti-rninjla-rlajinta.
trim-INF-COMCOMP
The man accidentally cut himself while trimming a boomerang. [Survey]

The "accidentally" in the gloss is essential, because -rlajinta clauses in general have the meaning that because X did Y, X accidentally did something, usually to himself. The SUBJECT need not be reflexive, provided that this accident implication is present. The SUBJECT can have ERGATIVE or ABSOLUTIVE case, as in (203) and (204).

(203) Wati kuntul-pu-ngu ngapa nga-rninjla-rlajinta.
Man-ABS cough-PAST water-ABS drink-INF-COMCOMP
The man coughed while drinking water.

(204) Kurlarda maja-rninjla-rlajinta, ngula -rna rdilyki-katu-rnu
spear-ABS straighten-INF-COMCOMP, that -1sg break-tread-PAST
wirliya-rlu + Iku.
foot-ERG + now.
It was when I was straightening the spear that I broke it with the pressure from my foot. [majarni]

But, if it is controlled by the ERGATIVE SUBJECT, it apparently does not get ERGATIVE case agreeing with that SUBJECT.

A rlajinta clause can also be controlled by the OBJECT of a sentence, as the examples given below illustrate.
While I was cooking meat the fire burned me. [JS]

When I was speaking up for the other person they told me off. [JS]

The difference between the instrumental ERGATIVE and rlajinta may perhaps be that the instrumental provides a direct cause or instrument for the action described by the matrix. The rlajinta clause provides an indirect cause. 34

Semantically, the idea of accompanying indirect cause is perhaps not too removed from the COMITATIVE case-suffix. However, the main obstacle to calling the two suffixes the same is case-marking. The examples of the COMITATIVE case-suffix given earlier showed double case-marking. The rlajinta suffix which appears on nominalized verbs never shows double case-marking.35 When I put an example of the COMITATIVE suffix with ERGATIVE case to two speakers, one flatly rejected it, thus making no distinction between the COMITATIVE and the rlajinta which appears on nominalized verbs. The other speaker accepted it, (but this speaker uses ERGATIVE case-marking much more freely than the other speaker, even putting ERGATIVE case on the TRANSLATIVE suffix

34. The presence of this indirect causâ€² is probably the semantic component which distinguishes rlajinta clauses from, say karra clauses. In a sentence such as the following, the karra clause merely indicates what the SUBJECT was doing at the time of killing the beetle, it does not have any inference of causation.

Ngarrka-ngku pirilyipirilyi pu-ngu kati-rinja-karra-ru.
man-ERG beetle-ABS hit-PAST tread-INF-SSCOMP-ERG

The man killed the beetle while dancing. [Survey]

35. The fact that the suffix rlajinta never takes additional case-marking, no matter what the case of its antecedent was readily explicable in the account given in Simpson and Bresnan (1982), in which rlajinta had the features [ + Subjective, + Objective]. Adjuncts cannot disagree in case with their controllers. But if both the SUBJECT and the OBJECT are the controller, the rlajinta clause, if it agrees with one of them in case, will disagree with the other. Therefore it cannot get marked with either case.
I conclude that, without detailed further study of dialect differences with respect to the use of double case-marking, the behaviour of case-markers when attached to *najinta* is not a reliable test for distinguishing two homophous suffixes.

Leaving aside the case-marking difficulties, the *rilajinta* suffix can probably be treated as an instance of the COMITATIVE suffix, in which case nothing further need be specified about its behaviour.

This concludes the outline of the properties of the complementizer suffixes. The charts below summarize some of the main properties:

<table>
<thead>
<tr>
<th>TENSE</th>
<th>TENSE</th>
<th>PAST</th>
<th>UNREALIZED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Obviation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>karra</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>kurra</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>rilarni</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td><strong>Subsequent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ku</td>
<td>+</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Circumstantial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rila</td>
<td>+</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>puru</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td><strong>Derivational</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parnta</td>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>warnu</td>
<td>(+)</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>wangu</td>
<td>(+)</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td><strong>Case</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rila</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The labels in the next table need explaining. 'Overt' refers to whether or not the clause
can have an overt lexical SUBJECT. 'Antecedent' refers to whether or not the suffix places constraints on the antecedent of its SUBJECT (excluding case agreement constraints). "SUBJECT", "OBJECT" and "DIRECT" denote antecedent features. "Agr." refers to case agreement – is it obligatory or not.

<table>
<thead>
<tr>
<th>Lexical Subjects and antecedent features</th>
<th>Overt</th>
<th>Antec.</th>
<th>SUBJECT</th>
<th>OBJECT</th>
<th>DIRECT</th>
<th>Agr.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Obviati</strong>on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>karra</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>kurra</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>rlarni</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td><strong>Subsequent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ku</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>kurra</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>kupurda</td>
<td>-</td>
<td>+</td>
<td></td>
<td>?+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>kungarnti</td>
<td>+</td>
<td>+</td>
<td></td>
<td>?+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>kujaku</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Circumstantial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rla</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>puru</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Derivational</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parnta</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>+?</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>warnu</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>wangu</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td><strong>Case</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rla</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>rlu</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>rlajinta</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>- / +</td>
</tr>
</tbody>
</table>
6.6.6 Multiple ADJUNCTs

Finally, I will conclude by examining three instances of apparently discontinuous expressions involving complementizer suffixes.

The first type was foreshadowed in the discussion of the complementizer suffix *puru*. It comprises the situation when a complementizer suffix is being used like a semantic case suffix, and the nominal to which it attaches acts as the OBLIQUE\textsubscript{\theta} of that complementizer suffix. Thus, if an expression such as *ngapa-puru...wiri-puru ‘rain-CIRC large-CIRC’* is discontinuous, *wiri* must still be interpreted as an ADJUNCT modifying the OBLIQUE\textsubscript{\theta} of the predicate *puru*, namely *ngapa*. This can be represented in exactly the same way in which I represented discontinuous semantic case-suffixes in Chapter 4. Nothing more need be said about it, except that it is not common.

The second type is perhaps the most common. Two nominals appear in a sentence. They have the same complementizer suffix, but one is an ordinary nominal and the other is a nominalized verb. The ordinary nominal apparently acts as the OBJECT of the nominalized verb. Examples follow:

(207) \textit{Narnngu + ju wita watiya kuja-ka-lu jilypi-yirra-rni}  
hook-ABS + EUPH small-ABS tree-ABS REL-PRES-3pl insert-put-NPST  
pikirri-rla jirri.marda-rinja-ku.  
spear thrower-LOC spear-DAT hold-INF-OAT  
A hook is a small piece of wood which is secured with sinew onto a spear-thrower in order to hold a spear. [narnngu]

(208) \textit{Paji-rinja-rla watiya-rla, laju manyani ka-lu}  
break-INF-SEQ tree-SEQ grub grub.sp-ABS PRES-3pl  
yapa-ngku nga-rni,  
person-ERG eat-NPST  
They break open the tree and then they eat the ‘manyani’ grub. [manyani]

The nominals with identical case-marking need not be adjacent.
It is possible that an account similar to that which I developed for discontinuous semantic expressions could be developed for these too. Under such an account, the nominal with the complementizer suffix would function syntactically as the OBJECT of the nominalized verb, just as a semantic case expression can have an OBLIQUE\textsubscript{\theta} and an ADJUNCT of that OBLIQUE\textsubscript{\theta} which are not adjacent in c-structure. However, there are technical difficulties with such an account, and furthermore, there is some evidence against it. Consider (209).

(209) Maliki-kirra .-rna ngirnti-kirra nya-ngu yapa
dog-OCOMP .1sg tail-OCOMP see-PAST person-ABS
ya:nka-nja-kurra.
grab:INF-OCOMP
I saw the man grab the dog by the tail.

Observe that the verb yarnka normally takes a DATIVE:

(210) Ngirnti-ki .-rna-rla yarnka-ja maliki-ki.
tail-DAT .1sg-DAT grab-PAST dog-DAT
I grabbed the dog by the tail. [bodypart elic.]

If maliki-kirra ngirnti-kirra is acting as the syntactic OBJECT of yarnkanja in (209), then the selectional restrictions of yarnkanja are not satisfied, since maliki-kirra ngirnti-kirra does not have DATIVE case.

An alternative approach is the one I developed in 6.6.4 for apparent SUBJECTs marked with the SOURCE case, namely to assume that these apparent OBJECTs are really part of a separate ADJUNCT which happens to be construed with the nominalized verb ADJUNCT. This account relies heavily on the fact that ordinary nominals with complementizer suffixes can appear freely in the sentence, whether or not a nominalized verb with the same complementizer suffix is present. Under such an account, in (207) kurlarda-ku would be an ADJUNCT, ku would be its functional head, and kurlarda the OBLIQUE\textsubscript{\theta} of ku. Jirrimardarninja would also be an ADJUNCT, and jirrimardarninja would provide the functional head. It is subcategorized for an OBJECT, and introduces a null pronominal for that OBJECT. This null pronominal is anaphorically linked with the OBLIQUE\textsubscript{\theta} of ku in the other ADJUNCT, namely kurlarda. A paraphrase then might be:
[for a spear, for hooking it].

The third type of discontinuous expression to consider is somewhat less common. This is the situation when a nominal with a complementizer suffix and a nominalized verb with a complementizer suffix both appear in the same sentence, and the nominal is interpreted as an ADJUNCT predicated of the event described by the nominalized verb. An example follows:

(211) (...)waku rna tarlarima-nu, tarnnga-warnu nyina-nja-warnu.
       arm-ABS -1sg flex-PAST always-ASSOC sit-INF-ASSOC

I flexed my arms after sitting for a long while. [Excerptions]

I propose to treat these in much the same way as I treated discontinuous semantic constituents. An abbreviated annotated c-structure tree follows.

\[
\begin{array}{l}
\text{S} \\
\text{\downarrow \varepsilon (\uparrow ADJUNCTS)} \\
\quad \text{N} \\
\quad \quad \quad \text{\downarrow \varepsilon (\uparrow ADJUNCTS)} \\
\quad \quad \quad \text{PRED = 'tarnnga'} \\
\quad \quad \quad \text{tarnngawarnu} \\
\quad \text{\downarrow \varepsilon (\uparrow ADJUNCTS)} \\
\quad \text{N} \\
\quad \quad \text{\uparrow = \downarrow} \\
\quad \text{PRED = 'nyinanja' (<SUBJ>)} \\
\quad \text{nyinanjawarnu}
\end{array}
\]

Tarnngawarnu is labelled as an ADJUNCT which does not have a functional head (\( \uparrow = \downarrow \)), but exhaustively dominates another node labelled ADJUNCT. Nyinanjawarnu has a functional head. For the f-structure resulting from this annotated c-structure to be coherent, there must be something for tarnngawarnu to modify. This is achieved if it is merged with the f-structure containing nyinanjawarnu. It can then be predicated of the even which nyinanja describes. (The Adjunct Agreement Convention will need to be modified to encompass complementizer suffixes, ensuring that both ADJUNCTs have the same complementizer suffix).
There are many aspects of complementizer suffixes in Warlpiri which this account
has either skimmed over, or left untouched; for instance, the embedding of non-finite
clauses within other non-finite clauses, the possibilities for words to have several
complementizer suffixes, the constraints on order within non-finite clauses, the
constituency of non-finite clauses, the relationship of preverbs to non-finite verbs. For
some of these areas, fuller accounts are given in Hale [EFW], and Nash (1980). For
others, the data has yet to be analyzed. I have ignored the problems which these areas
raise, in the hope of showing clearly that semantic case suffixes and complementizer
suffixes share a number of properties. I have tried, moreover, to show that the principal
similarities and differences between the case suffixes and the complementizers can be
represented explicitly by developing a theory of the relationship between morphology and
syntax.
BIBLIOGRAPHY

Abbreviations


CLS: Proceedings of the Chicago Linguistics Society

FofL: Foundations of Language

IULC: Indiana University Linguistics Club.

JL: Journal of Linguistics

Lg: Language

Li: Linguistic Inquiry

NELS: Proceedings of the North Eastern Linguistics Society

Part 1: Works treating Australian languages


Nash, David. 1982. Warlpiri preverbs and verb roots. In Swartz, ed. q.v..


Swartz, Stephen. 1982. Syntactic structure of Warlpiri clauses. In Swartz, ed. q.v..


Wordick, Frank J. 1981. The Yindjibarndi language. Written in cooperation with the

Part 2: General Works


Bresnan, Joan. 1980 a. Polyadicity. In T. Hoekstra, H. van der Hulst and M. Moortgat, eds. q.v.. Revised in J. Bresnan, ed.q.v.


Bresnan, Joan. 1982 a. Control and complementation, *LI* 13:3. Also in J. Bresnan, ed. q.v.


Green, Georgia. 1972. Some observations on the syntax and semantics of instrumental verbs. CLS 8: 83-98.


Huang, C-T. J. 1979. A lexicalist account of resultative compounds and resultative complements in Chinese. ms Cambridge: MIT.


Kiparsky, Paul. 1982. Lexical morphology and phonology. In *Linguistics in the morning*


Manzini, Maria Rita. 1982. On control and control theory. ms. Cambridge: MIT.


Mohanan, K. P. 1982 b. Functional and anaphoric control. ms. University of Texas at Austin.


Neidle, Carol. 1982 b. Case agreement in Russian. In J. Bresnan, ed. q.v.


Whitman, John. 1981. The internal structure of NP in verb final languages. CLS 17


