LEARNING TO LEARN AND DESIGN;

THE DEVELOPMENT OF EFFECTIVE STRATEGIES

IN A GRADUATE SCHOOL OF ARCHITECTURE.

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ABSTRACT

The dissertation is a case study of the First Year Design Studio in a Graduate

School of Architecture. It is a comparative analysis of the developments of

twelve selected students as they were influenced by the studio; their inter-

pretations and responses are compared in light of the messages they received

in the form and content of the studio program. There is equal concern with

messages and responses about a theory and practice of architecture and messages

about how to learn it.

Through types of conscious and unconscious rejection, selection and distortion

of message form or intended meaning most students are found to exhibit, what

is called,"simple" learning. In this they are only willing and/or able to

respond positively to suggestions which either relate to or imply development

of their existing orientations. Two students, however, exhibited "complex"

learning in which they were willing to take on, albeit temporarily and

critically, perspectives and behavior which seemed to be quite outside their

initial orientations. This "complex" learning was exhibited in relation to

both their developing theory and practice and to their learning behavior

itself. They adopted new learning behavior and new learning roles to meet the

special conditions of the environment.

(Abstract cont.)

This same attitude to learning in the studio was also exhibited in students'
emergent design methods. Those who demonstrated "complex" learning and
"learning how to learn" skills approached their designs in similar ways;
they were able to take multi-perspective views of their problems and potential
solutions and were willing to construct a new design method to meet the special
conditions of the problem and the problem environment.

The report documents how it was the qualities of "consciousness" of their
learning and design modes; "awareness" of their own deeper motives in a given
behavior or attitude and "confidence" and "courage" in taking necessary risks,
which distinguished the two students from the other ten. Five aspects of the
current studio and its emergent "culture" seemed actively to prevent the
development of these skills in the others.- the product fixation of students,
critics and program; the avoidance of intimacy and the failure to confront
deep seated needs; the failure to correct misapprehension; the non-recognition
of assumptions which became built into the emergent studio culture and which
served to give meaning to more direct messages; misunderstandings about the
limits of "simple" learning for the development of effective design skills.

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INDEX

Chapter 1

INTRODUCTION

The following is a case study of the design studio in a first year graduate degree program in architecture. It is an analysis of the developments of twelve sample students as these were influenced by their contact with the studio.

The First Year Program was organized by Quist, the Studio Principal. He also ran the design studio and gave one of the five satellite lecture courses. Other staff gave the remaining four courses and three part-time critics assisted in the design studio. Quist, however, was so central and powerful a figure in the students' lives that I have chosen to write this report around the theme of twelve students and their development largely as this was influenced by his messages. These messages are discovered and documented ahead in his speech, in his written handouts, in his program and task design and in his teaching behaviour.

All the students will be found to have made some development as a result of their contact with these multi-level messages but, it seemed, according to the attitudes to architecture and the decision making and learning modes they came with into the program, everyone developed differently. This report attempts to discover the nature of these differences and the reasons for them both in relation to changing attitudes and behaviour in architectural design and in learning about it. I am as interested in changes in learning architecture as I am in changes in a theory and practice of architecture. Often, in the data ahead, these two themes are discovered to be highly interdependent but it has been fruitful to look at them separately while recognizing the linkages.

The report has a simple structure. Chapter 2 deals with the research method and the assumptions underlying it: Chapter 3 with a description of the studio and the way it is embedded in the rest of the curriculum: Chapter 4 presents a description of the more important messages, which

I discovered in the form and content of Quist's program and teaching behaviour: Chapter 5 is made up of twelve sections each dealing with the visual, verbal and behavioural responses of a different case study student: Chapter 6 is a long summary and analysis of these responses.

The analysis in Chapter 6 shows how, through forms of rejection, selection, polarization, surface acceptance and distortion of form or intended meaning, most development can be characterized by what is called "simple" learning. In this process students seemed only willing or able to develop along directions already implicit in the attitudes and skills they brought with them into the studio. It was almost as if the direction of development was already there, but latent, and students merely used the program as a device for bringing it out. While this process had the advantage of allowing natural talent to flower, it also enabled "bad" information processing habits and unexamined ideological stances to become even further entrenched than they already were at the beginning of the program. Everyone had these bad habits and unexamined stances.

Two students, Joanna and John, seemed able to learn in "complex" ways. They seemed able and willing to accept and act out, albeit temporarily and critically, a much wider range of messages about a theory and practice of architecture. In this sense they were able to take on ideas and develop skills in architecture which did not seem to be already implicit or latent in their existing positions. This same willingness was revealed again in their attitude to learning; they were able to adopt new learning modes and roles in learning to meet the special conditions of a given program. They did not insist on the same, or variations of the same, learning stances for every kind of learning situation. It will be said that they showed the capacity to "learn how to learn" in "complex" ways.

Understanding the nature of these "complex" learning and "learning how to learn" skills became doubly important. In the first place they seemed to explain why it was that Joanna and John were perceived by most people to be developing faster than anyone else. In the second place it became clear that similar attitudes and information processing skills also lay behind their "successful" design behaviour. It seemed that, in certain

important ways, they approached the development of their buildings in the same way that they approached the development of themselves as architects. One aspect of this common approach was that they both took multi-perspective views of the substance of their learning and design tasks.

A second aspect relates to their attitudes to design and learning skills. They did not see these as fixed elements as their colleagues tended to do. Just as they seemed able to adopt new learning modes and roles to meet the special conditions of the material and its context so they seemed able, or expected eventually to be able, to develop new design methods to meet the special conditions of the task and the task environment. Just as they could "learn how to learn" they expected to be able to "design a design method" for each problem and problem context encountered.

It is claimed that Joanna's and John's ability to learn and design in these flexible and effective ways was due to their possessing a high degree of "consciousness" about their educational and substantive responses, "self-awareness" about their deeper motives for taking a particular stance and "self-confidence" and "courage" in order to be willing to step into unfamiliar territory.

In the second to last section of the final Chapter the existing studio is assessed in terms of its effectiveness in promoting these skills. Although these are what Quist was looking for in students, there seemed to be several ways in which his program actively worked against their development and, in situations where program elements had been deliberately geared to their promotion, the intentions were largely thwarted by students.

Five main themes against the promotion of "complex" learning and design skills are recognized. The first is the "product fixation" of the studio, in which the focus of attention is always on the design products of great men or of the students themselves. It was seldom on the design processes or the producers and never on the learning processes.

The second theme is "the avoidance of intimacy", so that students were never confronted or required to confront themselves at the deeper levels needed if they were to investigate and go around their more rigid ideological stances and habitual behaviours.

The third theme relates to the unconscious assumptions and tacit agreements, about such things as the role of students in the learning process, which seemed to have become established in the emergent "studio culture". Students and critics needed to become conscious of these assumptions because they formed the context within which other, more direct messages, were given meaning.

The fourth theme, relating to one of these tacit agreements, seemed to be that students and staff almost deliberately sustained as much ambiguity as possible in an exchange. In this way students could feel free to interpret it in the way most convenient to them and avoid "complex" learning. Staff could avoid the difficulty of explaing exactly what was being suggested. Quist, himself was often found to be an exception to this rule but even he was found to be crippled by the poverty of an available language for talking about design and learning processes.

The fifth and last theme relates to what seemed to be a misunderstanding about the limits of learning in a studio exercise. Everyone seemed to assume that one could learn new design skills through the process of what I have called "simple" learning. But "simple" learning will be shown to produce nothing but a design skill in its own image. The data is full of confirmations that the same limited but often quite unique information processing skills can be found to lie behind a given student's learning and design behaviour. To learn new design skills requires personal development of a profound kind and this development will lead to changes in learning behaviour itself as well as in design.

Chapter 2

RESEARCH METHOD

The study was designed to look ·for concepts and not to test them.[1]
It involved extensive observation during about half of all studio time in
the semester, looking at problem research exercises and presentations,
formal and informal group discussions, desk criticism sessions, work
presentation and review sessions and individual students' design pro-
cedures. Field notes were kept and tape recordings made of about fifty
hours of the above events. Copies were made of students' design work
and any class handout material and this was supplemented by lengthy
interviews with Quist and the twelve selected students at the beginning
and end of the semester.

Although designed to build and discover concepts and not test
existing ones, the research was based on certain broad assumptions which
lay behind its design and which also, then, lie behind the conclusions
of this paper. In the first place a model of man and environment is used
which stresses their interdependence. The model here is based on Kelly's
"enquiring man".[2] In this every man is seen to be in constant dialogue
with the environment in order to discover its nature and how it can be
manipulated. The individual is seen to be in a continuous process of
conscious and unconscious concept formation, leading to test in experience
and of experience leading to new or reformulated concepts. After Piaget,
however, it is now possible to see that the very act of conceptualizing
is as much an activity upon the subject as are the more familiar forms
of physical manipulation.[3] In this sense the act of conceptualizing is
both a response to reality but also a process of creating reality.
Concepts, because they influence the way we respond to the world, have
self-fulfilling potency. As Berger and Luckmann claim - "knowledge about
society is thus a "realization" in the double sense of the word, in the
sense of aprehending the objectivated social reality, and in the sense
of ongoingly producing this reality."[4]

The above model of the subjects of the study has great appeal for two reasons. In the first place it seems to be an appropriate model to use for students engaged in the development of a professional skill. In the second place it is a model in which I can recognize myself and my own behaviour in the study.[1] This is in contrast to so much research in which the subject is recognized, either explicitly or by implication, to be quite a different kind of being from the researcher. In this study I have been able to identify with the subjects and use my own experince, now and previously, as input into the research enterprise. In the same way, the knowledge which I have acquired in undertaking the work especially, in this case, from the subject matter itself I have been able to directly embody in my own development. It has been a joyful enterprise from that point of view alone.

The main assumption about student development or change here is that change usually leads to conflict, either between those being changed and those urging it or within the person under pressure to do so. The intention, then, is to look to these interpersonal and intrapersonal conflict situations as the points where change is most likely to be taking place or being forcefully resisted.[2] It is also felt that this is where information will be most clearly revealed about a student's existing state and the mechanisms this person uses to accommodate, resist or assimilate the forces which would change it.

The interview method was derived from earlier experiments of adapting Kelly's Repertory Grid Technique.[3] This had been developed by Kelly as part of his work as a psychiatrist. It was designed to discover two things, firstly insights into a subject's state of readiness for action on the world and, secondly, the constructs which the person used and which were interdependent with this state. These constructs would become the medium thorugh which the therapist could get back to the subject with suggestions about how they might change.[4] It was important, therefore, to discover concepts that really did lie behind or interdependent with a subject's state of readiness for action and to avoid superficial rationalizations, which really had nothing to do with it.[5]

The technique was to focus on the subject's actual experience and response but in a slightly obtuse way. Subjects were asked to classify and compare people and events with which they had been, or were now, intimately involved. It was felt that in such classifying behaviour people would remember the most troublesome or surprising things because, in order to deal with them, they would have faced some kind cf conflict and had to make some adjustment in their habitual responses. In a sense, then, this method brought out past conflict situations for the subject, which had resulted in a changed state of readiness or an existing state being entrenched.

The benefit obtained by this obtuseness was that it focused on the subject's most intimate or important experiences while avoiding their inevitable desire to try to put themselves in the best possible light with the interviewer. The simple idea behind the method is that people reveal more about themselves when they describe other people, or events with which they have been intimately involved, than they do when asked to describe themselves.

Kelly's grids had been quite formal procedures but, after attempts to adapt these to the needs of this study, I used a much looser version of them. Names of different students in the class, teachers they had encountered and buildings or spaces they knew well were elicited by asking questions like - "Who, in your opinion, is the best designer in the class?" "Who have you noticed who seems to proceed with design quite differently than you do?"... etc. Once names have been elicited in this way the subject was asked to make comparisons - "What is it about this person's school design that you think is different from these two?" "What is it about this person's design procedure which is different from these two?" "Who do you consider to be the better student of the two?" ... etc. Questions like these would then be repeated for different teachers and environments encountered.

Once concepts had been elicited in this way subjects were asked to use them in relationship to their own designs, design behaviour and learning behaviour. Often such questions would be anticipated; for

example, Phillipa when replying to a question about one of Joanna's skills, said - "S he lets herself loose enough in the waves (of the problem) to come along in them. That's my trouble, I don't seem able to do that."

The final interview also became a device for following up on conflict situations I had noticed a student in earlier. I'd ask - "What happened?" "Why did you respond in that way?" "What did you think he (the other person) wanted you to do?" It also became the device for asking about my own perceptions of changes during the semester and for asking students to talk of their own. Finally this interview was used to get a student's perceptions about the changes Quist had been requiring and their own response to these. I'd ask questions like - "How did you go about designing your school project this semester?" "How do you think this differs from the way Quist suggested you work?".

In the cases ahead and in the chapter, Quist's Messages, all the statements which are quoted were elicited in the above kind of way. They are all, thus, grounded in, and interdependent with, a given individual's intimate experience of themselves and others trying to practice and learn architecture. It is important to remember this, even though, in order to cut down the excessive length of text, the experience context of a quoted statement is not usually given.

I was particularly interested to get as wide a range of students' interpretation and response to Quist's messages as possible. Therefore, at the beginning of the semester all the students in the class were asked to take Kolb's simple learning-mode self-characterization test.[1] They were handed four lists of activities with words like "contemplating", "looking", "trying out", "watching", "feeling", etc. They were asked to rank and score each list according to the amount of time they spent in each of the actions; 10 points to the action occupying the longest time; 9 points to the next longest and so on down each list. The numbers were written next to the listed action.

The results were then collected in and the four lists rearranged

into four new lists according to a separate code. The numbers next to
the actions in the four new lists were then added to give four totals.
These totals were supposed to indicate the relative weighting the indivi-
dual had given to four general types of activity, which could be summarized
as "thinking", "doing", "watching" and "feeling". These figures were
plotted on a graph with the four generalized actions as the four poles.
The resultant graph gave a profile for each student, as in the diagram.

thinking

watching ———————— doing

feeling
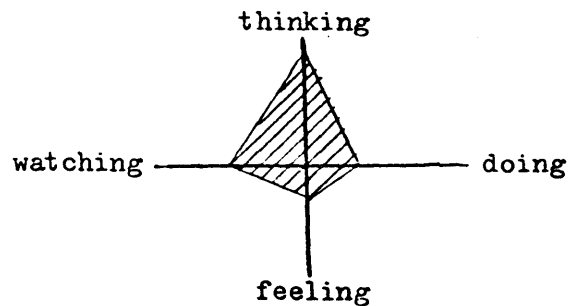
The test was given to the whole class to see if any profiles would
predominate. In fact the distribution was surprisingly random, with a
slightly greater number of students biased to the watching-thinking segment
(as in the diagram) and a slightly smaller number biased to the doing-
feeling segment. If there had been significant biases it might have led
to questions about the type of people who apply to architecture school,
or, at least, about the type that get accepted to this one.

The four students with the most biased profiles to each of the four
poles were asked to be case study students and seven more were chosen on a
balance between their profiles, age and educational and social background.
One student, Phillipa, was selected, partly because she had refused to
participate in such "reationalized nonsense".

Not counting Joanna, one of the twleve who just about everyone
classified as " one of the best" in the class, the other eleven represent
a good cross section of the class in terms of recognized ability as
designers and students. In the interviews with the twelve students the
proportion of those named in the sample as "one of the best" and "one
of the worst" in the class was the same as for the class as a whole.

Chapter 3

DESCRIPTION OF THE STUDIO

The setting for this case is the Graduate School of Architecture and
Planning of a well-known university. The studio being observed is a part of
the first year curriculum of the three year Master of Architecture Degree.

The studio began with 48 students of greatly varying experience and
academic background. 40% were women, an unusually high percentage for an
architecture school. All had previous degrees, but selection was generally
not based on what kind. The criteria for admission to the program is only
that a student can prove to have done well in his or her previous education.
This policy is an important part of the school's more "rational" attitude to
architectural education, as discussed ahead in quotes from Quist and the
Dean. Students thus had degrees in subjects as far-ranging as Latin American
studies, Mathematics, Psychology and Art History. Some already had Master's
Degrees in subjects like Civil Engineering, Art History, and Theoretical
Physics. Experience since college ranged from twelve years of practising
law to two of script writing and sculpture. About six students had a B.A.
in Architecture and almost half the group had some kind of experience of the
discipline, however slight. They had been tea maker in an architect's office,
had taken a night school class or had worked as a draftsman for a year.

The students had decided on architecture through many strange processes.
One, after two years out of college, talked of meeting "an arrogant young
architect" at a party. This man had talked of his job so it sounded more
interesting than his own and the idea began to take root. After a while he
had left his job and gone to work for an architect as an odd job man to see
if he liked the business. Another talked of expecting, with more or less
intensity over the years, to be an architect since he was seven, when his
mother had told him he'd become another Frank Lloyd Wright.

The studio itself is a large fourth floor room, approximately 60' x60' with windows on three sides. On the fourth side is a large 20' long and 7' high permanent partition free-standing about five feet from the wall. The entrance to the room is directly behind this, allowing circulation into the room from behind and around either side of it. The partition is painted white and is used as the pin board for presentations and reviews. Beyond the entrance is a large hallway with the blueprint machine. Symmetrically opposite the First Year Studio on the other side of the hall is the Second Year Studio. There is a small library and reading room between them on one side and a stair and lift access on the other.

The policy of the school, given the variety of the students' backgrounds, is to put them through a very tight and structured experience to begin with. The Dean calls this "the narrow end of the funnel". The expectation is that students will, in the last two years, be able to broaden out their interests and activities. He contrasts this with some other schools where, he feels, students are given a good deal of variety and choice early on but seem gradually and steadily to become socialized into one narrow view of what architecture is about.

Dean —
> We try and put the students through the
> narrow end of the funnel to begin with.
> If I had my way I'd have my system
> thoroughly thought out and applied all
> through the first year. We put students
> under a lot of pressure at first, but
> then let them broaden out, hoping they
> remember those skills and talents they
> brought in with them and synthesize
> them into what they've learned.

The first weeks, as several students explain it, were a nervous time of wondering how they would take to this new discipline and how they would compare with other students in the class. One student, recognized by virtually everyone to be one of the "best" in the class, confessed to feeling certain she wouldn't be able to handle it. She had expected to have to drop out after a couple of months. Others talk of first impressions —

Student—
> The first thing I noticed about the person
> next to me was that she could draw better
> than I could.

Student —   I noticed that he didn't even know how to
                sharpen a pencil.

Students with some experience, almost any experience, became resource
centers. One describes how helpful this was to get him into the mainstream
of the emergent culture —

Student —   We used each other in a mechanical sense
                to begin with. Our comments on work
                weren't up to much.

Some people, for many possible reasons, got left out of the developing
culture.

Student —   There has to be some level of cohesiveness
                and the people who get left outside the
                channels of communication really get hurt.

The work was difficult for most of them and there was a lot of it to
do. For many, the whole process of working in a studio was a new experience.
Most talked of the great benefits and some of the few costs of having to work
in public in a medium in which the progress or lack of it was visible to
everyone. They talked of the problems of having people look at your work
before it was "ready" — of being able to crib ideas and having your own
cribbed — of getting many inputs rather than just the one of your advisor —
of the great pressure to produce something "good" because everyone could
see what it was.

Perhaps the greatest difficulty the majority of them were facing was
the difference between solving academic problems in an academic context and
solving practical problems in a practical context. Many people had to face,
often for the first time, a situation in their studies where there were no
right or wrong answers; where satisficing was the necessary mode of proced-
ure; where the essential information was not given; where decisions had to
be made about multiple and contradictory goals; where one had to define the
question in the process of trying to solve it; where they felt they were
being asked to be "creative" for the first time in their life; where they
were operating at least partly in a medium of communication and thought, the
visual, which many of them had never encountered.

Reports of Medical School subcultures often talk of the strong bond that develops between students in the early years.* The pressure is strong and the subculture develops as a cohesive one to cope with the stress. A similar phenomenon seems to have occurred in this case -

Student (1) - Comradeship was what you needed. Someone who could say to you "yes, I know how hard that is".

Student (2) - There's a great comradeship in these late nights in the studio. You'd never stay up working until 4.00 a.m. in your room at home.

The "clique", as it was called by those who, either by choice or fate, were not part of it, seems to have emerged out of the late night sessions. They developed, for a while, a habit of keeping "bowling scores" on those who worked at night. This kind of behavior created a good deal of resentment for a while and other students talked of losing touch with people they had initially liked because they had joined the clique. By the middle of the second semester, however, it had completely disappeared.

There were others who chose to work at home for a variety of reasons. Some were labelled "unveilers". They were people who would come in at the last minute with everything drawn up, "unveil" their work for a crit or review, and then roll it up and take it home again.

In spite of certain resentments and tensions related to differing views about the appropriateness of such things as "cliques" and "unveilers", the studio seems to have quickly developed into an easy and exciting place to work. Most people responded with enthusiasm about it -

Student - The studio here is great - it is one of the great attractions to me, the kind of inter-action that goes on. I 've some friends in other schools of architecture and they say there is great tension and competition there. There is so little here. It makes it very easy to use others as resources, obviously written into that is you have to respect others. It is funny how it works. You have a relaxed atmosphere, but everyone knows what everyone is doing.

Undoubtedly one of the reasons for this is the atmosphere of the school itself. It is a very friendly and cohesive environment. Most of the faculty in the school seem to know the students by their first names by the second year, or at least they know them by sight and have sat in on one or two reviews of their work. The Dean and critics from other years wander through the first year studio giving impromptu desk crits, discussing last night's lectures, or just talking in general. Students between years also got to know each other and in one or two cases actually collaborated on each other's work.

Another reason for the atmosphere can probably be related to the maturity of a large number of the class. Most of them were clearly not in the business of trying to score cheap points off each other, but were collaborating together in the business of learning.

The third and perhaps most important influence was Quist himself. In the chapter ahead it is discussed how, through his enthusiasm for the subject and openness about himself (who but an intensely open person would agree to be studied in this way?) he seems to have managed to create an ambiance which was at once open and yet involved.

At the beginning of the first semester there were two other critics who were employed part-time by the school to attend the official studio periods as advisors. The students were divided into three groups, each of the two critics and Quist would be responsible for those in one group. The system could, of course, be loose and one could seek advice from any of the other critics. After about six weeks of the semester there was a good deal of complaining from students that they were not getting enough time with their critic. A petition was written up and handed to the Dean, who agreed to supply another part-time critic. This man was not available for the second semester and so after Christmas another was found to replace him. Another critic was then brought into the studio during the second semester to take Quist's place after he had left, late into the semester, on a research project. Students had, therefore, encountered five part-time critics and Quist over the two semesters.

The studio, as in most schools, occupies the center of the students'
activities. The fact that they must all take the same studio no doubt
partly explains the emergence of a strong student culture. This does not
appear to have happened in schools offering several studios as options.*
All students take five additional satellite courses along with the studio,
in most cases being allowed one option. One of the additional courses was
taught by Quist and called "Principles of Architectural Design". In order
to understand the studio better, it is best to see this course as an integral
part of it while the other four are more generally peripheral. It was the
close relationship between the "Principles" course and the studio, as well
as some of the programmed elements of the studio itself, which led to the
assertion ahead that Quist, in some sense, challenged certain traditional
methods of teaching architecture.

The desire to hit the students early with a tough series of basic skill
programs, manifested itself in the first semester in an initial series of
five formal design exercises. Examples were a "cube problem" (intended to
introduce the idea of "space definition") and a "path problem" (intended to
introduce the concept of "movement through a sequence of spaces"). The
final exercise at the end of the semester was the design of a "parti-wall
building", a museum.

Parallel with these exercises were the "Principles of Architectural
Design" lectures and presentations. Elements had titles like "site/context/
access", "Approach-Entry", "Horizontal Circulation: implicit vs. explicit",
"Vertical Circulation". This series ended with a major analytical exercise
to be done by the students themselves of a well-known house of their choice.
This exercise became recognized as one of the most important events of the
whole curriculum, as discussed ahead.

The first semester had ended on a somewhat cataclysmic note with the
events of the final review of the museum designs, as described here —

Student —   The first day we had mostly inhouse people
                and it was a low-key affair. The second
                day we had Bream and two outside critics
                and they really laid into us. They went
                after us with a vengeance and it was a
                great review and the people who had gone

on the first day were really jealous because
it went beyond the function and programatic
stuff and got into the implications and the
contextural issues. We all got grilled, we all
got hammered — it was a real sweat box.

The second semester, the one being described in this study, began with
the presentation by students of their house analyses. These took a good
deal longer than had been programmed for and it began to eat into the time
allotted for the preliminary phases of the Primary School design project,
which was to take up the rest of the semester. The program, as will be dis-
covered, placed a good deal of emphasis on various forms of analysis before
the design phase could begin and some students felt very frustrated at not
being able to begin, at once, with the form making. These kinds of attitudes
become important evidence ahead in the attempt to discover emergent theories
of architecture in the students' actual design behavior and their conflict
around this.

The analyses included studies of well-known primary schools in Europe
and the U.S.A. These were visited, where possible, and slides were shown
and presentations given to the rest of the studio. A few people, rather
than doing an analysis of a school, chose to research such topics as
"The History of Educational Thought".

There was an exercise requiring the students to analyze the Primary
School they had attended as children and there was a site analyses exercise.
These programs are described in greater detail in the chapter ahead. An
analysis of them becomes a part of the attempt to discover the messages about
architecture and architectural education that can be found in the form, as
well as the content, of Quist's teaching behavior and program.

Chapter 4

QUIST'S MESSAGES

This chapter documents what I saw as some of Quist's more important multi-level messages to the students, as these were conveyed in the form and content of his teaching and program design. The intention is to give a brief sketch of how I interpreted his messages and not a detailed analysis. The twelve case study sections, which follow, are then about how the different students interpreted and responded to them. This, of course, is the focus of the study and the detailed analysis in the last chapter relates to these interpretations and responses.

There is a rough order in this section of dealing with messages about teaching/learning architecture, through messages about the more abstract aspects of a theory and practice of architecture, down to more specific apects of this.

The following statement is from one of Quist's hand-outs in his "Principles of Architecture Design" lecture series, described in the last chapter.

Quist —   The overall aim of the course will be to
                 demonstrate and explain principles of
                 design which are true for different
                 cultures and different building purposes
                 because they derive their meaning from
                 basic human biological and psychological
                 traits as well as from inherent, and thus
                 stable, formal characteristics. Examples
                 of architecture produced by industrial
                 societies will be used as well as pre-
                 industrial and industrial European and
                 American examples.

                 In as much as the premise to any design
                 work is that before you can do you have
                 to be able to see and think, i.e., to be

> able to recognize and categorize a
> given situation, the course material
> and the method of its treatment by
> instructor and students is geared to
> develop the students' ability to trans-
> late visual cues into intellectual
> concepts and visa versa.

The statement reveals three basic premises upon which his major program designs are based.

It states a belief in certain "principles" or "deep structures" which transcend all cultures and individuals. These principles not only underlie certain appropriate spatial forms and relationships but also, as will be seen, certain appropriate procedures of design. He is promoting a view of architecture as if it is a general discipline, a "field", based on these principles to be learned, as opposed to an individual craft to be acquired through practice.

It states a belief, importantly linked to the above, that there is a facile interchangeability between visual language and verbal. He argues that it is possible to discuss at a verbal level the major elements of the product and process of architectural design. He challenges the familiar notion that architectural knowledge is inscrutable, that it cannot be verbalized without a loss of its essence.

Finally he reveals a belief in the appropriateness of a learning mode which moves from the stating of a general principle to testing specific aspects of it in action. He argues for what might be called a "deductive" learning mode as against an "inductive" one, in which the generalized principle emerges after detailed experience. He felt that the claims of certain students that they preferred to learn inductively was a popular trap and served as a mechanism for them to entrench their own hidden and unexamined biases.

Quist's claims for the existence of deep transcendent structures seemed to serve as one of his justifications for taking an authoritative stance with students. This relationship existed formally in the Principles course but also, informally, in the studio sessions. An example, which shows how stu-

dents felt they were in a state of being "taught" by Quist in these sessions, occurred during a presentation of a school some students had visited. The atmosphere, as often, was lighthearted and Quist, as usual, had dominated the discussion of the last building. A new building had come onto the screen and, while everyone was thinking of something to say, John had asked – "Do we or do we not like this one?" Everyone had laughed uproariously, presumably because they too felt he had been co-opting them into his own perspectives all morning.

When speaking of the two "best" teachers he had encountered as a student Quist said –

> Both implied a master/student relationship –
> It has to be a kind of contract between the
> two – the teacher must be open to challenge
> and must be able to defend his position –
> the student in turn must be willing to
> suspend his disbelief, to give the teacher's
> suggestion a chance – to try a suggestion
> out. The student must be willing to trust
> that the faculty member has a programatic
> intention which will be preempted or ruined
> by his requiring full justification and
> explanation before anything is done.

The phrase "willing to suspend his disbelief" is the key to the learning stance Quist wanted from students. It generated more conflict and misunderstanding than almost any other message he was giving them. The suspension of disbelief does not imply a blind acceptance of his authority but a highly complex and difficult state of deliberate and temporary willingness to accept. The student, in this case, must be able to accept a piece of operational or descriptive advice and work with it without feeling that his or her natural mode of operating or explaining was lost forever. It will be seen from the cases ahead that most students had no awareness that such a complex stance was possible and thus interpreted Quist as asking for a once and for all submission.

The tendency of students to misinterpret Quist's requirements seemed also to be a result of the context within which they interpreted his messages.

Bateson makes the point that verbal messages are usually meaningless in
themselves; it is only when related to some context that they make sense.[1]
These contexts are often defined by what he calls "metalinguistic" messages.
I can say "I think you are a fool" but you can see by the expression in my
eye and my tone of voice that I mean you to interpret that statement in the
context of a game I am playing with you. Within the context of this game, I
am actually saying that I think you are very bright. The expressions and the
tone of voice set the context in which the verbal statement can take on
meaning. Quist is a powerful and charismatic figure who, largely through
such metalinguistic messages, seemed to have established control of the pro-
cess of defining the context within which verbal messages could be interpreted.
The general sense of these context defining messages was that he was the
leader and they were his followers; this was the name of the game they were
playing. It is perhaps not surprising that, interpreted in such a context,
"the willing suspension of disbelief" sounded to most students like a call
for their submission.

There were, of course, great benefits as well as costs associated with
his ability to control the process of defining the context. Students were
definitely inspired by Quist and came to see architectural design as an
exciting and important activity and they worked harder at it and with greater
enthusiasm than any other group of students I have encounterd. Quist was
sure that it was part of his responsibility to inspire in this way –

Quist –   It is a pedagogical objective to turn them
                  on to architecture on a number of levels –
                  the formal, the social, or whatever – that
                  built form is an important cultural event.
                  You the teacher have that job but without
                  personality you can do nothing. The best
                  curriculum without personality won't work
                  while no curriculum with personality will.

In order to consider Quist's messages about an appropriate theory and
practice of architecture it is necessary to approach them as they relate to
different levels of activity and belief.

To begin with he can be seen to locate himself within one of five general "paradigms" about the essence" of architectural design. These paradigms, recognized to overlap each other considerably, emerged as the dominant themes of the different courses looked at by Raugh and Wright in their study in this A.E.S. series.

The five paradigms are –

i) The tools and techniques necessary to ply the profession.

ii) The various design parameters that impinge on any environmental design solution, (a focus on the shifting variety of these).

iii) The role and responsibilities of the architect as an arm of the construction industry and as an agent for the public interest.

iv) The step by step procedure by which architects carry through a project from program through design to construction.

v) The possible formal manipulations of the various architectural subsystems that make up a building.

Quist was located in the fifth category most clearly through the exercises he set in the studio and the Principles Course. The tasks were strongly "form" oriented; for example the "cube" and "path" problems, described in the last chapter, or the"leporello" exercises in the studio, which are described ahead.

These messages about the priority of form are revealed also in his class behavior. Students are encouraged to develop and give formal insights and are often put off when giving insights or showing interest in other perspectives on the architect's role. Thus in the presentation of a school analysis a student says –

Student –   I discovered that this gap in the main block
             is exactly the same volume as this secondary
             piece of the building here.

Quist –   You mean like a solid collection of blocks
             that can be pulled apart to make two blocks
             ... that's interesting.

In the same presentation another student raises the point that the designed school suggests a highly rigid educational program — shouldn't the architect have tried to persuade the client to have a looser program?

Quist —   He could have, he could have, but I don't
               think we should try to run that now. It is
               a sort of hang up. In individual cases it sort
               of comes up but ...
               (it is not an appropriate subject for group
               discussion — he would have said).

Given his acceptance of the form maker paradigm, there are then choices to be made about how to do this. It is at this lower level that the faith in deep structures comes into its own again. In another presentation of a school design, the plan of the school was made up of five separate square blocks, one in the center and the other four arranged around it to make the four corners of a larger square. The building was thus completely symmetrical in plan. Quist had said that there was logically no way of entering such a plan form except directly into the center of the center block from a helicopter or from a tunnel below. One of the students explained that he knew a building in Thailand with a similar plan form which did indeed enter via a tunnel into the center —

Quist —   Well then they had discovered the principle,
               hadn't they.

The primary element which related to the deep structures, however, was the amount of time, both formally, in the Principles Course, and informally, at other times, he referred to the work of the "great" architects. He felt that through analyzing the works of the masters the nature of the deep structures would be revealed. Here he is more candid about just how specific he is able to be about the deep structures at present, and he somewhat goes back on his earlier promises of rationality —

Quist —   I don't care to make a theory out of these
               structures — I don't spend my time fiddling
               with it in such a way to articulate it that
               it becomes an institution in itself — I think
               it is perfectly fine to let it rest as an
               assumption and let it be intuitive, let its
               strength be people's innate sensibilities

about it and let it be tested against that.

It will become clear in the cases ahead that this position caused a good deal of confusion for students. One group, rejecting for various reasons the claims for deep structure, felt they were having it forced on them while the other group, accepting the claim, were always trying to catch on to just what these structures were. Their constant nervous questions to the critics were of the order "have I discovered them yet?", "do you see these structures in this design of mine?".

One aspect of this position was finally accommodated to by all the students. These cases ahead show how eventually even the most resistant agreed that a design ought to demonstrate a coherence or order and a certain economy of means, an "elegance". This concept, what he calls here a "transcendent structure", is, as it were, an even more abstract kind of deep structure.

Quist —   Perhaps we (the studio and review critics)
                   do agree on this concept of transcendent
                   structures. Well O.K., we demand that those
                   be addressed and recognized so that Bream
                   with whom I disagree stylistically a lot and
                   Michaelson who disagrees with Bream even more
                   than I, can all be in the same review of a
                   student project and all make very similar
                   criticism but drawing from different areas.
                   That demonstrates the existence of those
                   deep structures.

The concept of deep structures, when combined with the bias towards a deductive design method, places Quist firmly at the classical end of the familiar form maker continuum of classical/Modern Movement. In the following example he is distancing himself from those who advocate a procedure which he calls "scientistic".

Quist —   The Modern Movement tended to see itself as
                   a new-born child in a certain way and cut
                   itself off from history and thus within a
                   curriculum, as Harvard's was, to give history
                   low billing, even local history, and thus to
                   make architecture into a much more unique
                   thing that it ought to be. To them architecture
                   is looked on as the instrument of change, the
   instrument of social change. Gropius, I

suppose, thought of it in these programatic
terms. Of course its proven to be not so
except in isolated cases and to some degree
in a negative kind of way.

In contrast to the "Modern Movement" then, he encouraged students to
respond less to programatic elements and more to the deep structural constants
which could be discovered, through history, in the work of "great" architects
and in forms of vernacular building. At the same time students should learn
to recall more on their own spatial experiences and use these, rather than
expect that such information would or could ever emerge from programming
activity.

Quist —   Their approach (the Modern Movement's) was a
                very systematic, scientific, or scientistic
                rather, approach to architecture, and of course
                there are umpteen examples here (in the studio)
                of what they did which are best summed up by
                Hannes Myer's phrase — "the plan calculates
                itself out of the following factors". The plan
                doesn't calculate itself out of anything that is
                my contention.

Thus, while he recognized the reciprocal relationship between program
elements and solution, it was the designer's response to deep structures
and to their own experience which were emphasized. The special analysis
exercises which preceded the generation of a solution in the studio all
emphasized these. One exercise called for research into previous "Successful"
school designs and another required them to recall their own experiences at
their own schools.

In the diagram Quist thus placed more emphasis on the hatched in areas
and claimed that the Modern Movement was over concerned with the unhatched.

external
program
elements

design

deep structural
universals

personal insights and
experiences of the designer
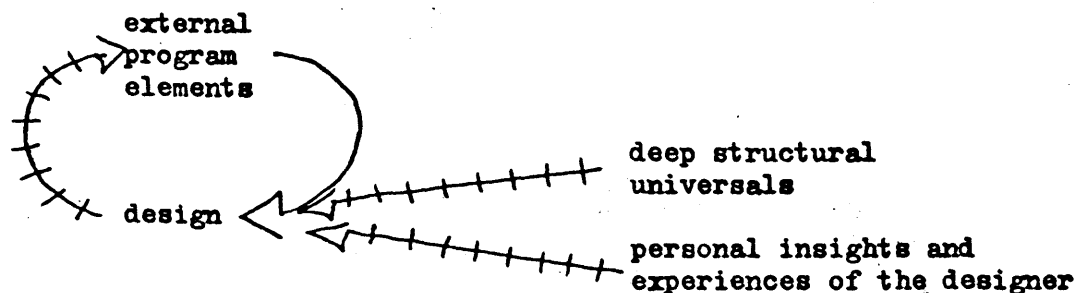
People like Thomas and Andrea ahead, discovered a hidden message in such an approach, that the production of "good" buildings did not have much to do with the quality of the consultation process with clients or other professionals. They felt that the implied message to the students was something like - "... you can do this on your own. You really don't need anyone else even though in practice you will have to put up with them".

In a sense, then, there is a strong consistency between the role Quist played with his students in the studio and the role he encouraged his students to take with their clients in the design process. In each case the requirements of the non specialist are to be assimilated into the perspectives of the specialist.

A similar consistency emerges when one compares his advocated learning modes, discussed above, with the design mode he urged on students. For Quist, it was impossible for a general problem solution to ever emerge out of defining and attempting to solve a lot of program elements.

Quist —   It has got to start with the statement it
            is not something which will simply start
            like a photograph which will eventually
            emerge out of doing a lot of small scale
            operations - like site analysis and program
            analysis which you shake a little and out
            comes the idea.

This "statement" comes from a conceptual leap which the designer must take. It may be sparked off by program analysis but more likely from the designer's own insights or from a response to "universal" ordering principles. Once arrived at, it has the status of a hypothesis which must then be tested. The mechanism of testing is then to deduce from the general solution the implications it would have for the value of specific program elements and to compare this with the actual requirements of these elements. If there was substantial misfit the hypothesis would be adjusted or even replaced.

In this model, the functional requirements of different program elements operate as tests of the general solution but seldom as the generators of it. Several students seemed willing to accept this approach to design but seemed unable to carry out the testing behavior. To test the hypothesis the designer actually reverses the process of generating it and is required to consider

the specific requirements of program elements and their implications for a
solution. This behavior necessitates a switch in thinking style which Quist
seemed able to carry out but which most others who used his method could not.
He placed a good deal of emphasis on students "knowing how to show the
switches onto the different tracks" in this way but it will be shown that
few of them came to understand the nature of this looping behavior.

Perhaps the greatest and most general confusion for students in Quist's
messages about a theory and practice or about how to learn it, was that they
appeared to be full of contradictions of the above kind. The best example
can be found over the issue of "commitment". Quist conveyed the message that
he passionately cared about architecture and that he felt the students ought
to as well. At the same time, however, he recognized that there was a great
danger of students becoming so committed that they "fell in love with their
own ideas". He was constantly trying to nurture a given student's detach-
ment. His message seemed to be that at times you need to be passionately
committed to what you are doing, but, at times, you need to be detached. In
the cases ahead it will be shown that few students understood this require-
ment. Either they were confused, or they selected the half of the message
that suited them and ignored the other. Joanna and John were the two who
seemed to pick up and understand the nature of these messages as they were
intended. In the last chapter an attempt is made to understand why they
were able to do so.

Quist promoted "self-consciousness" as a mechanism for promoting the
versatile skills he was looking for. If a student discovered how he or she
habitually operated they would be better able to develop skills which con-
trasted with this. The major program element carrying this message was his
suggestion that students keep a note-book or diary of how they tackled a
given problem. If you knew where you had been it would be much easier to
go somewhere different next time.

Quist —   It is an incredible help in the thick of
             things to flick through the diary and
             discover a perhaps better or different
             line of approach. The sequence is crucial
             so don't get a ring binder or you will
             fiddle with it.

Interestingly, only three people began such a book and only Joanna continued
with it. She already had emerged as the person who was most conscious of
the procedures she went through. In the analysis of responses in the final
chapter a distinction is made between "conscious" response, in which
an individual knows how he is responding, and "self-aware" response, in
which he also has a deeper understanding about why. Joanna also emerged as
one of the most self-aware.

Partly because Quist wanted students to get a feel for the deep struct-
ural principles, the analysis of existing "great" or "good" buildings (in
this case schools) played an important part in the studio. The "leporello",
as he called it, was a device for presenting these analyses. It consisted
of a series of pages stuck end to end to make a sort of concertina, which
could fold out. "leporellos" were also used as the format for presenting
the analyses of the schools students had themselves attended. While each
page was supposed to deal with a different theme, including cost, size and
circulation, it was the formal analysis which received the most feedback
in class. Quist felt that in learning to analyze form students would even-
tually be able to reverse the process and produce them. Metaphor and analogy
were suggested as indispensable tools for translating from spatial perceptions
to verbal ones. Eventually, in their design behavior, students would be
able to use metaphor to translate between intuitive feelings about what a
space should be and a spatial manifestation of this.

Quist —   I do believe it is profitable in the early
                   stages to push things around and look for
                   a metaphor or perhaps investigate which
                   metaphors won't fit. The sort of thing
                   Saarinen might have done — he'd say "O.K.,
                   this time it's going to be a bird or a tent".
                   This is perhaps where frivolity comes in but
                   the other kind of metaphor, the building as
                   a bridge or dam or palace is more appropriate.
                   The metaphor has to contain the kernel of what
                   the thing is about or it won't work.

Quist modelled the use of metaphor and analogy constantly in his own
behavior, as here in his response to a student's idea about small children —

Quist —   It is something you have to address, that kind
                   of hair-dryer desire of wanting to be serviced,

to be put away and serviced .... They don't
have to be moved. It goes into some important
notions of what education should be.

He encouraged students to tell stories about their research which did
not, at first sight, appear to have much to do with anything. He wanted
them to loosen up, as here -

Student —   Mark was talking to a very small person and
                he asked him how he knew he was in the right
                area. And he said, "Well you can tell by the
                size of the kids". (Much laughing).

Quist —   That's pretty good. (You might be able to
                use that, he implied.).

The above messages and messages about the context within which to under-
stand them were described as I interpreted them during my stay in the studio.
The next twelve sections describe those messages the case study students
interpreted and responded to. The analysis in the last chapter tries to
explain the differences in these interpretations and responses and, as a
result, comes up with suggestions for how the program could be reorganized
to improve both the quality of messages and, more importantly, the quality
of the students as receivers.

Chapter 5

THE CASES

The following sections are each descriptions of one of the selected case study students in the studio. There is an attempt to discover the early commitment of a given student to architecture and how to learn it and to relate this to the individual's background. Then the internal and inter-personal conflicts they are engaged in are used to help describe their responses to Quist's messages. This chapter represents the data on which the analysis of responses in Chapter 6 is based.

The twelve cases are of varying length for two reasons. In the first place certain students were added to the group rather late into the semester and thus were only given one interview and had none of their desk crits recorded. In the second place there was, as would be expected, a good deal of repetition of issues from one case to the next. Mainly to limit the length of this paper I have generally only detailed one typical example of an issue and referred backwards and forwards to this example from other relevant cases.

Each case, except for the very brief ones, has a loose structure assoc-iated with it. This structure has not been formalized, however, and different cases have been allowed to generate their own structures in contradiction to this. The main structure is as follows -

  i) Self characterized and observed learning and operating modes.

  ii) Background, where appropriate.

  iii) Proclaimed and observed social action and professional role models.

  iv) Responses to their educational role in the studio.

  v) Responses to Quist's theory and practice of architecture.

Where possible, it has been the intention to use the actual remarks of the students. This not only provides a form of legitimacy but is also the most effective way of giving a sense of the studio environment. The quoted statements should be read as essential parts of the text and not as mere confirmations of a previous or subsequent paragraph.

Also, as mentioned in the Methods chapter, it is important to understand the context in which the quoted statements were elicited. They are all a result of applying the interview technique, which was adapted from Kelly. Thus they relate to the actual experience of students, though the context is not given here. They are not random thoughts given in a vacuum but concepts grounded in the students' own intimate experiences.

CASE 1 — Bartholomew

When asked to characterize his predominant learning and operating mode through the Kolb test (see Methods chapter), Bart described himself as an extreme "thinker" who operated comparatively rarely in the modes of "doing" or "watching". His score located him at easily the most extreme position in the class on this pole.

He had a B.A. in philosophy and history but had preferred science at high school. He had worked with various designers for a year in Germany and then in New York for a well-known designer and architectural theorist.

With this man and subsequently with Quist he seemed to have struck up a form of master/apprentice relationship; one in which, while there was plenty of dialogue and exchange, both parties recognized that the teacher was a model for the student. Impressed with Quist as a teacher in this mode, with their major premises matching and discovering no "authority" in any of the others, he had insisted on Quist as his advisor for both semesters. This had caused some resentment with those who didn't get Quist either semester and even with some who did.

Bart —   There was no authority in anyone else — you'll
               notice that the first assignment we had after Quist
               left the students all stamped and yelled. This
               studio has been very much a leader and his team.

Along with the two "best" teachers he'd ever had, and with the New York designer, Quist was also recognized to have the qualities of rigor and personal discipline —

Music is Bart's great love and the musicians he uses as models are the rigorous types —

Bart —   All the people who ever made anything of
               themselves worked like hell — they chose a
               direction and denied anything outside of it:
               It is a grossly limiting thing and all these
               liberal artsy-craftsy people say "you're
               limiting yourself" and I say, "you know the
               Socratic Damon? All it ever said was no!"

Unlike most of the students he has a very clear picture of how he will allow himself to develop. While other students speak with surprise and sometimes with delight about what is happening to them, Bart has a model which he is following. You get the impression he doesn't have surprises.

Bart—   I'll develop towards the kind of thing
        Geoff Beck has done recently ... he's a
        master — for a decade or so he's been one of
        the great cock-rockers but from a very tight
        rock he has gone into an instrumental album
        which is very jazzy — he's been ready to do it
        for years .... It is like a Schoenbergian sound,
        a twisted building that reaches the height. It
        is not at all his earlier work of a straight to
        the point —"I'm not going to stop until I get
        there" kind of thing.

At present he admits to being in the straight forward phases, but, without discarding these skill foundations which he is building he will, as he says, be able to reap a "Nietzschian revenge" on his own "rational system" But even then —

Bart —   These people don't vomit all over the place,
        they are very disciplined. They are very
        tough on themselves and that is why I am.
        For the others (in the class) it is all this
        taking in everything you can — embrace the
        earth — it is bullshit!

He is a serious and private person, not pally or outgoing in the ordinary sense of those terms. If you talk to him for any length of time you discover that he is a very warm and generous man but he doesn't really display this side of himself in the studio. He confesses to feeling uncomfortable in criticizing the work of others and doesn't find other people's criticisms of his work much help either —

Bart —   There are several reasons why I don't interact
        with students — one is because to address oneself
        to something hermetic (like his method) one has to
        go so far as to dwell within it, one has to go that
        far ... students aren't that interested. I usually
        find if I have a problem that Quist is able to see it
        more clearly than they can or I can see it before
        anyone else. I haven't found anyone else who thinks
        along the same lines that I do.

> Now interaction (with others) is quite valuable
> for people who design by asking themselves -
> "You go in the front door and what do you see?
> - you walk down the hall and what do you see ? -"
> I go into the basement and what do I feel? (this
> is a design method he has rather contemtuously
> ascribed to some other critics).

Given his personality and his operating mode it is inconceivable that he has ever contemplated a role in life where he would be expected to interact in a profound way with any but a very few chosen mentors. In contemplating a role with clients he says-

Bart -   Well, I guess I'm a very stubborn sort of person
          so I guess a blind faith relationship would be
          one that I would appreciate with minimal input
          from the client - I'm used to working in a realm
          which is that of nature and I guess all students
          tend to get into that through doing projects
          where they fictionalize a client which is really
          only their other self. In certain situations I
          can see how one would need input - but that is
          just unknown territory to me.

Not only does he not consider the specific needs of individual clients as primary constraints on his design behavior but neither does he recognize generalized "user needs" either.

In the Quist's Messages chapter it was recognized that in the program/design loop Quist, in his teaching, places far greater emphasis on the design feeding back to change program. While recognizing the other side of the loop as necessary before one can begin, he never-the-less looks to his deep structural universals to provide the major constraints on his problem solving behavior. Mostly under the influence of his New York mentor, Bart had not so much minimized but dispensed with the program in the sense of user needs altogether.

Bart -   Terragni was after creating a man who is one
          who takes the intellectual baggage of a culture
          as something which one can do without, and through
          building clear conceptual frameworks discover
          something which is more universal and more
          vibrant than a particular culture's idiosyncrasies.
          That, at least, is what I am trying to do. To take
          architecture and reduce it to a level of abstraction
          where the cultural element is minimized. To work

without the historical material and through
clear thinking be able to manipulate.

He claims to have a scientist's instinct for searching for universals
but that his stance is as much a political one as anything else. If human
civilization is to survive people must stop thinking in terms of petty sub-
cultural biases but reach out for universals that subtend all cultures –

Bart –   Universals which are, say, urcultural – not
                deep, not extra, not beyond, not above but
                below.

There is, of course, a consistency between his admiration of authorit-
ative behavior from teachers and an expectation from clients of "blind
faith". In both situations the justification for the authority comes from
the claim to have a handle on certain profound universals which anyone would
want if only they know enough to recognize it. His justifications, however,
have a subtle twist to them which render them in the end more libertarian
than authoritarian in sound –

Bart –   People keep harping on about – what does it feel
                like to be in my building? What does it feel
                like? I'm not going to share my feelings with
                them. I'm not even going to try, and so they
                say "he has no feel for space". Now Joanna (who
                he had earlier described as the "best" student in
                the class), might go about design by being explicit
                about the feelings she hopes to evoke, I don't deal
                on that level. Besides people feel about space
                according to how they feel about themselves. If
                you feel lousy on a certain day the building won't
                change that ... take Mahler's basic complexity and
                ambiguity – it is up to you what to make of it,
                what is sad to me may be happy to you – but that
                doesn't matter because the art is to provide you
                with something you can make something of.

In the following excerps from one of his reviews this issue, about his
belief in a role of providing flexible material for the conceptual manipulation
of the user, it is interestingly contrasted with the more traditional views
of faculty. While he is arguing for a need to respond only to the general
universals, they are calling for a response to specific user needs –

Bream —   Could we stop this, which has been a most
complete presentation? What you have said I'm
interested in ... all of the formal issues that
relate to the fundamental poetry. But we have
to deal with something before we get to the
poetry ... now tell us about the building, what
happens in it? There is no indication on that
plan — what about the classrooms? People are
going to be in that building — what are they
going to do in that classroom?

Bart —   I can't tell the teachers how to teach. I
don't know what happens in a classroom. Why
do you want me to tell you?

Bream —   (After insisting that it's the designer's job
to know). I venture to say that I have no more
interest in program for program's sake than you
have — but I believe the function of a building
is a release for an exploration of form in the
sense of light, scale, interpenetrations of space
and all the things that can be put under the
rubric of form .... Those items of use which
make a building different from another, partic-
ularly to the people who use it. These issues
are not explored or only marginally explored
here.

Of course, Bart is not looking for issues of use which make one build-
ing unique from another. For him, the uniqueness is to be discovered from
the formal operations he has brought to bear. He is extremely frustrated
that people won't come into his hermetic system and talk about them.

He can be discovered to accept Quist's first message about the central
variables of the architect's activity. He is one of the most extreme cases
of seeing architecture as essentially form making but based, as he claims
for his building here, on "facts" of perceptual psychology (the deep structure).
While, as discussed, Quist expects the big idea to partly derive out of an
analysis of site and program; to Bart it is as one student puts it —

Student —   Almost as if he had a series of basic forms
in a box at home ready to pull out.

Which one is pulled out seems to have relatively little to do with any
prior analysis. Thus —

Bart —   I started by trying to deform a megaron in terms
of an odd, an ABA grid, so that I shifted the volumes
within the gridding structure to imply three even
bays from the original odds ... that idea was
scrapped ... now I have taken a single pair of
grids, five bay grids; one being divided evenly,
so I have a thirty-one five bay divided into three
nine eight and a half bays. Then the other thirty-one
five divided along the lines of its golden section,
so that I get nineteen five and twelve. The
section of them is on the golden section of the
red, giving me a twelve foot circulation corridor.

He provides beautiful analytic drawings of the formal moves associated
with the design — the overlapping grid systems are shown red for one system
and blue for the other. The building is in the form of an L and one of the
formal moves is to have inverted the volumes of the one side on the other.
He shows a knot in a rope, a metaphor for explaining and, as he says, for
"checking" this idea. The one which carries the circulation is called the
"real axis" and the other, which is disfunctional, the "virtual". There is
an analytic drawing showing the way the entrance is aligned with the "virtual"
axis only to surprise you on entry to find you must use the other axis for
movement through the building.

His constant musical analogies are revealing in that learning architec-
ture to him is very like learning music — it is the collecting and learning
to intelligently combine different fromal relationships. These moves, say,
the contrast of "real" to "virtual" axis and the entry on the "virtual", are
what he means by his "method" and he is constantly thwarted in his desire to
discuss this method because students and faculty won't accept the context in
which he has defined his problem. An example of this can be found even in
the following exchange with Klinker, who appears as his most sympathetic
critic in his Mid Term Review.

Klinker —   I would assume that if I wanted to make the
space read in reference to the skylight, I'd
have some volatile space. If you are Corbu,
you would have a grey cement tile area or
someone else might put down a piece of vinyl
or carpet.

Bart —   Why is it necessary to be so literal about
these distinctions?

Klinker —   You have established two activity zones in this
                 space and what Bream is asking, and I agree with
                 him — so there is no need to get huffy at him,
                 it is very simple that these zones must have
                 specific meaning. For example, what are wet
                 and dry zones?

"Specific" is, of course, the key word there. Bart explicitly is after
general meanings. Apart from saying he can't do that, no-one ever tells him
why not. In the following example, Klinker is actually giving the student
a most worthwhile piece of advice, but because he doesn't address the sub-
stantive issues of "Why does Bart have to be so literal about it?", the
advice is completely misunderstood. It is also misunderstood, of course,
because of Bart's developed ability to deny anything outside his system.

Klinker —   The system you have evolved seems so tight and pure
                 that it cannot stand any inflection or, if an
                 inflection occurs, that would be a secondary
                 system which is loose. So I would have a fixity
                 versus a loose thing, which is the whole idea of
                 the Corbu system (he elaborates on this). I see
                 the need for a secondary system — now if the world
                 wouldn't be as nasty as it is to architects, where
                 we have to accommodate not only clients, but rules
                 and structural contractors and God knows whatever else,
                 it would be wonderful and we could then make this
                 peaceful sculpture idea and we would be done with.

Bart responds but reveals that he did not get the meaning of the
suggestions —

Bart —   That was the point of having two systems,
                 one of layering and one of vectoring.

But both his systems are rigid systems and the whole point of having
two was for one to respond to use. As to the point of the free wall —

Bart —   I'm not ready for it yet .... I understand
                 what you are saying, but I'm not ready.

He doesn't understand, because to him the free wall will be the next
phase of his development — an intuitive exploration of the universals. To
the critic the free wall is free to adapt or respond to issues of use.

The majority of students, while they obviously unconsciously select from the infinite number of messages from faculty and students, have an attitude, though they very often fail, of wanting to get every point, of not wanting to miss a thing. Bart is quite the opposite, as is consistent with his personality and his chosen models in music, he admires discipline and the person who knows where he or she is going and is able to say "no!". In Quist, he recognizes a man of great talent who shares to a less extreme extent most of his attitudes to architecture and teaching/learning architecture. The messages from other faculty are ignored. Of another critic whom he had consulted –

Bart –   Oh! They don't criticize, they just tell you
                     to do so many drawings and then it will become
                     clear. I'd think "look it is clear to me now
                     that it is wrong, I don't need to draw a mistake
                     out a dozen times, I need to know how to correct
                     it".

Presumably, buried in the advice to draw it up, is a belief that you discover through doing, but Bart wants to know the solution in advance – he is a deductivist par excellence.

He does, however, confess to feeling insecure about two aspects of his theory/action approach to architecture; his inability to respond to the ideas of the ecologists and his lack of alternative models of design behavior.

To him, the ecologists in their work are talking of deep structural universals of a similar order to the perceptual psychology universals and the visual language universals he and Quist are interested in. He feels, somehow, that he ought to be building these ecological constraints into his design behavior. This means entertaining a direct relation between site analysis, or problem setting behavior, and problem solving. His New York mentor had always maintained that there was no link here.

Bart –   He has always denied any dialogue between form
                     and function so that the two are always disjunctive.
                     Others say "oh yes, there is", but when they
                     elaborate it, it always breaks down because there
                     is no way to conceptualize it in a general enough
                     way. Unless you meet someone who is trying to

> bridge this seeming mis-match in their own work,
> you don't have any idea of what resources are
> available to do this — you'd hope the people,
> who are in that process, would be a bit more
> accessible to people like myself, who are
> looking for examples in that way. Most writing
> on the subject seems to dwell on planning issues
> like McHarg. The scale is too large, you can't
> find specifics that are useful to you.

His second concern is somewhat related to the above but it also represents, perhaps, the most consistent complaint that students have about Quist's messages —

Bart —   I wish in this case study method (the precedent
                  class and the preliminary case studies of schools),
                  there was more detail about the procedures and
                  patterns of decision making of really addressing
                  yourself to the problem than to one's resolution
                  of it. I wish there was more emphasis on types of
                  problem solving methods and less on this product
                  as solution.

He has, of course, constantly been confronted by alternative methods. In this report Bream was shown to be presenting an alternative, as was Klinker, and there was a quite different method buried in the rejected advice of one critic to draw out his ideas earlier than he tended to do. His was one of the clearest examples of a student's being misled by Quist's promises of complete formal. principles which would inform design behavior. So rigid was he about this expectation that he failed almost totally to learn from all the evidence of alternative methods around him. He seemed unable to learn how to learn in the method of formulating or reformulating principles from the experience of his or other people's attempts to design, or from the piecemeal advice of critics.

In summary, it seemed that Bart had set himself on a course of development and was only willing to listen to advice which confirmed this commitment. Luckily for him Quist's perspectives on architecture seemed to overlap enough with his own for him to be able to continue the educational role of apprentice to master which he had played with his earlier New York mentor. Messages, which he had received, but which did not fit with his chosen direction were either openly rejected or interpreted so that they seemed to

fit. If the message came from Quist, then the latter response seemed to be given, it enabled him to continue his educational role although he didn't seem to recognize that he was distorting advice in this way. If the mis-fitting message came from someone else, then it was openly rejected.

While he was one of the more self-conscious people and the most able of all to give a crisp theoretical justification for his stance, it did not seem that he had ever really investigated why he advocated the principles upon which his theory was based. He did not seem to have much self-awareness in this sense, but was quite happy to feel committed to a premise without ever investigating his own deeper needs for it. If he had done so one felt he might have been able to critically investigate these needs and decide whether they were valid and what could be done about them. One issue, seeming to be in particular need of challenge and response, was his avoid-ance of social interaction.

By not confronting this he seemed to have created all kinds of problems for himself, such as his failure to recognize the self-deception which led him to misrepresent Quist's advice to him. It seemed that he could not tolerate personal interaction and to avoid it he pretended to himself that Quist and he always agreed on everything, and the other critics and he dis-agreed on everything. In both cases, then, there was no need for dialogue or interaction. Another problem, caused in a roundabout way by his avoidance of social interaction, seemed to be his denial that a building need respond to functional use. Again his need to play down the role of consultation and potential conflict seemed to have led him into extreme claims, which he couldn't possibly justify except in a purely abstract and theoretical way. He did, of course, inevitably respond to functional requirement in his own design but, by pretending he did not, he was able to avoid confronting all the problems which were raised by this.

CASE 2 - Matthew

In many ways Matthew is the opposite kind of personality to Bart. In contrast to Bart's Socratic Damon, which says No! he is concerned to take in all he can. While the one is consciously trying to limit himself expecting to move more freely later, the other is consciously trying not to limit himself now.

Matthew —   Architecture contains so many diverse elements
            that you aren't working at it unless you get
            into that diversity. It is your obligation
            to have a good time — it is nice to have a job
            which obligated you to do that.

In contrast again to Bart, while he recognizes the need for discipline, it is the other side of himself that he accentuates —

Matthew —   I find I am an active loafer — Whitman talks
            of loving a man who loafs. But loafing is
            an activity. You sit, you watch, you observe
            what people are doing. I feel that most of my
            observational equipment is on a lot of the time.

He describes how his greatest insights often came to him while "loafing". One of his great leaps in understanding about what he was doing in architecture came when he took a week off from his project and wandered around looking at what the other students were doing.

Matthew —   Drawings were no longer just that, but infor-
            mation that I could take in and process in my
            head. The meaning of the drawings started to
            come through.

Although he had a B.A. in politics, much of his undergraduate career had been taken up in producing and acting in theater or doing sculpture and painting. He had left college and worked for a sculptor for one year and spent a year in L.A. writing soap opera scripts.

Just as Bart uses analogies from his favourite subject, music, and others ahead will use analogies from their own backgrounds, he constantly refers to his sculpture background and to theater —

Matthew —   I'm attracted by the monumentality of it —
architecture is sculpture only more.

When I was directing plays, and I guess I have
more ego than most, I tried to keep my hands
off but I did want to get something out of it —
I had to decide that. Even in the open theater
there is someone making the decisions though they
won't admit it, of course. Each of your actors
produces something and as the director, you must
take that vocabulary and use it. (This was in
answer to a question about the role of an
architect.)

During the first semester and for the beginning of the second he was
constantly on the verge of leaving. He was at war with Quist and the
administration over the messages about the nature of architecture contained
in the course content; but mostly with the messages about his role as
student in the structure of the program and in the social relations estab-
lished by Quist. His major argument was that these threw him into a
dependent relationship both to Quist and, in a sense, to architecture.

Matthew —   There was no argument with his definition of
space. Coming into school I didn't feel I
wanted to be told what space was — I wanted
either to be led to it or to discover it for
myself. My feeling was that someone who had
been working on the definition of space for
so long may have missed some important direc-
tions or accepted certain biases and prejudices
early on and now have ended up somewhere quite
irrelevant.

I don't like the excessive categorization that
goes on around here — it keeps you from seeing
things differently. Creation is a glorious
thing — it takes up energy and anything that
stands in the way of that I regard as bad for
my education.

In these statements there is demanded a completely different relation-
ship than the master/apprentice model favoured by Bart and demonstrated in
his behavior by Quist.

Matthew —   You see I have some sense of myself and how I
learn and I won't be patronized to — I can't
stand that. I like to be treated as if I

have that sense and I haven't been up to now.
This school hasn't been open enough. The
political activism of my college, I now tend to
confine closer to home in this way.

He was virtually the only student who was prepared to freely interprate
from Quist's seemingly rigid program requirements - in which exact drawing
types and scales were always called for. He'd often hand in very rough
sketches, mounted on anything he could find lying around in the studio.
He became very popular with the other students for his stance and about five
of the twelve felt he was approaching his education the most intelligently
of anyone. He and other students had been surprised at the good natured
response, and even encouragement, that this had elicited from Quist and he
had finally concluded that Quist's behavior and his program's rigidity
resulted from his impossible role of leading a studio of 48 people.

Matthew —   Quist is more flexible than people realize and
                 I see his biases now. Once you know where someone
                 is then you are in a better position, you can
                 filter out what you want. Something that is
                 presented as a pat truth lacks something to
                 grab on to - it is sterile for me.

This statement raises one of the major complaints that most students
had about the other critics in the studio. Critics are perceived not to be
able to identify where they stand on issues. There are two forms of this
"inscrutibility". The first form relates to the students' feeling that
critics are not critical or responsive enough to their work. Bart had said
of his critic -"if I put a turd on my sheet something nice would be said
about it". The second form relates to a perception that critics are not
taking a stance about architecture in general. Several students made similar
remarks to Matthew's above about the need to know where a critic stood in
order to be able to relate to him or her.

His major complaints with the content of Quist's teaching were twofold.
The first relates, in a similar way to Bart's criticism, to the excessive
focus on the design product in the analysis course. Somewhat as a demon-
stration against this he had attempted to present his house analysis to the
class, not by doing analytic drawings of the final form, but by demonstrating
how the design emerged -

Matthew —   I broke the house into units and looked at the
spaces and the way they wanted to be — in my
presentation I had hardly any finished product
but I drew my ananlysis up as I went along —
people were supposed to see the house emerging
in this way. The students could make the same
discoveries I had made about negative and
positive spaces because I wasn't doing it for
people like Quist but for people like me.

This idea of "looking at the way the spaces wanted to be" became a
central part of his method in the school design.

The second conflict point with the content of Quist's teaching, related
to the constant reference to historical precedent. It appears to reflect
again their basic conflict about architecture, in Quist's belief that in
the work of the masters you can discover the deep structural universals,
Matthew's desire to invent for himself.

Matthew —   One of the reasons I dislike history is because
they are always stealing my ideas — someone
comes up to my building and says — "oh yes!
just like the Palazzo Del Something or Other".

By the end of the second semester, feeling that he'd freed up some
room to operate his way, Matthew had been converted to the usefulness of
history and was intending to go off and read some. As he said, once he
could understand where Quist stood, once he could put some distance between
himself and Quist, then he could "use" him.

Given his propensities to look at architecture as sculpture, it is not
surprising to find almost complete acceptance of Quist's concern for form
and formal manipulation as the primary variables of the architect's concern.
This acceptance is coupled, as in Bart's case, with a central concern for
the natural context in which the building would be located. The following
description shows clearly those variables which he chose to be constrained
by in his design —

Matthew —   I picked a site up where the old water tower is —
I was going to use four quadrants — the three
I've mentioned and the fourth would be a rock
outcrop up there.

> Then I went out to the site and thought "My God!
> I can't do that to this place — I'd really be
> destroying the site" — it looked fine on the
> drawings but there were these beautiful old
> trees and they were saying — "you fucker, you'd
> better not cut me down". It is your responsibility
> not to be too abstract, you have to adjust somewhat
> to the existing situation. I realized I wasn't
> worshipping, I was desecrating — I moved it off
> the dramatic part of the site and said — "I'll do
> my act here and nature can do its act there — if
> mine's good then they can exist side by side".

So the existing natural ecology was used as a major constraint, as an
independent variable, while the social ecology was not.

Matthew —   I took the existing land seriously, but not the
            needs of the community. I doubt if such a
            school could be built now but I went to the
            land and I saw this tree ... I said to myself —
            "Well, if you are not going to start thinking
            of these things now, when are you going to start?"

Others ahead, notably Andrea, have been scornful of this kind of atti-
tude to the social ecology.

The notions of his social role as a designer are not, on the surface, so far
removed from those of Quist and Bart. The difference is only that his
attitude is tinged with a former radical's reluctant experience —

Matthew —   I've become more and more a pragmatist in my
            life and I've given up making statements that
            I can't stand behind. It doesn't seem to me
            that you get anywhere . I would stand behind
            the notion that people should have some deter-
            mination over their own fate. Some of the
            more abstract notions I now tend to ignore.
            The dialectical imperative makes sense to me —
            "don't do anything to anyone you don't want
            them to do to you" — the ten commandments
            condensed. Yet, I guess I want to be ful-
            filled in what I'm doing before I care whether
            my client is. (Laughs).

As he has said about his theater experience — in the end someone has to
put it together and he likes directing.

Within the role of architect as form maker he takes a different stance to Bart on two key issues. He is concerned, it is his main intention, to evoke specific feelings in his users while Bart wants to leave his design open for users to make of what they will. In the following description, one also finds another key difference in their method; while Bart is an essentially assimilative designer, Matthew is much more accommodative. Bart would not recognize "emptying oneself" as a useful design skill, for example –

> Matthew –   I have studied method acting – I find I employ
> a lot of that. I try to put myself back in the
> situation – try and feel what it was like. I'm
> not as orthodox as when I was acting but I try
> to do it. I don't know whether you can teach
> this stuff in the arts but you can in acting –
> people who couldn't act before suddenly became
> better actors. Adults need to learn how to
> empty themselves out and then selectively
> bring back those experiences which are needed.

The second major difference between the two can be discovered in their formal design behavior and relates to the above issue also. Matthew, apart from one loose initial organizing idea which he imposed, discovered an organizing principle in the process of trying to work out the design. Bart, while obviously making substantial adjustments, never-the-less began with the major elements of his organizing framework already thought out. This, of course, was closer to Quist's advocated method.

> Matthew –   As I loosely saw it, it was not predetermining
> the space but letting the space be what it wanted
> to be. So I used a grid of sorts, of square spaces
> which I wanted for the studios. I made a loose
> configuration and said to myself –"when it starts
> to work, I'll firm it up" – the studios were the
> generators ....

The following description shows how this theme emerged. It is provided in full because it is such a marvellous example of how an articulate person is capable of talking about such a complex activity. The quality of this example becomes an important justification for some policy suggestions about teaching/learning design thinking at the end of the report.

> Matthew –   The next step was the studio – it was the most impor-
> tant building. I decided that six studios would

have to sit 3 over 3 to get this mass. If I did
that I would need skylights and the top studios
would have to slide off the bottom ones. I looked
at that - I played with sections and put lockers
first here and then right next to the studio
where it was more appropriate. I'd also have
a wall, light, light - running a dividing shaft
through the building. That is what I'd done to
the whole program anyway (divided it up), so I
said "ah! I can play with that" - with solid/
empty and building within building. So that
gave me a design orientation which picked up
and literalized a program idea - that was fine
with me, I'd carried that along.

As I continued I found that the order, though
I hadn't started that way, was becoming increas-
ingly formal and that it was easy to do.

The idea of the square was somewhat imposed but
I felt free because I did want rooms that were
proportioned nicely - a square is a decent space
to work in as a studio. This was 40 x 40 - you
enter here - it is all glass - solid, solid and
glass. If you look from here you can pierce the
whole building and see a brick wall back here -
another building inside the first building.

So that was the design rhythm (he goes on to
describe some problems in using the rhythm in
the other two buildings).

   While the above process is much closer to Quist's advocated method than
to Bart's, because Quist does recognize elements of site and functional
analysis in the emergence of the big idea, the differences between Quist and
Matthew's method are substantial. In this case, though there was a program-
atic idea to break the building into three parts, each one quadrant with one
empty, the organizing formal idea mainly emerges much later. The key sentence
is -"as I continued I found that the order, though I hadn't started that way,
was becoming increasingly formal and that it was easy to do". This is in
fairly stark contrast to a method in which one begins with a formal organizing
hypothesis.

   The differences between Quist and Matthew over a theory and practice of
architecture were small compared with some of the cases to follow, but Matthew
had become the most outspoken critic of the program. His criticisms were

based on the structure of the program, especially on its implications for his role as student and for the learning mode in which he was expected to develop his theory and practice. This conflict over teaching/learning issues tended to obscure the great deal they had in common about an appropriate theory and practice of architecture.

His major conflict with Quist was over his desire to build his own theory in the process of doing architecture. He felt that in being required to apply Quist's principles he was being drilled through a not-so-subtle socialization process –

Matthew –   We all have the problem of being stereotypes,
                of being forced to conform to an image or of
                reacting to it. Somehow you try and break
                through and become what you want – not just
                what does the space want to be, but what do
                you want to be?

He was fighting for the right to develop his theory and practice through a different mode, but of course, in the process, he would also have freed himself somewhat from the stereotype.

Later on, when reflecting on this semester, he recognized that his stance and his justification for it, on the grounds of his different learning procedure and his refusal to be "socialized", was not that acceptable. He recognized that it had prevented him from developing very much and that the grounds of his rejection were more to do with his own problems than with the program's. He recognized that he had been unwilling to use Quist's perspectives and take on his suggested learning mode because he feared that he would lose his own identity in the process. He had not had the self-confidence and self-esteem to risk adopting an unfamiliar role in case he lost touch with his original sense of himself. Other students seemed to have taken very similar stances for the same reasons but had failed to develop the same kinds of self-awareness about their motives for doing so.

This quality of insight into his own deeper motives led him to recognize the importance of these, both in confronting the learning context of the studio and in confronting the context of the design problem within this. One of his persistant complaints about the program had been the way these

deeper issues had remained buried throughout the year.

Matthew —   Even at desk crits we don't talk of process,
                 perhaps because this kind of talk needs to
                 be more confessional. One's innocence is
                 dealt with in such a cursory fashion around
                 here, as if one isn't supposed to admit that,
                 as if you are not supposed to ask the most
                 basic questions about something.

CASE 3 — Andrea

Andrea's approach to architecture is fiercely pragmatic and she was the most out-spoken of the twelve against Quist's advocated "conceptual" approach to design —

Andrea —
I'm not going to be a "Howard Rourke" type — someone who is up in the air, talks of the intellectual quality of buildings. I'm not really interested in that. There has to be a reason why one piece of structure goes in one place as opposed to another but they go into reasons of geometric form and philosophical stuff. This attitude blinds them to the more functional aspect of building — most of their stuff is so unique that it would cost a fortune to build — it becomes socially pretty irrelevant.

She grew up in Harlem and is probably the only one of the twelve who came from a relatively poor family. Interestingly, she and Thomas ahead were the only two to consider cost as a major constraint on their school designs.

Unlike the first two, who are forceful individualists in their different ways, Andrea is a forceful and highly effective social being. The fact that she saw her architectural role very much in terms of a social manager or facilitator probably relates to these developed skills as much as to any general social or political philosophy.

Andrea —
I tend to think of the architect as much more a "tool", as someone who implements the client's ideas .... People who live in a place definitely should participate in choices about it.

People are going to be working and living in this structure, it matters most that they are able to use it. The average person coming off the street probably won't even notice if it is "architecturally strong" — they don't care if there is a transparency here or there. People just want good places in which to live.

This image of a facilitator's role has two major elements to it. The first relates to her recognition of a responsibility to respond to _specific_ individual user needs. This responsibility had resulted in some considerable traumas when, in the design of her school, there were no specific users. Quist had always been open to students finding themselves "real" users but, given his own particular biases no doubt, he had not gone through the immensely difficult task of providing programatic means for facilitating this.

Andrea —   Another thing that bothered me was that the
             Dean said to forget about who the people were
             who would actually use the building and just
             abstract it. I did abstract it and it did help
             but it still bothered me that I had to forget
             who the people were.

The second response to her perceived facilitator role led, in this problem, to a recognition of the need to design flexible architecture so that new users coming into the system could assimilate the building into their own life-style. This desire to provide flexibility, as a means of getting around the almost insuperable task of finding "real" clients, was a response of several people.

They all came in for criticism from the faculty for not responding to specifics; either specifics generated in consultation but usually generated in recourse to generalized concepts of user needs, or generated as perceived needs by the designer. In Andrea's Mid-term review —

Bream —   I like the idea of the teaching unit but I don't
             think these spaces are designed either. They
             are very diagramatic. The only "real" architec-
             tural notion that I detect is the change in grade
             and I think that is a very valid way of achieving
             the openness and closedness at the same time ....

Two months later she remembers this remark —

Andrea —   I noticed that the people who did open plan
             schools got criticized for being too flexible
             so that they were not architectural. That was
             a criticism I got. In my review Bream said it was
             too diagramatic — that there wasn't enough
             architecture in there.

Although to an extent she has misunderstood Bream's criticism it is revealing of all the critics' theories of architecture that only twice in all the twelve reviews recorded, and never in a recorded desk crit, did a critic respond coherently to intended flexibility. One positive example is to come and one was in Klinker's response to Bart in which he suggested overlapping fixed versus loose systems. The familiar form of criticism was of the following rather useless variety — "you may well want flexibility but architects respond to specifics" — What is meant, of course, is "flexibility doesn't produce form".

The constant reference in the reviews to a distinction between what architects do as opposed to what other people do becomes one of the mechanisms of socialization. Time and again in the recordings students are being told — "Architects don't do things like that ", "it begins to have an Architectural quality it really does", etc.

Andrea —   Last term I was criticized for my floor plan —
               the critic agreed that it worked but said that
               it wasn't strong architecturally. I don't see
               what is so important about something being strong
               architecturally if it works.

The conflict with the critic and with Quist is over what the central variables of architecture are. For them, the key constraints appear to be generalized user needs, constraints due to certain cultural or maybe perceptual psychological deep structures, a requirement of some form of organizing coherence and elegance for the scheme. During the semester she was inclined to reject both the last two variables but by the end, while still rejecting the concept of deep structure, she had come round to the latter (see ahead).

The issue of the existence of the deep structures is her major conflict with Quist and people like him. She sees their arguments for it as a subtle device for keeping the power in a relationship away from clients and users. In her first review she had lost her temper over the issue —

Bream —   The shape of your building is such a perfect one
               and is symmetrical in a number of ways that when
               you add one thing on (the gymn block), it is not

enough. (The tape is bad here, but he says
something like) - given the symmetrical form
of the building you absolutely can't have
that entrance off center in that way.

Andrea -   Well what's wrong with having the main door
              there?

There are suddenly four critics all speaking at once - this is a
question they all want to answer.

Bream -   You must have the door in the center in this
              symmetrical case, or you can choose not to
              have the door in the center and not have a
              symmetrical building - you are dealing with
              two thousand years of tradition. When people
              get there, there is a logic to look to the
              center.

Andrea -   But why do you <u>have</u> to do so? (She is angry)

There is a great deal more argument about it and she loses her temper.

Northover -   If you want the entrance here then there are
              issues of sunlight and views which could deform
              the whole condition - if you insist on the door
              you must take the form with it.

Buttress -   Now if you take a circle, the most important
              part of the circle is the center because every
              point on the surface is equidistant from it.
              The figure is symmetrical about any line I
              draw through it. If I take a square, this
              side equals this side equals this side and
              that becomes the most important fact of that
              form .... (He continues and the other critics
              begin to mumble dissent with this obtuse line.)

Looking back on this event two months later, Andrea says -

Andrea -   These "laws" exist because of people like them
              and why do I have to stick by them. Who's to
              say I'm wrong when I do something different?
              I don't see why I should do something just
              because the fat cats of architecture call it
              "law" ... I don' know, I see architecture now
              just as a whole lot of opinion and the guy with
              the biggest name is allowed the greatest freedom

> of opinion and he picks up a following. I did
> not defend myself very well in that crit because
> I didn't have a well-worked out opposition, I
> didn't have an architectural rhetoric. Now I'm
> much better I think — if you can give a valid
> reason and quote some example, you are free.

At the time of her first review she was clearly sitting on an uncomfortable fence and mixing her own images or metaphors of Quist's "conceptual" approach with her own more natural instincts to a form of functionalism. By the end of the term she had invented a coherent design approach for herself and had incorporated into it, not the deep structures nor the "conceptual" method but, the critics' and especially Quist's requirement for order and coherence in the design product —

Andrea —   In designing I still think of the function of
                 the building first and the way it will be used.
                 I then look for a suitable form. Last time I
                 told you I began with the form but in looking
                 at myself I realized that this is not how I
                 work. I have learned to deal with the idea that
                 order follows freedom — in analysing the things
                 people have done you can in the good ones find
                 patterns and trace them through the scheme. I
                 guess in nature there is a certain order or pattern
                 which you take for granted but don't see.

To an extent then Andrea had discovered what the critic meant when he said her plan worked but was not strong architecturally.

In the program/design loop she places emphasis on a quite different side of the loop than Quist or Bart. Not recognizing the constraints from the deep structural constants and playing down the role of her own instincts in the problem situation, she inevitably looks to the problem setting and programming skills to provide her with the constraints she needs. It is probably most revealing of the sweeping fashions to which architecture is subjected that five years previously at least eight of the twelve would have argued for a similar position. Only Judith, Andrea and Thomas did so here.

Given her rejection of the deep structure, it is not surprising to find she has problems with the "principles" course. Quist's primary intention is to help the student discover the nature of the universals in the work of the

masters. She is equally interested and impressed with the utility of analysis but hers would be a functional analysis, something Quist certainly deals with but it does not come over as the major intent.

Andrea — One problem in the analysis is that it is always of the great masters, you never analyze a building by Joe Smoe down the street — that would help in lots of ways.

To summarize, Andrea did not, at the beginning of the semester, demonstrate much self-consciousness about the way she designed. My intervention, in asking her to describe this process, had caused her to think about it and watch herself in a way she had not done previously. By the end of the semester she could give an accurate description of how she worked.

She still seemed to lack sufficient self-awareness about her deeper motives for taking certain stances and, as in Bart's case, seemed to use professed ideology as a mechanism for avoiding the operations she felt insecure about and advancing those she felt good about. In this sense she had not even recognized that aesthetic judgements had played a strong part in her decisions about her building, which was symmetrical in both plan and, except for the front door, in elevation also. It seemed that, feeling insecure about herself as a designer of built form, she had unconsciously chosen to deny the importance of this variable while, at the same time, she was actually responding to it.

CASE 4 - Thomas

Thomas had a B.A. in psychology and had worked as a student counsellor. When he finally decided to go into architecture he'd worked for a year as a sort of odd job man for a small architectural firm. He still worked one day a week for them, while at school, and the people there and that experience had greatly influenced his attitude to the studio.

His background in psychology and counselling had also had a lot of influence. As will become clear, he is probably the most skilled of the twelve at understanding the social dynamics of teaching/learning and he has some very clear insights into his own needs in that process.

Although he suspected it must be easier for younger students (he is 25) to learn architectural design he shared the same kind of enthusiasm, expressed by many, who had come into the school with a purely academic training.

Thomas -   You aren't going to stay up all night writing
            your psychology paper because only the teacher
            is going to read it anyway. Another plus is
            that you are able to have more stake in the
            process. In psychology, most of it has been
            written before. Even though my building will
            never be built, no one has ever conceived of
            the things this way before.

Not surprisingly, given his background, he had a much more interactive view of the architect's social role than Quist, Matthew or Bart.

Thomas -   I'd spend a lot of time with teachers on the
            detailed classroom spaces of my school design
            and let them give me examples of what they
            wanted. I'd go along with the client unless
            it was really against my principles. Look
            they blame the disaster of the new Chemistry
            Lab. on the architect. That is partly true,
            but I mainly blame the University Administration,
            they ought to have found out what was going on.

In this last statement he reveals that he has not entirely bought the architectural role message of Quist. He is able to stand outside and look

critically at a role in which he is under a good deal of pressure to see himself as the central and most responsible character.

He, like Andrea, takes a much more pragmatic stance about the role of architecture in the community. He does not see it in the "High Culture" releif of the school but in much more functional, operational terms –

Thomas –   I've been influenced in my office by the laugh-ing and chuckling that is done about architectural school and how terrible it was. How they never learned anything until they got out.

I've been acutely aware of the issue of how problems are approached by students, that this probably isn't the best way. More should be made of the fact that architecture needn't be as hard as it is assumed. I'm impressed with the level of work that comes out of the office – though it doesn't win awards and isn't that terrific, it is a much more straight forward approach.

He regrets that with all the new buildings going on around the school (one right outside the window, the noise from which ruined several tapes) that none of them have been visited. Like Andrea, he seems to object to the fact that the only buildings they ever look at are those defined as "great".

He appears to be one of three who do not accept Quist's messages about the essence of the architect's role to be form-maker. He is the only one, in the five basic paradigms, who appears to fit either "The Architect as Actor Approach" or "The Design Procedure Approach". In the former model, emphasis is placed on the view of the architect as actor in the building process and the requirement is for a broad range of these kind of inputs into design. In the second model emphasis is placed on how the design of a building is developed gradually over a period of time through all the phases of programming, schematic design, preliminary design, design development, working drawings, specifications, construction supervision. In this model pragmatic ability to compromise and get on with the procedure is more highly regarded than the processes of constant revision and perfection.

Thomas –   Form has got to be the thing we learn most about to the detriment of the rest sometimes.

> I remember being annoyed by one critic going on
> and on over Phillipa's building in the Mid-term
> Review - the form it was making with the court-
> yard. At one phase I asked a question and was
> looked on as if I had a hole in the head, Like
> I didn't appreciate form. They were discussing
> it to the point where it no longer was a model
> of the building but something in itself.

The choices of what simulations in his design exercise to take serious-
ly are perhaps revealing and certainly ironic in ways -

Thomas -   I was sorely tempted to site my building on top
                  of the hill and cascade it down like some of them
                  did but the level of reality intruded to the point
                  where I couldn't do that. I had to consider the
                  ease of construction, the cost of land and the
                  value of the woods in this situation (the site
                  was actually a small community park). Some people
                  did nice wilderness schools but I had to realize
                  that that wasn't the wilderness. It did irk me
                  a little that we had to design a school for a
                  community in a park when they already had a school
                  which was half empty.

Interestingly, it was the social value of the park that he chose to
take seriously, to simulate as real. The actual physical elements of the
park he wasn't so concerned with and chose to imagine that a stream bed still
existed when in fact it had been filled in years earlier. This attitude is
in direct contrast to Matthew, who took the existing landscape as real but
ignored the social ecology almost entirely.

Of his design thinking modes he describes himself as being the sort of
person who likes to carefully work through a problem and not use the "random
process". He has a distrust that answers will ever just suddenly come up.
This more systematic method means the gradual process of deciding on con-
straints until the problem is solved.

Thomas -   I decided I was stuck with certain constraints -
                  kindergarten through sixth grade, it would be a
                  one-storey scheme, all the classrooms would have
                  the same orientation. I felt I'd get too bogged
                  down having to consider too many alternatives so
                  I'd need these constants at the beginning. I
                  feel that how you start something is really impor-
                  tant and probably has a lot to do with what you

> end up with. I wrote a program and then stuck
> with it. Others rather than solve the problem
> would change the program and it became really
> tortuous, that is really crazy.

He recognizes, however, that his greatest problem is not bing able to
let go of an idea once he has worked with it. That is the thing that really
bothers him.

Thomas —
> I think I am one of the most linear thinking
> people in the class. Partly because I was
> trained by the Jesuits and the only way you
> can get through Latin and Greek is systemat-
> ically step by step. They didn't even want to
> teach you things that you couldn't pursue in
> a step by step way.

His perception of his problems seems correct from watching in his review
and crit. The problem appears to begin at the beginning in his non-recognition
that the program is in fact, even in his pragmatic terms, never immutable.
The problem then continues into his subsequent design behavior where a
decision, once made, becomes nailed down. He, like Phillipa in the next
case, seems unable to suspend judgement on decisions, it must either be
good and therefore "in" or bad and therefore "out". The fact that he has
only one counter model, "divine inspiration", to his linear one reveals that
he has not grasped the idea of suspending judgement or the notion that later
decisions often feedback to change earlier ones, even pragmatic ones. Neither
of these are divine inspiration methods but he seems to have encountered
neither thus far in his education. If he has encountered them he hasn't
recognized them.

The clearest examples in his case can be found in his decision to locate
his library in the center of the building so that it would be midway along
his linear strip of classrooms. This also meant that it had to sit astride
his main access from the entrance of the school to the classroom at right
angles to it.

Thomas —
> I wanted the library to be in the middle to
> get a little symmetry back into the system,
> which otherwise is just strung out.

Critic —   But if this is the resource center I'd think the
                less circulation through here the better. It
                makes me wonder if this is the correct place
                for the library.

Thomas —   Except that the real circulation system is
                going to go by one side of them.

Critic —   Well then I wonder about the main access, the
                library is central to that also. I wonder
                whether the idea of symmetry should penetrate
                that far — this perhaps isn't the right element
                for your symmetry.

Thomas —   I do want the library here to tie the two wings
                together and to be as accessible as
                possible. The trouble with this scheme is that
                once one thing begins to go the whole thing
                seems to fall apart.

Towards to end of the crit he sums up his main problem —

Thomas —   Well I'll see what I can do with it — I have
                a feeling that by the time I've resolved all
                the things that need resolving the whole thing
                might look a lot different ... well maybe that's
                O.K. ... I'll keep the good parts.

Later in his review, he has changed the entrance but not its align-
ment and the library still sits across it with the difference that the
circulation now goes round both sides of it. He gets shot down for their
juxtaposition in the review.

The point is not that the critics were necessarily correct but to show
that having fixed the library and fixed the alignment of the entrance he
couldn't accept, agreeing that they clashed, that one of the decisions had
to be modified and changed. Also his attitude is revealed in his dismay
about its all falling apart and the confident expectation to be able to keep
all the "good" bits. He still failed to recognize that nothing is "good"
in isolation from the things it must relate to in the design.

One of the reasons Quist had allowed the students to design their own
programs was to encourage them to recognize the relationship, to him the
primary one, in which problem solving behavior feeds back to change the

problem definition. Thomas had thwarted this intention by fixing his program, he claimed as much to bring his behavior into congruence with his social role model as for operational reasons. He reasoned that architects have to respond to client demands and that he might as well begin assuming that situation existed now. An attitude, closely related to the above and seemingly shared though generally not recognized by about ten of the twelve, is Thomas's recognition that he falls in love with his scheme —

Thomas —   Even though I know it is not true I always
                prefer my scheme to the rest.

Quist, of course, had been highly conscious of this issue and the need to "distance" students from their work. The mechanisms he has provided for this distancing, however, are almost all relating to his presentation of formal criteria, not by any means the key criteria in Thomas's model. The distancing criteria must relate to the central concerns upon which the infatuation is based. Thomas had discovered one simple method — to deliberately solicit as much opinion from others as he could get but one felt he needed some operational tips. He needed a device, rather like the one John describes ahead, for focusing his attention away from his initial decisions. He needed what De Bono calls an "attention directing device".*

Thomas was another person, like Bart, who seemed so stuck in a learning mode based on testing pre-articulated principles that he was unable to learn by building concepts from the evidence of his own and other people's experience. His inability to learn from John, whom he sat next to, is an example of this.

One final perception, which again seems to relate to all but three of the twelve is his recognition that he doesn't do enough freehand visual note taking.

Thomas —   We had some freehand exercises which everyone
                pissed and moaned about because the results
                didn't look as good as ruled lines. Freehand
                does help you to run through options quicker.
                People waste an incredible amount of time doing
                door swings and using straight edges long before
                a scheme is worked out properly. I know that after
                some rough work I try to prove things to myself that way.

His attitude to his critics has also undergone a substantial change since the first semester. In neither terms was Quist his critic.

Thomas —   Both my critics began with what I had on paper
             and did hint at objections but never said as
             did the critics in the review "this doesn't work".
             I guess I'd expected them to say that if they
             felt I was barking up the wrong tree, even if I
             wouldn't necessarily agree with them.

             I'm much warier now. I'd assumed that they'd
             all be terrific and that they were going to
             tell me what to do. I noticed last semester
             that James really knew what he wanted to get
             out of his crit while I'd just shove the last
             two days work over and say "what do you think?"

Not having really encountered Quist at his board he speaks of him more in terms of rumours — but, of course, the rumours are very revealing —

Thomas —   Others have said that Quist will come up with
             statements like "what the hell are you doing
             that for? It is a disaster!" He can also draw
             parallels between seemingly unlike things, which
             if you listen to, you could see there was some-
             thing to it. He was able to create metaphors
             while the others were not. People say that he
             is able to scribble out seven or ten alternatives
             to a problem.

             This kind of behavior is a lot more appropriate
             at this stage. The critics should give a lot
             more of the kind of advice — "Look! You've worked
             with that idea for a week now, let it go ...
             you really ought to let it go.

He also picks up another generally held resentment about the desk crits and reveals his own rationalist biases in the process —

Thomas —   One of the things that really bugs me about
             architectural education is that a lot of things
             are really implicit, remain under the surface
             and are not talked about. It would be better
             to bring these things out — for instance, in my
             museum design last term, if I'd been able to
             engage with my critic in a similar kind of
             discussion (to this one) like —"how will I start
             this?" — "what are my major assumptions?", etc. ...

Again my intervention through my research role seemed to help him confront these kinds of questions. Because Quist's principles hadn't given him the answers he needed and because he hadn't been able to come up with his own, he had felt helpless. In my research role I asked him to think about the experience of other people around him and about his own — "how did they work?" — "what was different about them?" — "what seemed successful and what did not?" This kind of question seemed to open up for him a whole realm of information, which up to then he really hadn't considered useful. He was learning how to learn from experience.

In his analysis of other people's methods, however, he displayed a complex device for avoiding much of the information he needed to confront. It was discussed how John's method contained several operations, the most obvious being his device for getting a multi-perspectival view of his design problem. This involved him in the production of a vast number of very rough drawings. Thomas saw this and presumed that such a behavior must be the result of a form of random search, he thought John was waiting for "divine inspiration". He considered himself to be a rationalist, by which he meant someone who can clearly articulate in advance the actions they are going to take and can relate these to a set of principles. But in a way John's method, described in his case, was more rational but in a different way, than his own. It seemed that Thomas had indulged in a classic piece of polarizing. He had identified anything which was not the same as himself as identical with the direct opposite of himself. This device was very common in the studio and was, of course, a perfect mechanism for resisting having to make changes in an existing state.

To summarize, he had been willing, in the first term, to uncritically accept almost anything he was told to do. This hadn't worked for him because unlike Bart, there was a vast gap between his own values about the role of the architect and Quist's. In his accepting behavior he had attempted to embody Quist's ideas rather than hold them loosely, as Joanna is described as being able to do. He had then switched to a stance in which most of Quist's messages had been rejected on idealogical grounds. It is an interesting case because it shows how similar are the stances of uncritical acceptance and outright rejection. In each stance the student is unable to distance

himself from the information but requires of himself that he identify with it completely.

This problem in his learning behavior was identical with the major problem he had in architectural design. Once an idea became accepted it became an entrenched part of the design but most ideas were rejected without being given the chance to work because they didn't fit in with earlier com-mitments. This pattern of behavior, discovered in both learning and design behavior becomes the source of several suggestions for improving the teaching in the studio.

Just as Bart had pretended to himself that he didn't want to respond to functional issues and Andrea that she didn't respond to aesthetic ones so Thomas tended to downgrade the role of his own spatial values. Yet his building showed a strong and persistent tendency to be symmetrical, both in plan and elevation. His lack of awareness about the role of this variable in his decision making seemed to mean that it would go on exerting powerful but unrecognized and uncorrected influence. This seemed to be the variable about which he felt most insecure and his attitude seemed to be a device for avoiding confronting it. Like the other two he also seemed to be trying to avoid recognizing the inherent conflict, which Quist and others saw, between architecture as art and architecture as social agency. To recognize both dimensions would be to undermine his desire for basic rules of procedure based on a minimum number of basic principles. To accept this inherent ten-sion was to him like building your house on shifting sands.

In many schools Thomas's set of priorities about architecture would have been considered entirely appropriate. In this studio he was very much an odd man out. Without capitulating to Quist's views, however, there was a great deal he could have, and needed, to learn from him. Because he didn't recognize the possibility of temporary suspension of his own commitments, however, he actually learned very little in his first year in the school.

CASE 5 - Phillipa

Phillipa refused to take the Kolb self-characterization test on the grounds that she didn't believe anything useful could be derived from such a rationalized form of communication. This objection to the test is the key to her rejection of some of the major messages contained in the form and content of Quist's teaching. Architecture to her is primarily about the feelings associated with form and about the intuitive meanings different individuals and sub-cultures impose on different solutions. These meanings cannot be recognized and turned into the rationalized principles of a "field" as Quist is seen to be trying to do.

Phillipa -   Let's say that I'm less a mystic and more
                  a romantic in not wanting to see these
                  processes uncovered.

Very like those who favour a more traditional approach to architecture education, she is concerned to preserve the basic complexity and subtlety of architectural knowledge. This, she feels, cannot be transmitted through rational linguistic systems alone but through other much less precise systems of communication in which empathy and sympathy are important preconditions. This leads her, as described ahead, to a deeply intersubjective theory of architecture and of teaching/learning architecture.

She sees the traditional studio method as the epitome of the inter-subjective method of teaching/learning, which she advocates for all learning not only architectural. Her school program was based on such a studio system. Only one of the critics, who she had encountered in the studio, was capable of living up to the demands of the system as she defined them.

Phillipa -   We discovered a way of relating as human
                  beings and I liked him for his restraint
                  and his refraining from pushing things
                  around for you, making moves for you in
                  your design.

                  We tended to operate on a slightly different
                  level. I was aware of why he felt certain
                  things and he really didn't have to come
                  right out and say it. We related on a more
                  subliminal level. He has a basic humility

and faith in each person's exploration of
him or herself rather than a body of knowledge
to be imparted. To him there are no ultimate
truths in architecture.

Quist, of course, is seen as the opposite of this but she was one of
the dissenters who still saw great utility in his "polemic" as a baseline
against which to identify her own position —

Phillipa —   Quist puts ultimate faith in the rational
understanding of things. What intuition
he has must be placed on a rational stretcher
and though he advocates self-discovery it is
in a very organized fashion. He teaches
faith in fundamental principles which you
always use.

He is extraordinarily articulate about what
it is that does and does not work in a
building but he limits your self-discovery
by giving you a list of thirteen things to be
considered, which is far more than you could
ever have thought of yourself.

There is, however, a fair degree of freedom
to reject this pretty directed approach. I've
always appreciated a polemic because it gives
you something to reject or respond to.

She admits that the problem with the studio method is that it is entirely
dependent on the personalities involved. In spite of her good experience
with one critic she has been disappointed in the experience in general and
has considered leaving and getting a job.

It is perhaps not surprising that she is easily the most inter-active
with the other students. She seems to know, on more than just a superficial
level, at least twenty people in the class. She consequently has far more
insight into what the others are doing and uses this insight in her own
development.

Having all these social skills, it will also not be surprising that she
has a powerfully intersubjective model of the architect's social role. The
messages about feelings and meanings are to go both ways. The architect must
also have a message for the people and the people a message for the architect.

Phillipa –   I pretty much came to the conclusion that,
while a great deal of respect has to be given
to people's notions of architecture, yet, just
as in other professions where the individual
has knowledge which you respect, an architect
is much the same and it is not fair to expect
the architect merely to reflect what people
want. They must also be allowed to educate.

Her role models for this kind of stance are Paulo Frieri(she did a B.A.
in Latin American history) and the Italian architect, Gian Carlo De Carlo.

Phillipa –   I'd try and go in there with total humility –
you need a concept that is big enough to
include all the variations (she is like
Bart in this sense). The message will en-
lighten while the details come from the
people themselves.

Again very much like Bart, she is trying to build up in her education
a kit of methods which will contain her general message.

Phillipa –   I'm trying to understand the basic elements
involved and how to put them together – sort
of helping myself along so that I won't have
to rely on a brand new inspiration each time.
The two elements I was primarily concerned
with in the school design were edges and
circulation.

Frank Lloyd Wright is the model of the formal skills she is trying to
develop. He manged to build a genereal language which contained the necessary
messages for her about relationship to the earth and the primacy of the feel
of space.

Phillipa –   In a sense Wright's subtlety is to do with
something one doesn't actually know consciously
but almost subliminally. There is an extreme
comfort there, something which you can deal
with.

In contrast to this "good space" she describes a "bad space" she knows –

Phillipa –   It was a totally intellectual building, a bril-
iantly logical exercise, quite impersonal and
proud as hell. Wright's buildings offer you

"good space". It is the difference between an inhuman rationality and a more humane approach.

Of her design method she says —

Phillipa —　　　I still, even now, have absolutely no method-
ology or any way of sitting down with geometry
or grid or anything like that ... I guess I
still trust to an intuitive sense of balance
against which to test whatever I do. There
are certain things I use but I'm not self-
conscious enough to know what they are. Yet
there is something there, it is not entirely
random, and for the first time this time I've
had the big realization that what I had was
not just an immaculate conception which was
just good or not good.

She is one of those students who sits for days at her board without putting anything down on it and this worries her. There are several dimen-sions of this problem. The first is a feeling of not being able to put things down until they are complete, a habit no doubt partly related to her instinct to work from general to particular and partly related to an inability to suspend judgement on decisions.

Phillipa —　　　Simon has a way of designing that I almost
wish I could develop. As soon as something
comes to his mind down it goes on paper.
I'll sit for weeks but unless something
makes sense I won't put it down. We've
discussed the differences — I tend to take
a shape or space and work in, while he
tacks on from the outside.

My mother could never get me to take notes.
I now begin to realize the value of it. In
your mind, I guess, an idea is less manipu-
table than when it is on paper.

It is an interesting point, of course, because when you express some-thing you inevitably abstract it to an extent. Another part of herself is trying to abstract as little as possible so as not to lose the holistic quality of the idea.

She also considers Joanna to be the "best" student in the class and,

although they are attempting different things, she recognized someone who is much more able to remain loose to issues.

Phillipa —   She is much purer in her translations and is less caught up in the rigmarole and polemics of architecture. I'm feeling very constrained, I guess, that is why I say that. She lets herself loose enough in the waves to come along in them, something I've had great difficulty in doing. I don't have the resources perhaps.

This skill, of an ability to suspend fixing on an issue before it has had a chance to flower or be integrated with other elements, seems to be a fundamental element of what most design theorists call "creative thinking". At least half the students recognized the need for these skills to be learned but seemed not to have been able to respond to Quist's exercises which were intended to promote this. Certainly neither the use of metaphor and analogy nor the laporellos were addressing themselves to this aspect of creativity.

Phillipa, given her biases, felt on the whole that one couldn't be taught these skills.

Phillipa —   It has been my experience, having gone through this self-criticism junk, that this process of opening up and breaking down is a process that you can witness and perhaps take a hand in, but ultimately I think it is something you have to wait on. I guess I'm a mystic in that sense.

She, Petra and Thomas, all conscious of this problem in their own work, had recognized in John the sort of qualities they were after. John was the only one able to talk, albeit rather elliptically, about this aspect of his method and this is discussed in his case.

A final and perhaps more mechanical element of the same problem was the inability of these people to make visual notes to themselves. As Nathan had pointed out — there are two kinds of sketches; those you make for yourself and those you make for other people. Most of them were "sketching" or "noting" with straight edges as if someone else was about to look over their shoulder.

Phillipa —   I was talking to Petra the other day and we had a list of pencil leads at the beginning of the year. I used a B the other day and I couldn't believe it. One of the things that had prevented me from sketching was the look of hard pencil on yellow tracing.

It is perhaps relevant that of the twelve, the four who were most recognized to have these "creative" skills, each had a crude thick lined system of making notes to themselves. These notes were almost always recognized by the others to be "poor" or "weird" drawings. It has, of course, been discussed that the major problem with learning to draw in this way was learning how to learn in a different way and had very little to do with graphic skills. These people needed to learn how to use drawing as a source of ideas and not merely as a representation or test of ideas already formed in their head. What Phillipa didn't recognize was that people like Matthew and John deliberately kept their drawings "rough" so that they would be more open to different interpretations. Drawing, of this kind, was learning from created experience, it was not testing hypotheses.

If the desk crits had not been helpful what could she expect from the reviews? It is certainly not reasonable to expect that a review can tackle the substantive issues of one student's design method. It must be expected that the critique will be of the product and that the student must, if possible, translate that back to the method. Even though this translation process is often almost impossible, the students still saw plenty of value in the reviews. It was necessary to hear what people outside the studio felt about what you'd done.

While Bart and Thomas have both been represented as learning best through applying a method from outside, as opposed to discovering one for themselves, they both were extreme rationalists and expected these methods to be verbalized and to be complete in their verbalized form. Phillipa, demonstrating a similar learning mode bias, had no such faith in the rational process and thus the only information source open to her was the behavior of architects. Practically, the only way she could learn was through watching the people she admired. In terms of the substantive issues of a theory and practice, Wright was a suitable model for her and she had spent a good deal of time

studying him. But she could only study the products of Wright's behavior and what she desperately needed were models of a suitable process.

In examples of crits with Petra ahead, Quist will be shown to be modelling a process to her, but the other arena or stage for such behavior was the reviews. A great deal of time in reviews was taken up by critics presenting alternatives to what the student had done. Often, in the process of suggesting alternatives, the critic revealed a hidden method and sometimes got carried away and modelled, quite deliberately, a design process. It is as if the critic said to the student — "I'm not quite sure how you produced such a dreary object, but why don't you watch how I can produce a shiny one." Though they all do it, it is Klinker's favourite mode, as revealed here in Phillipa's end of term review —

Klinker —   Why couldn't it have been ... well, for
                example, if this wall had carried on to
                this point, this incidental opening in there,
                like in the entrance to Falling Water, then
                this niche could have been an inglenook, a
                cosy place with bookshelves around it or
                something. The kind of place where you
                read stories to small kids.

Phillipa —   Well this is a middle school so ....

Klinker —   (cutting her off) even then ... the idea of
                having a cave—like space makes the scheme
                all the stronger.

                (later) Can you imagine how nice it would be
                to come in the other way? You've seen it only
                as an Acropolis as you drive up. If you
                utilize the contours properly, the whole
                thing becomes a kind of platform. You could
                make it even more pronounced by using your
                retaining walls in here. And now, as I see this
                thing sitting up there and I'm driving up and
                snaking around I came in from the back. Then
                I pass in through here and there is pretty much
                a wall on this side. As I come in now, I come
                into a large space or hall in which I get my
                bearings. As I look I see beyond that a
                private lounge, a private world ("with my
                inglenook space"he means) and beyond that a
                real Greek type amphitheater. So as I walk

> around the Greek space, it slopes down on the
> hillside. It is no longer identified with
> the Acropolis. It actually spills off, not
> that way but that way, it actually cascades
> off down the hill.

He had modelled a very different method the the one she employed to make her design but it is not likely that either of them recognized this.

Whether she is correct about the impossibility of describing process in verbal form, it was certain that Quist's principles had not been adequate descriptions for most people to be able to use them. In such a situation the only information about process available to them was their own and other people's demonstrated behavior. But learning from experience in this way was not the sort of skill students associated with being at university and there seemed to be a great need for them to recognize the importance of such a learning mode here.

Phillipa recognized the above necessity, and through her many contacts had attempted to learn in this way, but her development had been inhibited by her insistence on the holistic quality of "good" procedure. Her rejection of the validity of breaking up such a whole, even to describe it, meant that she could not construct her own method from piecemeal experience but must, as she said, "wait on" one to appear in almost completed form. This seemed to account for her strange passivity to her development.

Again this attitude to the development of her theory and practice is mirrored in her "immaculate conception" method of design. She could not put anything down until the whole design had been worked out in her head.

CASE 6 - John

A constant dialogue that goes on among the faculty in the school relates to the selection of students. Can the average person from a background like psychology become as "good" at architecture as the average person, who has a background in the arts, and the visual arts in particular?

Quist and the Dean largely take the stand that in the long run educational background doesn't matter. The Dean especially claims that, after the First Year, these backgrounds are allowed to re-emerge thus providing a maximum variety of potential perspectives and roles within the profession. Quist's insistence that background isn't important in the long run is, of course, consistent with his attempt to turn architectural teaching/learning from an intuitive subliminal activity, from a craft, into a field based on rational principles. In the short run he recognizes "problems" with people from science and maths backgrounds, see Petra's case ahead, who he feels have to be persuaded out of their instinctively aggregative or "scientistic", problem solving modes. The students from the literary arts only have to shift into the visual linguistic system; he sees the problem solving mode as familiar to them. The visual arts people are seen to have the initial advantage.

It is a crude generalization and the numbers certainly aren't significant but, given for a moment Quist's focus on the prime architectural skill to be that of form making, only four of the twelve students demonstrated a strong ability to think formally by the end of the First Year. They were Bart, Matthew, Joanna and John all of whom had had a significant amount of experience in the visual arts before joining the studio. I intend to re-interview the students after their third year to see if those from other backgrounds have caught up with the visual arts people.

John argues that he is an innately visual person and in some ways he is the classic of one kind of visual arts type; lousy at maths, he had to take extra maths courses, and often slow verbally. He is the only one of the twelve who has consistently thought of doing architecture since being a child.

John —   I thought of becoming an architect when I was
seven when my mother, you'll like this! told
me I'd become a Frank Lloyd Wright. I've
always drawn a great deal ... I won a prize
for a steam shovel when I was four. I loved
construction in those days I had a zillion
Tonka Toys, that's all I ever wanted for my
birthday.

Other students recognized him to be an unusual character and he is
recognized as the studio wit. His timing is impeccable.

Thomas —   He's a scream, he's very, very funny. He
can have everyone on the floor laughing
while still doing a pretty competent job.

He is one of these people who never seems to be prepared for anything
but always pulls something out of the hat at the end. His friends worried
that he'd have nothing to show for his final review but he came up with a
good design. While many of the others were nervously rattling out drawings
he took a week off to go skiing.

His sense of the social role of the architect, to the extent that he
seems to consider it, derives from his belief in his natural talent and a
simple expectation that people will see it and trust him to do a good job.
With his critics, in one very real sense his paid consultants, he is often
selective and insistent on his particular needs. Yet, he was one of the
more critical students who nevertheless maintained an openness to Quist's
point of view. He seemed more willing and able to see value in his advice
and was more prepared than most people to try out Quist's suggestions.

His major objections to the course are focused, as might be expected
from the above attitudes to architecture and life in general, on Quist's
attempts to formalize what he considers to be unformalizable.

John —   The main problem that people have been
having with the class, I think, is that
Quist has a way of looking at things which
deals in size and relationship and propor-
tion rather than in feelings, say, of
happiness, sadness, openness, restriction.

> I think I understand that he doesn't mean to
> leave that out but some people seem to be
> developing a grudge because he won't deal
> with it. Just because something is formal
> why can't it be a mound of dirt with a hole
> dug in it? Why can't we talk about form that
> way? Why does it have to be broken into
> circulation and formal elements?

He gives an example from one of the assignments from the previous semester —

John —   In that assignment we had a 9 x 13 field and
           we had certain elements related to this — the
           assignment was to construct a cube in different
           ways. The idea was not to construct a cube that
           was massive or airy, but a cube that divided the
           spaces into certain proportions.

He recognizes that Quist's focus gives him the chance to develop
principles or criteria which can be taught and used as standards. His test
for his own forms would have to be of the order — if this is called a warm
space do people feel warm in it? And the criteria he used to design these
would be almost impossible to verbalize. In this sense he argues strongly
against Quist's emphasis on principles but he doesn't deny the value of that
point of view —

John —   Well look I don't want to go all one way or
           the other. I feel Quist has a very one-sided
           approach — not that one side isn't very important.

The most interesting thing about the case, however, is the method that
John has developed. Other students have classified him as the great intui-
tive type, the sort of person to whom things just seen to pop up out of the
blue —

Thomas —   I'd say his method is more a lateral one, it
           is more cognitively immature somehow. He
           seems to see things in a less systematic way
           than people like myself.

Petra —   I haven't seen his drawings but she told me
           it wasn't just his architecture, it is every-
           thing. He's everywhere at once. I have a lot
           of respect for that, perhaps because I don't
           have it. I'm really the opposite.

Several of the students wishing they could "loosen up" don't try because
they have bought the story about innate talent and feel they don't have it.
Others don't try because they are afraid of the chaos that might reign.
Others, like James in the following case, deliberately let chaos reign but
have no method to manage it.

In the following rather lengthy description John provides a very clear
example of his management technique for the ideas he begins with. It is, of
course, argued that what all the individuals in the last paragraph need is a
similar management method.

John —
> Decide that you want to do three thousand
> things, but then do it as simply as possible —
> do it easily.
>
> My idea is not to start out too specific and
> hard edged, not straight lined. Perhaps I'm
> saying this because we have a review in ten days
> and I haven't started yet — but this might be
> the way it should be done anyway.
>
> For mine I want an open classroom situation
> but I want elements of closedness where you
> can go off from the space. The circulation
> was important. For a school I wanted it to
> have a sense of variety but not fragmentation.
> I wanted everyone to know what was going on in
> the other teaching areas. I wanted everything
> to face the circulation route. So that became
> a constraint. The ideas came from my feelings
> of what a school should be like.

He felt the use of circulation was certainly not a generalized principle
he had developed but was unique to this problem.

John —
> When I was in college one of my teachers
> talked of giving things up. About how hard
> it is to give up a piece of painting which
> you have fallen in love with but which won't
> relate to the rest. About how you must scrap
> it or begin again around this piece. I get
> caught up in that all the time.

Before he had drawn a line on the board he already had several key ideas
all of which he knew were going to clash with each other. At first he did

about seven very rough drawings, described by one student as "bizarre drawings to himself".

John —
Each of the seven schemes maximised a different variable. The gymn is in different positions because in some drawings I chose to maximize the natural lighting, in another its location exactly exactly where I wanted it, etc. It is a priority generating mechanism, taking certain things which cannot be sacrificed, this is the embryo of the big idea.

I used this method less last term but now I'm back on to it — we are talking about priorities. That's how I can make decisions, the only way I can make myself give things up. I say to myself — "that's nice but that means the courtyard must go and that is high on the priority list".

The key skill for dropping precious ideas is to be able to step outside of them and view them from a different angle. The different priorities and thus perspectives of each drawing give him a perfect mechanism for doing that, for constantly shifting perspectives. Eventually, long after ninety per cent of the class were drawing in door swings these seven drawings got expanded into about sixty other drawings — all extremly rough, taking about one minute to execute.

John —
Kids hate coming to school so I made a welcoming school with reaching out arms. Then I tried opening up the school so the kids could see in. The first idea fitted less well with the other ideas which were high on the priority list so I worked with the second.

Others looked on with amazement and presumed that he was waiting for the moment of inspiration. They did not see this as a careful process of test and elimination. He had no sudden gestalts that now he had the answer but gradually began to be aware that something he wanted was emerging. Of course he got sudden flashes of ideas but his system, unlike most of the others, could handle that.

John — I think I mainly learn slowly and surely
rather than have sudden leaps.

His method, in a similar way to Matthew's, differs in some important
respects to the one Quist advocates. For Quist, "The Big Idea" is something
which one comes up with rather early in the scheme — it is tested and dis-
carded if it wont't fit other constraints. For John it is a process of
satisficing between several major elements, some of them "big ideas" in the
Quist sense. Finally an idea emerges, a formal idea to which a metaphor can
be attached.

John — I can go both ways on the use of metaphor —
with this scheme I have drawings which look
very much like a monastery — the plan still
is and so is some of the massing. I've been
told by a couple of people that the scheme
reminds them of an Italian village, the
cathedral with the houses up against it. I
didn't consciously think of it but the meta-
phor (as in this case) definitely appears on
the scene as a means to implement the ideas
I already have.

Quite accurately he compares the differences between his own and Bart's
method.

John — He comes up with systems which he'll use to
make the statements while I think what I want
to say and what should be said and then try
to develop a system which will make the
statement.

In the above statement he reveals a quite different attitude to the skills
needed in order to be a successful designer. Most students felt they were in
the process of constructing a fixed method of procedure which they would
always use, what Nathan called — "our own personal method". For John a new
method had to be constructed in response to the nature of the problem context.
For him, then, the key skill was the ability to design an appropriate design
method to meet a given problem context.

His attitude to his role as student is that he is independent, in control
of his own process, but he'll use the critics when he can. He admires students

who question their education -

John -   Matthew questions a lot and so does James,
                 they ask themselves "what am I going to learn
                 from this?" If they aren't satisfied they
                 won't do it. Matthew loves to paint so
                 without worrying about getting credit for it,
                 he takes a painting course.

The best teacher he'd ever had, had been a Third Year T.A. at college.
The qualities he had admired were an ability to understand him and his inten-
tions and to relate these to work in history. He had only had one crit from
Quist all year but found similar qualities in him.

John -   He noticed right away what I was trying to do,
                 where it could have been developed. He remem-
                 bered my last term's review and pointed out
                 what I seemed to be doing wrong in general -
                 namely that I was being too literal. I'd
                 have an idea and put it right in there instead
                 of trying to think about using it to work with
                 the building's functions (he elaborates). I
                 learned a lot, if you listen to him, he is
                 much more open to a different point of view
                 and is capable of making light of his own
                 view of things.

In spite of his criticism of Quist's rational perspective, the thing
which stood out about John's response to him was its openness. He seemed to
see, quicker than anyone else, the value in Quist and he was the only one to
see and understand Quist's attitude to his own principles. Everyone else
saw Quist as blindly committed to his advocated perspectives because he
argued for them with such energy. John saw Quist's position as a choice he
had made from several known alternatives. The energy he displayed did not
indicate a blindness to the alternatives but, on the contrary, seemed to be
focused just because he knew them very well.

Another aspect of John's method distinguishes him, along with Joanna,
from the rest of the students. Perhaps at first sight surprisingly, seeing
as they were two of the most experienced visual designers, they spent consid-
erably longer than anyone else on the analysis phase of their designs. While
others rushed into the synthesis phase, they worked away at producing elaborate

lists of priorities and issues for consideration. Long after the others were well into their "design" they were still sifting through their initial priority lists and writing out their understandings about what the building should be like. In both cases they were willing to focus on a wide range of problems and possibilities and, unlike people like Bart and Thomas, seemed to actually focus on the inherent tensions between them.

-      Perhaps John's sense of humour is an insight into his willingness to delay commitment and to entertain disharmony and mismatch between the elements of a design problem. He positively enjoyed the irony in situations, even sought it out.

The quality which comes out most clearly in his case is his ability to distance himself from his immediate responses in order to reflect about their nature. This skill seemed to be possible because he was one of the more self-secure people in the class. For most of the others their learning or professional roles were almost identical with their sense of themselves and who they were, meaning that reflection about them was virtually impossible. To play, even temporarily a different role, was to lose this sense of self. John seemed able to play different roles and reflect on them because, in some important way, he recognized an existence beyond these manifestations.

In contrast to the people who have been discussed so far, then, John seemed capable of accepting and trying out a wide range of advice much of which seemed to conflict with the directions he was developing along. Again, unlike the others, a willingness to accept messages in undistorted form and try them out did not mean that they would automatically become embodied parts of his stance. On the contrary he was highly reflective and often critical of the messages he received and worked with.

The clearest example of the above stance could be found in his attitude to the development of a design method. He was not looking for one "personal" method which would be built around his own natural inclinations and which would be appropriate for all problems and problem contexts. He was looking for a wide range of methods, each one appropriate to a different problem and problem context. The skill he sought out, and he was almost unique in this,

was the skill of designing a new design method for each encountered problem.
In order to develop such a skill he required an openness to new perspectives
which few of the others could have managed. Already he was trying out a
different procedure than the one he had used in the previous semester and was
speculating about other perspectives he might take subsequently.

A second and rather different aspect of this attitude seemed to operate
at a more subliminal level. Within the particular design procedure he had
used in his school design he displayed the same sort of versatility that
Matthew was described as having. In early stages he maintained great openness
to ideas about the design and was willing to contemplate almost any idea that
came up. In later stages he was capable of extreme toughness so that once a
theme began to emerge he was able to throw out anything, even ideas which
early on had seemed central, if these didn't fit with the emergent theme.
Different people seemed able to operate one of these two stances, usually
the latter, but not the other. They could operate in one fixed mode of
information processing but could not switch into alternative modes when these
were called for.

CASE 7 - James

This case is brief because James was the last student asked to partici-
pate in the scheme and it was late into the semester. None of his crit
sessions were recorded and only one review was audible in the tape. I had
wanted to talk to him for two reasons; the first because three people had
mentioned that they thought he was approaching his education with particular
intelligence; the second because he was supposed to have done a very "tight"
scheme in the First Semester design project but, from the evidence of his
Mid-term Review, was having real trouble with this one.

Student -   Last semester when we got our first "real"
                 building I wanted to design the hell out
                 of it but James was wiser, he knew how to
                 restrain himself.

James -   Last term was an experiment. I said -
                 "O.K. I'm going to make this minimal" -
                 it was 1956, it was so reductive.

The project had been a museum, they had talked to a Museum Director and
James had responded to the sort of needs he had expressed. He had been criti-
cized for the building on the grounds that it was too minimal, too responsive
to functional requirement.

James -   Bream (in last semester's review) got up and
                 said, "Well Museum Directors are a bunch of
                 idiots - if we left it all to them there'd be
                 no Guggenheims". When it got round to me and
                 the fact that I'd played the architecture to
                 a minimum, the tide was set against me.

Maybe partly in response to that criticism from Bream, he had decided to
take an entirely opposite tack this semester. The constraints from program
and site would be ignored and everthing would be generated from his own
insights into the nature of school and its appropriate formal manifestations.
He decided that this semester's project would be an experiment and he was
very bold in the attempt.

What follows is unfairly selected from what he said but the caricature
is a valid mechanism now and then. He'd agree that the method he adopted was

something of a caricature method anyway —

James —

After being very tight last term "minimal" I really felt the need to mess around in a very fanciful way and get it all out of you. I fooled around and messed around with many geometrys and things. The idea keeps shifting. At one time I had crazy shaped rooms which became a very formalistic thing. I decided to have a very regular courtyard thing but that turned into a street with one wing with things at the end and then a space between these .... The way I look at architecture at art or even playing an instrument is to get things out of you, it is basically theraputic I think — the "Primal Scream".

I was just playing with shapes and a piece of paper — just exploring the shapes that result when the forms intersect. Then I had this one configuration that I liked — so I just made a box out of it and said — "Well this can be below and this around it on top". It got me back to the notion of a centrally planned school a sort of resource center with things around it.

I was pretty rational about the site, I thought about the location of the school but then I threw away the site. I really threw it away a lot and I don't know if I should have. I said — "I'm not going to get hung up on the site" — so I started to fool around with classroom configuration. That's where I started but I wouldn't say that stayed as the main idea because now the classrooms are rectangular. It was just a place to start. I don't know how it was that I decided to enter this from such a difficult angle. I just don't know what made that happen.

Oh yes! I changed it (the program) all the time — I'm terrible that way (he laughs) — I just said — "Well there goes the sixth grade", which I guess is bad. The way it works is this, you take it all seriously to begin with but then you start cheating.

Well let me just say that what I've been doing this term is really puddle fucking ... I don't think I'll do it this way again but the whole thing has been a kind of experiment.

He was shot to pieces in both his reviews and only Bream, usually the prime marksman at such occasions, stood up for him!

I have used the caricature as a device here because, perhaps, it best represents James' behavior over the semester. His design process was a caricature of what he and several of the other students thought Quist meant by "creative" as opposed to "reductive" architecture. In a sense he is the classic example of someone who mistook the name for the complex activity represented by the name. He exhibited all the outward signs of creativity but few of the design thinking skills needed to give it potency.

CASE 8 - Judith

I should confess, at the beginning, to being sympathetic to Judith's overall position about the direction in which architecture ought to be going in the future. I may, therefore, be a little biased in my description and appraisal of her disastrous semester.

She was one of the three from the group who did not share Quist's general view of the architect's role as form maker. Some of the pressure she received, or felt she received, to change her behavior seemed to be directed at this rejection. The major criticism, however, had been that she had developed no method for making real, in any way, the ideas which she purported to hold.

In Quist's and also the Modern Movement's position, architectural form becomes the medium while the end is self-expression, insight, social change, or whatever. In Judith's model, programmed technology becomes the medium while the intended end is the self-expression of the user.

To her, the speed of turnover of users of buildings means that the attempts of people on the liberal wing of the profession to consult users, the "advocacy architects", are quickly obsolete. What is required is a technology through which the user becomes largely the creator of his/her own environment. It is, of course, recognized that new programs will have to be developed for the provision and use of this technology. There are aspects of these ideas in most of the work of the twelve, especially in Andrea's and Bart's. In Bart's model this process of creation for themselves happens purely in the minds of users. To her, the process happens in their manipulation of physical place also. She sees this idea as extended not only to housing but to offices, schools, etc.

On these buildings the major constraint will be the requirements of environmental technology. The efficient use of energy resources and the recycling of materials becomes the only constraint on the shape of buildings. It is important to distinguish here between form in the sense of shape, which any physical object will have, and "form" in the sense of cultural phenomenon, as a thing in and of itself. To the charge that hers was only

an extreme kind of functionalism, she would probably disagree on the grounds that in functionalism form is always a deliberate means of expression, never coincidental; it is part of a philosophy of expression.

Of Quist and everyone else in the studio she says —

Judith —   They've had their day in court, they can't
                    handle the problems any more. They are
                    always the last to respond to changes.
                    Their buildings can't be adapted to future
                    use. They are not really moving forward no
                    matter how beautiful their buildings are.

She does not expect programatic needs to manifest themselves formally, however. They are just provided as efficiently as possible within the loose system. Her buildings tend, therefore, to be pure symmetrical shapes. Her past designs have often been circles and the first school plan was circular in this project. In the interview she said she would be quite happy to turn it into a square and did, for her mid-term review, present a round version and a square version.

The critics are always trying to get her to respond to specific issues which will create a formal "distortion", as in her review here —

Northover —   That would begin to distort the diagram — so
                    that you wouldn't have an equal force diagram,
                    this might have shrunk down because it would
                    have been purely circulation and these might
                    have grown.

Judith —   There are problems with that because of
                    getting into the asymmetry and arbitrary
                    geometry. That is exactly what I don't
                    want.

The only programatic need she will respond to is flexibility and that has no formal implications. It upsets the critics a lot, as in the review again — Here Northover is asking for her to deliver on one of Quist's major requirements of students — that they be able to articulate a coherent description of the major organizing formal idea, the parti.

Northover —   I'd like to ask a couple of questions — I'd
               like to see if you could diagram your parti,
               make a little footprint of your organizing
               concept.

Judith —   I really don't know what you are after.

Northover —   Well, it is something we've been asking for
               all year.

Judith —   Well, I've sort of said it.

Northover —   Well, I can't think what it would be.

Judith —   Basically, flexibility is what I'm after
               and have a lot of organized spaces.

Northover —   Flexibility doesn't make a form. You've
               got to be more specific than that.

Roper —   There are things which litle kids are going
               to take and make for themselves and there
               are others which are more or less fixed and
               immutable elements — to be really dumb about
               it, the structure which holds up that dirt
               (a large sand pit). You get a graduation
               of changeable and unchangeable. You might
               get further if you thought of the structure
               as hermit crab. One super mega-structure
               and substructuring within it. You might
               begin to exploit some of the asymmetrical
               possibilities of the scheme.

She is, of course, coming in for very similar kinds of criticism that
Bart gets. They keep trying to get him to respond to specifics and he keeps
saying "no". There is a substantial difference between the two of them in
that Bart is primarily interested in form as his medium and he is very
assertive about his rights to do it his way — but in the end they are both
providing flexible material, form or programmed technology, for the mental
or physical manipulation of the user, while insisting on a good deal of
power in how that material is provided for. She is equally assertive in her
own medium —

Judith —   Listen, every inch of my building is a result
                  of my philosophy of education. Hers (another
                  student's) is representative of somebody else's.
                  I wouldn't design a building without an exper-
                  ience, in a school it would be a new educational
                  system. In designing an office block, I might
                  want to create a new means of people working
                  together.

Perhaps because "form"has such little meaning for her, she almost by
accident seems to erase in in her mind one of the key boundaries that Quist
defines for their activities. In the studio there is am implicit red line
through activities that relate to the design of, say, an organizational
solution as opposed to a formal solution to a problem. She seemed to be the
only student of the twelve who, if asked to solve the problem, say, of identity
in a school, would even consider an organizational solution, like the design
of a "small daily playgroup", as opposed to a "cosy homeroom". It is perhaps
revealing that architecture uses the word "program" to be the "problem to be
solved by the architect" while several other disciplines use it as the
"product to be designed".

Judith was thus at odds with Quist's general view of the architect's
role in several central respects. Had she been at the school I go to, a
significant percentage of the faculty and students would have shared the
general scope of her ideas. They would, of course, have quibbled with her
inconsistencies and substituted some of their own. The fact that she was the
only student out of twelve and probably out of all forty-eight in this studio
to hold such views makes one wonder again; was it a self selection process,
that students with similar interests applied here? Did the school select the
people who would "fit in"? Had Quist or the critics at my school had such a
powerful influence on the broader parameters within which students identify
their role?

In her first interview after the Mid-term Review she says —

Judith —   After one extremely aggressive session with
                  Quist, I began to realize that my approach
                  wasn't architectural at all. That's when I
                  started attending to architecture and less
                  to all the future worries of the world. I

began to realize what those issues were and
began to understand how to deal with them
all in one evening. It was very painful.

From my understanding of her review, Quist and Roper were criticizing
her for not dealing with the constants in the scheme, not dealing with
lighting, not dealing with structure, they were not telling her to give up
her view of the need for flexibility, nor the mega-structures. They seemed
to have told her that even architecture, "little a", as she called it, has
material and functional requirements which need responding to, even a tent
has. Thus -

Roper -   You've got a container and events happening
                          within it. You might even devise a whole
                          range of structural systems, a mega-structure
                          with smaller systems within it. You don't
                          have to invent the wheel each time but you
                          might find a beautifully designed sub-
                          structural system on the market. But unless
                          you can begin to think of the problem
                          architecturally like this, you aren't
                          going to find any way to proceed.

Quist -   It's a dead ringer for one of those
                          Japanese Metabolist things - you know, a
                          series of 120 foot beams - I mean,
                          Rayner Banham ought to be sitting here now.
                          (I talked to Quist afterwards and he felt
                          they had been very helpful to her within
                          her own system, which it seemed to me they
                          had).

Probably partly because she was under a lot of pressure, feeling herself
to be the misfit, she seems to have taken their criticism as a criticism not
only of her lack of a method for producing a coherent enclosure, but of her
whole general view of architecture. She set out to try and give them what
she felt they wanted.

Judith -   Well, I've changed - it fits the site well
                          now. I've added it as a major constraint.
                          I've put in a lot of constraints. I've
                          added the metaphor of a "city, highway and
                          open field", hoping that that would be the
                          connection between open flexible space and

closed space. The final constraint I've
added is what the circulation spaces would
be like as a rhythmic kind of experience.
The other building wasn't healthy. It was
too flexible. The real trick is to know
how much flexibility to leave the client.

The key words there are "add" — she seemed literally to "add" things to
her original ideas. She wanted to be quite sure that she had a bit of every-
thing the critics were calling for. Thus, in her review she says —

Judith —   I like symmetry, but I also don't like it
                  that much, so I decided to change it a little
                  bit.

                  Incidentally, there are a lot of golden
                  sections that occur through here, but this
                  really wasn't part of my construct. It was
                  just that I liked those spaces too.

She was quite pleased with her scheme and was really hurt by the fact
that it was heavily criticized. The new scheme was clearly not the purist
mega-structure with the reasonably consistent philosophy behind it. It was
a poor attempt at a formalist's solution to a problem, still loaded with all
the old rationalizations she couldn't let go of.

The best example was the issue of energy conservation. That had been
almost priority number one in the original purist schemes and they had been
responsive to that. Now it was still claimed as top priority, but the scheme
was a single storey sprawled "expressive" with bits jutting out everywhere.
It was a caricature of her worst earlier suspicions about Architecture,
"capital A".

Quist, who had since gone on his research project, and Roper, who was
only visiting anyway, were not present at the last review nor was her own
critic. Most of those present, then, were ignorant of the earlier processes
that she had gone through and cannot be blamed for their more excessive
critical indulgences. The criticisms of the old scheme were, of course, all
the more valid and powerful in the present design because now she was working
within the paradigm of form making. To the outsider and sympathizer it looked
very much as if the "Architects, capital A", including by this time most of

her fellow students, recognizing her original schemes to be outside the range
of their critical devices, had lured her inside their own perimeter with
soft promises of praise and succour only to let her have it with all their
familiar old guns once she stepped through the fence.

Whether she would now revert to her old position remained to be seen.
As a study in socialization, it is perhaps instructive. Matthew had des-
cribed how the process seems to happen. You change your behavior in order
to be acceptable, then you change the theories so that they fall into line.
Judith quite clearly did not discover the method that was being urged on her,
but she changed the outward appearance of her building so that it would be
the sort of thing she felt all the critics admired. Matthew, even though he
is a formalist par excellence, feels he is resisting the socializing process
on himself and she is still somewhat defiant about what happened to her.

Judith —
I reject Quist's notions of categorical
imperatives. It is a trip that he draws
people into — he compliments someone who can
take an idea from the past and use it well,
rather than someone who tries something new
and has to struggle. They try to organize us
so that we tackle it (the design) in their
specific way. It is not my way and I learned
mine somewhere else.

But what she called "my way that was learned somewhere else" is not a
method, it is a general perspective. She needed to find a method within
that perspective.

Most of the twelve talked of this need a good deal and most felt that
that was the problem which few of them were coming to grips with (see the
three cases ahead). One problem was that discussion of methods was always
a by-product of two much more common processes. The students wanted to know
"do you like what I've done?" or "what else can I do?" and the critic, in
responding to that, usually revealed a method. In this crit session between
Judith and her critic, it is obvious that they are not communicating, neither
giving enough information to the other about how the implicit issues of
method fit into their general theory and practice. Because Judith is more
stubborn than most and her critic reputedly the most forthright, apart from

Quist, the session becomes a caricature, but a very accurate one, of the chronic miscommunications that seem to go on in many of the crits —

Critic — . You can say that it works, but unless you draw it up, how do you know?

Judith — No, it does, I've figured it out, I've spent days on this thing.

Critic — Well, the ramps don't work, if you are to enter off them, there have to be flat pieces.

Judith — Yes, they do.

The critic persuades her that they don't work and that quite a few other issues don't work either, some of the relatively important. Judith fights each one, finally concedes the point but remains totally unmarred by the discovery. She has the attitude "any fool can work out a few building details".

Judith — First tell me what you think of this stage. I wanted the students to feel that the whole place was their territory. I wanted there to be as much variety as possible.

Critic — How do you get from here to here? the whole thing depends on how you work out the details. You can't just go on saying "Oh, it will work out". Making ideas real is important.

Judith — You don't seem to like it much. I need to find out because I can draw it up in one night.

Critic — I don't think you can. I really don't think you can. But that is exactly what you should try to do. It is an enormously complex thing you are trying to take on.

Judith — Let me say that I've a lot more worked out in my head than I've shown you.

Critic —   You can't really work them out in your head.

Judith is frozen at the level of her general view of architecture and is unable to come down and get with the business of making it reality. There are several possibilities for why she is frozen there.

One reason might be that she feels her general view is doing violence to everyone around her and that in return they resent her for these views. It just takes up all her energy to sustain her belief in these ideas against imagined and real attack. The reactionary forces must be kept at bay. This sort of argument would support the claim that students in this studio are under enormous pressure to conform to Quist's view. It would be part of an explanation for why only one student out of forty-eight holds such familiar views in a supposedly progressive school of architecture.

The pressure to conform should not be underestimated in a studio like this. There is a powerful, charismatic figure who defines a tone, a level of expectance of everyone, who provides a theory and practice of architecture which he claims is based on fundamental principles. There are four other critics who, although they clearly disagree on issues of teaching style, are never heard to raise voices in objection to the line that is being put over. There are forty-seven fellow students who, from one's own lonely position, all seem to be producing designs based on the one principle. In an environment of constant dialogue around the issues largely as defined by Quist, how long can anyone, even a critic, maintain their own sense of reality and a responsibility to that? The major problem was, of course, that there were no counter models anywhere to be found. Never, in the time I was in the studio, was there disagreement amongst the critics about anything substantial. To maintain one's own position in an environment like that must take incredible ego strength or a full-time output of resistance, which allows very little time for the sort of self-reflection and openness that a student would need to build his/her own design method.

A second equally plausible idea, not necessarily contradicting the above, is that she was in love with her program and could not see beyond it. Against it everything paled into insignificance. She felt it was so important that it was sufficient in and of itself. Her life's work was complete.

There was a good deal of evidence for this view also, or at least the notion that she is one of those people who cannot remain loose enough, or is not pragmatic enough, to enable an idea to take root in a social or physical reality. There is a lot of evidence that Judith was the person least able to distance herself from .the commitments she made. In this case it might be argued that so closely did she identify with her program ideas that she couldn't tolerate the changes which would be bound to be made in the process of translating them into some kind of spatial and physical reality. In exact contrast to John, above, she did not have a strong sense of security about herself and it seemed that any violence done to her ideas was taken as if the violence had been done to her personally.

In summary, she did not seem to be able to understand that Quist, at least, had not been asking her to give up on her own perspectives. He had tried to be helpful to her within her wider view but she had not recognized this. She had polarized the world so that all those who didn't agree with any part of her approach were identified with those who were diametrically opposed to her. She mistook advice, like that from Quist and Roper, as trying to lure her into the formalistic trap while actually they were trying to get her to make her ideas real. That said, it must be remembered that Quist had established a powerful background understanding in the studio about what was and what was not "valid" material for discussion. Judith's interests lay outside this established discourse and, in this kind of context, it is much easier to see how she had mistaken the meaning of Quist's and Roper's advice.

Believing that they were demanding total capitulation to their point of view and feeling that she would fail the year if she did not "give them what they wanted", she had attempted to do so. She had, however, produced only the most superficial imitation of the dominant formalist point of view. She had produced a design which contained all the familiar products of such a process of thought but had made none of the necessary adjustments to her thinking.

In an important sense, through polarization and superficiality, she had managed to resist the important messages she had been given in the first year. In neither case did she really understand how she was resisting these messages

and in the second process she, of course, thought she was "giving in" to their point of view.

Of all the students she seemed the least likely to be capable of the learning stance of "willing suspension of disbelief". For Judith it seemed that to ask her to suspend her belief was to ask her to suspend herself, so closely did she identify with the behaviors and ideas she exhibited. This seemed to mean two things. Firstly, she could not get the necessary distance between these ideas and herself to be enabled to look at them critically. She could justify her stance but not reflect on it.

In the second place, she would never be able to adopt alternative perspectives in order to critically reflect on these either. To adopt an alternative perspective would require her to let go of her present one but, quite apart from her close sense of identity with this stance, it seemed that she feared that, once let go of, it would be lost to her forever.

CASE 9 – Nathanial

On the Kolb test he emerged as the most extreme individual operating in the modes of doing and feeling as opposed to watching and thinking. One would expect him, in such a position, to be the "pragmatist" of the group – interested primarily in action, experiencing the results and trying out alternatives. From some of the observations of his behavior, this image fits him remarkably well in others less so. He was the extreme opposite to Bart, who characterized himself almost exclusively as "thinker", in the test. Interestingly, they sat next to each other in the studio but seldom met because Bart did all his work at home.

He had a B.A. in Social Relations (sociology, psychology and anthropology) and talked, without any prompting, more about the social dynamics of the studio than any of the others. Some of the quoted comments in Chapter 3 are from him. The other relevant aspect of his background was that he had spent several summers working as a carpenter. This becomes an important element of explanation ahead.

Nathan –   When people start out studying architecture
                 you can't get totally into theory – it is
                 like jumping into a pool and you've got to
                 have some lifeline of reality and experience
                 to relate to.

In spite of his Social Relations B.A., he appears very much in the middle of the group on issues of the architect's social role and the necessary relations with paying and user clients. He does not display any strong tendency to define architecture in social relations terms.

Nathan –   I think client input is necessary. You'd
                 hope that they'd deal with the functional
                 decisions. They'd tell me what spaces
                 were needed and what needed to be next to
                 what and so on. I have visions of designing
                 a house in the not too distant future and of
                 taking parents and children aside and asking
                 them how they want the spaces to be. You
                 need input. You can't pull a building out
                 of the air.

He seems from the beginning to have accepted the messages about the architect's prime role as form maker, but within this model had gone through some fairly fundamental changes during the semester.

During the previous semester and at the beginning of this one he felt he had been over concerned with program function as the generator of his architecture. He felt that Quist had been somewhat responsible for this, especially through encouraging him in one particular initial design mechanism. In this he had taken the program and worked out the various area requirements, then had cut out pieces of card to these areas and begun to play with them on board. He saw that about forty students in the class had done the same thing and that their buildings "all looked the same". As a result of this one experience he had tended to overlook Quist's many verbal messages and messages in the program structure indicating an opposite view, and labelled him a "functionalist".

He felt that he must begin again in a different way to develop other inputs and for a while he would refrain from consulting Quist, who was his critic for the semester. He describes here two students in the museum project last semester who had taken an "appropriate" stance –

Nathan –   What you have to admire about these two
              is that we are given a whole series of
              programs and specifications and expecta-
              tions and yet they are able to look at
              it through their own set of norms so
              that their outcome isn't necessarily a
              linear progression from the day you handed
              out the stuff. They seemed to be able to
              develop another perspective, an outside
              input. In the museums most of us were hung
              up with program and function and the schemes
              really suffered and became pretty deadpan
              in the end –they seemed to be able to put
              something into it that the rest of us didn't
              have. I'd behaved like a company man and it
              wasn't architecture. (The theme of architec-
              ture being "creative" and springing out of
              the architect is raised again).

One of the influences that had caused him to recognize this was the dramatic review that had been delivered on them at the end of that museum

project. His account of the review can be found in Chapter 3. It was, of course, also this experience that had catapulted James into his experiments of this semester.

In the sense of rebelling against the program as generator and seeking other inputs through his own set of norms he was, of course, actually adopting the attitude to architecture which Quist was attempting to convey. His psychological gains, however, must have been substantial as he was one of the students who laboured uncomfortably in the dependent role they felt that Quist cast them into.

Nathan —   It is much more reassuring to do stuff on
             your own than to be patted on your shoulder
             and led along every step of the way by some-
             one else.

There were, however, other perceptions of Quist's position that he took exception to.

Nathan —   A lot of studio is taken up with analysis.
             He is hung up with geometrical formalism and
             tries to delete everything down to this very
             intellectual level. I don't know how much
             room there is for the emotional and psycholo-
             gical aspects of architecture — he over ration-
             alizes — I think in every building he tries to
             find the Palladian plan.

Through seeing the necessity for analysis he was one of the students impatient to get into the "design" work. In spite of all Quist's attempts, many students still didn't consider the analytic phase of information gener-ation to be "design".

He seems to have been ready to accept the notion of deep structures at their most abstract level, i.e. the belief in the necessary "order" of a piece of design, an "elegance" which anyone can recognize whether they like the building or not. He seems never to have accepted the notion that there are significant deep structural constraints in a design method. He was one of the most outspoken in the studio about the failure of the present system to help them develop a method.

Nathan –

The First Year, as I understand it, is supposed to be an introduction to design methodology – how do you go about formulating your own design methodology? after a point, you have to strike out on your own. Maybe that is what we are all experiencing – we are a little hesitant, anxious, and confused about it all. A lot of people have taken that initial step they don't accept everything as gospel.

Quist is much more authoritarian – he feels there is a right way and a wrong way and there is very little room for greys. It is very re-assuring to have someone come up and say "it is this way" – you jump and say "My God! it is this way. I've got a handle on it", but afterwards you realize there are other ways.

He recognized that Quist's great talent was in helping students to come up with a formal ordering idea for their schemes – the following example is from an early desk crit with Quist –

Quist –

In your choice of site and your relation-ship to it, you turn this into a romantic and highly complex idea which is going to take great design skill to pull off. All I can tell you is to try and if you get a hydro-monster, you get a hydro-monster and you have to try again. I'll just tell you what the problems are, but I won't solve them for you – well, I'll give you the generic solutions to the problem, but I have to have paper ....

First you have to make up your mind whether this thing is that with an arm coming out of it or a hinge with something coming out here and here. At present the two ideas are uncomfortably intertwined. Part of it makes me think that this is the governing idea, with the wall here ... right? On the other hand, this here and the way this is jointed makes me think of that. (He has drawn the two possible formal ideas on the paper).

Besides all that, this is going to be an ugly bottleneck anyway. It might be better if this was this kind of shape and the glazing came around like this.

Nathan —   Well, funnily enough, that is what I was
                  going to do ....

Quist —   Now because of the strange angle ... (he
                  talks for maybe twenty more minutes).

The following piece is rather lengthy, but it is a very explicit
description of how he came, in the second method he used, to a formal idea.
It is quoted here in full because it is another example of the rich infor-
mation that is available to critics. It is one of the conclusions of this
report that, if methods are to be addressed either in board crit or lecture,
it cannot be done by beginning with the drawing in front of the student, but
must get at this kind if information as well.

Nathan —   I began with a two-dimensional composition
                  in plan — I took the program home and delib-
                  erately didn't have it in the studio to begin
                  with — then I tried to fit the pieces into the
                  composition. That was what I presented for
                  the Mid-term Review. It wasn't a building yet,
                  but a sort of diagram composition. I wasn't
                  sure if the pieces would fit in or if it would
                  stand up. Now I'm trying to compromize by
                  fitting the pieces in, to think of three
                  dimensions and of structure. I've tried to
                  impose a formal order on top of the 2D composition.

                  I thought about the house I'd analyzed for the
                  "precedents" class — I thought of the organization
                  and the way it had worked. I'd seen another
                  house on the cover of P.A. organized the same way.
                  They had a very solid wall which was penetrated
                  with a narrow band of cells stacked up against
                  that wall. That image became a sort of spring-
                  board. I'd never actually seen the site and
                  when I broke away on my own, I went up to
                  look at it and it was very different than the
                  way I'd expected it to be. It made it impossible
                  to do what I intended to do on paper. My
                  building would have had to go through huge rock
                  outcrops and span across other mounds like a
                  bridge. When I think of this idea of a "wall" —
                  I got to the site and there were these two huge
                  rock outcrops in a sort of valley. I thought
                  "if I could use my building to close the gap
                  between those two big rocks, then I'd make an
                  enclosure with the wood on the other side" —
                  and that is where the idea of the wall came in.

> It was almost as if the recognition of the
> wall in the house analysis and on the P.A.
> cover coincided with the idea generated by
> the site - I guess I couldn't have done it
> without the site.

The major differences between the method he used here and Quist's
advocated position was his greater emphasis on the land as constraint and,
in general, a rejection of the notion of Quist's formal universals. They
both agree on the concept of beginning with a "big formal idea" and both
expect previous experience and the insight of the designer to be major inputs
to the idea.

In his presentation at the Mid-term Review he had invented a metaphor,
as suggested, but as in so many cases it was added after the fact. In
Nathan's case the metaphor didn't seem to have much to do with his building,
as indeed Roper pointed out in the review. Quist and Bream, however, took
him up on it and began to use it to generate some suggestions for development.
The following is probably yet another example of the familiar theme in reviews
of critics modelling a method, in this case seemingly deliberately, for the
student. It is a good example of how Quist intended them to use metaphor -

Quist -
To complete the metaphor (of corridor as
"street"), it goes from place to place and
you might just argue for that meeting space
as a place - but it would need more physical
identity if that is so. Secondly, if it isn't
just a linear street like this but has some
spaces which are community and have lateral
movement also, then you should consider that.

Bream -
Where the street metaphor falls down is in
the inevitable associations one makes with
stores like grocery and hotel and others
that are impulse type stores that you might
drop into. You don't have any clear distinc-
tions here. Do you have impulse stores? My
thought is that there ought to be a distinc-
tion between impulse stores like music room,
library, and your classroom ....

Quist -
Which is where you have to go to anyway.

Nathan was particularly skilled at making models and even made one as the requirement for a history option. His carpentry background not only contributed to his skill at this but, much more importantly, to his being able to impose a level of reality on to the process which none of the others could manage.

Nathan —   With the model I approached it as if I was
             building the house. It helps me extract
             what the building was about. If I try and
             put the pieces together I know how it's done —
             how the columns meet the grid and that the
             grid is 12' away from this wall. I can see
             why and I can imagine lifting the 2 x 8s
             around, banging them together and coming up
             with a building. Some other exercises were
             too academic for me, I couldn't make the
             link between what I was playing with in front
             of me and the reality of a building.

He had also discovered another key element in the development of communication skills — perhaps an insight that could have helped over forty people in the class —

Nathan —   There are two kinds of graphics — the diagrams
             to yourself and those you use to describe to
             others. If you look at Corb's notes to him-
             self, they look as if they were done by a
             third grader, while his renderings are beauti-
             ful. I'm too self-conscious. I still think
             as a First Year student of someone coming and
             looking over my shoulder, which they often do.
             We don't get into graphics as a means of com-
             municating to yourself.

Perhaps because of his carpentry background, or his model-making skills, or just his simple pragmatist's concern for how to make all these things real, he was one of the first to talk of structure as a constraining variable on the design. While most of the others still talked of structures in terms of "well, I know I'll need it one day", he was beginning to discover how it was a necessary consideration in space making.

In his reflections on his relations to Quist as critic, he takes a more assertive role than most —

Nathan –   Quist has an ability to look at things that
               I only hope I'll develop one day. He is very
               concise, very poignant, though his formalism
               sometimes gets you down. He carries around
               with him a kind of energy which you just have
               to absorb – I mean, you have no choice, which
               for a First Year Studio is really a positive
               thing and for a class of fifty is the only workable
               thing.

               The problem with him is that people have become
               intimidated by him. The general feeling is
               that if he is your critic, you have to watch
               that he doesn't impose himself on you too
               much so that you become a mini-Quist.

He was the most articulate spokesman in the class about the lack of a
means for students to tackle the issues of developing a method –

Student –   Look here we are. We are supposed to be
               developing our own personal methodologies.
               Here somehow the link between the designer
               and the building isn't made; we are working
               blind and there needs to be some accommodation
               made for that. It is a nice idea that all
               architects are artists and they sit around
               and wait for their muse to come and tap them
               on the shoulder and that all of a sudden
               there they are with a methodology. But I
               don't think it works that way and I kind of
               feel that a lot of the frustration around is
               due to the fact that everyone is sitting
               around waiting for their muse to come and he
               never shows.

Many students took it for granted that they were supposed to be build-
ing their own "personal" method in this way. It seemed to be tacitly
assumed that this one method would be unique to themselves and capable of
handling the wide range of possible problems and problem contexts encoun-
tered in architecture. It seemed not to have occurred to them that different
methods might be needed for different problems and problem contexts.

As they expected to build their own "personal" methods, it is not sur-
prising to find that students felt quite free to reject advice if it didn't
fit with their own natural inclinations. In this way an ideal about what a
design method should be seemed virtually to ensure that most students engaged

only in what is called ahead "simple" learning. In this, development will only take place along lines already laid down in an individual's habitual way of proceeding. Anything which lay outside of this would be rejected.

Nathan's case also reveals a prime example of the confusion generated between conflict over learning issues and conflict over substantive issues, which was generated by the taboo on discussing learning issues which seemed to exist in the studio. As in several of the cases he felt the need to react against the learning role Quist cast him into. Unable to deal with this directly he had naturally fixed on issues of substance as the vehicle for his expression of resistance. In order to do this in his case it had been necessary to misinterpret Quist's messages about substance in order to feel free to reject him and yet continue with his own procedures.

CASE 10 - Simon

Simon was one of the people in the Kolb test who described himself as a "thinker" and "doer"; someone who habitually moves from a clear concept of what to do, or what an experience will be to a test of this in action. In Simon's case the testing in action is particularly emphasised. He had preferred maths and science at school and said -

Simon -   The other subjects at school didn't have
                    this firm basis - the basis of learning a
                    method of how to do things.

This kind of inclination should, of course, have inclined him to Quist's teaching method and he had trouble with learning from one of his other critics.

Simon -   The attitude seemed to be to let you puzzle
                    everything out for yourself, which didn't
                    seem to me to be getting me anywhere. I
                    wasn't getting the feedback that I could use.

Of the twelve, he talked most about the political implications of the architect's role. His own politics had brought him into conflict with the role that he felt Quist cast students into and with the role implications of Quist's theory of architecture.

Simon -   There is this feeling that this studio is
                    somewhat autocratic. There is this point of
                    view which Quist wants to get over but he is
                    not willing to admit it. Sometimes, therefore,
                    in instances when he is promoting it he is
                    often not willing to discuss it.

That statement reveals two attitudes. First an acceptance of Quist's rationalist principle and even a claim that he doesn't take it far enough. Secondly a resistance to a state of dependence on Quist's authority, a desire to have the whole story which will then be accepted or rejected. This theme of objection was more muted in the responses of others of the twelve but it is there in many of the cases. The complaint seemed to be that Quist promised "principles" but in the end often did not deliver on them. Simon's objection, given that he accepted the message that rational principles were deliverable, was that they were often not delivered and that Quist reverted at times to

empty assertions of authority. The following is an example of Simon openly challenging Quist on this in one of the analysis sessions. In the studio — two slides were on the screen side by side —

Quist —   Oh, my God! Look at that! The little building
                   you can have.

Simon —   What do you like about the big one?

Quist —   (Doesn't respond but talks on).

Simon —   Wait a minute now. Let's get our prejudices
                   straight (much laughter). What am I supposed
                   to like about the big one?

Quist —   About the big one? Well, what I like is the
                   way the little piece pulls out of the bigger
                   piece. And it grows in all kinds of ways in
                   going round the corner there.

                   What I don't like about the other one on
                   the left is that it's just like ... well
                   it's almost any old ice cream parlour ...
                   I don't know, it is just terrible ...
                   Disneyland what!

In referring back to the incident Simon recalled —

Simon —   It seemed that Quist was saying "this is what
                   you should like" without giving any reasons.
                   I was talking to Luke the other day and he said
                   that Quist was actually telling us what to do.
                   There is an illusion of freedom but in the end
                   you are told.

The authoritarianism he discovers is to be found in the fact that criteria are not given for assertions. He felt he was expected to accept them on faith and he wasn't prepared to do that.

The rejection of carte blanche authority becomes a major theme in both his thinking about his role as student and eventually as architect. For him both the critic and the student must be satisfied with a result and eventually both the architect and the client.

8   Simon -   What is wrong with the whole program here is
that it is just not designed to respond to
student input. It is the old philosophy -
"we know what you should learn".

I've maintained pretty much the same attitude
over time - my basic feeling was I understood
what they wanted me to do - I'd be prepared
to make compromizes to their point of view
but that I knew what I needed to do. When
it comes to a relationship with client, you
must to a large extent do what they want or
you don't serve a function.

One of his complaints about the studio was that the political impli-
cations of design behavior were not discussed. He rejected Quist's claims
that his method is a-political and he gave political reasons for why he
accepted elements of it and rejected others. He accepted the notion of the
insights of the designer being a crucial input to a design not only because
it cannot be avoided but also on the grounds that otherwise the designer
becomes alienated from his work.

Simon -   The problem I have with architects who feel
they must adapt to the environment totally
is that they become alienated from their
work; they become machines at work. I have
some friends who are trying to set up an office
where the designer does not sit back and res-
pond to clients but actively goes out and
generates the problems he would like to do.
It is the search for a social role, which
is other than just technician - obviously
I feel there is one somehow.

He places great emphasis, as Quist, on self-awareness, but the differ-
ence is that for him it is political while for Quist it is seen as closer
to an awareness of relationship to space. For both of them the medium of
expression is form and Simon thus accepts, but in a rather different way,
the notion of the architect's primary role to be that of form maker -

Simon -   Well the basic conflict between form and
function is usually answered by the cult
of image makers who insist that basically
the form is not dictated by the function -
not only from the point of view of function
but also from the point of view of image.
And that's where I am.

The functional responses, however, are also as much to do with the image of the building for the people who will use it, or with its symbolic meaning to them, as it has to do with the need to respond to issues of use.

Simon —
> I'd like to get more into sociological studies of architecture and what it means. There is, for example, a need to analyse the particular vernacular of a culture you are designing for.

Over the issue of deep structural constraints on spatial issues he is ambivalent. Partly this seems to spring from two irreconcilable needs on his part. In the first place, as given his operational biases, it would be convenient to be able to accept a process based on a coherent set of principles. While he had quibbled with a lack of explicitness at times, on the whole, Quist could be seen to be providing such principles. The other side of his needs seemed to argue for the rejection of these principles on political grounds. He had a strong personal sense of himself as dissenting from the social status quo and presumably, therefore, a need to reject the theory of deep structures except at the most abstract level, where their existence or lack of it would make no difference to his architecture one way or the other.

Simon —
> Quist intends us to recognize that there are certain fundamental architectural forms which can and should be adopted to the particular situation being dealt with. You don't have to consider whether they suit the particular building you are trying to do and therefore you have a respect for history and precedent.
>
> I think that perhaps there are events which are much more important which derive out of the uniqueness of context. I've talked to a lot of the people who say Levi Strauss, for example, is hogwash. For myself, I'm not sure that I've completely formed my own opinion.

He had been much more prepared to accept the need for an overall coherence to a design and to accept this as a deep structural need —

Simon —
> One great leap of insight I had this semester was when I went to talk to Quist (who was not his critic). He said my building lacked an

> overall organizing idea, that instead of
> doing it the way I had, I should have made
> it a continuum of open to closed and that
> would have implications for the volume.
>
> I began to see, I thought, how there was a
> lack of overall discipline in the approach
> that I tended to take. This awareness was
> then reinforced by my critic, who said that
> you have got to start with the simple and
> move to the complex rather than vice-versa.
> The notion was that it should be slightly
> dumb and ordinary if it is to be understood.
> I had too many things going on in there.

He generally rejects the existence of deep structural constraints on an
appropriate initial procedure, while the procedure he claims to adopt is not
unlike the one Quist advocates.

Simon —
> The approach I tend to use comes from people
> like Charles Moore and Lou Kahn. You come to
> the problem knowing what it is and having a
> store of archetypical forms. You have this
> form in your mind and you say "I want to see
> this form on this project" and then you try
> to manoeuver the form to fit the project.
>
> A method of beginning that I've seen others
> use and I've wanted to try is to begin with
> figuring out how big the spaces needed to be,
> what their inter-relationships should be, what
> kind of matrix you can set up and then somehow
> putting all this together and getting a form.
> One process seems to be productive and adaptive
> and the other rational and additive.

He had also been much influenced by Quist's suggestions that they use
metaphor as a means of evoking this initial sense of what a building should
be. In the analysis of the school he had gone to it had seemed to him that
the appropriate metaphor was school as "factory". In the second analytical
exercise, when most people had looked at some well-known school in depth,
he had chosen to look at the history of school buildings in America.

Simon —
> One of the reasons I chose not to analyze an
> existing school was because I was curious about
> how schools were before the factory image. The
> idea was there before my analysis but that may
> have helped define the "house" metaphor.

> I began my design with the idea that it wasn't
> going to be a factory but a house. At that
> time I had certain images of houses in my mind —
> so I designed one and adapted it to the problem
> and adapted the program to the image.

He had, at different times six pitched roofed —"little red school houses",
sometimes in seeming random relationship to each other and sometimes in
rather formal relationship. These units were situated off a circulation
system with the larger scale and more communal spaces like gymn, library,
administration, etc ... organized as one major formal block. The school
houses represented the classrooms, study rooms, home rooms of six
separate streams of students. Finally, the scheme was reduced to three
"school houses" off a straight circulation space with the other facilities
behind it. This became his "organized" framework after his earlier rather
random distributions.

His representations of the process he went through is not totally
accurate in the sense that he did not follow what he describes as the Moore
and Kahn approach for the whole building. Once the"house" idea was generated,
this became the unit but the layout of the rest of the school and the
relationships between units was achieved by an extremly lengthy process of
trial and error. Even the layout within the house units was achieved not
by an initial idea but by endless trying out of permutations of potential
relationships. It seemed that if, given certain assumptions, there were
a hundred possible combinations or relationships of these, each would be
tried out one by one. It seemed to take him longer than most to realize that
it was his assumptions that were at fault not his inability to solve the prob-
lem which they presented him with.

This process, as he recognized, was greatly hindered by an inability
to be flexible about his priority list and to recognize how the discovery
of the new priorities often meant the complete overhaul of his assumptions.
In the end through his conscientiousness and hard work the readjustments
were made but always the process was a painful and seemingly worrying exper-
ience. He was another example of someone who tended to fall in love with
his assumptions and early decisions and who seemed not to have discovered
a method, as John had, for getting over it.

As in so many of the cases, his house analysis exercise at the end of the first semester had been influential on aspects of his school design.

Simon —
> I realize that the Aalto house which I did
> for my house analysis influenced my design.
> My entry sequence has always been one of
> coming in and having to turn 90° and I have
> rejected all schemes that implied a straight
> in street experience. In the Aalto house that was
> one of the main characteristics. I felt I wanted
> that but I didn't think of the influence of the
> Aalto house for the longest time. It has also
> had some influence on my thinking in terms of
> volume.

Along with Nathan he represented the extreme desire amongst the twelve to impose a degree of "reality" on the process. It was not so much that he didn't recognize the reality of the process of design even in a simulated environment but it was a recognition that information from a real environment changed the design product.

Simon —
> It is funny, many of us got pulled into the
> idea that the contours represent the site —
> then we noted that, first of all, contours
> don't exist on the site, although a lot of
> people were amazed to find that out and also
> that the contour map seemed to have a lot of
> discrepancies from what actually existed.
> They also tended to leave out crucial data
> such as the location of boulders, etc. There
> is a great deal of unreality in what we do
> such as no consultation with people who might
> be potential clients. I think that is a bad
> thing but educators seem to want to make a
> distinction between office practice and school.
> They don't want to bring too much reality into
> the school.

This and the following statement reveal a strong inclination to include into the design process as central variables elements which Quist has wanted to play down temporarily so that students can learn to handle the problem at a simplified level.

Simon —
> You begin to get upset when you realize
> that there is no reality to the design. For
> instance, I was willing to ignore the building
> code and build a two storey wood structure but

one of the things I didn't realize was that I
also was building in certain problems of
mechanical ventilation, which I didn't really
understand. Then there was also the structural
thing, which I don't fully understand at all.
Those issues are important to me and yes you
do suspend reality but those issues can be
helpful in design .... Even now, when we
are supposed to provide structural diagrams -
I can supply the diagrams well enough but
I don't understand what is going on.

In some senses, of course, these are natural uncertainties, coming as
they do at the end of a first year. It reveals a thoroughly healthy desire
to pull into the arena other dimensions which he knows are eventually
going to have to be dealt with.

In other ways his discomfort is more fundamental. Along with Matthew
he seemed more conscious of the implicit understandings in the emergent
culture of the studio, which, in a subtle way pull a student into a looking
at architecture in a certain way. It is not enough for him to be told -
"you will be able to include these variables in later" because, in the process
of learning to operate without them now, his whole development for ever more
is likely to be skewed. He felt he was learning to "practice" an architecture
under the tacit rules that consideration of one's own perspectives and
insights and their interpretation in form were the important variables, while
issue of structural constraint, cost constraint and, more importantly, client
constraint, were not important.

Not that he wholeheartedly disagreed with Quist, only that he wanted
alternative perspectives as well.

Simon -   In a sense I do believe he is putting forward
                         a particular point of view which does not
                         necessarily connect with all the things that
                         architecture should be connected to. However,
                         he is presenting a view that is worth thinking
                         about. The responsibility for going beyond
                         that is not really his but the Dean's, who is
                         responsible not to present only one point of
                         view. Maybe we'll get another next year but
                         that worries me because the main idea is not
                         that each studio should be a shift from one view
                         to the next but that there should be choices within
                         each studio.

Simon is a thoughtful and intelligent person but his demand for a multi-perspectival view, to be delivered within each studio, seemed to be mainly a device for avoiding discomfort. He did not seem to be willing to go more than half-way on Quist's position and it is unlikely that he would do so on any of the others. It seemed that such a format would give him the maximum chance of finding a perspective which was a development of his own basic instincts. In the words used in the final chapter, it seemed that, for him, such a format would enable him to avoid the discomfort of "complex" learning while engaging in "simple"learning.

CASE 11 - Petra

Petra had a B.A. in mathematics and had taught maths at a high school for six years. She had become interested in architecture by attending evening lectures but until arriving in the studio had not picked up a pencil to draw with since she was a child.

Her favourite subject at school had been chemistry and she felt that this and her maths training had inclined her to an operational mode in which clear cut principles of design were applied.

Petra —   I was starting off at perhaps the basest level in the class. I had no experience of this kind of thing at all. You see I was trained in mathematics, in the deductive process — I need to understand what I am going to do before I do it. Maths is purely intellectual, you learn to understand it and to work within the system. It seems that Quist has the most valid approach for me because I have been trained in this intellectual vocabulary.

She had found Quist's Principles course particularly helpful and clearly accepted his messages about the rationalizability of the major themes of architectural knowledge. The two "best" students in the class to her were highly methodical. Of one of them she says —

Petra —   He is so methodical and organized, it's incredible you could see his building growing daily — each day a new yellow sheet and a new development.

What I like about these two is their intellectual approach — I best relate to that because I feel architecture is something which can be learned intellectually. I don't think it is simple enough to be written down one, two, three, four but there is something like that going on.

Quist was her critic and in contrast to the major messages she had picked up from his teaching he would rather have helped her develop what he saw were her "literary talents". He saw his task to be to help her translate an ability he felt he saw to think in literary metaphor to think

in visual metaphor and also to help her see how discovery in the problem
solving phase could be used to feedback and change the problem definition,
one of his major intentions.

One of the most common mechanisms Quist developed to encourage students
to be looser about their work was to model the process of design thinking
while at their board. The following is an example from an early crit with
Petra —

Quist —   Now in this direction, that being the gully
                   and that the hill, that could then be the
                   bridge, which might generate an upper level
                   which could drop down two ways.

                   (He goes on to describe the implications of
                   the level changes) ... the section through
                   here could be one of nooks in here and the
                   differentiation between this unit and this
                   would be two levels. (He describes how the
                   top level could become a gallery).

                   If it happens this way the gallery is north-
                   wards — but I think it might be a kind of
                   garden — a sort of soft back area to these
                   (hard fronts) ... let the land generate some
                   sub-ideas here which could be very nice.

He has invented three new programatic elements — "nooks", a "gallery"
and a "garden".

Petra —   Where I was hung up was with the original
                   shape (in plan). This makes much more sense.

Quist —   Much more sense — so what you have in gross
                   terms is this (he points to the gallery) it
                   is an artifice, the sort of thing Aalto would
                   invent just to give it some order — he's done
                   that on occasion.

It seems that students could not recognize that the major event in the
crits was often nothing to do with their own designs but that these were
merely the vehicles for Quist to model a mode of procedure. Students were
unable to stand back and see this so concerned were they with their own design
and its future. It becomes a major theme of the conclusion that students are

hindered from learning at desk crits by an over-concern with their own product. One of the major distinctions between Quist and the other four critics was that they tended to indulge this over-concern.

Petra was full of praise for Quist as a critic but even she was troubled by the issue of Quist imposing his ideas. Again she seems to have been unable to stand back and look at the modelled process and was only able to see the event in terms of the product of Quist's behavior for her design.

Petra —
Now I also realize that when Quist leaves my desk there is something there which I did not come up with and that he did come up with and that is disturbing. You feel that if you use it, it is not yours yet I know if I sat here for a million years I wouldn't think of some of the things he thinks of. I said to him yesterday that it is very difficult to do it without him.

Unless the student's detachment can be nurtured it seems that the desk crit is probably not the correct format in which the critic should model a design procedure.

The productive aspect of Quist's behavior, which runs counter to the above, was that he inspired students to feel that the work they had begun with could lead somewhere exciting. He seemed to be able to take the dullest idea and demonstrate to the student where it might lead them. At an early stage that ability to inspire seemed to be one of his qualities most admired.

Petra —
Quist has the ability to help you see some worth in your work. He is none-the-less definitely an authority figure, which I can get on with personally but can see it causes problems for some people.

The main theme of his authoritarianism comes, of course, from his intellectual claim that his mode is "correct" in some fundamental sense.

Petra —
In the larger political sense I can see problems with him, there are different approaches to architecture and he is giving us very much one view. You see, I don't have any inkling of alternative approaches at all

and that is probably dangerous for me — I
don't even know the way I'm being shaped
and that is a problem.

Petra had become, as she described it, "a sort of social center" in the
studio. This is probably because she was unusually respectful of the needs
of others and displayed an understanding of where their particular perspec-
tives came from. This undoubtedly had a lot to do with the experience she
had had as a teacher and also with the fact that she was older than most of
the others. She talks of the role of the architect in terms of the architect
as teacher in much the same way as her friend Phillipa.

Petra —   Architects with a conceived educational role
               in society around issues considered irrelevant
               by that society are a menace (but she feels
               that can be taken too far). I can analogize
               from my experiences in the teaching profession.
               Parents always come and think they know how
               you should be doing things — and their input
               is very important because it is their child
               and sometimes their building. But if you
               believe in being educated as a professional at
               all, you must believe you will come upon issues
               that will be important to you and you will have
               to stand by. I believe that if I deal reason-
               ably with people, they will deal reasonably
               with me.

This sort of stance about the role of the professional leads her into
the typical dilemma about an appropriate architectural method.

Petra —   I'm torn between the classic problem of an
               arbitrary concept unrelated to program on
               one end and a concept that merely derives
               from program on the other.

She was one of the students who had discovered, during the first semester
the need to take a more assertive hand in her own education. Before a desk
crit she would have a list of issues she wanted to deal with and she'd make
sure each item was covered. She'd also learn to push for explanations.

Petra —   I remembered that during a crit last term
               a scheme I had liked got changed dramatically
               and I never went back to the original scheme
               or discovered how I got into the new one.

> I'd do things and some would get negative
> responses and some positive responses but I
> never knew exactly why or how they came about.
> You see I've learned to ask — when Quist says
> "No!" I've learned to ask "why?". ·

When asked if this discovery of her own needs as a kind of client in the studio had influenced her thoughts about a professional role she confessed, as did everyone but Simon and Andrea, who were asked this question, that she had never considered the similarities between the roles of student and the client.

Her admiration for Kahn's architecture is based on the necessary dichotomy between the need for an imposed coherence and formal identity and a similar need to respond to the context.

Petra —
It (one of Kahn's buildings) is a beautiful
object but it doesn't say "look at me! Look
at me!" so that everything around it faces
away. He has a way of creating an organized
plan, but without the linear just setting
out of things. There is a real free floating
use of space even though it is organized and
not confusing. The very worst thing you can
do, I'm sure, is just sit a building out in space
like a sore thumb — a direct expression of your
own ego.

She accepts Quist's messages about the architect's primary role to be form maker and probably subscribes to a more geometrical interpretation of the meaning of form.

Petra —
Basically in the first term I had learned
that using a geometry in architecture was
the thing to do so I was using a geometry
but I had no reason for using the particular
geometry I was using. The geometry seemed to
become an end in itself and I wouldn't break
away from it. Perhaps a way to do that is
to first develop an idea and then let the
geometry spring out of that. I was tending
to impose something.

Quist was attempting to get her generative idea to be formal but more evocative of her interpretation of the problem. Because she knew geometry

she had tended to begin with that. By the end of the semester she was beginning to get his message.

Accordingly during this semester the geometry did derive out of the initial idea. The problem in Quist's terms, however, was that the initial idea was not a big organizing idea but something that emerged from a detailed study of classroom space needs. The development of a classroom arrangement, while nice enough in itself, was never able to successfully relate to the other major spaces in the building.

Petra —   My project was generated initially by the
need for a certain kind of indoor/ outdoor
relationship for the classrooms. I began
with six staggered rectangular plans for the
classrooms but decided that this didn't provide
an appropriate indoor/outdoor relationship. I
then changed to the L shaped plans. The idea
to focus on the indoor/ outdoor distinctions
came from my analysis of a Frank Lloyd Wright
house. It was one of the things I discovered
in trying to work it through.

She later claimed that this analysis exercise was the single most important event of the year for her and that until she had done it during the Christmas vacation she had had no idea what Quist had been talking about in the Principles course.

She seems not to have taken a stance one way or the other about the existence or not of deep structural constraints on potential formal solutions but had accepted as a major tenet the need for an organization and coherence to a solution.

Petra —   (Of another Kahn building) — there is an order-
liness but not a sameness. There was an individual
approach to each room but they were not obnoxiously
individualized. There are people here with no
notion that there needs to be an idea holding
the thing together.

There are several good examples of Quist pushing for coherence in her desk crits —

Petra —   No — it gets access this way.

Quist —   You mean through here? So there is a conflict.
                  There is something of great regularity implying
                  this kind of entrance but really it only happens
                  once in this case. Here it goes this way and
                  here that. The relationship of general zone
                  to each teaching space is significantly differ-
                  ent each time that you question why are the
                  spaces so symmetrical in the first place.

Petra —   The problem with trying to make that more
                  regular is that then you have to put the
                  stairway right through here — that puts this
                  area totally out of existence.

Quist —   No you don't have to — (he goes on to show
                  her a solution to the problem. In the process
                  he has to invent some new spaces) ... I also
                  think these ante spaces will make the entry
                  from your classrooms to your big library space
                  somewhat more structured — but which leaves you
                  freer to make this more open.

This business of continually reinventing the problem to escape from an
insoluble difficulty with the solution is one of the most difficult modes
for some students to accept. In an earlier review Quist had caused much
laughter by telling a student he needed to do a particular thing and then
saying —

Quist —   Now the problem is to discover an excuse for
                  having done that.

Bream had caused similar mirth in another review over the same issue —

Bream —   You can't just stand there as an architect
                  and say "Oh! I don't know why" — think of
                  something.

In these cases the problem is to find the problem for which this new
invention is the solution. The whole issue of looping through the problem
setting/problem solving process is an alien mode to so many of the students.
For Petra part of the problem lay not so much in falling in love with her
idea but in exactly the opposite.

Petra —
> The problem was that I kept looking for the
> solution to really excite me without realiz-
> ing that I didn't have the skills yet. This
> term I'm trying to take my natural inclination;
> and work that through a bit, hold on to it a
> bit longer and try to work it out further.

High expectations about one's effort can be the cause of a debilitating amount of internal conflict, especially if there is the feeling that the initial idea has to be either good or bad in and of itself. Part of several students' problem seemed to be that, having little idea about how to proceed with the development of an idea, the idea had to stand as acceptable or not in its early initial state. She desperately needed something like John's listing technique or Joanna's, in the next case.

In the following example from the crit Quist is explaining another variation of the above looping theme — this time it is looping to bring two solutions to elementary problems into some kind of congruence —

Quist —
> The principle is that you work simultaneously
> from the unit and from the total and then go
> in cycles — back and forth, back and forth.
> That is what you have done a couple of times
> stutteringly.

By the end of the semester Petra has got the concept of looping between program and solution in her head though she still seemed not to have oper-ationalized it in the scheme in any thorough way.

Petra —
> That idea changed the program a bit but
> that is the kind of adjustment which has
> to be made to make the program meaningful.

In summary, Petra's case is another interesting example of the way responses which related to messages about teaching/learning found expres-sion in and overlapped with responses to the substantive messages. Petra seemed anxious to play the role which she felt Quist was asking for but she justified her stance on the grounds that it was because Quist's advocated procedure was the most suitable to her and her maths background. Actually, of course, he was trying to get her to adopt procedures which were quite antithetical to her maths instincts.

To begin with her responses to messages about substance and about learning had been passive. As she said she had found no way to work at either of them. Later on she had begun to take a hand in her education, asking for clarification when she didn't understand (a rare behaviour in this studio), having a list of issues she wanted covered in a crit and so on. In this sense she was quite an unusual case of a student learning how to learn in what seemed to be quite a new way.

It had taken her much longer to get a grip on her development as a designer. Until the analysis project at Christmas she confessed to having had no idea at all what Quist had been talking about. By the end of her second semester she still had very little idea but some important messages, which must have been quite new to her and her initial orientation, seem to have been taken in. Her recognition of "looping" between problem setting and problem solving is perhaps the most dramatic example. This willingness to take in quite new information contradictory to her natural instincts is what is called in the analysis ahead "complex" learning.

CASE 12 - Joanna

Because ten of the eleven students had named her as " one of the best" in the class, and because it had been impossible to track down the original twelfth "disciple", Joanna was asked rather late into the semester if she would agree to be one of the case students. She was one of the three in the group with an extensive background in the visual arts. She had done a lot of painting and sculpture, had worked in two small architect's offices and had an M.A. in Art History.

Her's is a complex case but one particular theme has been chosen around which to recongize her reception and responses to Quist's messages. In thoughts about her role as a student and as a professional designer she consistently returned to the conflicting themes of constraint and freedom. It is there in all the students' attitudes but for her it is a conscious part of everything she does. Her desire for both seems to become a conscious irony, almost a starting point for thinking about anything. The ability to handle irony, to face the situation of wanting two irreconcilable things, is of course one of the themes Quist speaks about a good deal in looking at student's work and in his Principles course. Others of the twelve have talked about it, but none so directly.

In each of the cases here, where the theme is raised, she has delibe-rately let one of the two sides take control in order to get the benefit of it. Thus in her relationship to Quist she had gone for structure, for constraint, and she was very glad of it.

Joanna —   I don't think we are getting that
                  doctrinaire a line. But in a way it is
                  laziness, you want a quicker way to get
                  there. I feel that even if someone is
                  very dominant now, I will always be able
                  to undo it later. I feel many of the
                  best people learned in that old Beaux
                  Arts tradition where they got a very
                  authoritarian line but later were able
                  to get out of it.

She worried about it at the time and felt maybe that she wasn't making up her own mind or was just sitting around waiting for Quist to do it for her.

Joanna —   In a way I completely trusted Quist's judgment and worried about it. But in looking at it now, he doesn't work that way — he works with your own ideas and never imposes his own except in the most positive way of helping you extend and see the implications of your own idea. My instruction from him was top notch and I would not be doing what I'm doing now if it hadn't been for him.

This choice to go for structure in her early education though, as she says, she expects to reverse the process later, is interestingly mirrored in her design of the program for the school. In her notebook she has written —

Joanna —   Freedom is discipline — the step beyond
(notebook)   progressive education. Children not leading discovery but being led to it. (And later on) freedom from something is not freedom.

The same theme of irony crops up when she contemplates a social role for the Architect. The mid-term scheme she had most admired was a building designed simply to respond to an educational idea. The critics had all talked of the form of it and whether he had a coherent parti — and not addressed the "real" ideas in the scheme as she saw them.

Joanna —   I'm torn between the desire to make an artistic statement and a respect for the more functional social, low-key kind of things he was tryting to do.

The "artistic" side has its own justifications in the notes —

Joanna —   This above all others to thine own self
(notebook)   be true. And it doth follow, as the night the day that thou cans't not then

be false to any man.

> To be authentic, the artist must be
> alone — must be confessional, un-
> ashamedly intimate.

The other side of this comes out here in her interview, talking about a conversation with the student whom she considers is one of the best in class —

Joanna —
> I remember talking to her about how,
> before we came into architecture, we
> always considered it in terms of its
> social implications and how both of
> us, who were trying to be painters
> and sculptors couldn't get very far.
> Who was it for? What was it for?
> We came here with the idea that archi-
> tecture could be something more, but
> we found that, once working, we quite
> often got caught up in the poetry of
> it all rather than the social impli-
> cations. We hoped we could get back
> to these.

Pinned above her desk is a quote from Aldo Van Eyck, recognizing how the skies provide children with snow as a material for their own ends — and finishing with a plea to architects to provide something more perma- nent than snow for the neglected child.

Joanna —
> These are paradoxes and need a dual
> response. One simultaneously of
> detachment and commitment. The freedom
> of the first allowing the second. I
> am free to choose, to decide to forgo
> some experiences for others.

In many senses, she is Quist's prime justification — someone who has taken his advice to the full; completed his curriculum requirements to the utmost; produced remarkably fine work, by any standards, so that people as poles apart as Bart, John, and Judith can all recognize it.

She also accepts most of Quist's messages about the skills required for architectural practice. She was only one of three to keep a notebook of her design process, a marvellous document of 120 pages of notes, diagrams and thoughts for future use. The message about the necessity for what is called ahead "consciousness" and "self-awareness" is recognized constantly, not only in her behaviour in the fact that she keeps the book but also in the text, the content.

Joanna —
(notebook)

Glass, when I was little, fascinated me.
Sometimes during the day you could see
through from inside and at night see
through from outside. Why? The material
stayed the same, but the light, the sun
day by day....

In the same way as Quist intended, the products of this kind of insight would serve as important inputs into the design.

Yet self-understanding is also a necessary discipline for openness and it was this quality that so many of the students admired about her work. She had the necessary discipline to allow the landscape to imprint itself on her design. She displayed an openness to external constraints to a degree that Quist did not advocate in his principles.

Perhaps through her Art History training, she displayed in her behaviour in keeping the notebook and in its content, a substantial faith in the possibility of exchange between formal and rational linguistic processes. Her notebook is full of theories and references to theories about the nature of form —

Joanna —

I do think back when designing because
when something appears on paper, I
wonder where it has come from..... If
I have something that is good, I want
to be able to repeat that step. I
play between the idea that the image
or the object of it comes first before
I ever really think about it, and then
I begin ordering it because of what
I've got on paper.

She works visually a great deal, more than anyone else in the studio.
Her notebook is full of sketches, usually three dimensional, showing spaces,
jointings, relationships. If you point out to her that no one else in the
studio works like that, and only three others draw much at all, she is
surprised. She claims it is a "built in thought process", an "automatic
way of thinking".

Her responses to issues of deep structure can be discovered in the
description of her design process ahead. There is little reference to the
sort of visual formal structures which Bart and Quist seek out. It seems
to be in her great concern to respond to the land that she feels herself
to be touching something of similar permanent status, something to lean
on —

Joanna —   Turn and live with animals: they are so
(notebook)   placid and self-contained......they do not
                  sweat and whine about their condition.
                            Walt Whitman.

There are lots of examples of her expecting to provide an organizing
idea — the notebook is, in fact, as Quist intended it to be, partly a
search for "the big idea".

Joanna —   ·   What this is the clue that defines,
(notebook)   orders, organizes the entire building?

There is definately a notion here of the most abstract version of
Quist's deep structure, the fact that human beings respond to the order
in a thing even though they may not like the rest of it.

Along with John, she was one of these people who waited and did not
dash into the synthesis phase of her design process. Very like him, she
spent a great deal of time carefully generating the kind of information
she felt would be necessary.

Joanna —   There must be a programming process for
                  me because I don't want to begin the
                  process until I've thoroughly read and

> researched it. I don't even want any
> idea of form or shape of a building there
> until that is done.

Out of this phase would come, in a normal process, information from people who would use the building. There was a substantial site analysis, careful research on the educational programs which would operate in the school and also the results of her own research into schools. She had written up a complete daily curriculum for the school and might present this as part of the program, in the form of a teacher's diary. For her school analysis project at the beginning of the semester she had done a presentation on the Brief History of Education. Two ideas come out of that —

Joanna —   The ideas of school as "theatre" and
             school as "market place". I used both
             of them (laughs). I really should have
             chosen one, but one is more dominant
             than the other in the scheme. I think
             a metaphor as working in many different
             ways, not only for the big idea but in
             many instances just parts of it. I do
             believe in that mode of thinking very
             much.

As a result of all this research she had a program and a list of priorities of which program elements were parts. Very like John, but taking less time about it, she proceeded to build her hierarchy of priorities. She also went through options — there were five potential site locations all assessed in terms of trade—offs between views, access, formal relationship to land, effect on land use, and so on. These priorities were then played against the established hierarchy, changes were made in the hierarchy and a site was opted for.

The hierarchy was always to be kept flexible for feedback during the actual synthesis phase. One example of this kind of process say, for reasons not clear, the removal of the gym from the list. The gym had caused all kinds of trouble to people and ruined many a scheme because of its bulk. That may not have been so in this case, but there is a note

of relief in the notebook.

Joanna – (notebook)	Tues. Thank God! Abandoned those idiotic kickball, dodgeball, relay race routeines – No gym!!!

Quist had asked them to design their own programs so that they could
discover how new information is generated in the synthesis phase which
causes changes in the problem as set. But whether it is legitimate to
rub out a gym is doubtful.

At this point, the theme of wanting a structured environment and a
free environment at the same time, the theme of irony came up again. Her
preference for order as the dominant theme emerged again –

Joanna – (notebook)	There must be a skeleton, a core that all else nods to; it is fugue, the strong voice with the others played against it.
	(Note from a book by Colin Rowe) There is a clue to the whole building, which is crystalized and found here.

She had begun by deciding on eight separate classrooms and had written
and drawn pages of alternative arrangements – one using the metaphor of a
rather awkwardly splayed-out sow suckling eight piglets (the classrooms),
four on each side. In the end the idea of spine became the main ordering
principle –

Joanna –	The experience of the spine must be varied, must be exciting, must be sequential, must have climax, must be able to be used for other purposes, must sort out circulation, activities, must have surprises and not give itself away. Direction is from top to bottom – must be clue to the whole building!

Although in one sense the eight classrooms were programatic constraints,
most of the major elements in the above list were generated by her own

thinking and experience. The "big idea", as Quist had suggested it should, had been generated by her own ideas and insights, not by manipulating the program. Although, of course, in this case seeing as she designed the formal program, it is difficult to make those distinctions very clearly. It is just possible that a skilled programmer could have generated these ideas in discussion with users or the School Board.

After testing the idea against other program constraints like room sizes, it seems that in Quist's model she would now call on her knowledge of the universal formal elements through which to implement the "big idea". These universals, by nature of the fact that they were "true" for all individuals and cultures, would give the scheme a sort of legitimacy, which it might otherwise lack coming as it did mostly from the insight of the designer. Joanna, however, appears to have looked for her legitimizing forces elsewhere; to the land. If the idea could be intimately related to the land, that would give it "reality", or would make it legitimate in some way.

Joanna - (notebook)	How to bleed the land back through the building? How to get a sense of the trees into the building? They have strong vertical trunks, but horizontal film.

One idea was to build over an existing wandering footpath which would go in one end of the spine and out the other — the footpath carried along parallel with the side of a V-shaped ravine. She had the idea to have the different levels of the spine relating to the two lines of the V. They would be oriented at 15° to each other (the angle of the V). She then discovered that the slope up which the spine stepped was also 15°. She felt she had some kind of fix.

Then, like so many of the others, she worried about the location on the site —

Joanna -	I went back to the site after the first idea and there was no way in which I could put it

there. It is a totally wooded area, a
beautiful area. People were using it just
to walk in. It was the most remote part of
the site. I had a sort of moral confronta-
tion one day — I said "there must be some
reason I can justify putting it there".
Then I decided that that was the point when
an architect had to say no!, at base it was
wrong.

The germ of the second idea came when she was drawing the contours for
the new location —

Joanna —   The contours coming in on the north
side close together, hit the building
broadside and when released through
the stretched area of the building are
looser, freer.

The spine idea remained but was no longer the dominant theme. The
new idea was for the classroom walls to be angled at right angles along
the changing direction of slope — their angle to each other being deter-
mined by the direction of land slope. Of the new theme —

Joanna —   Nestled into the hill — change in levels —
(notebook)   home bases centered around resource center
at angle to allow access to outside —
positioned to get morning sun from the
east.

The new idea sent some shock waves through the priority hierarchy,
but it remained largely intact, the only difference being that the "big
formal idea" now came almost exclusively from the land form and not from
the spine idea.

In both the mid-term and the final reviews people were very compli-
mentary. The critics, relieved, I felt, to have the chance to relax and
give praise, found in it the qualities they each had emphasized as lacking
in most other schemes. Thus —

Bream –   It is very clear in my mind that she has
          been in this building in her head.... she
          has thought that something will actually
          happen in a room. There will be a
          teacher and students. I can see signs
          of those kinds of thoughts throughout the
          building and I think that is what this
          discipline is about.....that is what archi-
          tects do.

Klinker – It is to me immediately apparent that you
          went and selected a certain kind of major
          mood. You decided on it, you went with
          it, and collaborated on it, it comes out
          very strongly, and I am convinced by it.

There were some long and quite substantial discussions about siting,
glazing, roofing, active/passive spaces and so on.

She felt very much by the end of the semester the need for some changed
perspectives; she needed some confliciting perspectives especially, as
she has said, around the isues of the social role of architecture –

Joanna – I'm not sure that I needed the conflict
          in that first term. Now I feel that if
          I'm not going to get it here, which I may
          not, then I'm going to have to get it on
          my own. I've been fortunate in the people
          I've met who've put me onto different books
          and ideas.

She must be the most conscientious student in the class. She does
all the requirements and more, and still reads extensively in outside
but related subjects. Yet, as she says, "it can all change tomorrow".

Joanna – I worry about being too studious and not
          imaginative enough, of not letting
          certain things go, of being too careful
          about what I do.

          I sometimes do see that the time some
          people free up by refusing to do the
          requirements for a satellite course, say,
          they are spending more wisely.

Tell her that people think she's developing faster than anyone else and she says –

Joanna –   Yet it's funny. Somehow I feel all the
             time I'm missing the point.

In summary she, and to a lesser extent John, seemed to be approaching their own development and the development of their designs on a different level to the other ten students. She seemed open to a much wider range of perspectives and was willing to adopt different learning and design modes to accommodate the problem and problem environment. No doubt partly because of these expectations she was forced to try to be more conscious of the modes she did use in a given situation. As she said, she thought about the procedures she went through because she wanted to be able to repeat the steps which had been successful. Others did not take the trouble to become conscious of these, perhaps because they did not see these processes as choices but gradually improving habits, which would be applicable in any situation. Seeing as they weren't choices why be so concerned about them? It would be much more sensible to worry about the things that could be changed; the products.

She was not only willing to reflect about her learning and design processes but she was also willing and able to reflect about herself, the producer. Others have been described as being too willing to resort to ideologies and habits, which seemed to cover up to others, but most of all to themselves, their deeper reasons for behaving in one way as opposed to another. As long as these remained unexamined there seemed to be whole avenues of possibility, both for a given design or for themselves as designers, which would remain closed to them.

In Joanna's case she seemed to be self-aware enough about these deeper motives to be able to confront them and, when occasion demand, go around them. Inevitably, this self-awareness raised in her conflicting desires and ironies about her role as a designer or about her needs for a particular design. While Simon's instinct was to rationalize such conflict into a rigid demand for a 50/50 relationship and Bart and Andrea were seen to

avoid it by denying the existence of one element, she seemed willing to tolerate it and to let it find its own resolution in light of each context and problem encountered.

Finally Joanna showed a mixture of self-confidence and courage which seemed unmatched in the other students. To play the role which Quist required and to learn in "complex" ways would mean the suspension of many of the ideas and behaviours which made up her sense of identity. She seemed able to feel complete, even when deprived of some of these favourite modes of expression and value stances.

Chapter 6

SUMMARY

1. Introduction

This final chapter is an analysis of the different responses to
Quist's multi-level messages, as these were described in the above
cases. The chapter has the following structure −

2. Responses To Messages About a Theory and Practice of Architecture.

3. Responses to Messages About How to Learn a Theory and Practice.

4. The Nature of Joanna's and John's "Complex" Learning and Design
Skills.

5. Shortcomings of the Program As Promoter of Complex Learning and
Design.

6. Suggestions for the Promotion of Complex Learning and Design.

Sections 2 and 3 analyse respectively responses to messages
about architecture and messages about how to learn architecture.
In these sections it is claimed that, while everyone made some
development as a result of their contact with messages from Quist,
most people only exhibited "simple" learning. In this situation
students only seemed to be willing and able to adopt concepts and
behaviours which either required limited adjustment to their
original position, or allowed ideas and behaviours to be brought
out which seemed already to be latent in their own make up.[1]
Messages which did not "fit" with these directions were consciously
or sub-consciously resisted or interpreted in such a way that they
seemed to fit. While there were some advantages to this stance, in
that it enabled students to concentrate on their own natural
directions, there were great costs in that it enabled them to

entrench even more their unexamined ideological stances and bad habits of information processing.

In contrast to the general picture of "simple" learning, Joanna and John seemed to be capable of "complex" learning. In this they were willing and able to adopt, albeit critically and on a temporary basis, new concepts and behaviours which conflicted radically with their original stances and which did not seem to be latent in their make up. As a result of this learning, they were able to get a wide range of perspectives on a theory and practice of architecture and used these to challenge and develop their own concepts and skills.

Section 4 then details the qualities which Joanna and John were found to have which seemed to lie behind their "complex" learning. They were also, by my judgement and many other people's, the two most "successful" designers of the twelve and the same qualities which lay behind their "complex" learning seemed also to lie behind their design behaviour. Interestingly, they seemed to have approached the successful developments of their designs and of themselves as architects in similar ways.[1] Similar but more rigid patterns are discovered to lie behind the "simple", and less successful, design and learning behaviour of the other ten students.

Section 5 concludes that Joanna and John must have come into the program with their "complex" learning and design skills already developed. It looks at the way students and critics seemed actively but unconsciously to conspire together to prevent the development of such skills in the program at present.

Section 6, the conclusion, makes some recommendations for how the current program could be changed to promote the development of complex learning and design.

2.   <u>Responses to Messages About a Theory and Practice of Architecture.</u>

In this section the focus is on responses to Quist's messages about a theory and practice of architecture. As demonstrated in the above cases, these messages and responses are discovered in both verbal and behavioural form. Section 3, ahead, deals with responses to messages about learning architecture but in both sections the overlap and confusion between messages and responses over these two issues is recognised.

2a)   <u>Themes of Misunderstanding.</u>

<u>Superficiality</u>

There were many examples of students mistaking the outward manifestation of a piece of advice or the name of a complex activity for the activity itself.[1] The results were empty imitation of one kind or another. One common form was exhibited by Judith when she had finally decided that she was going to "give in" and do it "their way". Quist had asked them to use their own experience and spatial values as central input into their design decisions and she had responded in her final review – "incidentally there are a lot of golden sections in here. It was not part of my construct but I liked those spaces too."

Similarly, Quist had urged them to use metaphor as a means of translating from an intuitive feel about an ordering principle for a design into some formal expression of this principle. Judith, in response to this, had said – "I've added the metaphor of city, highway and block." Nathan had also presented a metaphor which he had "added" on after the fact. In neither case had the metaphor had anything to do with the emergence of decisions, as Quist had suggested they should. In Judith's case her final design had made concessions to only the most superficial manifestations of what she called the "form freaks". She had produced what was an empty imitation of the results of their thinking without adopting any of the thinking styles which would be needed to bring it about

successfully.

A rather different example can be found in Thomas case. In one exercise Quist had asked them to use their previous experience at their own school to generate ideas for their designs. All Thomas had been able to think of was his antipathy to the double loaded corridors at his school and a firm resolve only to have single loaded corridors in his design. This he duly provided. The chapter Quist's Messages documented how he had actually been asking for a much more difficult exercise of recall, in which one tries to reach beyond these more obvious and superficial images to a richer vein of experience. To do this would require the ability to put aside or empty oneself of such obvious imagery. Thomas had no idea that this was being asked of him. In contrast Matthew had been trained in the theater to use Stanislavski's Method, in which he went through a careful exercise of "emptying" himself prior to attempting recall. He was able to apply the discipline here, and was able to come up with ideas which he could work with.

Both Judith and Thomas had received poor response to their products but neither of them really found out what had gone wrong in the production process. Judith was stunned and bewildered that, after giving them what they wanted, it still wasn't good enough. Thomas knew that his corridor idea wasn't that profound and, failing any feedback, blamed at different times the "boring" school he'd been to and his own lack of insight.

Yet another form of superficiality emerged in the common phenomenon of students accepting intellectually what was wrong with their behaviour but being unable to carry out the necessary adjustments or changes in it. Phillipa had admired the quality in Joanna which enabled her to "let herself loose in the waves (of a problem context) to come along in them" or the quality she perceived in John to be "everywhere at once". She recognized that this was exactly the quality that she needed to capture but had no idea how to go about it. She said - "it has been my experience that you can

do nothing about acquiring this state. All you can do is wait on it." She understood the state she wanted but had no idea of its deeper operation and so no idea of how to achieve it.[1]

Thomas had accepted, even before coming into the program that he was a "linear thinker", someone who was unable to feedback later decisions to change earlier ones. He was very articulate about his problem and yet, even when he had deliberately set out to eliminate it, it constantly re-emerged in his behaviour.[2] In a later review with his critic he says –"well I guess by the time I've corrected everything which needs to be corrected, things will look a lot different. Well perhaps that's O.K. ... I'll keep the good bits." In this, of course, he reveals that he hasn't understood one of the basic points of non-linearity, that nothing is "good" in isolation from the other elements it must eventually be organized with; the value system must be relative.

Misrepresentation of Meaning

Even Quist, who was one of the most verbal people I have encountered and who seemed to understand well what he was asking of students, was unable to verbalize, in much detail the operations behind such advice as to "remain loose", "recall experience" or "use metaphor". Architecture is beset by a poverty of language and concepts with which to convey such ideas. Even relatively simple activities often seemed not yet to have been identified and "named". Eskimos are supposed to have seven words for different types of snow because it is such a vital element in their lives. Architects only have one word, "drawing", for a wide range of quite different activities, all basic to the carrying out of their professional business. A quick look at my research notes revealed "drawing" as

– putting (visual) notes down on paper – representing to someone else or to oneself a visual image in one's head – testing an image in the head for its workability – discovering ideas through the process of loose drawing on one's board.

Phillipa had been a victim of the ambiguity of the word. Her critic had told her she must do "more drawing" and she had interpreted this to mean "do more visual note taking". She said - "He's right, my mother was always trying to get me to take notes. I guess on paper ideas are more manipulable than they are in your head". It was certain that her critic meant her to do more loose drawing so that she could "discover" ideas to work with. It never occurred to him that she had misunderstood him so completely and she still had not understood this possible dimension to drawing by the end of her first year.

Two of the critics had come in for a lot of abuse for advising students to "draw out" their ideas. Bart had said of one of them - "this calling for drawings is just empty authoritarianism. I don't need to draw a mistake out a hundred times, I need to know what it is so that I can correct it". Judith said of another critic - "Oh she just tells you to draw things out and then they will become clear. I think it is copping out personally". Phillipa had said of the same critic, who had told them they didn't produce enough drawing - "I came as close as I have ever done to losing my temper. This calling for drawings is abrogating responsibility for over the desk criticism. That's what this process is about. This is not college where you hand in papers for marking". From my discussions with them, both critics had actually held the view that only through constantly testing ideas on paper, reformulating them and testing them on paper again could one proceed in architecture. Both had been completely misunderstood by some people right up until the end of the year.

Similar and even more trouble making misrepresentations of meaning were constantly cropping up over assumptions about the meaning of the word "creative". For most people being "creative was synonymous with being an architect, and yet it was never clear what people meant when they used the word. At different times it seemed to mean either or all of - "getting it all out of you" (James)

— "using your own as opposed to someone else's ideas" (Petra) —
"being productive as opposed to critical" (Thomas) or "synthetic
as opposed to analytic" (Nathan) — "being inventive" (Matthew) or
being original. Some of these themes are raised ahead.

Misrepresentation of a Message Form

While people would naturally select from an ambiguous message,
like "do more drawing", and interpret its meaning within their
partial understanding of that word, or would pick up the superficial
elements and mistake them for the essence of a message, sometimes
even the form of a message would be mistaken. In these cases
students completely misheard what was said. The most dramatic
example can be found in Nathan's case. He had laboured uncomfort-
ably in the "apprentice" role which Quist had required him to play.
Being unable to confront Quist on this educational issue, as will
be discussed, it seemed that the conflict must come out through
the medium of substantive concerns. He seemed to have an instinct·
to define architecture in similar terms to those used by Quist but,
in order to "rebel", he appeared to have completely misrepresented
Quist's position to himself. He was forced to actually hear Quist
as advocating some form of functionalism when in fact he was
forcefully advocating quite the opposite.

An opposite version of the above can be found in Petra's case.
She seemed to be looking for a justification of the role Quist asked
of her. She felt insecure about doing so because she had no real
sense of alternative procedures and felt she may not be being
critical about what was happening to her. She thus justified her
acceptance on the grounds that Quist's advocated method was what
most suited her instincts. She said — "you see I was trained in
mathematics, in the deductive process. I need to know what I am
going to do before I do it and work within the system. It seems
that Quist has the most valid approach for me because I have been
trained in this intellectual vocabulary." All Quist's efforts
with her at her desk crits had, however, been geared to try and

get her to let go of her dependence on these things. He said –
"I've been trying to nurture her literary instincts and not her
scientific ones. About half the students here are very inclined
to literature as opposed to science. You can, for example, move
from verbal to visual metaphor."

Polarization

There were many examples of students misunderstanding advice
through the habit of labelling everything that did not fit with
their view as fitting with the opposite of their view. Judith was
concerned to produce an architecture which could adapt to the
functional and aesthetic choices of its users and which, in its
physical form, would respond to issues of energy conservation. The
polar opposite view to her own she correctly identified to be held
by people, like Quist, who placed maximum importance on the meanings
of forms and saw architecture largely as the articulation of these
meanings. On many occasions, in her reviews and desk crits, people
had been willing to step outside of their own positions and look
at issues from her's. In her first review, Quist and Roper are
quoted in her case as doing so. Her problem, however, had been
that she was not able to bring her ideas to any kind of physical
reality but they seemed to remain in her head in a kind of limbo.
The advice she received was thus about how to make her ideas real.
But Judith could not make the distinction between making real and
being concerned with formal manipulation. She tended to see the
two issues as one and the same thing and thus constantly rejected
important advice on the grounds that those who gave it were trying
to sell her formalist ideas. None of her critics ever came to
understand this problem which she had with their advice.

Long before he had come into the studio Thomas had decided
that he was a "rationalist". By this he meant that it was possible
to articulate in advance the methods of procedure you would adopt
in a given action and the concepts which underlay it. The polar
opposite of this stance were those people who proceeded by the

method of "divine inspiration". He sat next to John, who operated a method quite different from his own. John method was, in many ways, the most systematic and "rational" in the whole class. First he went through a lengthy analysis phase in which he attempted to come up with a ranking in importance of the key problem variables. The mechanism used was to carry out seven quick sketches, each maximizing one of the key variables. This enabled him to investigate the connectedness between the variables and gave him seven different perspectives on his emerging value system. Then he began to generate ranges of solutions to each of his identified problems. He drew about seventy or eighty sketches as part of this process and then began to look for a theme which could pull together one of the solutions to each of his problem variables. An ordering theme very gradually emerged from this activity.

Thomas, Petra and Phillipa looked on in amazement at what they thought was a random process of trial and error or, in Thomas's terms, a search for the "inspirational ideas". John's method had been partly conceived as a deliberate attempt to avoid his tendency of "falling in love" with single ideas for his design. This was a central problem for Thomas also and he could have learned much from John, if he hadn't quite wrongly labelled him as one who worked by "divine inspiration" and thus prevented himself from ever having to take his method seriously.

Selectivity

Some of the above examples of misunderstanding seem to be, at least partly, explained by an unconscious desire on the part of the student to avoid certain information which might challenge or disconfirm their existing ways of looking at or dealing with the world. One couldn't say that Judith or Thomas in the above cases were consciously resisting the information available to them but it seems possible to argue that there was an element of tacit or unconscious resistence on their part. This theme of unconscious resistance can be discovered in responses to complex messages in which part of the message would be understood and part either

misunderstood or not even recognized.

Bart, for example, had decided that Quist's view of architecture was sufficiently close to his own to enable him to engage in his preference for a kind of master/apprentice model of teaching learning. He had decided to use Quist as a kind of model but it seemed that he would not have done so if their basic premises had clashed. He had accepted with enthusiasm some of Quist's messages about an appropriate design procedure but seemed to have completely mis- understood or not even to have heard other messages. The accepted part of the message had been Quist's claim that an ordering theme for a design could never be expected to emerge out of solving a lot of detailed problems. The designer must take a conceptual leap to an organizing theme. This concept would then act as a kind of "hypothesis" to the solution which must then be tested. The part of the message, which he seemed unconsciously to have rejected, claimed that the "hypothesis" should be tested against detailed program requirements. Bart's instinct was to test the hypothesis only against universal and abstract formal principles and not against issues of use. His deafness to the advice to respond to these was revealed in his review, when Klinker suggested that instead of a rigid system he have two systems, one rigid and one flexible. Bart responded by saying - "I know what you mean but I'm not ready for that yet". Later on it became clear that Bart thought Klinker meant the flexible system to be responsive to the designer's creative impulses, while he actually meant it to respond to issues of use.

Confusion

Some messages were not selected from, nor given unintended meanings and forms nor ignored but they simply generated confusion in students. The most obvious examples of this can be documented around the series of messages which Quist gave about forms of "looping".

The first form of "looping" related to Quist's intention that
students learn to recognize how restrictions on potential solutions
and discovered possibilities in the problem solving process can
feedback to change earlier problem definitions. He had required
them to design their own program, partly as a device for helping
them recognize this. He had caused cynical laughter and shocked
reactions when making this point in one student's Mid-term review
by saying — "now that is a good idea, O.K.? your task now is to find
a reason for having done that." To many students, that sort of
behaviour was simply cheating. It was like getting an essay or
exam question and then changing it so that one could talk about
the things one did know. Another difficulty seemed to be that,
in this kind of looping behaviour between problem solving and
problem setting, there is no fixed point from which one is moving.[1]
This sort of status for an activity seemed to confound students'
deepest sense about the fixed nature of things.

Thomas and Andrea had retained their fixed positions by
insisting on a rigid program. One mechanism was to play up the
responsibility to respond to direct client demands and it was
assumed that these would be concrete and fixed. They had, in a way,
replaced the role of the examiner with the role of powerfully in-
sistent clients to whom they must respond. Thomas said — "I decided
to fix my program otherwise the whole thing would get out of hand
and become ridiculous". Both of them had great trouble operating
without real clients and constantly felt uncomfortable about
having to play the role of both client and professional.

Nathan had captured his fixity in a slightly different way.
He fretted during the analysis phases of the program, claiming
that this was cutting out important "design" time. To him "design"
was synonymous with "problem solving". One could learn problem
definition any time but the business here was to learn how to
"design".[2]

Petra, by the end of her second semester, had cautiously got the message about looping. She said of her design — "that idea changed the program a bit but that is the kind of adjustment which has to be made to make the program meaningful".

The second form of "looping" advice related to mechanisms for relating together solutions to different sub-problems. Simon, for example, operated a method in which he quickly translated all his identified sub-problems into formal solutions. He then set about trying to organize them together. Because he'd only generated one solution to each problem he found that he couldn't easily find a theme in which all his earlier ideas would fit. Inevitably any organizing theme would require him to go back and generate different solutions to some of his sub-problems. But he resisted this behaviour with great fortitude. If there were a hundred possible permutations of relating his fixed decisions he would try each one out. Only then, exhausted and frustrated, would he be willing to let go of some of his earlier commitments.

Thomas demonstrated the same rigidity somewhat differently. He had generated a list of priorities for his elemental problems. He'd then begun to invent a solution for the most important one, then a solution for the next most important, within the constraints set by the first solution and so on down. He had, of course, quickly run out of room to manouvre but he never seemed able to go back and change early decisions to free himself more room. Later solutions to "less important" problems just became jammed into his rigid system as best they could.

Neither Thomas or Simon had come to understand this most basic of design devices by the end of their first year. This seemed to be partly because they were not ready to understand it and partly because their critics seemed to be unaware of their problem.

Conclusion

In some of the responses in this first section it is clear that a student has been misled through poor or insufficient presentation by the critic or by genuine ambiguity of terms. In the majority of cases, however, there seemed also to have been strong elements of rejection. It seemed that many students were avoiding messages which, if they had been accepted in their intended form, would have caused them to undergo painful changes in their whole orientation to architecture and to decision making in general. But one could not say that students knew they were rejecting the above messages, they were certainly not conscious of doing so. In most of the examples above, then, we can say that students were, at least partly, "unconsciously" rejecting the messages as Quist had intended them to be received and understood. In the following section "unconscious" acceptance is dealt with and then "conscious" rejection and acceptance in the sections after that.

2b)   ## Unconscious Acceptance

In spite of the powerful themes of unconscious and conscious rejection, documented above and below, the cases reveal a surprising uniformity of perspectives on architecture, which seemed to have become establihsed in the studio by the end of the first year. I was struck by the difference between the level and content of the established perspectives in this school and comparable schools, which I knew well. It seemed an inescapable conclusion that, while all around me I found resistance to change, subtly and almost imperceptibly, students had all been changing to conform with a view promoted by Quist.

This apparent paradox can be explained in two ways, both having strong support in the data. In the first place any require-ment for significant change raises conflict in the persons being changed; it is one of the basic assumptions of the research method used here. In this light the explanation of the paradox would be that students at first resisted a given message but then, finally,

came to accept it. Judith's and Andrea's cases are the clearest
examples of this process. These two, along with Thomas, held the
most discordant opinions with Quist's at the beginning of the
semester. They resisted, lost their tempers and misunderstood but,
by the end of the semester, they had·both made strong gestures to
the prevailing orthodoxy of Quist.

Much has been made in the study of the fact that Quist was a
powerful and charismatic figure. He had managed to control the
development of the informal class culture through which assumptions
became established about what variables are considered to be "good"
currency and "bad". Even the other four part-time critics appeared
to accept these assumptions and were never once heard to disagree
with Quist or raise issues of their own outside them. Confronted
by such a consistent level of agreement among critics and especially
amongst colleagues it is not surprising that someone like Judith
began to doubt her own position.[1]

The second explanation for the apparent paradox of resistance
but ultimate acceptance relates to the quality of the concessions,
which people like Andrea and Judith were willing and able to make.
In many cases these concessions, at least by the end of the first
year, were only superficial. As demonstrated in the last section,
they were willing to use the words and phrases, but they had not
been willing to make the concessions required to change their
decision making and information processing methods. Thus, although
the studio did present a picture of uniformity it was a surface
uniformity only.

There seemed to be at least four reasons why so few concessions
had been made at the procedural level. In the first place there
were few formalized procedural models and a poverty of language
available for discussing these issues. In the second place,
students were unwilling to recognize procedural models in the
behaviour of their colleagues or critics so that, while this
information was available to them, it was not used. In the third

place the curriculum was so set up that the focus of attention was almost always on the products of the students' design behaviour. The major concern of students and the major dialogue with critics was around the questions "What do you think of this design of mine?" or "How can it be improved?" In such dialogue questions of the production process and the producer play secondary roles, if any at all.[1] The fourth explanation for the lack of focus on procedures relates to the probability that it was these habits of processing information which had been the most entrenched by the time a student arrived in the program. It is likely that these procedures had long become deeply habitualized behaviours while attitudes to the nature of "good" and "bad" architectural products would have been more recently developed and loosely held.

Perhaps having accepted, however unconsciously, the more superficial elements of Quist's messages by the end of their first year, students would now begin to adjust their procedures in order to be able to deliver on these expectations. Matthew described, through example, how such a process might come about — "you dress up for an interview as they expect you to, but then, once having done so, you start to change your thinking to bring it in to coincidence with it perhaps".

2c) <u>Conscious Rejection</u>

In this paper a "conscious" individual is understood to be someone who accurately understands his or her educational and operational response to messages. For example, the people in the above sections were "unconscious" of their educational responses. They often thought they were responding positively to messages when to everyone else they were being superficial, selective, misinterpretive and so on. In the same way they were not conscious of accepting messages when they obviously were.

Similarly people like Andrea and Simon were found to misunderstand the nature of the design procedures which they operated and

it will be said that they were "unconscious" of these processes.[1]

The dangers of students being unconscious of the responses they
were actually making to Quist's messages seemed to be substantial.
Unconscious acceptance implies that a person has moved from one
position to another but, not having recognized the move, there
would be no memory of the former state or of the process through
which the change took place. There would, therefore, be little
chance of an individual returning to his original position, if
that ever became necessary, and there would have been no learning
about how it is that one challenges and changes one's position.
Unconscious rejection implies that students are unable to recognize
the mechanisms through which they protect their position and thus
little chance that they will ever become good learners about their
world of action.

A student could be conscious of the responses he or she was
giving to Quist's messages, however, without knowing anything about
why such a response was being given. In this paper, then, "self-
awareness" becomes a second quality of response along with
"consciousness". A "self-aware" person is understood in this
paper to be someone who understands his or her deeper motives for
the educational and operational responses given. For certain
behaviours like "remaining open", it may be necessary to be self-
aware but not conscious. But dealing, as we are here, with
responses to broader and more general messages it would seem that
consciousness is a necessary precondition for a person being self-
aware but not vice-versa. In this study, at least, self-aware
people also displayed a high degree of consciousness about the
nature of their educational and operational responses.

Conscious but Unself-aware Rejection

In many cases students were aware that they were rejecting
Quist's messages. In most of these a reason would be given; either
it would be based on a recognized clash between Quist's and their

own ideological position, as in the cases of Thomas, Andrea and Simon, or it would be explained on the grounds that it cut across processes of development which they had already embarked on, as in Judith's and Phillipa's cases.

While a good deal of respect must obviously be given to a student's carefully considered value position, it seemed that, often enough, these values stood for more deeply held hopes and fears which had not been carefully investigated.[1] Often it seemed that the expressed ideologies were mechanisms for protecting a student from having to undertake actions which they felt personally insecure about taking or for promoting actions, which they felt confident about and in which they had invested a large part of their identity. Often I felt I could point to a given student's professed ideology and recognize it as a mechanism for protecting the weaknesses and legitimizing the strengths of their interpersonal and their thinking skills.

The clearest example could be found in relation to the social role of the architect; how much should the architect have to work closely with client groups and other professionals who are often hostile to his chosen position? The pattern was very clear; those with well developed social skills, about which they felt confident, could be found to express an "ideology" in which inter-action with clients and other professionals was a key element. Those, who felt uncomfortable in interpersonal conflict situations, could be found expressing an ideology which, in one way or another, protected them from ever having to operate in them.

Bart, for example, showed few of the social skills in the studio which would be needed if he were to play anything like an advocacy architecture role. He was the class loner, who did all his work at home and who disliked even discussing his work with other students. His choice to believe in deep structural constants which transcended sub-cultural differences, and his refusal to

recognize the issue of use as a central variable can be seen as, at
least partly, a defence from his having to confront social situations
in which there would have to be negotiation over such issues. In
fact, of course, he did respond to issues of use all the time in his
design behaviour. It was almost as if he couldn't admit this in his
professed ideology because, once allowed in, this behaviour might
begin to take over too important a status. As long as it was denied
an existence in the official ideology there was no chance of that
happening.

Exactly the opposite social stances seemed to be true for
Andrea and Thomas. They had rejected Quist's messages about an
appropriate method on the grounds that it overplayed the role of the
designer's insights about visual/formal issues and underplayed the
role of users and their functional needs. Both were skilled social
operators, Thomas having worked previously as a counsellor, and
both appeared to feel insecure about themselves as "creative"
spatial designers. Both have been described as being almost
paralysed by the fact that there were no "real" clients to respond
to and both resolutely refused to even recognize that their design
decisions were partly based on aesthetic choices which they had
made. Just as Bart did actually respond to functional issues, so
Thomas and Andrea actually responded to their own aesthetic
judgements. Andrea presented an almost symmetrical building in
plan and elevation and Thomas said in one of his desk crits - "I
wanted the library in the middle to get a little symmetry back into
the system, which is otherwise just strung out". In contrast to
Bart, these were the issues they found stressful and the denial of
their existence seemed to have been an unconscious device for
avoiding having to confront them.[1]

While they disagreed radically on the above issues, there was
another important theme on which Bart, Thomas and Andrea all agreed
and which, to a certain extent, cuts across the above distinctions.
Quist's messages about architecture tended to include categories of

variables which existed in contradiction to each other or set up tensions in a given design context. To Quist these tensions were an inherent part of the profession and any response to it must include them. One of the tensions he discussed on several occasions was that between architecture as art and architecture as social agency. Though he himself favoured the former, and his whole program's orientation reflected this, the social agency perspective was given a recognized, if subservient, role. Bart, Thomas and Andrea seemed to be unable to accept the notion of inherent tensions in the theory and practice of architecture. They required something more unambiguous. It is certain that none of them had ever looked into their own motives for insisting on this concreteness. If they had, they may well have discovered aspects of their own personalities which needed to be challenged over this issue. In the end, of course, they might have chosen to retain their position but in this case it would be a deliberate committment made with much greater knowledge of the alternatives.[1]

The above attempts to uncover the deeper motives behind much of the conscious rejection of Quist's messages is, of course, highly speculative. But whatever did lie behind those expressed ideologies seemed to be unexamined by the people who expressed them. Each person seemed to feel that it was enough to have an ideology and not at all necessary to find out why. Although they each received substantial criticism in reviews and crits for the limited nature of their responses, no one ever challenged them on the grounds for their holding a given value position. In each case the student was able to go away from an exchange feeling that it was just a question of value clashes between their position and the critic's, when in fact it was a great deal more complicated than that.[2]

Conscious and Self-aware Rejection

Phillipa was among the more self-aware students. She had made almost a cult out of it for herself and those she engaged with in the studio. She seemed to understand well the deeper needs which

she had and which underlay her advocating one position over another
and she did not seem to be using these positions to cover up and
avoid skills she felt uncomfortable about. She understood, for
example, how her values promoted and justified her intersubjective
style of relating to people and she understood how important it
was to her sense of identity to operate in this way.

Her basis for conflict with Quist's position related to his
claims that the desirable quality of the design product and the
mechanisms for achieving it could be "rationalized". She felt that
turning these into rational principles was bound to do irreparable
damage to the way they needed to be integrated into the skills and
commitments of a given individual. She thus approached her own
design in a "holistic" way, in which she tried to tackle in her
subconscious as large a number of issues and variables together
as she could, hoping that eventually everything would come together
in some kind of gestalt. By the end of the second semester she
was getting thoroughly frustrated by her inability to really
develop this method. As she said, all she could really do was
"wait on changes".[1]

All through the year she had rejected Quist's messages about an
appropriate mode of procedure, which, if she had adopted even for
the briefest time, would have given her a perspective on the value
of breaking down the design process into recognizable chunks. She
would have discovered that the costs were nothing like as great as
she feared and the benefits in clarity of perspective were greater
than she had imagined.

It seemed that the people in the sections above were unable
to distance themselves enough from their habitual modes and
professed ideologies even to reflect on them and their relations
to deeper needs. Phillipa had been able to distance herself that
far. She had even recognized, unlike many of the others, that it
would be possible to let go of her existing position and recapture

it later. She would not let go of her "holistic" method even
temporarily, however, because it seemed her identity was too wrapped
up in her stance. In one sense the public and private image of
herself as a "harsh rational being" would be too much to handle,
even on a temporary basis and, in another, she seemed to fear the
loss of her original sensitivity once having gone over to the other
side. She lacked the self-confidence to feel that this aspect of
herself was still there even though it was not, at a given moment,
being exercised.

2d) Conscious Acceptance

Conscious but Unself-aware Acceptance

At different times Bart and Thomas seemed to have consciously
accepted Quist's advice, without feeling the responsibility to
reflect critically about it or to relate it to their own deeper
motives for doing so.

Thomas had begun in the first semester feeling that he would
unquestioningly do what he was told. He said — "I'd assumed that
they would all be terrific and would tell me what to do." He soon
began to recognize that what he expected to be principles of a
field, as one might find it mathematics, were in fact perspectives
on one of several possible sets of principles. This discovery,
coupled with the fact that Quist's perspectives threw maximum
stress on the variables which he (Thomas) felt most insecure about
handling, caused him to reverse his stance. By the end of the first
semester he was the most resistant to Quist's messages and he
remained so throughout the year. He had moved from one rigid
educational stance to another on ideological grounds but, as
discussed, it is unlikely that he ever confronted the roots of
his ideology. He never said to himself — "I feel helpless as a
spatial designer".

Bart was conscious of accepting Quist's messages on the grounds
that they were based on the same principles as his own perspectives.

He accepted them but he did not critically investigate them or relate them to his own needs for accepting them. Until he did so it seemed that these unexamined needs would prevent him from ever taking another perspective on a theory and practice of architecture. It has been discussed how these needs seemed to have caused him to unconsciously reject or misrepresent those elements of even Quist's advice which seemed to clash with such needs.

Conscious and Self-aware Acceptance

Only Bart, therefore, found Quist's advocated theory and practice close to his own instincts and even he has been described as having to misrepresent to himself a number of messages which otherwise would have conflicted. Almost everyone else, finding substantial grounds for ideological and operational disagreement, resisted the messages they felt conflict with and accepted the ones they naturally agreed with or which indicated threatening development of their existing positions and skills.

Only Joanna and, to a lesser extent, John seemed to be willing and able to adopt Quist's advice, in its intended form, even though much of it conflicted with their intended directions of development. They were the only ones to take stances which were similar to the "willing suspension of disbelief", which Quist was described as asking for in the Chapter Quist's Messages.

Joanna's grounds for conflict with Quist's position would have been built on her desire to see architecture as more than manipulation of form but as much, if not more, the practice of social agency. She saw Quist's program as placing far too much emphasis on the former. John had naturally accepted the focus on architecture as form making but, as Phillipa, had disagreed with attempts to verbalize and quantify formal variables. For him, once "rationalized", they lost their important meanings. In the cases of most of the others these disagreements, or ones like them, had become the grounds or the excuse for rejecting much of what Quist had to

offer. Joanna and John, however, seemed to be willing to submerge these problems in order to gain the maximum from their contact with Quist.

The quality of their "acceptance" is the key to understanding their stance. Most people have been described as assessing the range of responses open to them on the scale between complete acceptance and complete rejection. You either responded in one extreme or the other or in some middle ground between the two, accepting pieces and rejecting others or accepting half-heartedly. For Joanna and for John the acceptance was total but it was taken only on a temporary basis and it was reflective and critical. The time element seemed to be important here; in contrast to the others they seemed to feel confident of reversing an adopted stance later and returning to their original position. This confidence must have been greatly enhanced by their high degree of consciousness about their original stances. It would be much easier to return to an original position because they knew what is was and the mechanisms they had gone through to move from it.

The stance would also be helped in Joanna's case by her strong sense of self-awareness. Others have been described as clinging on to ideologies, at least partly, as a mechanism for avoiding or confronting uncomfortable things about themselves. In Joanna's case particularly but also in Phillipa's above, both seemed willing openly to confront the uncomfortable things about themselves and would thus be less likely to throw up barriers to suggestions for temporary change.

Both "consciousness" in orientation to their procedures and to Quist's Messages and "self-awareness" of their own deeper motives would require students to be capable of distancing themselves from their behaviour and their own deeper needs.[1] Some people, in the above sections, were shown to be capable of one or both these forms of distancing. While both can be seen to be important elements of

the "willing suspension of disbelief", called for by Quist, they
are not sufficient. The above forms of distancing are more abstract,
but in the willing suspension of disbelief the individual actually
behaves as if central values and skills, which they are committed to,
do not exist. The student has to be able to sustain a sense of
identity and reality even when shorn of these important means of
expressing it. Such a sense of identity must be characterized by
enormous ego-strength and self-confidence because to the outside
world the student is different. Others would see Joanna practicing
architecture as if she believed in something different or as if she
didn't have the skills in which she had invested so much of her
identity.

The readiness of Joanna and John to engage in these more complex
forms of learning also seemed to support and be supported by their
expectations about the eventual structure of a theory and practice.
John's attitude to his emergent design method is the best example
of these expectations. Most students felt they were developing a
design method, which was "personal" and unique to themselves and
which would be capable of handling all problem contexts encountered
in architecture.[1] John had no such expectation, comparing his view
with Bart's he said — "he expects to have a system which he'll always
use while I expect to build a new system for each new problem".[2]

For John, then, the skill he wanted was the ability to design
a new design method for each problem and problem context encountered.
For him, in contrast to people like Bart, learning a design method
was developing a repertoire of possible procedures, any one of which
may be useful in combination with any other. The real art of design
would be the skill of manipulating old and newly invented elementary
operations into some form of comprehensive method in response to a
reading of the nature of the problem and the problem environment.[3]
For him, then, his very expectation about what a design method should
be like inclined him to keep himself open to a maximum number of
operations. But it can also be claimed that it was his ability to

remain open and learn in such a successful way which enabled him to afford the luxury of expecting to build such a versatile method. Those who were only capable of the limited or "simple" learning of the other ten would never be able to build the required repertoire or sustain the openness needed to "read" a problem or its context.

3.   Responses to Messages About How to Learn a Theory and Practice of
Architecture.

The above discussion dealt with responses to Quist's messages
about a theory and practice of architecture and described how most
of the open dialogue took place over issues of design product. What
messages there were on procedural issues often tended to be buried
in the behaviour of critics at crits and reviews and were usually
misunderstood, rejected or not recognized by students. It seemed
that this focus on product was promoted by the program, by the
poverty of concepts on process available and by the natural
inclinations and concerns of students and critics.

In dealing now with messages and responses to them about how
to learn a theory and practice, this section relates even more to
issues of process. In fact, in an important sense, the developed
architectural production process of a given student, which received
such scant attention, now becomes itself the product of the educa-
tional process being focused on here. It will not be surprising,
then, to find that what dialogue there was between Quist and the
students about educational issues was a non-verbal and largely
unconscious process. In this, messages are discovered implicitly
behind teaching behaviour and program structure and responses are
found buried in student behaviour. At no time, when I was in the
studio, did I ever hear students and critics discuss issues of
teaching and learning architecture and yet, at times, the passions
raised over this issue seemed to dominate attitudes to the material
itself. It was discussed, for example, how Nathan had found it
necessary to misinterpret Quist's messages about a theory and
practice in order to feel free to reject his educational stance.
In an opposite way, Bart and Petra had both felt it necessary to
distort Quist's position on architecture to themselves in order to
justify playing the educational role of apprentice in the way they
thought Quist wanted them to.

Once disentangled, however, similar themes of response emerge
to those discussed in the last section. Just as surely as people
came into the studio with established decision making, or design,
modes and notions about the nature of architecture, so they appeared
to come in with established modes of how to learn in general. They
displayed patterns, often unique to themselves, of challenging,
developing and changing their existing knowledge. In the same way
as students above were discovered to resist changing their early
commitments to a theory and practice so here they are found resisting
messages which would lead to changes in their modes of general
learning. Responses are discussed here under similar headings to
those in the last chapter.

3a)   <u>Misunderstandings</u>

<u>Surface understanding and polarization</u>

These themes were revealed in responses to Quist's basic
educational requirement that students be "willing to suspend their
disbelief" if they wished to make maximum use of his program.

Nine of the twelve students seemed to have taken the surface
meaning of that requirement and interpreted Quist as calling for
their capitulation to his point of view. Petra and Thomas had
attempted to comply with this interpretation and the other seven
had rejected it more or less out of hand. In fact Quist was asking
for a much more complex learing stance which could not be understood
on the simple continuum between giving in or resisting or some
compromise between these two. He actually wanted students to accept
his messages completely and in their intended form but critically
and only on a temporary basis, retaining the capacity to return to
their former position if they desired afterwards. He had actually
been asking for a much more complex response than most of the students
dreamed of.

Student responses also revealed a form of polarization, in
which anything which was not in agreement with a given individual's

position was seen to be identical with the position they were most
in conflict with. For example, most students felt it was their
responsibility as "creative" people to retain their own personalized
view of the world. The antithetical position would be their complete
capitulation to someone else's view. Although Quist was not asking
for this stance, it was assumed that this is what he meant because
he was asking for something different to their belief that they
should hang on to a personalized view.

These misinterpretations seemed to have been partly a result
of the learning culture of the studio which served as the context
in which Quist's more direct messages took on meaning. Bateson
was described earlier to make the point that all messages are
meaningless in themselves, or, at least, are open to a wide range
of possible interpretations. It is the context within which the
message is received which gives it meaning.[1] Quist was described
in Chapter 4 as controlling the formation of the studio culture in
which issues became established as valid or invalid for discussion.
So also, through the power of his role as Studio Principal and
through his personality, he controlled the formation of the teaching/
learning aspects of the studio culture. In this, a sort of tacit
contract seemed to have been agreed upon between students and
critics about the relations to be adopted in learning. It seemed
to be an unspoken agreement among everyone, for example, that even
if the other critics and all the students were present for an
event, it could not begin until Quist's arrival. It was understood
that he was the orchestrator of events, to the extent that if two
people were discussing an issue in a class session, all the remarks
would be addressed to Quist and not to the person who made the
previous remark. Given this kind of context, within which to give
meaning to direct messages about teaching/learning, it is easier
to see how so many students mistook Quist's call for "the willing
suspension of disbelief" to be a call for their capitulation to his
point of view.

Missed Categories of Information

The last section on responses to messages about a theory and practice documented how students had failed to recognize the many examples of alternative methods around them in the behaviour of critics and colleagues and how they failed to learn from their own experiences of undertaking design. Although Quist had suggested that they keep note-books of their procedures, in order to better understand them, only Phillipa, Petra and Joanna even began the exercise and only Joanna persisted with it.

There seemed to be two reasons why most students disregarded the experiences of their own and their colleagues procedures. In the first place Quist had promised rational principles of procedure to be applied and tested in action. He had actually meant "more rational than usually given at architecture school" but this nuance seemed to have been lost on most people, who continued to expect everything of the principles to be acquired in lectures and tested in the studio and <u>nothing</u> of their experiences.

The second reason for their disregard of concrete experience seemed relatable to the fact that almost everyone had come from undergraduate academic backgrounds. Such programs tend to play down the method of learning from experience and instead, students are required to criticize, manipulate and compare formal principles, which are given to them in the verbal and written medium. Although everyone could presumably learn from experince in their daily lives this mode is probably considered "not acceptable" in the usual undergraduate course. For these indivuduals, however, it was a vital skill and would continue to be later on in their professional careers. There was a great need for people to learn how to learn in this way in the studio but at no time was this pointed out to them or even recognized by the critics to be a problem.

Both the last two sub-sections on superficiality, polarization and missed categories all show examples of students unconsciously

hanging on to their existing learning modes while resisting advice
or available information, which required them to learn differently.
The next section looks at mechanisms of unconscious acceptance and
the ones following it at conscious responses.

3b)   Unconscious Acceptance

Quist had established control over the process of formation
of the studio culture in which certain kinds of discussion came to
be recognized as "good" or "bad". In the same way he had established
certain operational assumptions about his educational role with
students discussed above in relation to his indispensability and his
orchestration of discussions. Even those students who fiercely
rejected his more overt stance with them personally, seemed to
have accepted these less dramatic operational rules of the eduational
game they were playing together.

Only Matthew and John seemed to be aware of the potential
importance of these more subtle dimensions to their relations with
Quist. Matthew resisted them in ways which inevitably sometimes
looked like quibbling. For example he'd often present work in a
format differert than the one required just for the sake of it or,
at times, he'd subvert one operational rule by turning to address
the whole class in a discussion and not merely Quist. John
resisted in a subtler way, through the odd well timed joke, which
showed to everyone the unconscious processes he felt they were
unquestioningly engaging in. It was discussed how — in response
to his perceptions that Quist had been trying to coerce people into
his own point of view all morning — he had asked of a new building
on the screen — "now do we or do we not like this one?".

The importance of most people's unconscious acceptance of
these smaller and less dramatic rules of the educational game has
been shown to be that they become the context within which other,
more obvious messages took on meaning. For example, "the willing

suspension of disbelief" and the promise of "rational principles of a field" both were misunderstood or only partially understood because they had to be interpreted in the context of an accepted teaching/learning contract in which Quist played such a dominant role. In this studio, then, it was the unconscious acceptance of these lower key rules and relations for information exchange, which became one of the forces of confusion in students' understanding of Quist's messages about learning architecture.

3c) <u>Conscious Rejection</u>

<u>Conscious but Not Self-aware Rejection</u>

As in Section 2, the distinction between conscious and self-aware and conscious but not self-aware becomes important for interpreting observed response. In this paper a "conscious" individual has been defined as someone who accurately understands his or her educational and operational response to messages. A "self-aware" individual is defined as someone who understands his or her deeper needs for giving a particular educational or operational response. In a crude sense one relates to an awareness of process and the other to an awareness of producer.

Many people "unconsciously" resisted Quist's messages about how to learn architecture, as discussed above. Some people "consciously" resisted these messages, without seeming to understand the deeper personal reasons they had for doing so. In most cases they were able to give some ideological or rational justification for their behaviour but, one often felt that this was merely an attempt to legitimize their stance, rather than a carefully considered position developed in light of their own recognized shortcomings and skills.

Simon, for example, was one of the more politically active people in the class and he quickly saw that Quist's model of an appropriate relationship in teaching/learning clashed with his own.

Quist's was a form of master to apprentice model while Simon's was closer to a model of educational consultant to client. He had the opinion that each person in such a professional exchange should have a 50/50 responsibility for what was undertaken. He said of Quist and the school - "I knew what they wanted me to do and I was prepared to compromise. But I also knew what I wanted to do". At one level his model is the epitome of reason and moral correctness but it left out dimensions which he did not seem to confront. How would he respond, as a professional, in situations where the client did not want a 50/50 say in events? Would he be able to tolerate the stress of taking a dominant hand in someone else's future, if this was called for? Would he, in contrast, be willing to compromise his own position if the client needed to be in a more powerful position than himself? How far would he be willing to go? All these questions seemed to hang unanswered and unconfronted over his relationship with Quist. In many cases it seemed that his "moral" stance had as much to do with protecting his own position from erosion by having to go more than half way on any of Quist's messages. If he had confronted these feelings of defensiveness he might have been able to overcome or go around them and thus open himself up to a wider range of learning roles.

By the end of the second semester Matthew began to recognize that he had been rejecting Quist's messages about learning on the basis of motives which he had not thoroughly confronted within himself. Quist had suggested that successful learning took place through the testing of preformulated hypotheses. All action should be seen as being based on concepts, consciously or tacitly held, but unless these were raised to consciousness in advance of action the experiences of action could not lead to the necessary reformulations of the concepts.[1]

Matthew had interpreted this as a subtle mechanism for "socializing" him. He reasoned that it was too soon for him to have formulated his own concepts and so, especially as no other were

available, he would be forced to use Quist's. If he rejected these he felt he would be thorown into the clutches of a competing dogma. He said he wanted to learn "inductively", moving from specific experinces of architecture and architectural design to the later formulation of concepts about it. While accepting Quist's claims that all experince is interpreted through existing concepts, he felt that any mature person ought to be able to "empty" themselves of many of these and thus remain much more open and innocent to experience.[1] Their respective commitments to these two different modes of learning was discovered to be mirrored in the design modes they operated. This discovery of similar patterns behind an individual's learning and design behaviour becomes the source of ideas ahead for teaching design in the studio.

In the end Matthew admitted that he had overplayed his claims for inductive learning. It seemed to have been a device for protecting himself from Quist. By the end of the semester he had established a position in which he no longer felt threatened by him and was then able to accept advice about taking a different learning mode. He said – "At the time I was inclined to blame the school but now, looking back, I realize that it was at least as much my own fault. I hadn't remained open enough ... I'm actually thinking of going off and reading some history this summer."

In other senses, for example over his design procedure, Matthew emerged as one of the most self-aware people in the class. But his failure to confront the fear of being taken over by Quist, which lay behind his professed rigid learning stance, meant that he had wasted much of his energies in the first year in defending himself from imagined attack.

Conscious and Self-aware Rejection

Phillipa had been the strongest advocate of self-awareness. She felt it should be raised to much greater importance in the curriculum, as an essential ingredient to effective learning and

design. She felt the studio method and the sessions with critics
were the approriate vehicles for promoting this but was disappointed
by the inability of most of her critics to work effectively in this
way. She said - "I have approached my critics with statements like
- "I have a tendency to do this, what else can I do?" It usually
leaves them at such a loss that I have considered leaving and getting
a job."

She felt that the relationship with critic should be characte-
rized by empathy and sympathy of one party for the other and she
rejected Quist's claims for "rationality" in education.[1] She
felt that, by taking apart and naming complex activities in order
to lecture about them, Quist was destroying their essential quality.
In the same way she rejected the notion, which he advocated, that
you could ever develop yourself in a piecemeal fashion, dealing
with these issues now and other issues later, or that you could
suspend belief in one set of issues in order to respond to others
which conflicted with them.

Unlike so many forms of conscious rejection, however, her
position did seem to be based on a recognition of her own deeper
motives for her stance. She recognized that her stance maximised
the value of her intersubjective skills of relating and that this
had become an indispensibe part of her image of herself and could
not be put aside easily.

By the end of the second semester, however, Phillipa had
begun to recognize how fruitless her insistences had been in terms
of her own much needed development. She had also begun to recognize
the inherent difficulties in any program of this size ever being
able to fulfil her educational demands. As she agreed, it would be
a matter of pure chance whether a given student and critic could
establish the sort of empathy and sympathy she demanded and anyway
how could four critics ever expect to strike up such relations with
fifty new students a year? By the end of the first year I had the

strong impression that she regretted the learning stance she had taken, as she did her design procedure, but she never actually said so.

3d) Conscious Acceptance

Conscious But Unself-Aware Acceptance

Bart had not really understood the role which Quist wanted him to play in teaching/learning, as discussed. To the extent that he did understand, Quist's model had been ideal for him.

Bart seemed to have a deep unease about conflict or even negotiation situations and it was discussed how he seemed to be partly constructing a theory and practice of architecture which would minimize his having to confront them in his professional life. His interpretation of the role of "apprentice", which he felt Quist was asking him to take, also seemed to be geared to avoid conflict. He tended to accept Quist's advice uncritically and thus did not feel conflict over them, those he would naturally have conflicted with, he misunderstood or didn't hear.

He had chosen not to play a similar "apprentice" role with the other critics on the grounds that they had no "authority" or "discipline". He avoided conflict with them and his fellow students by refusing to engage with them and by dismissing their advice almost out of hand. Until he confronted his deeper motives for his learning behaviour there didn't seem to be anyway he would ever learn a new learning stance.

Conscious and Self-Aware Acceptance

Joanna showed a willingness to adopt the learning role of apprentice, which Quist wanted. She was also willing to use his strictly "deductive" learning mode, in which learning took place through the testing of concepts and behaviours, articulated in advance. She was willing to do this even though these stances did not seem to be the ones she would have instinctively chosen to play. Just as she and John were capable of "complex" learning in

the last section she was capable of the equivalent in this. She was able to "learn how to learn" or adapt herself deliberately to the circumstances most conducive to learning in this particular situation. Strictly speaking Joanna's skills should be called "complex learning how to learn" to distinguish them from the "simple learning how to learn" of the others. But in this paper I will use only the "learning how to learn" term and leave the "complex" implicit.

Her ability to be reflective about the effectiveness of a particular learning mode, given a particular context, was quite different from the attitude of most of the others. For her the learning modes are not fixed habits of relating to the world but flexible behaviours controlled and managed from another level of knowledge and intelligence. This stance is an interesting parallel of John's attitude to design methods. For him, as discussed, a design mode was not a fixed behaviour, which was expected to be applied for any problem, or problem context, but a flexible behaviour which had to be decided on in light of these.

In this studio John had not been willing to play the role, which Quist required of him, or learn by testing principles. Yet he was one of the few people who were not threatened by Quist and who seemed to be ready to make a positive interpretation of his position. He said — "if you listen to Quist he is much more open to a different point of view and is capable of making light of his own view of things". In a later semester he had taken a learning stance similar to the one Quist advocated. He had reflected about it afterwards, claiming that he had "lost control" of his building as a result and would have to be careful when he operated this way again.

Joanna's stance with Quist required her to be highly conscious of the learning mode she was using and the stance she was taking with him. Only then could she expect to compare the new mode she was adopting with her more familiar modes and be able

to return to these when and if required. It would presumably also help her to feel confident about risking new stances if she knew where she could return to afterwards and the mechanisms she had gone through to make the move in the first place.

Self-awareness was the second required quality. It was important to be able to reflect about the learning process but also about oneself as learner. It has been described how many people seemed to be prevented from attempting new stances by failing to confront hidden and unexamined motives in themselves.

The last and most important quality for learning how to learn is self-confidence and a kind of courage. The greatest problem for someone like Phillipa, who was both conscious of her learning stance and aware of her own deeper motives, was that she seemed to fear a loss of identity without her familiar stances and to feel in danger of being taken over by Quist. Joanna, in contrast, showed great strength in two senses - In the first she could engage in a dependent relationship with Quist without actually being taken over. She said - "I feel that, even if someone is very dominant now, I will be able to undo it later". In the second she had such a strong sense of identity that she could retain a feeling of her own existence even when she was using quite a different style of relating to the world. While she "looked" different to everyone else she could retain a sense of still being the same. This was perhaps the most difficult aspect of her learning how to learn stance for others to emulate.

4. The Nature of Joanna's and John's "Complex" Learning and Design
    Skills

It was difficult to judge accurately the relative developments
of the twelve students during the semester because each had begun
at a different level of development and it had taken time to get to
know them and their capacities. General agreement had it, however,
that Joanna was developing faster than anyone else and by the end
of the study, as described above, I found myself accepting this
opinion and adding John to the same category. This section is an
attempt to describe how it was that these two seemed able to progress
so much faster than their colleagues.

The other ten students' development has been described as
being characterized by what might be called "simple" learning. In
this, the only information responded to positively was that, which
either confirmed a given student's existing conscious perspective
and extended it further, or which seemed to raise to consciousness
perspectives which, in a sense, they were already tacitly ware of.[1]
This last claim was difficult to justify by observation and has had
to be based on students' explanations for why they accepted certain
information.

Information which did not fit into this framework of "simple"
learning was rejected through a range of different conscious and
unconscious responses. It was misinterpreted through such devices
as polarization, superficiality and simple mishearing or it was
consciously rejected on the grounds of its ideological or operational
conflict with a given individual's own position.

Joanna's and John's greater development seemed, in contrast,
to be characterized by "complex" learning, in which information
would often be responded to positively, even when it conflicted
substantially with their conscious or tacit positions.[2] This type
of learning meant that they were constantly able to get new perspec-

tives on a theory and practice of architecture. At best, this
helped their own emergent positions to be developed in new and
usually productive directions and, at worst, it provided a polemic
against which these positions could be recognized.

Other students tended to see the potential spectrum of responses
to be between total and permanent capitulation and total and perma-
nent resistance. Most people seemed to operate in a middle ground
between these two, in which elements were accepted and others
rejected or in which a stance was accepted half-heartedly. Joanna's
and John's response did not belong to this continuum. It was
wholehearted but it was critical and, most importantly, it was
temporary. They expected to be able to return to their own perspec-
tives and maybe adapt them as a result of their experiences.

The same themes of difference emerge again when looking at res-
ponses to Quist's message about how to learn a theory and practice.
The other ten would only accept advice if it related, in some way,
to the learning mode and the learning role they already operated.
Joanna and John, in a later class, were both willing to adopt
learning stances which clashed with their habitual modes. They
showed the capacity for learning new ways of learning.

These two aspects of their learning behaviour came together to
give an approach to the studio which none of the others could manage.[1]
In the first place their learning how to learn behaviour meant that
they were and would always be as concerned with the process of
developing their theory and practice as with its end state. They
did not treat the learning process as fixed but were willing to
adopt different ones to maximize development. Because of this they
were bound to reflect on their development in ways that others were
not.

In the second place they were willing to take a multi-
perspectival view of the desired nature of their emerging theory
and practice, the learning product. They were willing to consider

many possible options, expecting later on to choose between them or
to construct a new theory and practice from them. The others seemed
already to have fixed on the major parameters and were expecting the
outcome of their theory and practice to be within the constraints
of these.

This open and flexible attitude to their own development is
interestingly mirrored in their approach to their school designs in
the studio. They were the only two who took clearly visible multi-
perspectival views in solving and defining problems. For example,
in Joanna's case she had taken six likely sites for her school and
used them as a mechanism for thinking about the siting problem.
Then, once it was defined, she set about choosing between them.
Everyone else seemed to have begun with a site already chosen, even
though one or two changed later and one or two may have been
informally selected by students considering options in their heads.

The best example of John's multi-perspectival design method
was his choice to execute seven separate schemes, each one maximizing
a different variable.[1] This had given him seven different perspectives
on his problem definitions. Then he had begun to generate a wide
range of options for each of his identified problems, only choosing
between them later, when he saw how they could be fitted together.

John, however, had been adamant that he would not always use
this multi-perspectival approach to a design. He felt that the
approach which was used depended on the nature of the problem and
its context; he had, for example, used quite a different procedure
in the previous semester.[2] For him the art of design was, after
taking a quick reading of the problem and its environment, to be
able to design a design method appropriate to it.[3] In this sense
then he was forced to show an equally reflective attitude to the
design process as he and Joanna are seen to do in the learning
process. Because he did not expect to carry out the same process
each time he could not, as the others, worry mostly about issues of
product when undertaking a design. In this sense there are impor-.

tant similarities between his "learning how to learn" and his "designing a design method" approaches.[1]

The qualities needed for a student to be able to carry out "complex" learning and learning how to learn have been shown to include a high degree of consciousness, self-awareness and self-confidence. All three are, in one sense or another, results of "distancing".

Self-consciousness, displayed to a greater or lesser extent by everyone, was necessary for "complex" learning and "learning how to learn". As one moved from one perspective to another, it was necessary to know the nature of the original position and the mechanism of moving, in order to be able to reverse the process when necessary.

Self-awareness, displayed by far fewer students, was necessary because, in order to progress beyond the barriers put up to defend or promote certain aspects of oneself, it was necessary to know what it was that was being defended or promoted at the deepest level.

Self-confidence was necessary because, in order to take an alternative perspective, or adopt an alien skill, one had, temporarily, to behave in ways which belied one's actual perspectives and skills. One had to exist in one's own eyes and feel comfortable in other people's when shorn of many of the elements around which one had built one's identity.[2]

Finally self-confidence was necessary, especially when dealing with powerful characters like Quist, to overcome the fear of being taken over by this person. Inevitably, without the familiar trappings of one's identity, one would feel more naked and vulnerable. It would take great confidence and even courage to let go of these.

All students displayed one or more of these qualities to a greater or lesser extent. To develop through "complex" learning and "learning how to learn", or to engage in what Quist called "the willing suspension of disbelief" would require all three to a great extent. Only Joanna and John seemed to have what was required although Petra, Phillipa and Matthew each seemed to lack in different ways only the quality of self-confidence. By the end of the year Matthew seemed to have confronted his problem and then seemed set to increase his development accordingly.

There is, of course, a close interdependent relationship between these elements; for example, self-confidence would be a great help to someone who would confront their own deeper motives and, to a certain extent, awareness of deeper motives must free a person from fear of the unknown aspects of themselves. This freedom from fear must promote an individual's sense of stability if not self-confidence.

In the same way this paper has tended to imply that the above states are the independent causes of "complex" learning and "learning how to learn". In fact it is much more likely that they are also a result of such learning skill.

5. <u>Shortcomings of the Program As Promoter of Complex Learning and</u>
    <u>Design.</u>

Joanna and John had been able to use the program to make sub-
stantial development because they displayed the above skills of
complex learning and learning how to learn. It seems likely, however,
that they developed these skills before coming into Quist's program
because, although these were the learning skills he was looking for,
there was no evidence that his program would have helped them do so.
This section is an attempt to describe the ways in which the studio
and its associated culture seemed actually to prevent the development
of these skills in the other ten students. These issues are discussed
under seven headings.

The Learning Sub-culture.

It was described how, almost without anyone being aware of it,
certain tacit agreements had grown up in the studio about what were
the boundaries of acceptable discussion and what were the rules for
information exchange. It was necessary for this to happen, for the
smooth operation of such a big studio, but in this case the nature
of the assumptions seemed to play an important role in preventing
the development of the required learning skills.

It was described how the tacit agreements and understandings,
sustained by the sub-culture[1] acted as the context within which
Quist's more direct messages were interpreted. It was these which
gave meaning to the verbal messages. Because Quist was such a
powerful and charismatic personality he had become the main orches-
trator of events, to the extent that nothing could begin in the
studio without his presence, all conversation had to take place
through him and even his fellow studio critics didn't feel free
to speak up when they disagreed with what he was saying. It was
students' acceptance of these events which became the context for
understanding Quist's request that they be "willing to suspend
their disbelief". Given that few of them had encountered such an

educational stance anyway, the context naturally inclined them to interpret him to mean that he wanted their capitulation to his point of view. Even people like Phillipa and Matthew, who may have under--. stood what he meant, were unwilling to comply because they felt insecure about ever being able to recapture their original position again in such an environment.

Once students had interpreted Quist in this way there was little chance that they would ever do anything else but try to give in to him or resist him. He, of course, wanted neither of these responses.

A Persistent and Unexamined Myth

The second force for promoting "simple" learning, and which seems to permeate all architecture programs, was the unexamined faith on the part of most students that architecture, being a "creative" discipline, must of necessity spring from the natural inclinations of the designer. It was this attitude, for example, which had caused Petra to discard any suggestions Quist made for her school design.

This same attitude persisted in approaches to the development of a design method. To be valid, opinion had it, a method had to spring out of oneself. Thus Nathan had talked of "us all being here to develop our own personal methodology", and Judith of "my way which was learned somewhere else" and Bart of his own "hermetic system". These sorts of attitudes, if held rigidly, virtually ensured that complex learning and learning how to learn could not take place. By definition these skills require an individual to put aside and suspend "personal" directions in order to try out other perspectives and skills not previously developed, contemplated, or even lying latent within an individual.

Product Fixation

In the above analysis the self-consciousness of students about how they actually worked and how they went about learning was seen

to be a necessary precondition for them engaging in complex learning and learning how to learn. While a good deal of effort was spent in raising a student's consciousness about his or her design product, issues of the learning and design processes were virtually ignored.[1]

The Principles lectures were so organized that the focus of attention was always on the products of vernacular building or on the products of "great" men, long since dead and about whose procedures of design no one could even speculate. The review sessions were set up for critics to respond to the students' products and perhaps could not be expected to do anything else. The desk crits, officially expected to deal with issues of the production process and the producer, hardly ever did so. Only the note-book exercise had attempted to raise students' awarenesses about how they operated but only three people had begun it and only Joanna had persisted with it.

In the desk crits the whole focus of attention was on answering two all-consuming questions which students had — "what do you think about this thing I have produced?" and — "how do you think it can be improved?" Students actually went out of their way to conceal their procedures by throwing away their early designs and rushing to have products ready for criticism. On several occasions students, in the middle of a process of investigation, actually postponed their crits until they had "something to show". Critics, in turn, were confused when students didn't have work to show and seemed unable to be helpful without it.

In an equally important sense, however, students and critics were engaged together in another production process; the production for each student of a theory and practice. In such a perspective the whole theory and practice of a given student becomes the product of his or her learning process.

Again the studio sustained an almost total unwillingness on the part of students and critics to confront these process aspects

of the learning enterprise they were engaged in together. So
strong was the taboo against discussing these things and yet so
strong were the passions raised about them that, at times, Nathan,
Bart, Thomas, Matthew, Petra and Simon have been shown to have all
used conflict or agreement over questions of substance as vehicles .
for expressing the educational responses they needed to make. These
kinds of confusion between substantive and learning issues were
almost promoted by the failure of the program to raise teaching/
learning issues to the level of legitimate enquiry.

The Poverty of Language and the Failure to Correct Misapprehension.

One of the major sources of the non-confrontation of the
process of design and learning was the poverty of the available
language for talking about these issues. Without such language
students would find it more difficult to identify their own habits
of procedure and almost impossible to understand suggestions for
alternative procedures. In such a situation complex learning,
learning how to learn and the design equivalents of these two could
not be expected to take place except by chance.

In many cases architecture, as a discipline, does not even
have names for many of its familiar elements of process. It was
discussed how at least four quite different activities are still
identified under the same term "drawing" and how at least five,
quite different, meanings for the word "creative" were discovered
to be in use in the studio. So many of the misunderstandings could
have been avoided if Quist, who has been described as one of the
most articulate people I have encountered in architecture, could
have explained in detail what was meant by "use of metaphor",
"recalling experience", "looping back and forth" and certainly "the
willing suspension of disbelief".

The poverty of language should have meant that critics and
students would take even greater trouble to ensure that there
had been congruence of meaning in an exchange but the contrary
seemed to be the case. There was very little evidence of critics

checking that their advice had been received in its intended meaning.
It even seemed that they actively shunned having to elaborate on
advice like "do more drawing" because they recognized that it would
lead into difficulties of expressing exactly what was meant.

Students, in turn, seemed to be unwilling to clarify that they
had understood advice. In many ways it has been discussed how they
seemed only to want to respond within their own terms anyway. In
this light it would be redundant to have to go through an elaborate
process of finding out what a critic really meant and then to have to
go through the difficulty of telling them that you weren't going to
do it anyway. It would be much better to leave the information loose
and unclarified so that you could do with it what you liked.

The Avoidance of Intimacy.

The product fixation of the program and its sub-culture not
only avoided questions of the production process but it also avoided
the producer. It was shown above that even when students were
conscious of their responses it was easy for them to avoid complex
learning and learning how to learn by resorting to unexamined ideolo-
gies. In many cases it has been shown how these ideologies seemed
to act as mechanisms for defending a student from having to confront
those issues and operations they felt insecure about or, sometimes,
for promoting those skills they felt too sure of. At no time on the
tapes are students confronted with their deeper motives for taking
a particular stance but, as documented in the cases of Bart, Thomas,
Andrea, Phillipa and Matthew, it was these which seemed to have
prevented them engaging in complex learning and learning how to learn.
In this studio, if you could reduce your conflict with a critic to
some form of clash of values then you were secure from pressure to
change. No-one was going to challenge you on your motives.[1]

Phillipa and, at a later date after the study, Matthew and
John talked of the vital importance of confronting these issues in
their design and learning stances and of the difficult and more in-
timate level of discourse required to do so. Matthew, as discussed,

felt that he had wasted almost the whole of his first year hiding
his fear of being taken over by Quist behind his insistence on
"induction" as his sole learning mode. He said about the level of
discourse in the studio - "it is interesting that conversations of
this kind (with me in his interview) rarely happen. Even at desk-
crits we don't talk of process perhaps because this kind of talk
needs to be more confessional. One's innocence is dealt with in
such a cursory fashion around here; as if you are not supposed to
ask the most basic questions about something."

John had said - "teaching methods must change ... it is not
enough to be told that one's circulation won't work. It may not even
be enough to be told why it won't work. The critic or advisor must
try to know enough about the student ... we need enlightened desk
critics who know about teaching, knowing about architecture may be
secondary." Phillipa had felt like leaving and getting a job because
the capacity of critics for responding to her on the personal level
required was so limited.

Assumptions About Learning Design

This section deals with the failure of the program to promote
the design equivalent of "complex" learning and "learning how to
learn".

There seemed to be an assumption on the part of the critics and
students that new forms of design behaviour could be developed through
the same mode of learning in the studio. What emerges out of the
research, however, is that the same information processing behaviour can
be found to lie behind both a given individual's designing and learning.
If this is the case, and the data is compelling, then it is pro-
bably wrong to expect that learning will ever in itself produce a
design process which is anything but a reflection of those informa-
tion processing skills which underlie itself. To change a given
student's design method in any substantial way would require deve-
lopment of their basic habits of information processing. This in
itself would require personal development of a much more profound

and fundamental kind than that currently expected of architecture
students learning design and would also incidentally lead to changes
in their learning as well as their design behaviour.

Joanna and John, as discussed in the last section, both approached
their learning and their design by taking multi-perspectival views
on the problem. They operated the design equivalent of "complex"
learning. In John's case his attitude to his ultimate design method
was similar to his attitude to learning. Just as he would be willing
to adopt learning stances to suit the nature of the material to be
learned and the particular learning context so he would set up a
different design method for each design problem and its context. He
would be able to design a design method in the same way that he was
able to learn how to learn in the studio.

Matthew exhibited the same inductive bias in his emergent design
behaviour as in his learning, though he was much more flexible about
the former. Quist exhibited the opposite; a versatile but relatively
fixed deductive teaching/learning mode and a deductive design method,
based on testing hypotheses. Bart practiced a rigid and fixed ver-
sion of Quist's deductive learning and design modes as did Simon,
although, in his case, he adopted a different learning role and design
role. Phillipa approached her own development and that of her design
through the "non-rational" method of waiting on a gestalt.

6. Suggestions for the Promotion of Complex Learning and Design.

This last section of the report makes some suggestions for promoting the learning and design skills attributed to Joanna and John in Section 4. It suggests ways in which the existing program could be.changed and does not attempt to construct an ideal program from scratch.

The suggestions are derived from two sources. Principally from the above data and analysis but also from the spin-off effects of my role as researcher in the studio. In one sense this role has demonstrated how it is possible to find out about students and the way they work. In another sense I had inevitably intervened in the development of the twelve students. In some cases this was productive and raised ideas for how the intervention could become a more deliberate part of the program.

Consciousness of Process

Consciousness was seen to be a central element of Joanna and John's skills. The program, however, only promoted consciousness with respect to the products of architecture. There was very little attempt to raise consciousness over design procedures and none at all over learning procedures.

The note-book exercise had failed because it had been seen by Quist and most students as only incidental to the real aim of producing a school design. In contrast to this exercise my research had required students to focus on and describe their design processes. Most people had begun by finding this difficult to do but had warmed to the task by the end of the semester. Most had talked of the value of being asked to do it and several people claimed that, until I asked them, they had never thought about it before. Since I had asked Andrea about this she had begun to watch herself working and had realised that her first description of how she worked had been completely wrong. This discovery must have been of substantial benefit to her.

One of the problems which everyone described was the lack of alternative models of procedure available to them. Quist had given one model but this had been delivered in verbal form and most people had had trouble translating it into action. In fact, each person had been surrounded by the different procedures of their colleagues, but they had not learned how to use this information in their own development.

In order to promote consciousness about a student's own method and their learning from the methods of other people it seems that the program should contain an exercise in which students presented their processes to the class.[1] In this, the process would be the focus of attention. Presumably this exercise is not attempted in schools because it is supposed that students are not able enough to describe their own procedures in an accurate and interesting enough fashion. The above cases have demonstrated that this supposition is quite wrong. In this studio, at least, most students were able to describe their procedures and some people, like Matthew and John, were enlightening to a quite surprising degree.

Although all but Joanna and John failed to adopt the learning process Quist wanted, the others were never confronted with the modes they did use. Three reasons have been discussed for why it is important to raise a student's consciousness about the way he or she learns. In the first place, issues of teaching/learning constantly became confused with issues of substance. In the second place, only by knowing how he or she presently operated, would a given student be able to learn how to learn in a new way and yet be able, later on, to return to the original mode when it was required. In the third place, similar information processing habits have been found to lie behind learning and design behaviour. It is vital for a student to confront these habits and it may well be that they are more easily identified in a student's learning behaviour than in their designing.

It was discussed how there seemed to be a tacit agreement among
critics and students that issues of teaching/learning were not publi-
cly discussable. This agreement should be dropped in this studio and
teaching/learning issues should be recognized as important currency
for exchange. This would then also provide a general framework for
discussion in which Quist could talk about the different learning
skills required for each aspect of his program.

Awareness of Deeper Motives

In the above analysis students could be conscious of their
behaviour but have little idea about their deeper motives for it.
They knew what they were doing but they didn't know enough about
themselves to know why. They could focus on the process but not
on the producer. Joanna and John and a few others were seen to have
the quality of "self-awareness", in which they seemed to have the
capacity for looking at themselves and their deeper motives for their
values and behaviours. Because they knew what their motives were
they were better able to suspend them in order to try a different
perspective on a given situation. People lacking self-awareness
were seen to resort too easily to ideologies and habitual behaviours
as ways of avoiding trying new perspectives. Often the ideology
seemed to be a kind of smoke-screen to hide the fact that they felt
insecure and uncomfortable about certain skills which they really
needed to confront. The "simple" learning of Matthew, Simon, Bart
and Thomas was explained in light of their failure to confront these
hidden insecurities.

Another tacit agreement between critics and students which made
up part of the learning sub-culture seemed to be that it was not
considered to be fair play to challenge students on the deeper needs
behind an expressed value. If a student could identify an ideologi-
cal reason why they weren't willing to try something then there was
nothing more to be said. This is another tacit agreement in the
current studio culture which should be dropped.

In order to help someone confront their deeper motives a critic would need to know far more about them and to know them more intimately than the critics knew the twelve students, who they each had under their care in the studio. In my research I felt that I had got much nearer to the level of knowledge required. To get this I had spent about four hours in interview with each student during the semester. As each student saw their own critic for about one hour a week, my time with them represents about four weeks' worth of studio time. Although this is a substantial amount of time I feel, given equal knowledge of the substantive material, I would have been able to be of more help to students than their critics were. Also I felt that, in time, my ability to elicit a given student's perspectives would improve so that, while it presently took me four hours to get sufficient knowledge, I would be able to reduce it to two or three.

By the end, I felt that there was a good deal to recommend the interview format, which had been based on the Kelly grid technique, described in Chapter 2. I felt that I had been able to get through to student's real purposes and perspectives and I had avoided, through the obtuse style of the method, the usual problems of the subject trying to impress the researcher.

Confronting Miscommunication

Another tacit agreement or bargain, which seemed to have been struck between critics and students, was that neither would push for confirmation that a piece of advice from the critic had been received by the student in its intended form. The cases are full of examples of miscommunications in which the critic had never checked back to see if his or her advice had been clearly understood. The student, in turn, seemed to have been equally unwilling to clarify with the critic.

Communication has been shown to be confounded in the studio by the poverty of available language; the ambiguity of the words "drawing" and "creativity" were particularly mentioned. Yet in the

light of the agreement not to confront miscommunication, the poverty
of language could be an advantage and seemed to be almost deliberately
sustained in this studio. Each party in an exchange seemed to have
a motive for keeping it as loose as possible. The critic did not
want to have to clarify advice, which would be difficult to elaborate
on in detail. It is easy to say to a student "you must reach back
and use your experience of spaces" but it is very difficult to tell
someone exactly how to do that. The student, in most cases, was only
willing to take advice which fitted into or extended existing pers-
pectives and skills. In this light what would be the point of clari-
fying with a critic their exact meaning when one had already decided
how one was going to respond whatever this meaning was?

This behaviour is the essence of the "simple" learning which
was exhibited by the ten students and fostered by the failure of
critics to confront them. It is quite possible to discover how a
given student has interpreted advice, as indicated in the cases
above, and it is suggested that this should become common practice
in the studio.

This proposal to follow up advice to see if it had been correctly
received and the promotion of students' consciousnesses about their
learning and design procedures raises the issue of the poverty of
language to central concern. The only suggestion which makes any
kind of sense is that, failing development by others, the studio
must itself become partly a laboratory for language and concept
development. Involving students in such an enterprise might anyway
be the best way to raise their consciousnesses about their own
procedures.[1]

Awareness of Context
 It was described how the gradual emergence of the studio culture
had established other, usually tacit, understandings, like the ones
mentioned above. One aspect of this process had been the emergence
of agreed rules for the relations to be adopted in teaching/learning.
The importance of these emergent understandings seemed to be two-fold.

In the first place they exerted unusual power because students were
only vaguely aware of them and in the second place they formed the
background, or the context, within which other, more direct communi-
cation, came to be given meaning.

In this studio the rules for information exchange seemed to be
that nothing significant could begin or happen unless Quist was
present; that most conversation in formal meetings had to take
place with or through Quist as intermediary; that the other critics
either actually agreed with Quist or they had agreed not to disagree
with him in public. The reason for the emergence of these under-
standings had a lot to do with Quist's problem of managing a class
size of fifty students but it also had much to do with his energy
and charisma and his ability and willingness to lead and inspire
the class.

This background understanding, which had been tacitly agreed
to but not confronted by most of the students, then became the
context in which they received and interpreted messages from Quist
and responded to them. Largely because of this context, although
also because he was asking for stances which few of them had
previously encountered, the majority of students had completely
misinterpreted his advice about how to use his program. In the
light of the context in which interpretation was made, it was easy
to see how they had misunderstood and why they had responded with
rigid forms of acceptance and rejection, which was the last thing
he actually wanted from them.[1]

In a different sense, some students had understood what he was
asking for and seemed to be capable of the difficult and risky
exercise of "complex" learning or the "willing suspension" of their
own perspectives and operations. But they had to take this stance
in the context of the background assumptions about roles in informa-
tion exchange in the studio and this made the task a great deal
harder. In the end only Joanna and John had the self-confidence

and courage to behave in this way.

It has been discussed how there were many advantages as well as costs to the role Quist played in the studio. The costs could be minimized by raising the awareness of students to the emergence of the studio culture, and to the nature of the assumptions which were becoming established, thus enabling them to take these into consideration when interpreting the meaning of Quist's messages.[1]

FOOTNOTES

7   1   While the research was essentially inductive, that is it attempted to discover concepts from the data, the data collection was not the mindless and unguided assembling of facts which Mills called "abstracted empiricism". It was, as he suggested it should be, a process of looking at "what actually goes on in the process of social action, then generalize and make consistent those procedures that seem most promising. This is a difficult kind of work and can often result in nonsense, but it is much less difficult if every working social scientist does it, and there is a sense in which each must do it. So far little of it has been done, and it has been applied to only certain kinds of method".

C. Wright Mills
The Sociological Imagination
Oxford Univ. Press N.Y. '59

The guiding principle of the inductive method was a comparative analysis of the twelve students. The method of eliciting concepts in this way was much influenced by Glaser and Strauss.

Glaser B.G. and Strauss A.L.
The Discovery of Grounded Theory, Strategies for Qualitative Research
Aldine Publishing Co. '67

7   2   The clarification about the model of man and environment being used here also served as a mechanism for cutting down the range of search in the comparative analysis.

The model was not tested by the research but acted as an a priori assumption guiding search and interpretation.

Kelly's work has been most coherently "marketed" in recent years by Bannister and Fransella. "Kelly sees man not as an infantile savage nor as a just-cleaverer-than-average rat nor as a victim of his own biography but as an inveterate inquirer, self-invented and shaped, sometimes wonderfully and sometimes disasterously by the direction of his enquiries...... a man _is_ the sense he makes of the world".

Bannister D. and Fransella F.
Inquiring Man. The Theory of Personal Constructs
Penguin '71

7   3   "The attribute of intelligence is not, in fact, to contemplate but to "transform" and its mechanism is essentially an operational one..... it is therefore action itself and not perception alone which provides an appropriate point of departure. In fact one does not understand the products of an object except by acting upon it and transforming it. There are two ways......

1) Consists of modifying its position, movement or property — "empirical".

2) Enriching the property with new properties or relations, completing them through systems of classification, ordering, measuring, etc. — "logico — mathematical".

Piaget J.
Psychology And Epistemology, Towards A Theory of Knowledge

I was open to use an extension of this idea in psycho-
analytic theory, which would posit a "drive" on the part
of individuals to act on their environment in this way.
In the end no ideas emerged from the data which could
pick up or use this perspective. White has described
how animals, children and even adults seem to seek out
objects or environments which are most open to their
own manipulation. "Recent workers have begun to see
the significance of these facts for learning to deal
effecitvely with one's surroundings. It is proposed
here to refer to the energy behind such behaviour as
"effectance" and the affect that attends it as "feeling
of efficacy". Effectance thus refers to the active
tendency to put forth effort to influence the environment,
while feeling of efficacy refers to the satisfaction that
comes with producing effects."

White R.W.
Ego and Reality In Psychoanalytic Theory
Psych. Issues Vol. III No. 3.

7   4   Berger P.L. and Luckmann T.
The Social Construction of Reality
Penguin Books '66

8   1   In Gouldner's terms this was an attempt to achieve what
he calls "Reflexive Sociology". To him it has three
main facets, each attempted in this research –

1) "The conduct of research is only a necessary but
not a sufficient condition for the maturation of
the sociological enterprise. What is needed is a
new praxis that transforms the person of the
sociologist".

2) "The ultimate goal of Reflexive Sociology is the deepening of the sociologist's awareness of who and what he is, in a specific society at a given time, and how both his social role and his personal praxis affect his work as a sociologist".

3) "It seeks to deepen the sociologist's self-awareness as well as his ability to produce valid, reliable bits of information about the social world of others".

Gouldner A.W.
The Coming Crisis of Western Sociology
Basic Books Inc. '70

8   2   As in Simon and March's work, conflict thus becomes the generator of search behaviour. This theme is picked up again in the discussion of the interview method. Also, while using a form of conflict analysis, it should not be assumed that I am thereby taking on the model of "rational man" of classical conflict theory. On the contrary the whole issue of how "rational" man is and can be becomes an important substantive concern of the study.

March J.A. and Simon H.A.
Organisations
John Wiley & Sons '58

8   3   This technique is described in Bannister and Fransella, quoted above and in Kelly's main work.

Kelly G.A.
The Psychology of Personal Constructs Vols. I & II
W.W. Norton & Co. '55

8   4   Because Kelly's technique was intended to aid working psychiatrists it is concerned with eliciting usable material. For this reason it is suggested at the end of the report that it is a particularly appropriate mechanism for helping critics find out, not only where students are at but also how to get through to them with helpful suggestions.

Kelly said of his method — "usability, rather than accuracy, per se, is the minimum standard of a good test ..... reaching the pathways along which the client is free to move ..... to reach the client's resources". (p.204)

Kelly G.A.

The Psychology of Personal Constructs Vol. I

W.W. Norton & Co. '55

8   5   Argyris and Schon call such superficial rationalisations, which can be deliberately or unconsciously misleading, "espoused" theory. Concepts which are assumed to be interdependent with action are called "in-use" theory. Everyone has an "in-use" theory to go along with their actual behaviour but they often hold it unconsciously. In their work, Argyris and Schon, avoid all attempts to get concepts directly for fear it be of the "espoused" variety. In this paper, through the use of Kelly's method, I claim to have avoided this problem and to have elicited "in-use" concepts. In this way I have been able to go into much finer detail about how a given student interprets a message and to explain their motives for interpreting it in a given way. It is a much riskier process but, in order to describe an individual's development, it was necessary to get that kind of data.

Page No.

Argyris C. and Schon D.A.

Theory in Practice

Jossey-Bass '75

10   1   Kolb's self-characterisation test is described in his
              book -

              Kolb D.A. et al

              Organisational Psychology, A Book of Readings

              Englewood Cliffs: Prentice Hall '74

22   1   Bateson G.

              Steps To An Ecology Of Mind

              Balantine Books Inc. '72

137   1   Some would argue that outcomes are written into an
              individual's structures - "outcomes are latent in the
              dynamic structure of the systems we have or may adopt.
              They will inexorably emerge".

              Beer S.

              Managing Modern Complexity

              Architectural Design 10/'72

138   1   It will be claimed that Joanna and John were responding
              to the needs expressed here by Morrison on the need for
              a new view of ourselves - "as a society which in time
              of great change identified with and obtained security
              and satisfaction from the wise and creative accommodation
              to change itself. Such a view rests, I think, upon a
              relatively greater reverence for the mere process of
              living in a society than we possess today, and a
              relatively smaller respect for and attachment to our
              special product of a society". (p.43)

Page No.

Morrison E.

Men, Machines And Modern Times

M.I.T. Press

139   1   Bateson claims that the mistaking of symbols for the
phenomena which they symbolize is an increasingly common
error in our society — "the map is not the territory".
(p.449)

Bateson G.

Steps To An Ecology Of Mind

Balantine Books Inc.   '72

141   1   De Bono argues that practice is more important than
understanding — everyone understands the need to consider
other people's point of view but not many can do it.

De Bono E.

Teaching Thinking

Maurice Temple Smith   '76

141   2   There are similarities between learning to really operate
complex behaviours and learning a social role — "To learn
a role it is not enough to acquire the routines immediately
necessary for its "outward" performance. One must also
be initiated into the various cognitive and even affective
layers of the body of knowledge directly and individually
appropriate to this role".

Berger P.L. and Luckmann T.

The Social Construction of Reality

Penguin Books   '66

147   1   This interdependence of the design of the problem set
and problem solution is described by Vickers — "the

Page No.

criteria by which one solution is preferred to another cannot be derived merely from the problem set. The "executive" even at the simplest level is never wholly relieved of the problem of "optimising-balancing", which is the hall-mark of policy making". (p.40)

Vickers Sir G.
The Art of Judgement
Chapman & Hall '65

147   2   Morrison has pointed up the dangers of such an attitude, using Hamlet as an example — "the trouble was he got the right answer, the answer he deserved, to a question that was totally wrong. He had asked about his father when he should have asked, as any psychologist will tell you, about himself and his relations with his mother ....
my culture says, in other words, that it is much harder to ask the right questions than to find the right answer and the right answer to the wrong question isn't worth much". (p.91)

Morrison E.
Men Machines & Modern Times
M.I.T. Press

150   1   Berger and Luckmann talk of the "indispensible plausibility structure" for an idea to be held. (p.47)

Berger P.L. & Luckmann T.
The Social Construction of Reality
Penguin Books '66

151   1   "It is easy enough to provide interesting thinking situations, it is also easy enough to suppose that because a pupil is indeed thinking in such situations he must also

be abstracting some general principles. What tends to
happen is that the interest and the momentum of the
content preclude any attention being given to the process
itself.

De Bono E.
Teaching Thinking
Maurice Temple Smith '76

152   1   In making this definition it is necessary to distinguish
between what Kaplan calls "act meaning" and "action
meaning". The "act meaning" of a response refers to its
meaning to the actor. Thus to Judith, in her case, she
was accepting Quist's advice fully. The "action meaning"
is the meaning of the response to the observer. In the
same case Judith is seen, in this light, to be rejecting
the bulk of Quist's advice. In this sense then an
individual is called "conscious" in this paper when
"act meaning" coincided with my "action meaning"!

Kaplan A.
The Conduct of Inquiry
Chandler Publishing Co.

153   1   This careful investigation would not be expected to
lead to a more complete rationalisation but rather to
an awareness of what lay, in Nietzsche's terms, "at
bottom" —"While at bottom it is an assumption, a hunch,
indeed a kind of "inspiration" — most often a desire
of the heart that has been filtered and made abstract —
that they defend with reasons (which) they have sought
after the fact". (p.11)

Page No.

Nietzsche F. (Walter Kaufmann Trans.)
Beyond Good And Evil
Vintage Books '66

154   1   Gouldner calls these unrecognized elements "the silent
partners in the theoretical enterprise".

Gouldner A.W.
The Coming Crisis of Western Sociology
Basic Books Inc. '70

155   1   This state of committment in a relativist world, in
which one has looked carefully at an issue from more
than one perspective, is similar to Perry's concept of
the mature student. To simplify Perry's nine stages
to three - his undergraduate arts students begin as
Freshman, willing to believe blindly in one point of
view. The Sophomore learns eventually that any position
is open to effective challenge and thus gives up a
committment to anything. The Senior, if he is lucky,
recognises the need for committment to get out of his
nihilistic state and in order to be enabled to start
directing his activities.

Perry W.G.
Forms of Intellectual and Ethical Development in the
College Years
Holt, Rinehart & Winston '68

155   2   De Bono has pointed out that "prejudice" might be looked
upon as a crude "two finger thinking skill" for cutting
out much of the complexity of the world of information.

De Bono E.
Teaching Thinking
Maurice Temple Smith '75

Page No.

156   1   Bateson seems to take a similar line - "it is suggested
that the specific nature of this distortion is such that
the cybernetic nature of self and the world tends to be
imperceptible to consciousness, insofar as the content
of the "screen" of consciousness are determined by
considerations of purpose". (p.444)

Bateson A.
Steps To An Ecology Of Mind
Balantine Books Inc. '72

159   1   Distancing is a skill recognized by Perry as a necessary
precondition for a student moving out of the Freshman
stage of blind committment - "what is required is a
capacity for detachment. One must be able to stand back
from oneself, have a look, and then go back in with a
new sense of responsibility".

Perry W.G.
Forms of Intellectual & Ethical Development in the
College Years
Holt. Rinehart & Winston '68

160   1   Kaplan relates such behaviour to "the law of the instru-
ment" in which - "you give a small boy a hammer and he
will find that everything he encounteres needs pounding.
We appraoch every sitaution as if the tools we have
available are those needed for dealing with the situation".

Kaplan A.
The Conduct of Inquiry
Chandler Publishing Co.

160   2   "Complexity" is an important concept here. Bart has a
relatively simple and invariant tool for dealing with

complexity. John's is itself more complex. The Law of Requisite Variety claims that "the complexity of the system to be controlled strongly influences the complexity of the necessary controls".

Britton Harris
Complexity In The Metropolis
Architectural Design 10/'72

160   3   Levin has written about this need to be aware of how the quality and availability of information affects the procedures of problems setting and problem solving so that a suitable method can be constructed from a quick reading of the problem and problem context. "The ability to face the fact of being faced with a decision making situation of a certain type and the ability to recognise how procedural, personal and organisational factors could, if not controlled, influence the decision reached".

Levin P.H.
Towards Decision Making Rules For Urban Planners
Journal of The Town Planning Institute Vo. 53 (10) '67

164   1   Bateson has illustrated this point by looking at a man who is at the theatre. He sees someone called "Hamlet" threatening to commit suicide but he does not leap to his feet to telephone the police. The threat is understood in the context of this being a play and the man knows it is a play by other messages or "context markers" which tell him so.

Bateson A.
Steps To An Ecology Of Mind
Balantine Books Inc. '72

Page No.

168   1   Popper is perhaps the best known arguer for this stance –
"I do not believe that we ever make inductive generalisa-
tions in the sense that we start with observations and
try to devise a theory for them".

Popper K.R.

Unity of Method In The Natural And Social Sciences
In Braybrooke D. (ed)
Philosophical Problems of the Social Sciences
Macmillan '65

169   1   Matthew's focus would be on the "almost" of the following
quote from Miller. He felt that through discipline
perception and conception could be kept apart a good deal
more than Quist suspected – "It is almost impossible to
keep them (perception and conception) apart. As soon as
one begins to consider even the simplest problems, one
discovers that space perception is riddled with inferences,
hypotheses, assumptions, meanings, expectations, that
derive from conceptual space". (p.115)

Miller G.A.
Psychology: The Science of Mental Life
Harper and Row '62

170   1   Her stance seemed close to the one argued for by Poole
in his discussion of "subjective method" – "sympathy and
empathy are not elements one can include or exclude at
will: they are inevitable structural parts of a whole
thinking being ...... without them the analysis would
not proceed, would not know its own path, would not have
a sufficient raison d'etre for continuing. Intuitive
participation in the act of thought gives a value, a
personal value, to the whole enterprise. It guides the
thinker towards a new clarity and warns him off conclu-

sions which are less than adequate in the light of the totality".

Poole R.
Towards Deep Subjectivity
Allen Lane '72

174   1   The concept of "tacit" knowing is used as described here by Argyris and Schon - "even when a craftsman cannot describe his or the organisation's theory of action, we attribute to him a kind of knowing ...... we might then say, following Michael Polanyi, that he knows the theory-in-use "tacitly"". "Tacit" thus becomes the opposite quality in this paper to "conscious".

Argyris C. & Schon D.
Organisational Learning, A Theory Of Action Perspective
Draft Publication '76

174   2   The distinction between the concepts of "simple" and "complex" learning in this paper are derived from Argyris and Schon's concepts of "single loop" and "double loop" learning and from Bateson's concepts of "Learning 1" and "Learning 2".

Argyris and Schon's concepts, developed for talking about "organisational learning" are described - "In single - loop learning, new strategies of task performance are adopted for the achievement of organisational norms which do not change ...... In double-loop learning, new ways of seeing the organisational situation lead members to detect errors in performance which they would not previously have recognised ...... In the first case, change in the theory-in-use is highly restricted:

typically it involves a single strategy and its related assumptions. In the second case, change in theory-in-use is both central and extensive. A change in norms carries with it requirements for changes of classes of strategies and assumptions".

In these terms, then, "simple" learning represents sophistication and elaboration of an established set of criteria which do not change. "Complex" learning sees substantial change in the established set.

This perspective also has much in common with Bateson's "Learning 1", which is described as — "the revision of choice within an unchanging set of alternatives and "Learning 2", which is — "a corrective change in the set of alternatives from which choice is made".

In this sense "simple" learning can perhaps be seen to be choice from a finite set of possible but maybe latent concepts or operations. "Complex" learning can be seen to be a change and not just a development in the potential of the individual.

175   1   This quality is close to what Bateson calls "flexibility" or "uncommitted potentiality for change". (p.497)

Bateson G.

Steps To An Ecology Of Mind

Balantine Books Inc. '72

176   1   This was a deliberate heuristic close to De Bono's "APC (Alternatives, Possibilities and Choices)" heuristic which is one of his devices for teaching thinking to children.

De Bono E.

Teaching Thinking

Maurice Temple Smith '75

176   2   Levin, quoted above, has talked of the influence of the "discretion content of information" and Galbraith of the "predictability of the task" as influencing the type of design method used. This can be related to other qualities like the "complexity" of the problem and its environment, the interdependence/independence of the operative variables and the possibility of discontinuity, related earlier to Britton Harris.

Galbraith J.R.

Organisational Design, An Information Processing View

Sloan School Working Paper, M.I.T. '69

176   3   Crutchfield calls this a "master thinking skill — the creative person's basic ability to plan, organise and deploy his repertory of specific skills in optimal attack on a creative problem.

Crutchifeld '66

177   1   Foz might have been hinting at such an overlap when he described parti-development as a "self-sophistication process".

Foz A.

Some Observations On Designer Behaviour In the Parti

Master's Thesis — M.I.T. '72

177   2   This finding of the importance of self-confidence is not borne out in the work of Hall & Mackinnon. They discovered little relation between "ego disfunction" and "creativity".

To them the only statistically relevant forcaster of creativity was "committment".

Hall & Mackinnon '68

179   1   Parlett has distinguished between "educational fore-
ground (of tutorials, lectures, courses, examinations,
etc)" and "educational background (of buildings,
traditions, local customs, geographical features, etc)."
He argues that the background, what he calls the depart-
mental "milieu", provides a context for learning which
may have far more influence than has been recognised.
In this paper the terms "studio culture" and its compo-
nent the "learning sub-culture" belong more correctly
in Parlett's "educational foreground" category. But,
in that these terms relate to largely unrecognised under-
standings and bargains struck between critics and students,
they have more in common with the "educational background"
category of "milieu".

Parlett M.R.
The Department As A Learning Milieu
Studies In Higher Education Vol.2 No.2 '77

181   1   Perhaps architects, because they deal in a medium which
is more permanent than words, are more prone to product
fixation. But it is a common phenomenon, as described
here by Kaplan - "Another source of theoretical bias is
what might be called "substantialism" - the search for
entities and structures rather than processes and func-
tions - The older categories of matter and energy have
not yet been integrated in much of our thinking with the
new categories of information, so that order does not
seem to be as real somehow as the materials which exhibit

the order, and the message seems more ethereal than the channel by which it is transmitted". (p.324)

Kaplan A.

The Conduct of Inquiry

Chandler Publishing Co.

183   1   Perry says — "It is no longer tenable for an educator to take the position that what a person does with his intellectual skills is a moral matter rather than an intellectual problem and therefore none of the scholar's business. Epistemologically the knower and the known are now inseparable. The forms of knowing entwine with the forms of the known and this involvement includes the forms of the knower's responsibility". (p.212)

Perry W.G.

Forms of Intellectual & Ethical Development   in the College Years

Holt, Rinehart & Winston '68

187   1   This idea of a seminar format in which students discuss their different perspectives on design problems is promoted by Abercrombie — "A situation (free group discussion) is described in which alternative judgements of the same stimulus pattern are discussed, and some of the factors influencing the judgements become apparent. The validity of the contribution of the various factors can be assessed. The results of a test support the hypothesis that judgement is improved after this experience." (p.172)

Abercrombie M.L.J.

The Anatomy of Judgement

Hutchinson '60

Page No.

190 1 Miller poigniantly describes the costs and benefits of
the development of language — "We insulate ourselves
from the world around us by a curtain of language. The
reward is a greater efficiency in dealing with patterns:
with organised parts of the world. It is the language
we speak more than anything else we do that represents
the particular sculpture we have carved out of "the
primordial chaos of sensations"". (p.49)

Miller G.A.
Psychology: The Science of Mental Life
Harper and Row '62

191 1 In attempting to communicate his message to the students
Quist had not recognised that this would be interpreted
in the light of other non-verbal messages he was also
giving them. This mistake must be similar to the error
Bateson speaks of — "but when you separate mind from
the structure in which it is imanent, such as human
relationship, the human society, or the ecosystem, you
thereby embark, I believe, on a fundamental error, which
in the end will surely hurt you". (p.485)

Bateson G.
Steps To An Ecology Of Mind
Balantine Books Inc. '72

192 1 I am calling here for a kind of self-analysis by the
members of each studio, to discover what are the back-
ground assumptions of the studio culture and its compo-
nent, the learning sub-culture, that they have developed
together with their critics. This suggestion is similar
to Parlett's that departments engage in a kind of "do it
yourself anthropology" in order to illuminate the
influence of its "milieu" (see above) on learning.

Page No.

Parlett M.R.

The Department As A Learning Milieu

Studies In Higher Education Vol.2 No.2 '77