Why Are You Stuck?
Inquiries in the Design Studio

By
Avigail Sachs

Bachelor of Architecture
Technion, Israel Institute of Technology
August 1995

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN ARCHITECTURE STUDIES
AT THE
MASSACHUSETTES INSTITUTE OF TECHNOLOGY

JUNE 1997

© 1997 Avigail Sachs. All Rights reserved

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

Signature of the Author
Avigail Sachs
Department of Architecture
May 1997

Certified by
William L. Porter
Norman B. and Muriel Leventhal Professor of Architecture and Planning
Thesis Advisor

Accepted by
Roy Strickland
Associate Professor of Architecture
Chairman, Departmental Committee on Graduate Students

JUN 20 1997
Thesis Readers

- Bill Hubbard, Jr.
  Visiting Associate Professor of Architecture
  Department of Architecture
  Massachusetts Institute of Technology

- Gabriela Goldschmidt
  Associate Professor of Architecture
  Faculty of Architecture and Planning
  Technion, Israel Institute of Technology
**Why Are You Stuck?**

**INQUIRIES IN THE DESIGN STUDIO**

By

**Avigail Sachs**

Submitted to the Department Of Architecture on May 9, 1997

in Partial Fulfillment of the Requirements for the Degree of

Master of Science in Architecture Studies

**ABSTRACT**

This thesis investigates the architecture design studio by focusing on particular instances in the studio: Situations in which students "get stuck." This study first discusses what these situations involve: When do students consider themselves stuck, how can such situations be recognized in the studio and what are their possible causes. In this description "stuckness" is seen as a reaction to a breakdown in the relation between the student's actions and the requirements of his environment. In the second part of the thesis the notion of inquiry (as described by John Dewey) is applied as a research method and used to determine the cause of a specific situation. The structure and content of such inquiries is discussed through a detailed example. Although the thesis does not intend to devise solutions to "being stuck," the practical uses of the research method in the design studio are considered as well: Inquiries are also seen as a tool to illuminate student's problems and to provide opportunities to discuss issues that are crucial to the student's learning.

The theoretical background of this study is drawn from work in several fields, including that of Kurt Lewin, John Dewey and Clifford Geertz. This thesis also relies on information gathered in informal interviews with architecture students and faculty and inquiries conducted within two design studios.

Thesis Advisor: William L. Porter

Title: Norman B. and Muriel Leventhal Professor of Architecture and Planning
ACKNOWLEDGMENTS

- Many thanks to my committee members: Prof. William Porter for two fascinating years, Prof. Bill Hubbard for all the ideas and comments and Prof. Gabriela Goldschmidt for encouragement that began before and went beyond her advice on this thesis. Thank you also to Prof. Donald Schon for suggestions that have proved invaluable.

- To all the students and faculty who took the time to describe their “getting stuck” and to professors “Sara” and “Charles“ and their students who welcomed me and shared their experiences and ideas with me. Thank you! I enjoyed all the conversations and all the hours I spent in the studio.

- To many friends with whom I discussed these and other ideas: Osnat Ganor, Aparna Datey, Ross Silberberg, Irit Printz, Tabi Wiedenfeld, Marios Christodoulides, Tal Einhorn, Ilan Dunskey and especially Jane Crudden, without whom this period in Cambridge would not have been the same.

- To my late grandparents, Lillian and Jacob Wolfowitz, who were the first to suggest graduate studies (when I was four) and who made it possible for me to fulfill their expectations. To Laura, Tsvi, Rachel and Natan Sachs and to Ariel Libman: All my love.
CONTENTS

3 Abstract
4 Acknowledgments

Introduction
8 • Why study “stuckness”?
9 • Relevance to the architecture education debate
10 • Thesis overview and method of work

PART 1: “STUCKNESS”

Chapter 1: The ‘Life Space’: The Design Studio
14 • The life space and momentary situations
15 • The life space: The design studio
16 • The design project
16 • The design instructor
16 • The desk crit
20 • Fellow students
21 • Progress and success in the design studio

Chapter 2: “Stuckness” Situations
23 • Behavior perceived as “being stuck”
26 • Defining “stuckness” situations
28 • Effective design process
29 • The breakdown
32 • Discord
32 • Judging a “stuckness” situation
34 • "Being stuck"
35 • The breakthrough and “unsticking”
37 • Renewed design process

Chapter 3: Causes of “Stuckness”
38 • Dalia
42 • Causes in the design studio
44 • Paul

PART 2: INQUIRIES

Chapter 4: Inquiring into “Stuckness” Situations
48 • Understanding a situation
49 • Inquiries and 'thick descriptions'
51 • Interpreting “stuckness” situations
52 • Determining the situation
53 • Identifying causes
55 • Problem formulations
57 • Clarifying the situation

Chapter 5: A Case Study
58 • Background
60 • Determining the situation: Was Lea stuck?
62 • The causes: Sara’s and Lea’s explanations
66 • Formulating a problem
67 • Clarifying the situation: Why was “stuckness” possible?
75 • Alternative problem formulations
77 • Discussion of the case study: The inquiry outline reconsidered
80 • Lea’s drawings

Chapter 6: Conducting Inquiries in the Design Studio
85 • Conducting inquiries in the studio
86 • Petra and Quist
89 • Conducting an inquiry conversation

92 Concluding Remarks: Future Endeavors
Appendix A: Identifying “Stuckness”
101 • Identifying “stuckness” in the studio

Appendix B: Guidelines and Useful Questions
103 • Guidelines for inquiries in the studio
104 • Useful questions

Appendix C: Sample Causes of “Stuckness”
106 • Causes related to the design project
106 • Causes related to confusion over the design process
107 • Causes that can be attributed to a lack of design skills
108 • Causes related a knowledge of architecture
108 • Causes involving the studio instructor
109 • Causes related to the studio requirements

Appendix D: Transcripts of Inquiries
110 • Paul
112 • Miguel
115 • Dalia
118 • Lea and Sara
INTRODUCTION

Why Study “Stuckness”?  
The design studio, the center of most architectural education programs, is a complex and challenging experience. Not only is the student expected to learn many new concepts but he is also asked to perform at least two tasks simultaneously: To design and to learn to design. He must in addition be able to conduct personal relationships with instructors and fellow students and present and defend his ideas. The studio is more than a place to study, it is the situation in which the student is initiated into what Dana Cuff has called the culture of the architectural profession (Cuff, 1991.) It is here that the students learn what is currently accepted as ‘architecture,’ ‘design’ and the ‘role of the architect.’

Investigating the design studio, understanding its mechanisms (such as the motives for different actions in the studio) is as difficult as completing its requirements. This thesis approaches the difficulty by focusing on particular examples of studio life and attempting to determine their characteristics so as to understand them better. The situations examined are not a distinct set or group, but can all be described as situations in which students are “stuck.”  

They are useful for understanding the studio since they may be seen as extreme cases in which the normal studio process breaks down, revealing it’s nature. As Roger Simmonds (1981) point out about situations with similar

---

1It is assumed that the existence of these situations needs no proof. I experienced and observed them during my own tenure as a student of architecture. All the students I approached with the question were able to report a situation they had experienced or observed which they considered cases of “stuckness.”
characteristics: “It is in these conflict situations that I feel information is most clearly revealed about a student's state...” (p. 15-16.)

Mature designers experience “stuckness” situations as a inherent component of any thought process (see Adams, 1979.) As Marvin Goody described in an interview reported in “Processes in Architecture: A Documentation of Six Examples”:

LL: What do you do when you get stuck in this kind of process?
MG: I talk to Joan (Goody.) Joan is constantly doing the same thing to me: “I’m stuck,” She’ll say “You’ve got to come talk to me. Here are all the problems as I see it.” (Cruikshank, 1979 p. 24)

It was expected, however, that students in the design studio would encounter a wider range of difficulties that could be attributed to the fact that they were novice designers, (as a fellow graduate student of mine said: “I am getting less stuck” ) and that they were in the studio environment. Therefore it was also expected that the investigation of these situations would reveal information not only about the design process but about the studio as well.

Although “stuckness” situations in the design studio are usually unintended and on the whole unwelcome, not all have such severe implications so as to disable the designer. On the contrary, many “stuckness” situations can be considered an integral component of the design process. Winograd and Flores (1986) even discuss the different ways in which getting stuck contributes to any thought process. It is these “milder” situations that are of interest in this study.

Relevance to the Architecture Education Debate
An examination of the design studio is relevant in light of the ongoing debate about architectural education. This debate has been clearly articulated in architectural publications and in the annual meetings of the Association of Collegiate Schools of Architecture. Much of the discussion concerns the curriculum of architecture education and the pedagogy of teaching the design studio. Many writers have critiqued different aspects of this environment (Maass, 1991; Kliment, 1991; Dutton, 1987 and Willenbrock, 1991.) Boyer and Mitgang, in their 1996 Carnegie Foundation report, Building Community clearly
advocate a reform of the design studio and the architecture curriculum. Some writers go so far as to suggest canceling the design studio completely (See Rapaport, 1984 and Beckley, 1984.)

Many writers join this debate by supporting particular pedagogical approaches to teaching the design studio. Horst Rittel, for example, in “Principles for the Design of an Educational System for Design” (1986) constructs a model of teaching based on the problems designers encounter while designing. Rittel lists twelve such difficulties. He then explains: “I had assumed that an educational system for design should prepare and equip the student for practice and that, therefore, it should focus on the typical and recurring difficulties of designing, on ways to overcome these difficulties, and on that knowledge necessary to obtain the knowledge needed for a particular project” (373.) Other examples include “Towards a New Pedagogy” by Robert Oxman (1986) and Educreation (Ritter, 1966.) The Proceedings of the annual ACSA Meetings include many such suggestions as well. (See for example Blake, 1981; Jordan, 1979.)

I believe that any suggestions for reform of the design studio and the architecture curriculum must be based on a better understanding of how the current design studio operates and how students perceive this environment. Therefore, although this thesis does not propose a specific pedagogy for the studio I think this study pertains directly to such considerations, since it is part of the foundation on which suggestions should be made.

Thesis Overview and Method of Work
This study focuses on two questions concerning “stuckness” situations:
• What are “stuckness” situation in the design studio? How can they be recognized and how are they characterized? What are possible causes of these situations?
• How can the student or an outside observer, most especially the design instructor, know what the cause of a specific “stuckness” situation is? What method can be used and how?

The first of these question is addressed in the first part of the thesis: Chapters One, Two and Three. Chapter One describes the design studio. In Chapter Two
I describe “stuckness” situations as they occur in the design studio. The description includes a definition of the following cases: What makes “stuckness” situation in the design studio distinct from other situations? What does “getting stuck” consist of? The process of “unsticking,” of breaking through the difficulty is discussed as well. Chapter Three considers the causes of these problems.

In Chapter Four, the beginning of the second part, I consider the investigations of such situations: What does it mean to understand these situations and determine its causes? The method of research and interpretation suggested in these chapters is based on the notion of inquiry by John Dewey. In Chapter Five I analyze a case study drawn from my observations in a design studio. In this analysis I follow the framework of inquiry outlined in Chapter Four. The final chapter, Chapter Six, considers the value of the research method in the design studio as a tool to illuminate problems and to provide opportunities to discuss issues crucial to the students learning and development that may otherwise left unattended.

The theoretical background to this study includes the work of Kurt Lewin, John Dewey, Clifford Geertz, Chris Argyris and Donald Schon. This thesis also relies on information gathered in informal interviews I conducted with students and faculty and inquiries I conducted in two design studios in two universities: MIT and the Technion, Israel Institute of Technology. In the informal interviews I asked my respondent to consider the following questions:

- What is the design process in the studio?
- What does the phrase “being stuck” mean to you?
- How do you recognize situations in which someone is “stuck”?
- Can you describe examples from your own experience or from your observations?

I also encouraged my respondents to describe any of their own associations with the word “stuck.” The interviewees were faculty, students and recent graduates of the departments of architecture at MIT and the Technion.
Following these interviews I began my investigations in two ongoing studios. I first observed a studio of second year students in a five year BArch program, at the Technion. The second group were studying at MIT towards a Bachelor of Science and included undergraduates as well. Both groups were in their second year of design studies. I joined each studio for 7-8 meetings (two - three weeks,) and observed desk crits, class discussions and pin ups. In both studios there were students who described themselves as stuck, or behaved as if they were. With these students I spent time (about an hour) discussing their situation. I also observed and recorded their interaction with their instructor and fellow students. The case study in Chapter Four and the examples described throughout the thesis are drawn from this part of the study. Complete transcripts of the examples discussed are provided in Appendix D.
PART I: "STUCKNESS"
CHAPTER 1:

THE ‘LIFE SPACE’: THE DESIGN STUDIO

The Life Space and Momentary Situations

“The professional background, mode of working, view of architecture and view of purposeful learning in conjunction with insights into his interpersonal behavior, are the main ingredients Lauda brought into the class. They form a powerful configuration which may explain partly why the course developed for him the way it did. Because of the interviews, the observer had the advantage of sensing pieces of this configuration at the outset. But Leftwich who, like any teacher, because of a different interactional focus, knew fewer of these specifics about the students than did the observer, encountered it in the action context of the studio.” (von Buttler, 1981 p. 526)

In this study the actions of individuals (design students,) are examined as a reflection of their relation with their environment. This approach relies on concepts developed by Kurt Lewin in Field Theory in Social Sciences and Principles of Topological Psychology (Lewin, 1951; 1966; Bar Gal, 1989; Gray, 1991) At the center of Lewins theory is the notion of the ‘life space,’ the description of all events and actions possible for a person considering the relation between his nature and the forces in his environment. (Lewin discusses these forces in Principles of Topological Psychology, 1966.) The persons nature includes all the factors that make up his personality, attitude and habits: Talents and inclinations, education, training, opinion of, for example, architecture and the architects role etc.
Lewin distinguishes between the ‘inner’ part of the life space, which is distinct and can be easily defined, and the boundary regions, which can be influenced by factors outside the life space. This distinction implies that most if not all explanations of a person’s actions should be sought in his immediate and present surroundings. Although influences past and present may play a role it is the present forces that shape a situation.

Once having identified it we can distinguish between the life space, which includes all possible events, and the momentary situation, in which a particular event has occurred. As in the life space the momentary situation includes both the person’s nature and habits and environmental factors, but in the momentary situation these forces configure in a unique way to allow particular actions and events. For example: a conflict between an instructor and a student (an event) may be the reflection of a continuous tension between them, which is part of each of their life spaces. In this thesis “stuckness” situations are seen as momentary situations of the design studio life space.

The Life Space: The Design Studio

So as to describe “stuckness” in the design studio it is important to understand how the studio is conducted and what success, failure and especially progress mean in this context: What is expected of the student and how his work is graded, since it is relative to them that “stuckness” is identified. The following description will also include aspects of the studio that I find relevant to understanding the situations presented in the following chapters.

The design studio is “the only common element among the hundred or so diverse NAAB accredited programs in architecture in the country” (Pressman, 1993.) Officially, it is the design class of the architecture curriculum. However, it’s set up and its importance in the architecture curriculum make it a unique type of class. As Boyer and Mitgang (1996) remark:

---

"It is a place - the design studio- where students spend as much as 90 percent of their time and energy. It is a product - the tangible result of thinking about and making architecture. And it is a process- a way of thinking during which the many elements, possibilities, and constraints of architectural knowledge are integrated" (pp. 86-87.)

The current pedagogy of teaching design has its roots in the Beaux Arts and Bauhaus traditions, and though it has been adapted over the years, many of its elements remain unchanged (See A. Cross 1983; N. Cross 1990) In these traditions the pedagogical system of the studio promotes learning through doing and thus revolves around the design work produced by the students. Although the focus of the studio and the timetable of the class are pre-determined, “students have the primary responsibility for finding their way through the problem”(Cuff, 1991.)

At the center of the studio is the project: a design problem outlined at the start of each semester to which the students (most studios have 15-20 participants,) presents a solution. In most studios the students first acquaint themselves with different aspects of the problem, such as the site, the program and the relevant precedents. Following the analysis the student continues to develop the design with the personal guidance of the instructor. The studio class hour revolve around desk-crits. Desk crits are short (usually about half an hour,) meetings between student and instructor, in which they review the work already completed and discuss its continuation. The desk crits are supplemented by lectures, discussions, slide presentations and conversations among the students.

At certain intervals the class meets as a whole for reviews, usually at least a mid term and a final review. In anticipation of these events each student creates a presentation of his work, which includes graphic and model representations of his design. These are exhibited so the entire class and visiting critics (comprising what is usually called the jury) can view them. The presentations are reviewed individually or in small groups. Each student explains his design, points out the important features and answers the jury’s questions. Following this oral presentation the reviewers comment on the work. The content of these reviews vary from studio to studio and in fact from design to design, but usually
include praise and criticism of particular aspects of the design and more general remarks on the nature of architecture.

So as to complete a degree in architecture a student is expected to complete a certain number of studios, the number depending on the degree. Though the problems and the complexity of the requirements are of course upgraded during the course of study the structure of the studios remains the same throughout the completion of the degree.

**The Design Project**
Although the studio project is a design problem in the sense that the student is required to solve an ill-defined problem and to use information in a novel context to create a new design, the problems in the studio are not complete architectural projects, since many of the components of such a project are not part of the studio. For example, there is usually no real client, no budget constraints and a disregard of the building code. Studio projects reflect the preference of the design instructors, who "tend to focus on esoteric and conceptual problems" (Cuff, 1989 p. 189.) The students must learn to identify all these differences.

Moreover, the design projects chosen for the studio are intended to be vehicles for teaching the foundations of architecture and not necessarily attempts to create buildings. Thus, design project are usually chosen to stress a particular topic in design, such as: The tools needed to practice the profession, the various design parameters, the role of the architect, step-by-step procedures and "the possible formal manipulation of various architectural subsystems that make up a building" (Rauh and Wright, 1975 p. 27.)

**The Design Instructor**
The design instructor is a trained architect who is often in practice as well. It is the instructor’s role to choose the design project for the class, explain its requirements and provide the information or sources of information the students require. The instructor also personally follows the development of each design in the studio, acting as teacher, consultant and surrogate client. Finally, the instructor is usually the chief if not the sole evaluator of the student's work.
Instructors vary greatly in their approach to the design studio and to the teaching of design. These differences are expressed in the way each one perceives his and the student’s role in the studio, in his view of architecture, the emphasis and type of building he chooses for the project and in the method of personal relations he adopts. Design instructors, for example, may assume any of the following roles in the studio, depending on their approach: role model, patron, father, task master, judge, consultant, collaborator and supporter. The instructor’s approach will greatly affect his actions in the studio and therefore the student’s situation.

“I come from classes with talking heads to an environment where suddenly my relationship with my professor is vital to my learning, my response and interaction mandatory for good learning” (Ching, 1997.)

The Desk Crit
The desk crit is a central activity and usually the main mode of communication in the studio so it is worthy of further discussion. The desk crit is an opportunity for the instructor to evaluate the student’s progress, difficulties and questions and to offer suggestions and criticisms as he thinks appropriate. It is also an opportunity for the student to make progress in thinking about the project with the instructor’s coaching.

Depending on his own approach and the situation at hand the instructor may adopt any of many methods of teaching in the desk crit. These ‘methods’ include demonstrating and describing design (perhaps the most commonly used,) giving specific instructions or even specific solutions and presenting relevant material (a precedent or a well-known example of architecture.) The instructor may also attempt to coach the student through asking probing questions or restating the students work to make the problems clearer.

3Lin Ann Ching is an undergraduate at MIT. She participated in my study in her studio and investigated her “stuckness” situation with me. In our conversation we discussed many ideas, some of which she articulated in an article she was writing at the time for the department newsletter.
"The studio master, when he works well, tries to figure out what the student understands, what his problems are about, what he needs to know, all of this from the main evidence of observation of the students designing. The studio master’s interventions, the, are experiments which test both the studio master’s grasp of the student’s understanding and the effectiveness of his intervention” (Schon, 1985 p. 63.)

Few desk-crits, however, follow this ideal model. (Schon in private conversation, 1996.) In many studios the instructors rely on criticism as the central if not the only mode of teaching (see S.M. Dinham 1989) As Laura Willenbrock complains:

“Often the discussion takes on a hypercritical air, and negative remarks far outweigh the positive. It was rare for me- and, I believe, for many- to walk away from a crit feeling reaffirmed or that the effort was worth the meager amount of good identified in the crit” (Willenbrock, 1991 p. 102)

Even when the desk crit is thoughtful and supportive, it is still far from perfect. A major problem is that to be effective, desk crits must rely on a convergence of understanding between the student’s and the instructor’s interpretation of the design project and of each other’s actions. Such a convergence is difficult to achieve. Not only is it hampered by the difficulty of communicating ideas that pervades all human interaction, it is further complicated by difficulties specific to the studio situation. One of these difficulties is the complexity of the subjects discussed in the studio:

“Even Quist, one of the most verbal people I have ever encountered and one who seemed to understand well what he was asking of the students was unable to explain what his advice “remain loose,” “recall experience” or “use metaphor” really meant” (Simmonds, 1981 p. 164.)

Because of this difficulty many instructors avoid discussing issues they find difficult to explain, preferring to allow the students to understand through doing
and through examples. As a result “... only a fraction of the content of most studios is articulated explicitly and taught directly.” (Ledewitz, 1985 p. 2)

Another complication is the need for ‘the suspension of disbelief.’ Since the student must do before he understands what he is doing, he often must accept the instructor’s criticisms and suggestions without agreeing to them or even understanding them, acting upon them as if they were his own notions, while bearing in mind that they are not. In the study Roger Simmonds conducted most of the students in the studio were unable to enter this state and therefore consistently misunderstood the instructor (see Simmonds, 1981.)

Differences in approach can also complicate communication in the studio. As instructors vary, so do students, each with his own interpretation of architecture, of his role as an architect and his understanding of the studio and his position in it. A difference in approach can cause serious misunderstandings between instructor and student since each is operating under a different set of assumptions. In some cases these misunderstandings can lead to what Schon has called ‘learning binds’ (Schon, 1984) where the student and instructor consistently misunderstand each other to the point that the student learns nothing. Nigel Cross has discussed similar difficulties that arise from differences in what he calls “cognitive styles” (see Cross, 1983.)

Fellow Students
Another important aspect of the studio situation is the social group within which the student must operate, and the pressure this group can exert on the student. Fellow students in the studio play a role in the individual students life far beyond that of those in other classes. Apart from social contacts fellow students are an important source of information and ideas in the studio. For many students they serve to demonstrate varied methods of work. In some cases students team up to give each other desk crits on their projects. Pause (1976) interviewed design students and says that “...many students see merit in student interaction and claim to have learnt a lot from fellow students” (p. 127a)

The cohesion among studio members is partly due to the very high level of commitment required and exhibited by most design students. This commitment involves spending many hours together in the studio (or at home) working on
the projects. However, the level of competition associated with these working conditions is usually high as well. In some cases this competition becomes a most important feature of the studio, causing the students to hesitate to share ideas, and creates a ranking of students according to perceived design ability, which may affect the student's perception of himself and his friends.

Progress and Success in the Design Studio

Students in the studio are expected to produce a novel design within the given time period. Thus, the emphasis in the studio is placed on progress in the creation of the design object and on producing the required representations of the design. Progress is viewed as something that must be visible in the architectural production, in the sequence of drawings and models, sketches, scaled drawings or abstract paintings, each expanding upon the information in its predecessors. In some studios progress is also measured in the production of more drawings, whatever their content. New types of representations, such as perspective drawings, are often highly credited.

"... the desk crit, the most important event during studio class. 
Make the best possible use of this time by doing your homework:
Have as much material (design sketches, concepts, analyses, precedents,) as possible to discuss" (Pressman, 1993 p. 7.)

Progress is also measured through questions pertaining to the design itself: Have issues been resolved? Are the new relations in the project more complex or reflect more complex situations? Has new information been incorporated into the project?

It is important, however, to remember that creating a design is only sufficient. To be considered successful a design must be convincing. What “convincing” means is one of the most difficult questions confronting design students. Moreover, success is usually measured very differently by different instructors. “Convincing" often refers to the student ability to present a design rationale and demonstrate its execution in the design or as Florian von Buttler (1981) describes:
“... success pertained to three areas: ideas, integration of ideas and implementation or “working them out.”

and also

“However, the praise the schemes of Sergel, Castor and Pollock earned at the final review proved that a positive balance among the three areas was considered more successful than strength in only one area the expense of the others” (von Butler, 1981 p. 483.)
CHAPTER 2:

"STUCKNESS" SITUATIONS

Behavior Perceived as "Being Stuck"

"If you give someone an open ended creative problem there is
great difficulty in getting started. There is difficulty in moving at all.
The person presented with the problem seems to say " Where do I
go, what do I do?" (de Bono, 1970 p. 141.)

In interviews with both students and faculty I asked them to describe to me what
they consider “being stuck.” Many described feeling they “did not know how to
begin” or “ were not sure of how to proceed.” These reports were extremely
interesting but were not enough to clarify what these situations involve, since
they did not explain in what situations students feel this way and how can they
be recognized in the studio. I attempted to gather more information by asking
my interviewees to consider how they recognize these situations: What is it
about their own behavior or that of others that makes them realize that they are
indeed “stuck.” I also scanned description of the studio for mention of such
situations. Following are a few examples:

- Being at a Standstill

  stuck adj. 1) unable to move or make progress, I'm Stuck! (Oxford
  Dictionary, 1980)

The feeling of a standstill, or being frozen (Pressman, 1993) was, perhaps, the
most frequently mentioned example. For some this meant a total lack of ideas
and for others an abundance of possibilities they were unable to choose from,
but for all a feeling of being unable to proceed with the design process.
• Procrastination
Some examples included a description of procrastination. In these cases the designer repeatedly puts off designing or doing other related tasks. Many students described such situations as typical of “being stuck.” For an interesting discussion of this and other time management issues in designer’s behavior see (Mann, 1985.)

• Taking “too long”
A student working on one issue in the design for “too long” will usually consider himself unable to resolve this problem and therefore stuck at this part of the work. “Too long” depends, of course, on the task and the designers patience; however, more than a day was quoted repeatedly in my conversations with students.

In the Architecture Education Study Florian von Buttler (1981) describes a student he named Fausto:

“Well aware of his working method which included the definition of constraints, and a slow and systematic evolution of the solution within the constraints, Fausto was spending his fourth day on this problem. Leftwich demonstrated his own way of working which was based on reviewing the generically possible options and selecting the one that best accommodated the intentions and existing constraints. After this crit, Fausto worked out this problem in less than a day” (p. 372.)

Fausto is quoted saying about this: “I wanted it to evolve one step at a time, and when it did not do that Leftwich came and passed the block.” (p. 372.)

• Not moving past an initial diagram
The design process in the studio is often seen as consisting of stages. Students usually begin by creating initial diagrams that outline the intentions of the design. In the following ‘stage’ the students are expected to develop these diagrams and create a formal scheme that will be the basis for their design. Some seem unable to proceed into this second stage. In such cases the student
repeatedly presents, discusses and refines the idea and diagram but is unable to produce initial (study) plans and sections. Such a student is said to be stuck at the diagram stage. As Julian Beinart (1981) points out these are “... of the most common knots in the studio design process, particularly among beginning students.” (p. 78) For example, in the Architecture Education Study a student named Petra is quoted as having said: “I am having problem getting past the diagrammatic phase. I've written down these problems on this list.” (Schon, 1981.)

• Fixation
In “Design Fixation,” Jansson and Smith (1991) define fixation as “... an obstacle, often self imposed by the problem solver, which blocks successful completion of a problem” (p. 4.) In their research they asked students and professional designers to design devices such as a bike rack and spill-proof coffee cups. Some of the designers were given specific information about previous solutions to the problem, while others were provided with the program only. The researchers found that designers familiar with precedents repeated their mistakes. In the article they conclude “that design fixation was empirically verified in professional design engineers” (p. 9.) Purcell et al (1993) conducted similar experiments and reached the same conclusion “that the effects are genuine fixation effects” (p. 343.)

Such an example was observed by an advanced design student. In this case the student had, early in the semester, analyzed a precedent related to the design project. During the rest of the semester all the design solutions she produced resembled this precedent very closely. She seemed unable to “break away” from its example and the student recounting this example considered her to be stuck.

• Repetition
Another behavior identified as “being stuck” is the repetition of same action (such as a sequence of decisions,) without a visible change in the design. For example, a designer who in trying to resolve the entrance continually re-draws it without suggesting a new scheme.
Change of Task

When I was an undergraduate student, I often used the term “stuck” to refer to situations in which I was obliged to stop working on what I considered the immediate design process (usually the creation of the form) so as to resolve other issues that pertained to the project. For example: A student going to the library to research the acoustic requirements of an auditorium might say he was stuck on “acoustic issues.”

“Indigestion”

“In fact, if new or contradictory information is introduced into the studio (e.g. by an outside reviewer) later in the project, it is often hard for the students to digest and may even create a crisis of “indigestion” in the studio, in which students question or reject the given parameters and assumptions for the project” (Ledewitz, 1985 p. 3.)

Defining “Stuckness” Situations

Even when considering the examples of student’s behavior, I found that defining “stuckness” is not an easy task. No one characteristic (such as standstill or procrastination) sufficed to distinguish these situations from “normal” design activity and from other difficulties students encounter in the studio. This can be attributed to the fact that “stuckness’ is not absolute concept that can be described independently of the life space in which it occurs. “Stuckness” is a relative term used differently by different people, depending on their situation and their understanding of term itself. The difficulty is further complicated by the fact that all these situations are part of an ongoing process. Not only do they occur within the design process, but designing continues, at least to some degree, even when a student is stuck.

The key to understanding these situations is, I argue, to consider them as a process in themselves, in which the relationship between the student’s actions and the forces in his environment undergoes a change. I will begin by outlining the entire process and then consider each stage at greater length. If we define that in a “design” situation the designer is taking actions that are appropriate to
the environment and that will further the project, we can understand “stuckness” situations as those where this relationship breaks down. In the breakdown the relation changes from being effective and appropriate to an inappropriate one, in which the designer is in discord with the situation, causing the design process to falter or even stop. Such breakdowns are not uncommon and are experienced by most designers; Not every breakdown, however, is considered “being stuck.” When a designer “gets stuck” the breakdown is followed by another stage in which the situation is judged to be a “stuckness” situation. Following this identification the designer can be said to be stuck.

Thus, if we designate an effective design process with an arrow:

---

And a breakdown with a point:

---

A designer who overcomes the breakdown and continues to design will return to “normal” designing:

---

However, if he does not he will be in discord with the situation and his design process will be ineffective:

---
A designer will be stuck if he also judges the situation to be a “stuckness” situation (marked with a square):

“Getting stuck” is often accompanied by a process of “unsticking,” in which the designer returns to effective activity. This process begins when the designer experiences a “breakthrough” (B) in which he begins to respond once more to the environment and follows this breakthrough with an adjustment of his behavior to the situation.

Of course, in each case the process of “getting stuck” may vary in the length of time of each stage takes. In some cases the stages may be so short they are indiscernible. For example the process of “unsticking” may begin so soon that the designer does not judge himself to be stuck. In some cases the student may be unable to “come out of it” completely and continue stuck through the semester. The following discussion, however, will refer to all the stages of the “getting stuck” process.
Effective Design Process

In “The Psychological Study of Design” the authors Thomas and Carrol (1979,) discuss the nature of the design activity and the procedures used by designers to achieve their goals. Akin (1986,) N. Cross (1982; 1990,) and Lawson (1990) use a similar method to describe the design process. As Omer Akin points out:

“In the case of selfconcious design, the definition of the problem, its constraints its solutions (or criteria for solutions,) are yet to be determined in the course of the design process. Consequently designers not only design the objects to be constructed but also the processes that will lead them to the description of these objects” (1986 p. 2.)

These writers use terms such as ‘specifying goals’, ‘producing sub problems’, ‘information acquisition’, projection and representation. Donald Schon and Glenn Wiggins have gone into greater detail describing, for example, the “Kinds of seeing and their function in designing” (Schon and Wiggins, 1992.)

Whatever procedures the designer adopts, there is no set order to their use. Throughout the design process the designer must choose the most appropriate procedure. Porter calls these choices the “designer's appreciative judgments” (1988 p. 169.) These decisions involve, for example, determining what to do (make a decision or leave all possibilities open,) choosing the tools to use (make a model or sketch a section) or choosing to follow or ignore advice. In each case these decision determine the designers actions and behavior.

As implied by the notion of a ‘life space’ the designer is not completely free to choose any action. Each momentary situation confronts him with many demands that should be met so as to allow a “smooth” design process. However, each situation also allows the designer to make mistakes or take actions that do not produce the required goals. A designer working “normally” is, as already defined, a designer making choices in accord with the situation, for whom the relation between his actions and the environment is an effective and productive one. He is, as Schon puts it, “in conversation with the materials of the design situation” (1992.) In a productive relationship the designer can continue working and responding to the situation as long as needed.
In the studio the “appropriateness” must be examined in relation not only to the design project and the nature of the design process (doing things in a “designerly way” (N. Cross, 1982) but also in relation to other demands of environment. For example, the instructors requirements and preferences, the expectations a student at this level must meet (in terms of complexity and amount of work.)

The Breakdown
What happens when a student begins the process of “getting stuck?” First, the relation between the designers actions and the situation breaks down. Winograd and Flores, based on concepts described by Martin Heidegger, (and considering a wider group of examples) define this as an “interrupted moment of our habitual, standard, comfortable “being-in-the-world” (1986, p. 77.) A breakdown may be partial or complete, as a student remarked to me: “one may be stuck in one realm but working in another.” Since the designer usually must take action on more than one issue, some of his decisions may continue to be appropriate while others are now causing problems.

The breakdown may be due to a change in the environment that the student cannot respond to, or a change in the designer’s attitude towards the environment. For example:

“We are replete with expectations distilled from our background of experiences. When the situation does not match our expectations then there is some kind of breakdown” (Coyne and Snodgrass, 1991 p. 125.)

Whatever the cause (the causes are the subject of the next chapter,) from this point onward the students behavior is no longer appropriate to the demands of his situation. Instead of proceeding in a smooth and effective fashion his actions do not achieve the goals intended.

Breakdowns situations are usually expressed in the behavior of the designer. These are the examples described above: Procrastination, standstill, repetition, fixation etc. It is this behavior that is identified in the studio as “stuckness.” Let
us consider for example the report of a student whom I have named (at his request) Miguel. Miguel participated in a undergraduate studio I observed in the Dept. of Architecture at MIT during the Spring 1997 semester. Together with his fellow students Miguel was designing a new boathouse to replace the MIT boathouse on the River Charles. Miguel initiated the conversation by telling me that he had been stuck the previous day. In our conversation we discussed the situation, its causes and the point of breakdown. As this part of the transcript shows, Miguel was able to distinguish quite clearly between the cause of the situation and the way it was expressed in his design behavior. 4

M: ...And the point where I started to get myself started was a T (the shape of the letter.)

A: Yeah, I like that!

M: I got stuck when I got to a point where I was unsure how much I should hold on to the T.

We discuss the model created in the previous week

M: I was at this point and I was using the T to shape my space and to ah...you know and to create other spaces. And the T stopped working for me, there was only so much that I could do with it. And I was afraid to, well since I had started with the T and I like it a lot because I looked what I had gotten so far, I wanted to hold on to it but I couldn’t clearly that I couldn’t do much more with it, ah, and so that’s where I was stuck, how the question of how much to hold on to an idea. Ah...

A: So what was that expressed in?

M: ?

A: Like what kind of questions were you asking?

M: Well, Um, let me see how I can, there were a lot of smaller details such as how do I end, how do I cap this off do I cut this off. How do I make the actual spaces have more reality to them, and I couldn’t answer those questions with just the T concept, and I didn’t have something else to help me to guide me in answering these questions. And also to create a pure T this would have to be flat, but I wanted to do other things, I wanted to put an observation deck here so how can I put an observation deck there with the T, yet I still wanted a T so that was ...

---

4For the complete transcript see Appendix D. This conversation was held in English.
Discord
As already mentioned, breakdowns often occur in the design process and are often followed by a revision of the behavior and its adaptation to the new situation (Winograd and Flores, 1986.) In "stuckness" situations, however, the students behavior following the breakdown continues to be inappropriate to the environment. We can describe the student as being in a new situation, characterized by the discord between his behavior and the requirements of the environment. At this stage the student often experiences difficulties with the design, confusion as to his actions and even frustration.

Judging a “Stuckness” Situation
However, for “stuckness” to exist one more stage in the process must be completed: The student must be judged to be stuck. Since “Stuckness” is a relative concept, it is only when it is considered in light of a particular situation and of a particular frame of reference (such as the student’s previous work and the instructors expectations) that it can be identified.

Who judges these situations and identifies them as “stuckness”? In many cases it is the designer himself who realizes that he cannot answer a question he should be able to, feels that a goal he has set himself has not been reached or senses that he is exhibiting some of the ‘stuck symptoms’ he recognizes. Observations such as these lead him to consider whether the situation qualifies as being “stuck.” In the studio the role of the instructor in the student’s design (as coach and almost a collaborator) means that often he is the judge of the situation. In many cases the instructor will call the student’s attention to his perception. Other observers such as jurors, researchers and fellow students (who may have their own frame of reference and therefore judge differently) may also identify the situation by comparing the student’s work with previous progress or with their expectations of the student.

Let us return to Miguel and see how he judges his situation:

A: I’m really glad you got out of it but I am interested in why you got into it. Why did you say “I was stuck”? Why did you identify the situation that way?
M: OK, when I started with this idea, and I started working to get it to a more real something that you can see as shaping real spaces, the I guess the idea, I’m not sure I
can say that, but I started having lots of ideas I did some sketching and my modeling and I made this model and I immediately made this piece did that piece and once I finished a step I automatically got a bunch of ideas of how to play with this more I always had something I wanted to do with this, and then I got to this point and I did not have any other, I started getting very attached to this and I didn’t know how to break it...

A: Afraid to touch it?
M: yeah, I was getting very afraid to touch it...

It is important to realize that the identification of “stuckness” does not necessarily imply the identification of a cause or of a solution. Designers often do seek the cause of their “stuckness” but this search is not a necessary component of “getting stuck” and can be regarded as a separate process. This process will discussed at length in the following chapters.

“Being Stuck”
We can finally consider the stuck student. In terms of our definition this is a student who is unable to respond effectively to the situation (a response could include changing the situation to suit his actions!) and has been identified as stuck. This situation will continue as long as the discord continues.

To understand this situations fully, however, we must consider some of their characteristics. First, it is interesting to note that “stuckness” situations are often described in relation to the length time they last. What is a “period” of “stuckness”? This term usually refers to the interval between the identification and the breakthrough and must be understood in relation to the time given for solving the problem. Since we are examining “stuckness” as it is perceived in the studio, I will consider periods in relation to the length of a semester, which is about three and a half months long. Here a short “stuckness” is one that does not interfere with the production of the design. For most students, I believe, this ranges between a day and a week. The student is then able to exhibit new work at the next cycle of desk crits. A more serious problem might consume more than a week. However, even if it goes on for 2-3 weeks it usually does not have a lasting effect on the design once it is resolved. A situation that lasts longer than this will be protracted and difficult.
Miguel, the student from the previous example, remarked on this aspect as well:

A: And did that go on for a while?
M: Um, Well, I didn’t work on it for a while, in relative terms I yes. In terms of the amount of time I have been putting into this it went on for a good deal. In terms of over all time, no.
A: No, that’s OK, time is only relative. Gives example
M: In relative time..

“Stuckness” situations are also characterized by one or several of the following responses:

Stopping (A Standstill.)
For example, architect John Myer describes in his interview with Lance Laver which was reported in Processes in Architecture: A Documentation of Six Examples:

“LL: What do you do when you get stuck?
JM: Stop.
LL: And do something else?
JM: Yeah, go away or talk to somebody.”
(Cruikshank, 1979 p. 111)

Stress and Frustration
Stress is a feeling of pressure, helplessness and frustration. This characteristic varies greatly, of course, from situation to situation. Each designer will exhibit different level of stress, according to his nature and to the immediate problem. Though stress may also be a cause of “stuckness” it is more often the outcome of being in such a situation.

Clashes with the Studio Instructor
Studio “stuckness” may also be characterized by a clash with the instructor. As with stress this is, in some cases, the cause of the “stuckness” while in others only the outcome. These conflicts may take many forms: Open confrontations, friendly disagreements and situations in which the student ignores the instructor’s advice completely. In my conversations with students a few
mentioned such conflicts, or at the least, disagreements with instructors as a frequent cause of the feeling of not knowing what to do next. This can be because a student does not understand the instructors point of view, because he does not necessarily agree with it or because the instructor has stopped the student within a train of thought without providing a new direction.

The Breakthrough and “Unsticking”

“Stuckness” situation are often, though not always, coupled with a process of “unsticking.” This “reverse” process may be directed by the student or the instructor, or may occur without their conscious intentions. In either case the student will first encounter a point in time when his actions begin to fit the situation, or when he realizes a means to an accord. This point is often called the “breakthrough.” From my observations in the studio it seems to me that it is this point in the “stuckness” situations given most attention in the studio. In one studio, which will appear later in the case study, the instructor refused to acknowledge “stuckness” situations at all, focusing exclusively on “getting unstuck.”

It is extremely important to remember that even in the cases where a breakthrough occurs, there isn’t necessarily a symmetry or even a relation between the cause of the situation on the one hand and the cause of the breakthrough on the other. The fact that a particular action caused a breakthrough does not imply that this was the appropriate action in the situation of the breakdown, since the process of breaking down itself has changed the situation.

The most common advice for “getting unstuck” is to seek help and a perception of the design. Andy Pressman summed up this advice in Architecture 101:

“If frozen, work on an unrelated task; come back to the problem at a later time from a different perspective. Isolate the problem do more research, become more informed about it; return to the site; visit or read about a related and architecturally significant work. Try changing drawing scales or media (if drawing build a quick and dirty model and vice versa.) As always, talk to colleagues and instructors“ (1993 p. 82.)
Design instructors have their own methods, sometimes called tricks, to help a student experience a “breakthrough.” These include:

*Representation Shifts*
Attempts to see the problem in a new way by changing the mode of representation. Sometimes these tricks are as simple as turning the plans around. In other cases the instructor suggests drawing a different representation. For example a section may be used to understand a staircase or a site plan to resolve an entrance.

*Providing a precedent*
These examples are usually drawn from the instructor’s knowledge. Precedents are chosen with the intention of clarifying a particular aspect of the design situation.

*Drawing a Diagram*
Diagrams are used to simplify the design and allow the student to see its elements more clearly.

*Use of Metaphors*

“Reflection on the metaphoric nature of our understanding can be seen as an appropriate response to “breakdown”- in which the design is not progressing well, the group is not functioning, the design is judged to be poor” (Snodgrass, Coyne and Martin, 1994 p. 122.)

Following the breakthrough the designer proceeds (in a successful process) to adjust the relation between his action and the demands of the situation. As in getting stuck itself, the designer need not be aware of the exact cause of the breakthrough and its implications. In fact, many "unsticking” processes occur without the designer’s conscious direction.
Renewed Design Process

The design process in this stage can again be characterized as was the process before the onset of the “stuckness.” The designer is once more in accord with the situation. However, this does not imply that the processes before and after are one and the same. In many cases the changes in the environment during the “stuckness” situation require an altered behavior on the part of the designer. In fact, it is often said that the designer learnt something from being stuck, implying that the design process in this stage is in some way better than it was prior to “getting stuck.”
CHAPTER 3:

CAUSES OF "STUCKNESS"

In the previous chapter I defined a stuck student as one who has experienced a breakdown in the relation between his actions and the environment in which he must operate. The cause of such a situation is seen here as any factor that has a causal relation to the change. What causes such breakdowns? What demands is a student unable at times to meet?

Dalia
I will begin with an example from my observations at a design studio at the Technion, the Israel Institute of Technology. The data of this example is the transcript of part of a conversation I conducted with a student. We were exploring a situation she had begun experiencing about two weeks previously. Dalia, the student was especially articulate, so a part of the conversation is enough to show various possible interpretations of a doubtful situation. I have identified eight different remarks Dalia made about the cause of her difficulty and will present them in order. The complete transcript of this part of the conversation is provided in the Appendix D.

At the time of our conversation Dalia was a second year landscape-architecture student (studying towards a BArch degree.) Together with the rest of her class she participated in a "regular" architecture studio during her first semester following with a landscape-architecture studio during the second. Now in her third semester, she had once again joined the larger group of building-architecture students.

The project required the design of about 15 residential units for visiting scholars, to be located on the hill-side on the outskirts of the Technion campus. At the beginning of our conversation Dalia described the project she had been
working on prior to the pin up. Her design concept was a raised building that would "soar above the site" and present a "broken up" aspect to the viewer: Be composed of many small units instead of one big structure.

It was the second project this semester and the class had been working on it for about a month when the first pin-up was held. The pin-up was considered hectic by most of the class since quite a few guests from the department were invited to this pin-up, all of them very outspoken as jurors. At the pin-up Dalia presented her concept and scheme, which included the specification of many details including the arrangement of each of the housing units. The project was composed of the buildings shaped as she had envisioned, set upon what she termed a "forest of columns." These columns were especially detailed, but in the jurors opinion they hardly fit the description of a 'soaring building.'

Following the pin-up Dalia felt obliged to abandon the original design, and spent two weeks feeling, as she described it, stuck. In this case this meant she felt she had nothing to work on, a situation that was, from my observation, atypical of her design process. Finally, on the advice of her instructor, she returned to the conceptual model she had created at the start of the design and used it as a formal diagram for her project. When I met her she had been considering this new proposal for a few days, and was still uncertain whether she had resolved the problem, though, as she says in the transcript, she liked the new scheme better.

What did Dalia discover when considering her project and her two weeks of “stuckness”? First, she was quick to point out the onset of her realization that there was a problem. It had begun in the pin up where she, together with most of the class, were “busted.” However, the realization became clear, she said, when she realized the jurors were right. What was ‘right’ in what their remarks she did not reveal. 5

“D: They began their criticism and I constantly argued with them, like, I, yes, I always argue, I stand my ground even if it’s wrong. But in the end I went home and saw it again and in the morning I woke up and, like, I started to

5 This and other quotation of Dalia's descriptions are my translation of the description in Hebrew.
look at the project in their eyes and and its alright, its true/right what they said. “

She then began considering the causes of her situation, making what I see to be eight different suggestions. I have numbered them:

1. Dalia’s next remark points out that the issue she has was unable to resolve was connected with the structural system for the design project. As she says: “. . . and in the end it was ruined because of a structural problem.”

2. She is then reminded of an explanation the instructor had given for her situation: Since she is a landscape-architecture student and missed the second building studio, she lacks the “tools” (knowledge) to deal with the demands the creation of the structural problem.

3. “. . . but in the end someone who stands here, its true/right this entire mass cannot soar on this forest of columns but...
   A: The problem in the end was not only that you didn’t like the columns, but that they also were not enough?
   D: No, because the soaring I was talking of was conflicted by the columns now. . . “

Considering the design and what the jurors had said Dalia elaborates on her first explanation by stating more clearly what the structural problem really was: The structural system worked and the columns were well designed but the structure did not give the feeling she intended. In fact there was a conflict between the intention and the proposed structural system that she was unable to resolve.

4. “D: I started thinking, Sara (the instructor) recommended this idea and to begin from it.”

Dalia then remarked on the instructor’s suggestion for solving the problem, which can be seen as another explanation of it’s cause. The instructor had recommended she take the conceptual model she had made at the beginning
of the semester and use it as a formal diagram for a “new” project that would better express her ideas and concept. I can only speculate that the instructor was suggesting that the form Dalia had chosen for the “first” design was in some way insufficient or ‘boring,’ since I know that the question of what is ‘boring’ and what is ‘interesting’ was central in this studio. If this is what the instructor meant, her suggestion would imply that the cause of Dalias “stuckness” was that she had been unable to respond to the “interest” requirement of the project.

5. While describing her instructor’s suggestion, Dalia interrupted herself to reflect on her own behavior, considering what she did not do to avoid the problem, what in her behavior was insufficient:

“...laugh...its true, how I didn’t see this and I had a feeling that I know how to treat all types of people and I don’t know how to criticize myself, but if I am looking in on the outside, I can criticize. But, I don’t give myself that space to look at it so, eh. “

6. She then realizes that her instructor’s behavior played a role in causing her situation as well:

“And from this point Sara’s attitude towards people (the students,) simply changed. She began to bust and that’s whats good. Like, I am very pleased that and

A: It (Sara’s attitude) changed after the pin up?
D: Yes, after that Sammy,
A: Cohen (An instructor in the department, the most outspoken reviewer in the pin up.)
D: Yes, oy, he is a man, the way he criticized I really admire him...”

Dalia does not view this change in Sara’s behavior as a trivial one. Though she acknowledged that Sara’s (to allow the students to develop their ideas and so learn to deal with the consequences of their decisions instead of questioning these at every turn,) she prefers the new mode of criticism since she finds it more suited to design studio:
“D: Yes, yes, we dealt with little things, like the space a person needs to pass, the general form (was considered) OK, the space for a person, how it stands and that is what finally got me in trouble in the pin up. It was dealing with things I bring, if there are problems I deal with them and not, like, principle issues and its good, like, if I have the principle then its OK, its what I want to give, the principle I have and then the developing I can deal and continue with. At least that I have this (the principle.)”

7. The last sentence in the last quote is another of Dalias explanations of her situation: In saying that one should begin with a design principle she implies that she did not and so encountered difficulties.

8. The last cause suggested in this example belongs in part to me. I suggested that Dalia replace the word ‘principle’ with ‘elemental’ or ‘primary.’ This would mean that some decisions (in this case those concerning the structural system) must come first and that she had ignored them. Dalia agreed that using these terms would not change her understanding of the problem:

"... And now I have learnt from all this I need to... and then to go into the, like, plans and I had everything, but not laugh now I have learned that the first basic form
A: That there are questions that come first?
D: Yes... “

Causes in the Design Studio
As Dalia’s example shows, the causes of “stuckness” cannot be attributed solely to the fact that the student is engaging in design but must be sought in the student’s entire situation. Thus, causes of “stuckness” in the studio may be of any of the following types: 6

• Causes Related to the Design Project

In Dalia’s example: Cause #1: The structure didn’t “work.” Cause #3: There was a conflict between the structure and the design concept. And cause #4: The proposed form was in some way insufficient or boring (suggested by the instructor.)

---

6 See also examples in Appendix C.
When working on a project the designer is constantly confronted with situations in which it is very difficult to choose the appropriate action, since no possibility is faultless. For example, an element of the building might need to answer two different requirements that may even contradict each other and so no choice satisfies them all. The difficulty of taking design actions is also complicated by the fact that is not always clear what action to take. When confronted with a design problem designers often do not understand the it or are blocked from seeing the solution (see Adams, 1979.)

- Causes Related to Confusion over the Design Process
  
  *In Dalia’s example: Cause #5: “I was not critical enough.” Cause #7: “I did not have a design principle.” And Cause #8: The questions about the design were addressed in the wrong order.*

A second, and in my opinion important, aspect of the student’s situation is that he must complete a process he does not yet know enough about and may not understand. A student may be confused over the very nature of the actions he must take and therefore be unable to complete them, or may lack the skills to do so.

- Causes Related a Knowledge of Architecture
  
  *In Dalia’s example: Cause #2: Dalia does not have the “tools” to resolve the structural aspects of her design (suggested by the instructor.)*

The problems of a novice designer are further complicated by the fact that the student is still in a process of learning and therefore may lack information vital for his design.

- Causes involving The Studio Instructor
  
  *In Dalia’s example: Cause #6: Sara, the instructor did not insist on asking the important questions.*

The instructor’s role as critic, coach and in some cases collaborator means that his actions play a role as important even as the student’s. An instructor doing or failing to do can affect the student’s decisions. Moreover, the instructor’s
opinion, or as the student perceives it, can also cause “stuckness” if, for example, it is not understood or it does not tally with that of the student. An example of such a situation will be described in the following section: Paul.

- Causes Related to Other Studio Requirements

The studio demands include more than just completing a design. These include the negotiation of social relations with the instructor and the other students and completing requirements of attendance and participation. A stuck student may be unable to meet these demands (which are not always clear.)

- Causes Related to Issues Outside the Studio

Finally, it should not be forgotten the student’s situation includes events that occur outside the walls of the studio, or to use Lewin’s phrase: outside the situation’s boundaries. These might be breaking up with a boyfriend, pressure in other classes and financial difficulties and might play a role in causing a “stuckness” situation.

Paul
Examples of all the types of causes are provided in Appendix C. However, I would like to focus on a particular cause (a difference opinion with the instructor) that I found to be a common cause in the studios I observed.

In this example “Paul” was, at the time of the study, a fellow student of Miguel from the previous chapter. Paul’s concept for the boathouse he was designing was a building that would look like a sculpture on the river. In the initial phase of the studio he had created a few models to describe this concept, and was especially pleased with the shape of one of them. He began the work on his formal design by deciding to use this shape as a roof for the building he was designing. Considering its curvilinear shape, the roof was soon dubbed ‘the shell’ by Paul, his instructor, “Charles,” and the teaching assistant, “David.” For about a week Paul continued to design the building but then:

P: What it was was ah...just the idea of having to resolve two different things, on the one hand you had this sculpture and it already has its form which can change and it can be
something else, but it pretty much it was, it is a symmetrical shape, I really like and I wanted it to be symmetrical, to do all the things, well Prof. Charles said maybe it doesn't have to do this but those are the things that I wanted it to do, choices I had made, and I, so there was a conflict between that and em, the program that really, should be the idea of the dock, which they just conflicted so that was that was the mess. Two different elements were not, did not like each other very much...no real ways, I mean there are ways but...

A: And you kept on choosing the sculpture instead of the other things?
P: Right, I kept on just saying you know well, I'll have to try something else because obviously, if one of them had to go then the docks had to go, I'll have to something else with them. Instead of doing something else with the shell. But, ahm, yes, so..

Paul continued to choose the shell shape in face of every consideration, (he was fixated on it.) I interviewed him following the mid-term pin-up, where he had presented the shell but little else and had received many comments from the instructor that suggested abandoning the idea. Though he did not use the term stuck it was obvious, at least to me, from the way he spoke that the instructor felt Paul was in trouble over these decisions. When I asked Paul if he felt stuck he answered that “maybe for a little while...I was fixed on the idea of the shell. I don’t think that the shell is the solution anymore.”

However, when we began discussing why he felt this way it transpired that there was more to these decisions. Paul mentioned again and again that Charles the instructor had been against using the shell as is from the start.

A: Do you feel that Charles convinced you or that you are doing it because he’s the professor?
P: Probably because he is the professor. I am not sure how convinced I am. I mean I tried to convince him of why, of my reasons, he did not seem very convinced laugh I didn’t really sell him on the idea. And I tried I mean I spent maybe half an hour telling him why it was so important. And it is, it is important idea, but it is not the right idea on this case. But he didn't really tell me to was not the right idea I guess he doesn't really want to say it do it this way or bend in your idea but I think the truth of the matter is that I need to bend in my idea at least to a certain extent to move on...
PART 2: INQUIRIES
CHAPTER 4:

INQUIRING INTO “STUCKNESS” SITUATIONS

Having described “stuckness” situations in the studio and possible causes, this chapter and the rest of the thesis address the second central question of this study: Why do specific “stuckness” situations occur in the design studio? Why does a particular student get stuck? The focus of this study was to determine a method for answering such question: How can anyone, the student or an observer, especially the instructor, understand the cause of the situation? What questions should be addressed to answer this? Can this be done in the studio?

It is important, however, to point out that there was no intention to devise solutions to the difficulties that caused the “stuckness.” Although it may seem artificial to divide between understanding the nature of the difficulty (Schon (1983) has called this part the “framing or setting of the problem”) and making suggestions for it’s resolution, this division has been made here. This is due to a few considerations. First, the framing of the difficulty and its resolution may not necessarily occur together and may be entirely independent of each other (see Chapter Two: The Breakthrough.) Second, it is not the purpose of this study to explore only those problems that can be resolved but rather any “stuckness” situation in the studio. Finally, framing such difficulties was deemed of importance in its own sake, since it was expected that through the process of framing the situation, of answering the questions outlined above, information about the studio would be revealed.

This information revealed in such investigations was expected to be of use to:
• The students in the studio, who have not only to design (for which breakthroughs are crucial) but also to learn about design. Understanding such situations was expected to present opportunities to learn about the
nature of design and of the studio situation. (Further discussion in Chapter Six.)

- The instructor who must in these situations assist the student in any possible way and whose task it is to plan the studio and its content. (See Chapter Six.)
- The researcher. Understanding such situations would be a source of information needed for the debate over architecture education.

The research method for this thesis was therefore continuously evaluated as a practical tool in the studio, since it was assumed that in this setting it would have the most effect. This aspect will be discussed further in Chapter Six.

Understanding a Situation

In *Principles of Topological Psychology* Lewin considers from whence situations arise. Most important for our discussion is his understanding of the cause of a situation. Lewin stresses that the concept of a life space implies that no one factor can be considered responsible for an entire situation. To explain a situation, according to Lewin, each factor must be examined together with the entire configuration of the life space that has produced the event. The representation of a situation must indicate relations within its configuration.

Understanding a situation therefore consists of being able to describe it so as to distinguish it from other situations in the life space and to understand the processes that caused it. Creating a list of possible causes, such as that described in the previous chapter (see the section titled Dalia,) is only a partial explanation, since such a list relates only to a specific aspect of the “stuckness” situation, the breakdown, and does not explain the occurrence of the entire “getting stuck” process. Furthermore, such a list does not show why the entire life space, including the factors that are not causally related to the breakdown, configured in a way that allowed such an event to occur.

Such an interpretation of understanding renders the task of explaining a situation extremely complex. However, this understanding of causal relationships also allows the interpreter a freedom to describe the situation to suit his own inclinations and attitudes. While keeping in mind that the entire configuration is being elucidated he can nonetheless choose with what aspect
to begin the description and call it, for the sake of a particular study, THE cause of the situation. The value of this freedom will, I believe, be apparent in the discussion concerning ‘problem formulations’ and in the consideration of the case study in the following chapter.

Inquires and Thick Descriptions

Lewin’s description of understanding the cause of a situation is good for an abstract world where we can in fact consider all the aspects of a situation and decipher its configuration. In the design studio, as in our world in general, this is not possible. We can, at best, clarify situations so we can better understand and describe them.

This process of clarifying a situation is the process of inquiry described by John Dewey in *Logic, The Theory of Inquiry* (1938):

“Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole.” (ital.) (104-5)

Dewey begins his analysis of the inquiry from what he terms a ‘problematic situation.’ This is a situation that is “inherently doubtful.” An inquiry begins when the inquirer judges the situation to be doubtful, or in Dewey’s phrase: “The first result of evocation of inquiry is that the situation is taken, adjudged, to be problematic.” (107.) In the case of understanding “stuckness” situations this is the point at which “stuckness” is identified and questions concerning its cause arise.

Having identified the situation as doubtful the inquirer then attempts to analyze and interpret it, striving to understand it better, until he is able to determine it, describe it with clarity. In doing so “The inquirer does not stand outside the situation like a spectator, he is in it and in transaction with it (ital.)” (Schon, 1992 p. 122.) As Schon suggests these attempts are not made through

---

7Dewey begins his discussion by stating that doubtful situations are inherent in the world and not just the creation of the human mind. If we accept this observation, it means that whatever the student does he will encounter dilemmas and “stuckness” in the studio.
observation alone but through an involved collection of information about the situation and exploration of the relations between its factors. The inquirer is free to use any method that will provide a better understanding of the situation.

Each inquiry into a situation can be seen as a single step in creating what Clifford Geertz has called a “thick description.” Geertz’s notion is especially useful because although his main focus is on man’s culture his understanding of the human situation echoes that of Lewin:

“Believing, with Max Eber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning” (1973, p. 5.)

Though the object of the interpretation is to create what Geertz calls “broad assertions” about the situation, he stresses the importance of rooting these assertions in specific situations, of supporting them by “engaging them exactly with complex specifics.” Thus, instead of interpreting the situation and then analyzing each interpretation to create an abstraction of it, the ‘thick description’ is a collection of parallel descriptions, each highlighting a different aspect. Since one can always continue to inquire into the situation and analyze it further such a description is bottomless, or to use Geertz’s phrase, “intrinsically incomplete” (p. 29.)

Let us compare Dewey’s term with that of Geertz: Each of Geertz’s interpretations is a complete Dewian inquiry in itself, since it analyzes a situation and determines it better. The collection of all the interpretations/inquiries make up the entire thick description. Thus, in considering the operative interpretation of situation we can distinguish two levels of interpretation. In each level the determination of the situation is upgraded. The first level consists of the individual inquiries and the second is a collection of these inquiries, which is also more than the sum of its parts. In this study, due to the limitations imposed on the research only the level of inquiries was considered.
**Interpreting “Stuckness” Situations**

In this study the notion of inquiry was applied to “stuckness” situations in the design studio and several such inquiries were conducted. The objective was to determine what questions such inquiries should address and how to approach them. The outcome of this study is a framework that outlines a complete inquiry of a “stuckness” situation. This framework can be used as a guideline when analyzing information retrieved in the inquiry.

An inquiry in the studio can be seen as consisting of several stages. In each one a different question is addressed and the information from the previous stage is interpreted and incorporated. I identified three such stages and an introductory one. (The terms used in this outline will be explained further in the following discussion. See also discussion of case study in the following chapter.)

- The introductory stage consists of determining the nature of the situation and confirming that it is indeed a “stuckness” situation.
- In the first stage the causal factors of the situation are identified.
- The second stage consists of formulating a ‘problem;’ a description of the situation that incorporates the identified cause and determines the situation as a "unified whole." (Dewey, 1938.)
- Finally, the last stage involves explicating the situation in light of the problem formulated to determine why the situation occurred.

In order to be do-able in the studio environment, where time is limited and attention spans are short, the inquiries followed the structure of a desk-crit in a studio and took the form of conversation between myself as an inquirer and “stuck” students. In some cases such a conversation was sufficient to complete an investigation of the situation (as outlined above) and reach a conclusion. In others I supplemented the conversation with observations of the studio and the relations between its participants. I usually observed the desk-crit related to the “stuckness” situation in time or content (that is a desk-crit that took place while

---

8 It is important to point out that the notion of inquiry is an appropriate description of other aspects of the student’s experience in the studio. The student is inquiring both about the design project and the about very nature of the design process and his position in it. In fact, every desk-crit in the studio can easily be described as an inquiry into the situation of the design. The differences between these and the inquiries considered here will be discussed further in Chapter Six.
the student was stuck or a desk-crit in which the “stuckness” situation was discussed.) The inquiries that were not completed in the studio required further consideration and analysis to be conclusive. The example in the following chapter is an example of such an inquiry.

**Determining the Nature of the Situation**

As mentioned before, “stuckness” is not a absolute concept but a relative notion that must be considered in relation to each situation separately. It is important, therefore, to begin each inquiry with a discussion of the situation. Since either participant in the inquiry (the student or the observer) can judge the situation, the object of this discussion is to make clear in what frame of reference the situation has been judged and why it is considered a case of “stuckness.” In this stage the breakdown should be identified: *What made you consider yourself stuck? On what occasion did this happen?* and it should be made clear why these events were considered a breakdown. *What is the difference between this situation and “just” working?* The process of evaluating the situation can be made clearer by asking questions about the identification of the situation: *What made you identify the situation this way? What did you notice that made you realize you were stuck?*

As I found in my conversations in the studio the completion of this stage is important not only for establishing a common ground but also because a lot of the information revealed in this stage is interpreted in the next stages and in the inquiry. To assist in the discovery of the information it is often useful to consider such questions as: *Can you describe another situation that was in any way similar? What do you consider “being stuck”?* In my inquiries in the studio I found that it was most effective to leave this stage unstructured and allow the associative process to take place.

**Identifying Causes**

Once we have determined that we are dealing with a “stuckness” situation, the inquiry can proceed and begin to interpret the situation. The first step is to identify the factors that have a direct causal relationship to the occurrence of the event, to the fact that the student is stuck. These factors are Geertz’s dense facts, Lewin’s causes and the intermediate steps in Dewey’s inquiry into the
situation. In the previous chapter I discussed the different possible types of causes that can be identified in the design studio.

The process of identifying a cause can be seen as one in which a label or meaning is attached to an observed behavior. Unlike the introductory stage, which can remain relatively unstructured, it is important to be very precise about this process of identification, since it is the center of the inquiry and because the interpretations in the next stages rely on the information revealed in this stage. In *Action Science* (Argyris, Putman and Smith, 1985) Chris Argyris and his colleagues discuss a method that insures common interpretations. They name this model ‘The Ladder of Inference’:

“The first rung of the ladder of inference includes relatively observable data- for example a sentence uttered by someone. This kind of data could be checked against an audio tape recording. The second rung of the ladder is the cultural meaning of that utterance. This is the meaning that would be understood by anyone who was a member of the relevant language community. For example, if the utterance is “X, your performance is not up to standard” and is spoken by a superior to a subordinate, the cultural meaning is “X, the quality of your work is unacceptable.” The third rung of the ladder of inference is the meaning imposed by the hearer. For example, someone might conclude that the superior’s utterance was “blunt” or “insensitive” (57-58.)

Interpreting “stuckness” on the basis of this model implies that the identification of a cause includes the observation of a particular aspect of the behavior (first rung) an association of this behavior with the difficulties encountered (second rung) and finally the labeling of the behavior as indicative of a “stuckness” situation. The importance of following this model is that this insures that each piece of evidence can later be evaluated by another inquirer as well, since it is related to specific evidence in the situation. This model also requires that the identification of a cause be considered carefully, not as a casual suggestion but as a real exploration of it’s relevance.
Following this model of interpretation in the order described by Argyris proved difficult in the studio, since few people are in the habit of describing their ideas in this sequence; however, by carefully making sure that all the information required by the ladder was described in the inquiry it was possible to reconstruct the ladder when needed. It was, therefore, important to make clear about each cause suggested in the inquiry:

- *How was a particular cause expressed? Was it, for example, in the questions you were asking, or in something you were doing?*
- *Why is this a problem?*
- *Why is this a cause of the “stuckness” situation?*

It is also useful at this stage to begin to understand the relations between the different causes, for example:

- *Is there another way to explain the same cause?*
- *Are any of the causes related to each other?*

**Problem Formulations**

Having identified the different causes the next stage is to formulate a description of the situation that considers the information obtained and explains the entire situation so it can be understood as a “unified whole.” (Dewey, 1938) Dewey defines these descriptions ‘problems’: “A Problem represents the partial transformation by inquiry of the a problematic situation into a determinate situation” (p. 108.)

Since no one inquiry can describe every aspect of the situation the inquirer must choose a point of view from which to begin. It is, therefore, in the formulation of a ‘problem’ that the freedom to describe the situation according to a preferred focus is most important. In fact a problem represents not only the situation and its configuration but also the inquirer’s interpretation and attitude towards it and therefore a choice of focus is a distinct and important the stage in the inquiry.

In an ideal world one could continue the inquiry until one reached a comprehensive problem formulation. This formulation would be a description of Lewin’s ‘life space.’ In real life, however, most inquiries result in more than one formulation, as Dewey’s states (1938) : “The problematic situation is made
relatively determinate by analysis into alternatives, each of which is represented in an disjunctive proposition a member of a system “ (p. 171.) These problem formulations can be inclusive or exclusive of each other. That is, one proposition may include the former formulation, clarify and enlarge upon it, (reflect more information) or may be un-associated or even contradictory (represent different information or a totally different point of view.)

Since only further inquiry can reconcile all the formulations of a situation, the inquirer must determine the most appropriate problem formulation for a particular inquiry. A convincing and useful formulation should conform to two requirements: it should take into account the different causes that have been identified in the inquiry and create a coherent explanation of the entire situation and it should be formulated so as to serve the purpose for which it was intended. For example: If It is a part of a desk-crit the formulation should clarify the situation so as to allow the student to benefit from the instructor’s advice. (In the studio this often means a clarification of the situation from the perspective of the design project itself.) In my study, on the other hand, I was interested in problem formulations that would clarify the situation of the designer as a student in the design studio, and therefore focused on the student’s behavior.

For example, here are two possible problem formulations of Dalia’s 9 “stuckness” situation, each from a different viewpoint:

Formulation #1: The source of Dalia’s problem lies in the concept she chose for her design, which was insufficient (or as Dalia says, not a principle) coupled with her inability to design an appropriate structure to support a building expressing the design concept.

Formulation #2: Dalia was unable to conduct the design process effectively because she had ignored aspects of the design that proved to be extremely important, namely it’s structural aspects. In developing the design she had made many choices that made it impossible for her to return and resolve the structural problems. Dalia was able to ignore these structural issues because she was unaware of their importance, because of her lack of knowledge and

---

9For Dalia’s description of her situation and its causes see Chapter Three.
because the instructor ignored them as well and allowed her to continue with the design.

**Clarifying the Situation**

Once the “problem” is formulated and the situation is understood as a “unified whole” (Dewey, 1938) it is possible to reconsider the situation and evaluate how the life space configured to allow the “stuckness” event to occur: Which factors contributed to the occurrence of the event and which did not? How did the different factors interact to allow the event to occur? Why wasn’t the situation avoided? Answering these questions reveals much information about the student’s situation and the design studio.

In the studio this stage is similar to the introductory stage (where the nature of the situation was considered) since this too is most effective when least structured. I asked students to describe their opinion of different aspects of the studio and then we considered whether this information had any bearing on the situation. It was found to be important to explore as many aspects of the situation as possible: the relations with the instructor, with other students, the level of difficulty of the studio, past studio experience etc. The questions useful for this stage are therefore a large and diverse group. For example:

*Why do you think that the instructor gave certain advice?*

*Did you consider the problem the same way before you discussed it with the instructor?*

*Do you have friends here in the studio?*

*Do you have help from other students?*

*How do you evaluate yourself in relation to other students in the studio?*

*Are there other issues that bother you?*

*How does this studio compare with other studios you have attended?*

A complete example of inquiry into a situation, including the clarification of the entire situation is discussed in the following chapter.
A CASE STUDY

The example in this case study will be examined in the framework of inquiries outlined in the previous chapter. I will begin with the identification of the situation and show that the student was in fact “stuck.” I will also examine the causes of this situation, as identified by the student and the instructor. Finally, I will attempt to formulate a problem that describes the student’s situation and investigate the situation to understand why this event occurred. The inquiry, its nature and success will be considered in the next chapter.

The data in this case study is a reflection of one day in the studio: The desk-crit the student’s opinion of the day’s events and the design work that was discussed. (See Figures 1-3 pp. 80-81. The complete transcripts of the desk-crit and the conversation are provided in Appendix D.) Involvement in the studio gave me glimpses into past events and future concerns, which will be used as extra information, but it is the situation itself as reflected in the data that is of interest here. “Past events can only have a position in the historical causal chains whose interweaving creates the present situation” (Lewin, 1936 p. 35.)

Background
Lea is a student of architecture at the Technion, the Israel Institute of Technology. At the time described in this case study she was in the first semester of her second year. Lea is about 21 years old. Following her graduation from high school she served her country for two years as a field guide, guiding children and adults on educational trips in nature. Sara, the instructor, is a doctoral student at the Technion, and holds both a BArch and a MS Degree from the same university. This was the tenth studio she had instructed, but the first second-year class, since most of her experience was with first-year students and with teaching a course on interior design.
The atmosphere in the studio was, in my opinion, very pleasant. This was due both to Sara’s attitude as an instructor and to the friendly relations between the students. Sara’s attitude was expressed especially in her reactions to the student’s design projects. She was able to show excitement and interest in any ideas and work the students brought in, even while criticizing some aspects of the projects. According to the students, Sara almost invariably preferred to encourage them in what they were doing rather than cause them to abandon their ideas and start anew.

In a conversation at the start of my studio observation Sara told me she was greatly impressed by the work of Antoine Predock and especially by his methodology (as he described it in a lecture which she attended.) This method included making collages and clay models as part of the design process. Sara decided to require the students to make such representations, hoping they would realize that these can be part of what she called “a set of tools” to use in future designs. Once the students had begun creating study plans and models most of the classes were devoted to individual desk-crits.

The project Lea was designing was the second project of the semester. In the first project the students had redesigned a living unit they knew well, such as their own apartments. This second project expanded on the subject of housing. Given a site on the edge of the Technion campus situated in Haifa, Israel, the students were asked to design living units for 12-15 visiting scholars, some arriving alone and some with family. The chosen site was a slope covered with natural shrub, affording long views including the Haifa Bay and a large industrial area.

The case study consists of a desk crit and most of an inquiry Lea and I conducted immediately following. However, as the transcript will show, this was not the first meeting between us. A week previously, during my first visit to the studio, Lea had asked me to help her. She began our conversation by stating that she had been stuck for two weeks, and continued to show me what she meant by this. Lea saw her project as consisting of two parts: A public walkway and clusters of housing unit (see Figure 6 on p. 83.) She had designed the walkway, which she named “the bridge,” but did not have even sketch plans or
models of the apartments. During this conversation I suggested we try and discuss the problem in a different way, but, acting on what she will later explain to be her understanding of “stuckness”, and under pressure due to a pin-up scheduled for three days following, Lea insisted I make comments about the project itself, which I did to the best of my ability. Later that afternoon she received a desk-crit from Sara, the instructor.

During the pin up I was not able to question Lea; however, the physical evidence showed, in my opinion, that Lea was unable to continue the design. The project still lacked housing units. At the next meeting, a few days later, Lea did bring some sketches that described these units, however, it did not seem to me that she had made enough progress to constitute a real change in her situation (see Figures 1-3 pp. 80-81.) Relying on all these observations I judged her to be stuck and decided to record her desk-crit and interview her.

Before I could follow through with this decision my judgment caused a bit of trouble. When Sara arrived and the class officially began I reintroduced myself and explained more carefully what I intended to do (I had been merely an observer up to this point.) In the discussion following my explanation Sara, the instructor, objected that even if students had been stuck, none were still in this situation. Considering my conversation with Lea, I felt free to mention her as an example of someone who still was. Sara also added that in her opinion getting stuck was mostly a matter of not working enough (In a later conversation she called this either laziness or a kind of stubbornness.) Lea, taking Sara’s remarks to heart, reacted very emotionally (finally with tears) and insisted she had never said she was stuck. The resulting discussion between Sara and Lea is recorded at the beginning of the transcript of the desk crit. It is at this point that the data of the case study begins.

**Determining the Situation: Was Lea Stuck?**

Considering both the instructor’s and the student’s reaction to my suggesting that Lea was experiencing a “stuckness” situation it is especially important to examine why I judged Lea to have been “stuck” before and during the time the case study was recorded. I will begin by addressing the question of a breakdown and attempt to show that Lea’s design process had changed following the first pin up and that she had was still unable to “get back on track.”
As I have already mentioned, my identification of the situation relied upon Lea’s saying “I am stuck” and the “physical evidence” of the work she brought to the three meetings in which I observed her. My conversation with her confirmed in my mind that she was experiencing a change in her design process.

1. Lea observed that her actions were not those required at this stage of the design:

“A: I remember that last week you said that it had been two weeks that you were...
L: Yes, because I worked for quite a while, I mean I pretty much developed this thing (the “bridge”) and then each time, lets say that between each crit all I did was a small change in this axis (the “bridge”) instead of the apartments, and I made a model and...don’t know...” (Section 17) 10

These actions meant, as Lea points on much later in our conversation, that issues in the design remained unacknowledged or unresolved. These issues were central to Lea’s problem.

L: ...I kept on attending to this bridge and not the apartments so neither of us knew if there was or there wasn’t enough room, I told her (Sara,) I wanted it more or less like this and I called her (to see) when it was a bit bigger and that’s it.” (Section 29)

2. Lea also reported that she perceived a change in the instructor’s reaction to her project. I did not question Sara to discover whether this was in fact the case; however, since we are considering Lea’s situation, it is enough that she perceived such a change to make it a factor in her situation.

“L: I’ll tell you what, here’s some I am just thinking of, lets say someone is excited by project, lets say I’m told its good, then it puts me in a certain indifference.
A: Ah! the difference began when you reached the stage of the units.
L: Yes, till then it was “OK, OK, OK” and now its “no,” now I don’t feel OK. I don’t know.” (Section 22.)

10All quotations are my translation of the Hebrew transcript. The section refers to the section of the transcript as it appears in Appendix D.
3. Lea also mentioned experiencing some of the characteristics of “stuckness” situations, such as a feeling of stress. For example, an excerpt from the desk crit in which Lea is talking to Sara the instructor:

L: The truth is that until now I did not focus so much on the walkway, that is I thought about it about this pergola that I will really have space and exactly as you drew it, and I was more in the business of the inside (of the apartments), because I was stressed by the pin up that I was the only one, that I don't know...(Section 7)

4. The breakdown in Lea’s design process is also apparent when comparing it to the rest of the class. At the first pin up, as quite a few students told me, Lea was one of the few who had developed an idea into a schematic plan (expected of the students for this pin up) that was considered successful. However, at the time of the case study Lea was noticeably behind. Most of the class had already been able to verify that the layout of their project was possible, and some were already designing the interior of their housing units, making detailed plans and measuring such things as kitchen cabinets, while Lea still had no study plans of the layout of her entire project.

5. Finally I believe it is important to mention that at least one of the students in the class had noticed Lea’s situation and considered it “being stuck.” This observation was made in a conversation following the final review. In this conversation, which Sara initiated, she asked the students to “comment on the semester,” to express their opinion of the project, the class meetings and herself as an instructor. The student was, as I understood his remark, expressing an opinion that Sara did not always pay enough attention to the concerns the students bring to the desk crit. He used Lea’s project as an extreme example, saying that in his opinion it was Sara even more than Lea who had ignored the importance of Lea designing the housing units. This, he remarked caused Lea to be stuck without them.

The second condition of the “stuckness” situation, as I explained in Chapter Two, is that the situation be judged to be a "stuckness" situation. In this case study this recognition is mostly my own, since Sara, as I have mentioned, refused to distinguish this or any situation as “stuckness” and Lea, following Sara's example, avoided using the term after our first conversation (in which
she asked for help because she was stuck.) However, I believe that Lea also realized to some extent that she was stuck, for example:

"... on the one hand I can't say its very stressed and that I am constantly thinking of design, although since I have had these problems I have thought about it, on the other hand it's not, I don't have like in the second semester, so I don't know, you can't define the situation, I have never come across it before."

And:

"Maybe its good all that happened today. It seems that I am stuck and I felt that I wasn't working and then laugh " (Section 23.)

The Causes: Sara's and Lea's Explanations
Let us begin to understand the situation by following the remarks Sara and Lea made about possible causes of the "stuckness."

Since Sara did not identify this situation in the way I did, I could not ask her for her opinion of it. I will rely instead on the observations Sara made to the class in general and to Lea in the desk-crit. First is the opinion Sara expressed to the entire class about what "being stuck" really is. Sara later elaborated on this opinion in a private conversation with me. "Stuckness" is, in her opinion, a "psychological" situation (I believe she meant that it is only in the mind of the designer) that people may find themselves in and is often accompanied by stress. As with all unproductive situations, it must be overcome by working on something other than what is causing the trouble. Also, students getting stuck are actually exhibiting either stubbornness or laziness.

Does this description apply to Lea? Lea asked this question in the desk crit and Sara answered:

S: No, no, I don't at all think that you are not working, there are other people in the group who are not working.
L: OK, like, I thought that maybe I don't work enough because of what you said...
S: No, no.
L: I don't know." (Section 1)
However, in private conversation Sara admitted to me that she felt that Lea was not working enough, mostly, she felt, because she was unable to gauge herself compared to other students and realize what was really needed so as to complete a design. In our conversation Sara described this as the cause of Lea's problem.

Sara makes no more direct remarks about “stuckness” to Lea but one excerpt from the desk-crit can be, in my opinion, seen as observation of what Sara considers a cause of the problem. This is one of only a few (I identified three) instances in which Sara can be described as instructing Lea not to do something.11 In this particular case Sara, after listening to Lea’s description of her concerns, tells Lea not to use arbitrary decisions as a basis for her design, suggesting that using such decisions, as Lea is doing, will lead to difficulties. This example will be returned to later, since I believe it is important in understanding why Lea behaves as she does.

Lea’s interpretation of her situation is interesting. In our inquiry conversation she identified five causes of her difficulty. I have gathered together her remarks from the entire transcript. The excerpts show the “evidence” on which Lea was basing her observations.

- The design seems impossible because of the way the design problem has been set up.

L: No, no, no, many problems with the project, you just heard the desk crit. Before there were many things that I want and many things that I need to take into account in the site, like the people who can walk above, and that there is a relation to the units and there is a relation to (?) and that all the units need to connect to each other, there are many things that I need to.. and I have many restrictions and many requirements on the other hand so ah...maybe because the apartment needs to fulfill so many requirements, I guess it may be a bit impossible to design, or it would be easier” (Section 25.)

11 See also section 3 and section 11.
• I am having problems because I am not clear about the direction I should take with the design.

“A: Then what is the difference between this and "just" working?
L: ‘Cause, like, sometimes, no not sometimes, usually, I am very clear about the direction in which I am going, and I know that if I spend two hours of work I'll finish drafting this plan, everything is, more or less, in my head and that I proceed in at a certain pace, that's the way I got to this thing (the “bridge”- a part of the design that was very developed)” (Section 16.)

• I have too many possibilities and need help to make a choice (this is Lea's definition of “stuckness.”)

“L: It's that I wanted to hear another opinion (when I asked you to help me) That's it, like, you hear another criticism from a person and it takes you to another direction, and that's what gives you the solution, many times it happens that I am stuck in some place and I hear criticism from someone else or I look in books or I just think myself and suddenly something that seemed impossible then it is solved, but I know that, I believe that every problem has a solution” (Section 16.)

• I work best under pressure and this case it is not urgent enough, I am not being stressed enough.

“L:. . . yes, I tried, maybe its not urgent enough to find the apartments, maybe that is the answer. Maybe that it is not urgent enough. Maybe if someone...”(Section 22)

“L: Ah, I don't know, I hope I'll change by then laugh this is the way I have always been, in the high school exams as well, and in the end I succeeded, like...it's never happened to me...no, it has happened, it's obvious that if you work earlier...but it has never happened that I presented a project and slept the entire night before, it hasn’t happened, never, never happened. In design, in the rest of the classes it doesn't but in design, always always always at the last minute. Simply that's the way I am, that's my character” (Section 23.)

• A worry over having enough space for the units held me back from designing and making other decisions.
“Ah, I had another problem, now I remember it. Here I needed to put five units here and it bothered me very much, because I saw I did not have enough room, and I kept on asking you (in the meeting in which we discussed the project,) whether I have enough room, and I knew I did not have enough room and so I knew from the beginning that it was impossible, so maybe in my sub consciousness it passed. So first of all she (the instructor) took off three units (allowed her to include fewer units in her design) then I made this plan immediately, that what I did at home. Maybe because I knew it was impossible, maybe now that I have many principles, many requirements I know that it is possible” (Section 26.)

**Formulating a Problem**

Armed with the information and interpretations that Sara and Lea have provided, let us examine what else the transcript tells us. As I have shown Lea makes a few suggestions as to the causes of her problematic situation, yet, I argue, she ignored the information she herself provided that points towards another, and in my opinion, more important, issue. Except for Lea’s first explanation, all the causes she suggested share a common characteristic. All these descriptions relate to making decisions: The need to have a decision suggested to her, the need to be forced to make one by being pressured and the ability to make one following the release from an irritating constraint. Moreover, Lea made a few remarks during our inquiry that illuminate further how she views the procedure of making decisions. For example:

“...I can just work, in the air, to just draw an apartment, like, I need *inaudible* principles that will guide me. I have a paper of principles according to which I develop the project. I can just, just put shapes, OK, this will be the apartment, I need a reason. That’s the part in which I got stuck, I can’t explain it at all...”

“...and I needed to take decisions in a certain subject and I didn’t want to make decisions because I didn’t want it to restrict me in principles that were crucial to me that I continue with them and to work with the principles I had decided upon at the beginning.”

This information implies, I suggest, that Lea’s problem was caused by a misunderstanding of the nature of making decision in design. By the time Lea got stuck she had carefully laid out a set of design principles (requirements for
the housing units) that were based on her own values. These included specifications such as that the units must be “related to the topography,” that the imaginary line connecting the rooftops of the housing units must be parallel to the slope. Having written this “paper of principles” (see Figure 9 on p. 84) Lea expected that she would be able to create a scheme that would fulfill them. Though all the requirements were perfectly valid, they were, at this stage still completely arbitrary since Lea still did not know what was possible considering the site and the program.

Creating a scheme that would answer all her demands proved, as Lea said, to be impossible. This was, I believe, because she did not realize what she must do. Instead of beginning a design, any design, and slowly developing it to satisfy all the principles or instead exploring the implications of each of her requirements through the design of a scheme that would highlight it (see Simmonds, 1981,) Lea was trying to do it all in “one go.” Afraid that she might lose part of her idea she put off making any decision until she could make all at once, rejecting in the meantime possibilities before she had even created them.

Lea’s problem was also complicated by the fact that she considered making a priori decision and following them with a design a legitimate procedure and that it had served her well in previous designs. Thus, when confronted with a situation where it was inappropriate (probably because this design had many more requirements than any she had worked on before,) she saw no need to change her “method” and adopt a new one, to change her “operational knowledge.” (Simmonds, 1980 p. 361)

It is interesting that in the week following the crit and conversation recorded in this transcript Lea brought designs for the apartments. In her remarks in the desk-crit of that week she admitted that she had given up one of her design principles.

Clarifying the Situation: Why Was “Stuckness” Possible?
One way to explain Lea’s behavior and attitude is to assume that this was how she approached making decisions even before she began studying architecture. Though I can only speculate, this is in keeping with Lea’s
background as an observant Jew and her remarks about working under pressure. The question remains, however, why did she continue to behave this way in the studio, even when such an approach behavior was inappropriate?

The answer, according to Lewin, must be sought in the components of Lea’s situation and especially in the relations between it and her actions. In this case study I will focus on the two aspects that seem to be the most important, and that were the center of the inquiry I conducted with Lea: Sara’s opinions and behavior and her own tendencies with regard to work and design.

In considering Sara’s role in the situation I find four aspects that contributed to the Lea’s problem:

- Avoiding (at first) a discussion of Lea’s main concern.
- Providing Lea with ready-made suggestions for the design, giving Lea ‘decisions’ that allowed her to continue the design without confronting her problem.
- Allowing Lea to avoid understanding advice that related directly to the problem.
- Insisting on work as a solution to a difficult situation, an insistence that contributed to Lea’s level of stress.

To explain these four issue, however, we must first consider how Lea’s problem was revealed in the desk-crit. When reading through the transcript I identified nine different questions or issues which Lea brought up. Five of them are very similar and relate to the buildings and their siting in the “topography” (in this case the incline of the slope.) Since the other four issues are different from each other, I identify this as Lea’s main concern in the desk-crit. It is also an expression of Lea’s problem because it is, perhaps, the most important “arbitrary” decision she has made about the project. For example:

“S: For next time work it, develop it, show spaces, relative spaces in plan and section.

12 The Jewish religious law includes specific requirements about almost every aspects of a persons life. To be considered an observant Jew a person must follow a great number of rules and traditions.
L: Most important are directions, how to place it relative to this yard, my questions and my conflict is that people walk here, this is my axis...

S: Yes

L: This is the axis that people walk on above on the one hand, and on the other I need to relate to the topography, so if I make the diagonal, lets say, in this direction, then will find the window here, and people who come here simply look into peoples apartment, and if I do it lets say radial then it runs off in a direction that is a bit different from this then I lose the business of the topography (following the slope with the buildings,) Then I, I...

(Section 11-12)

Sara was slow to respond to these concerns, going so far as to interrupt Lea (more than once) as she was articulating the problem to suggest totally different ideas. For example:

"L:...also, I have many many types of apartments inaudible there is this thing, very schematic and the pergolas and with them actually inaudible and these I made from parts of ellipses, I really didn't have, I couldn't work without meaning, I started with a circle...

S: Say, wouldn't it help you, now that I think of it, lets say digging in (excavating), something like those cities in Kapadokia, a soft rock and according to the need..." (Section 2-3.)

Another aspect of Sara's ignoring Lea's concern is her suggesting ideas that are not in keeping with Lea's "principles":

"L: Ah, sort of in this direction?
S: Yes?
L: Like, this doesn't really fit what I want, because I want the difference in height to be in accord with the topography. That is that when I enter here the building will be tilted to here, this building I actually lengthened it I want to make it really with the topography and likewise here..."(Section 6)

It is important to point out that Lea did finally insist and the subject was discussed in the desk-crit (see section 12.) However, considering the importance Lea seemed to attach to this question this discussion was, in my opinion, late and too short.
The import of Sara’s suggestions will be examined further. However, I would first like to emphasize why dismissing the issue (although it was finally discussed in the desk-crit) contributed to Lea’s problem. As I have explained, Lea was caught up in believing that she could first choose certain aspects of the design and then create a formal configuration that will answer all these requirements and did not realize that an important stage of testing these original decisions is needed before they can become part of the design. The relation of the units to the topography (the slope) was one of the decisions Lea had made and she was working very hard to find a design that would fit it. Avoidance of this aspect allowed Lea to continue holding on to this decision without testing it, because she was not made to realize that she should and how she might do so.

It might well be argued that discussing this aspect of the project (teasing out the different implications of such a decision and testing the different possibilities) would not necessarily have cause Lea to realize her problem and resolve her “stuckness.” However, this argument is irrelevant since I am not suggesting Sara’s behavior caused the “stuckness,” only that it made it possible. I am interested in why Lea continued to think as she did and I believe that this was partly because these aspects were discussed only briefly in the desk-crit, although they were of great concern to Lea.

Another aspect of the cause of Lea’s problem was that she did not realize that she must choose among the many “design principles” she had decided upon. This is partly because, in my opinion, she was unable to judge the relevance of these choices and thus differentiate between them and arrange them in some kind of hierarchy. Avoiding the discussion of these decisions meant that an opportunity was lost to help Lea in unraveling the importance of these decisions.

Sara provided Lea with more than one idea during the desk crit. These ideas, unlike other advice Sara gave, were only partly, if at all, related to what Lea had designed (in fact, the first two were suggested before Lea had described her design and concerns, when Sara interrupted her. These suggestion were described almost entirely by Sara. They include:
In section 3: Digging the housing into the ground by designing an “architecture of subtraction from a volume,” similar to the example of housing in Kapadokia, Turkey, which Sara had presented in a lecture attended by Lea.

In section 5 & 7: The design of a covered walkway that would connect the entrances to the units.

In section 8: Sara suggests a “thick wall” and an enlarged entrance area.

I view these suggestions as part of Lea’s problematic situation for two reasons. First because they themselves can be viewed as a priori decisions that Lea might incorporate into her design. In Lea’s design, in my opinion, there was no more reason for a thick wall, a covered walkway or an excavated unit than there was for a particular relation to the slope. Therefore, Lea’s using these ideas would mean that she would repeat the same problematic behavior; she would take ideas and incorporate into the design, without understanding how Sara had produced them and not doing the testing they would have been subjected to if Sara had been the designer.

These suggestions also provided Lea with a way of avoiding her problem by giving her other things to work on. That she did so was obvious in the final review, where Lea’s placement of the units was one of the most criticized aspects of her design, and in the presentation which included the thick walls and covered walkway suggested by Sara. (See Figures 7-8 on pp. 83-84.)

In considering Sara’s reaction to Lea’s decision-making process I would like to examine a rather lengthy excerpt from the transcript.

“L: Ah! because you are not relating to the topography, I was thinking of another thing, this about going up to the living room, I meant something else ... I mean, I mean, that all the roofs from both sides of the...
S: Never decide something arbitrary. If you have to, if you want to develop some kind of entrance...and you want the bedroom to always be above the entrance area and that it will have a continuation and a view through this window, then begin developing and afterwards it may be that you will coordinate all the angles. If that is what you want, I don’t know what else, but don’t, don’t take something arbitrary.
L: Yes.
S: So look, what you already have, principles, what we talked about the subject of the entrance etc. Start working from that and get into one of the apartments, one, just one. But make plans as well as a section. And try to show all the spaces, and really show the furniture (placement) so we can relate to it and discuss it...continues in this vein.

After the first avoidance of the subject Sara and Lea discussed the relation of the buildings to the slope and Sara made one of the only remarks that can be understood as direct criticism: Don't make arbitrary decisions. (Has she realized how hung-up Lea is over this issue?) Sara continues to explain to Lea what a better method of thinking would be: Begin working and then “afterwards you will coordinate all the angles.” She also recommends that Lea try out each of her principles on one housing unit and then return to the rest of the project and design it in light of the tested principles. This advice relates directly to Lea’s problem. Lea’s reaction is recorded in the transcript:

L: But there is something I have to decide first of all. Do I really place my “place” in the direction of the topography or in this direction, it's very basic, because people come here and I can’t have the window directed at where they are or that...

Sara responds only by asking whether the decision concerning the “topography” really means only one particular design and continues to discuss other issues:

“S: But can’t you, lets say, make the units according to the topography built not in its direction?
L: Yes, like. Its possible. Ah! make some kind of frame.
S: Don’t, look here, lets say that they enter through the living room, but here the living room faces this direction and here the living faces here (a different direction,) Who said it has to be like this (both facing the same direction.) This, you understand this...
L: Simply I started with the bedroom.
S: I can’t see it right now, that is the problem, but...try to think about it this way, that if you have a certain location that is comfortable, if you have an attractive placement for the living room in relation to the entrance and in relation to the rest of the unit, here you should assume that you always have two sides, once the window is in this direction and once the window is in this direction. “ (Section 13)
I find this excerpt fascinating because it is a recording of the only part of the desk crit in which Sara responds directly to what I see as the main cause of Lea’s problem: Her insistence on “arbitrary decisions.” However, it is also part of her problem, since even this exchange does not change Lea’s concept of her behavior or her understanding of her method and of a design process. Lea’s first response, that she must “decide something first of all” is exactly what Sara is explaining to her not to do: Not to decide something “arbitrarily” without checking it out in the design.

Why does even this direct response fail to change Lea’s situation? Why does Lea fail to “hear” what Sara is so pointedly explaining to her? Part of the answer lies in Lea’s concept of a method of design:

“L: Every instructor has, tries to teach his students how, how to begin to design, Sara gave us all sorts of class exercises, and last year they said begin from a grid or the plan or the functional aspects. Each one adopts what most, what most, what he feels helps him most, because it is very personal, and I am the same, I have adopted a certain method of working.
A: That first and then go to something that fits them.
L: At least to come out of principles, from something, to come out of a concept and according to it to continue and develop. I’m not saying that all my projects till now have been marvelous and excellent, but until now when I have used this method I have made acceptable projects that I am pretty pleased with.” (Section 18)

Listening to Sara’s explanation I believe Lea realizes that Sara is advocating a different approach; however, because of her concept of method she is able to view this as a separate approach, that can be rejected wholesale, since she has her own “method.” Sara’s explanation does not make clear that Lea’s approach is not only different it also inappropriate in that she will not be able to create the result she wants.

Another reason Lea cannot hear Sara in this instance is her inability to realize the import of her own actions. Although Lea made several remarks in our conversation that show that in some cases she does test her design decisions she does not realize she does so. Therefore, when Sara gives advice Lea cannot relate it to her behavior and ignores it.
Moreover, Lea is lacking an important ingredient for understanding advice: She does not have the question Sara’s remarks are answering. Sara is, as I understand it, telling Lea that she is making decisions in a arbitrary way and that this is to her disadvantage, since it may cause problems with the design, if has not already. However, Sara does not explain this to Lea. Unaware of the connection of this remark to her difficulties, Lea has not “struggled with a problem” and so has not created “a conceptual model” in which to put the information Sara is providing her (Gelernter, 1988 p. 49.)

The final aspect of Sara’s role in Lea “stuckness” is her view of these situations and her insistence that the only remedy possible is to “work work work.” This is not irrelevant advice; practiced designers usually find that this is a “way out” of an difficult part of a design, and in Lea’s case much work was needed. However this advice also contributed to Lea’s level of stress, as was obvious from Lea’s reaction. I believe this is because Lea has not yet grasped the meaning of the instruction. When Sara says “work” she means make more and more suggestions, even if they are not the solution you are seeking, try different designs until you find a way back to your main design path (Sara in private conversation.) Lea, on the other hand, understood the instruction to mean “think think think make more decisions”: ¹³ Instead of helping her Sara’s advice tells Lea that she has been trying to do something and has not succeeded, or she would not be feeling stuck. Therefore it only was more frustrating.

Lea’s nature and habits of thought are as much a part of the situation as Sara’s behavior. I would like to point out a two that contributed to Lea’s predicament. The first is her habit of working better when under pressure to complete a project. This, as Lea reported, was not special to the design studio but had characterized her behavior when studying for exams in high school as well. Pressure for Lea is more than an incentive to work, it actually changes her

¹³This is not the only problematic instruction in the design studio. As Donald Schon suggests when describing another case study:

“A term like drawing, though its meaning may seem obvious, is often extremely puzzling to students who have not yet grasped the idea of drawing as a form of experimentation. Many students in Quist’s studio found the term metaphor central to Quist’s view of designing, to be opaque and unhelpful” (Schon 1984 p. 6.)
working pattern. (As Gabi Goldschmidt has suggested, the pressure to finish becomes more important than any other consideration or principle.) It makes, or perhaps allows her to make moves that she considers a contradiction to her method, but are effective in the design process. Lea’s report in our conversation suggests that her situation did not include enough pressure.

“L: Not critical just more requirements, bring for next week a plan in 1:50 then I’d have to, like, I mean that I wouldn’t have time to play around with the time and say good, this I like this I don’t. I’d need to bring some kind of plan on paper, it’ll be busted, OK but I’ll have to bring something. But, it’s very individual and very personal, because I know that till I am made to sit and work I don’t sit down to. Until I am under pressure I don’t work, very simple” (Section 23.)

The second aspect of Lea’s behavior was revealed in the desk crit. My own observations confirmed Sara’s judgment.

S: I’ll tell you what, you are very critical...
L: Yes,
S: And you are afraid to begin something very schematic and so you go into the criticizing (attitude) that what you do does not please you.

Both of these habits, together with other traits that were not revealed in the case study data form the background against which Lea was operating and which caused her to get stuck in this particular situation.

**Alternative Problem Formulations**
The formulation presented above was based on my interpretation of the information I retrieved in the inquiry, and is, to my mind, the most interesting and convincing formulation. However, other explanations are possible, based on the information and on other aspects that were not explored with Lea. I will outline a few of these alternative formulations.

1. The information from this inquiry can be interpreted using alternative concepts and description of design activities. For example:
• Lea may be described as someone having difficulty with the concept of commitment in design. Unpracticed in designing she does not realize that she may make decisions and later modify or even reject them in response to the changing design. Instead she feels that any decision she makes is a commitment and therefore is hesitant to make any decision at all. For example, in our conversation she says:

"L: Because formally everything was open, everything was open very simply... and I needed to take decisions in a certain subject and I didn't want to make decisions because I didn't want it to restrict me in principles that were crucial to me that I continue with them and to work with the principles I had decided upon at the beginning." (Section 17)

• The problem may also be formulated based on the notion of design boundaries. Design boundaries are the principles that the designer sets up at the start of a design, that limit the possible solutions to a number that can be dealt with in the design. Although it is useful to adhere to these boundaries, it is important to remember that they are just a tool, a sort of guideline, that can and should be broken if needed. Lea seems to be confused about this distinction and regards her principles as absolute boundaries that cannot be changed.

2. Another possible formulation relies on evidence that I chose to ignore in the formulation described in this case study, but that was expressed in the inquiry. This formulation argues that the problem was that Lea was unable to represent any of her ideas. Lea's drawing and sketching ability seemed to be rather limited or at least was not being used at a satisfactory level in this studio. This was evident in the small amount of drawn material she produced and in the mistakes her drawing exhibited (see Figures 2-3 on p. 81.) Moreover, her drawings represent little of the information Lea was able to describe verbally. For example, it does not include the representation of the relation of the buildings to the slope.

The importance of this factor is well expressed in her reaction to Sara's sketching in the desk crit (see Figure 4 on p. 82.)

"A: . . . What caused these things to connect?
L: They haven't connected yet.
A: But they seem more connected?
L: Ah...a little, a bit, I don't know, suddenly I see a plan on paper and I suddenly saw the section Sara drew and things connect. But, I don't know, I need to draft it to see I laugh OK, so why haven't I drafted something?” (Section 25.)

3. Finally I would like to consider the instructor’s opinion of the situation. As I described, Sara considered “stuckness” a symptom of a students “not working hard enough.” This may be an explanation of this case as well. Although Sara did not tell Lea that she thought she was not working hard enough , she did think so, as she confided to me. Also, as I have pointed out, Lea was, compared to the class, behind in her resolution of the design and in her representation of it. She wasn’t even clear as to what was expected of her, to develop only one example of a housing unit, as the following exchange shows:

L: . . . In short, I will develop just one unit in the meantime, OK?
S: OK.
L: Because even if I continue...

Discussion of the Case Study:
The Inquiry Outline Reconsidered
The inquiry of Lea’s situation was chosen as a case study because it illustrates several important aspects of conducting inquiries into “stuckness” situations:

1. This case study illustrates the importance of the information provided by what Geertz has named “the native speaker of the situation” (Geertz, 1973.) As Geertz remarks, only the native speaker can make first order interpretations (“it’s his culture.”) In this example only Lea was truly able to consider the importance of each aspect of her situation. Practically this meant that only what we discussed in our conversation was a real part of the inquiry. For example, the design project and the difficulties it presented to Lea are most certainly part of her situation and I believe that they played a part in her getting stuck, but since I did not discuss this with Lea I found that I could not include it in the inquiry, since it was not clear that Lea saw the project’s role as I did.
2. The previous limitation has severe implications on the nature of inquiries in the studio, making them all partial inquiries at best. Lea and I spent nearly an hour discussing her situation, which is as long a time as I spent with any student in the studio, and I was reluctant to intrude on her again, for fear of interrupting her design process. Even inquiries in which I was able to discuss more aspects of the situation with my informant, were partial.

3. This example also illustrates the usefulness of having an outline for the inquiry. Since the information Lea provided was very garbled and confusing, having particular questions to answer allowed me to make sense of her information and to seek the evidence I needed in the transcripts of the desk crit and of our conversation.

4. The case study is also an example of how difficult it is to follow the guidelines of the outline in an inquiry conversation on the one hand, and, on the other, an example to what extent the entire structure can be reconstructed from the information gleaned from the data. Even bearing in mind what it was that I intended to achieve in the inquiry conversation I was unable to follow the guidelines completely while conducting the inquiry with Lea, yet in interpreting the data I was able to understand the situation through them.

5. This example also reveals the importance of the introductory stage, in which the nature of the situation is determined and it's frame of reference as a “stuckness” situation is revealed. Because both players in this situation, Sara and Lea, were unwilling to call Lea’s position “being stuck” much of conversation with Lea revolved around reaching an understanding of the situation. However, without this evaluation the effort as an inquiry into a “stuckness” situation would have been invalid, since one could argue that there was no “stuckness” at all.

6. The difference between the identification of the causes and the formulation of the problem was also explicit in this example. Not only did the problem rely on information that Lea did not identify as a cause of her problem, it was also clearly my personal interpretation of the situation. This is the nature of any problem formulation.
7. Finally, this example was chosen to illustrate the usefulness of such an inquiry for the investigation of the design studio, in this case the relations between instructor and student. It would have been difficult to describe this relation only from the analysis of the desk-crit. However, since we focused on a particular aspect and especially since we formulated a problem, it was possible to sort out the information in the desk crit and make a "unified whole."

The analysis of this example also raises, of course, a few questions concerning the guidelines outlined in the previous chapter:

- In this particular inquiry the informant, Lea, did not have a clear image of the intentions of the inquiries and therefore did not always follow the outline of the inquiry. Yet I was able to complete it. Who, then, are the guidelines for? How specific should the instructions in the inquiry be?

- In this example an important task in the inquiry was, once having formulated a problem, to return and see how it was revealed in the desk crit. Is this stage required in any inquiry?

- The inquiry took place after the "stuckness" situation had begun and it can be argued that Lea was no longer stuck. Did this make a difference? Are inquiries into “stuckness” situations always post mortem? How does this affect the nature of the inquiry and it's guidelines?

- A few subjects were not discussed in my conversation with Lea and yet are of importance: The design project, Lea's opinion of Sara, the connection to Lea’s being an observant Jew (see Background to Case Study in this chapter.) In this inquiry, as in others I conducted in the studio I chose not to return to the student and question her further since that would interrupt her work. Should this be done? Are there other ways to collect more information?

---

14 This is due to both our attitudes, Lea, still upset by the instructor's opinion was suspicious of my study and so, I believe, not interested in the framework. I had purposefully abstained from being too specific so as to allow Lea to be free with her associations. (In later inquiries I was more specific about my intentions.)
Lea's Drawings

Figure 1: Lea’s sketch plan of the entire project
Figure 2: Lea's sketch plan of a housing unit

Figure 3: Lea's sketch section of a housing unit
Figure 4: Sara's (the instructor's) sketch section of a housing unit

Figure 5: Lea's final presentation: Plans
Figure 6: Lea’s final presentation: Model of entire project (unfinished)

Figure 7: Lea’s final presentation: Model of housing unit (without roof)
Figure 8: Lea’s final presentation: Sections of entire project and detailed plans of housing units

Figure 9: Lea’s final presentation: “Paper of principles”
CHAPTER 6:

CONDUCTING INQUIRIES IN THE DESIGN STUDIO

Conducting Inquiries in the Studio
As I described in Chapter One, communication in the studio is often limited to a few topics pertaining mainly to the project itself. In severe cases the projects become the single focus of the desk-crits, as Roger Simmonds remarks in the Architecture Education Study:

“. . .the curriculum was so set up that the focus was almost always on design products. The students major concern and their major dialogue with the critics focused on the questions “what do you think of this design of mine?” or “How can it be improved?” In such dialogues, questions relating to the process and the producer play a secondary role, if any at all” (Simmonds, 1981 p. 176.)

The focus of the studio is, and should be, the design project. However, I believe that an avoidance of other issues is detrimental to the purpose of the studio as an environment for learning. 15 I also believe that discussing issues that illuminate the situation in the studio, be it talking about models of design 16 (see, for example, Darke, 1984; Hubbard, 1995; and Habraken, 1985,) about

15 The importance of addressing issues other than the design project in the studio has been discussed by other researchers as well. For example: “The inter-subjective nature of effective design activity can be made explicit through the involvement of the designer in dialogue relating to the design task. . . This can occur as close to where ideas are being explored and decisions are being made as possible- in other words at the drawing board.” (Coyne and Snodgrass, 1991 p. 130.) See also (White, 1989.)

16 As Stefani Ledewitz points out: “Talking to a student about the progress he is making in problem relative to a particular model of design can help him to see more clearly what he is doing, to be more purposeful about it and to gain better control of it” (1985 p. 7.)
'operational knowledge' (Simmonds 1980,) about social relations or about the causes of getting stuck can greatly benefit the students and the instructor who must act within this environment. Conducting inquiries (even if only partial inquiries) in the studio addresses these issues. Such inquiries cannot replace "regular" desk crits but they can help the student find his way and enrich the content of the studio discussions. 17

Conducting inquires while the student is stuck takes advantage of a particular mind-set: In situations such as these, where the student is grappling with a particular problem, advice is most easily understood, since the student can immediately evaluate it relative to his problem and apply it.

"Knowledge offered in advance of any attempt to apply it cannot find a conceptual scheme in the students mind in which to reside, for the required schema can only be developed while struggling with a particular problem" (Gelernter, 1988, p. 49.)

Inquires can also be useful as a method for eliciting information from students that can be used by the instructor in planning the ongoing studio and subsequent studios. An instructor made aware of particular problems through such inquiries can respond to these problems in his choice of projects, lectures and styles of criticism. Such inquiries may be a partial answer to S.M. Dinham's question: "How can new information become available for design teachers' use?" (1989, p. 87.)

Conducting such inquires in the studio is not necessarily simple: They must be with people who are most involved and therefore the least objective about the situation. Moreover, not all participants may be eager to consider such aspects of the design. The inquiries must also be limited in time and in the tools that can be employed: I suspect that in most cases these will be conversation only. However, as I found in my own inquiries in the studio, they are both effective and rewarding.

17In his article "Turning Breakdowns into Opportunities for Creativity" Gerhard Fischer proposes a computational environment for designers that is based as the notion of using the point of breakdown as a means to enhance the creative design (See Fischer, 1993.)
Petra and Quist
First, however, I will give an example of a situation in which an inquiry could be effective and contribute to the student’s learning process. In the *Architecture Education Study* and again in *The Reflective Practitioner* and other articles, Donald Schon discusses a desk crit an instructor named Quist gave to a student named Petra (Schon, 1981;1983;1984.)

Petra begins their meeting by saying that she is “having trouble getting past the diagrammatic stage” (Schon, 1981, p. 356.) She continues to describe the design and the problems she encountered. Quist then begins a “regular” desk crit by suggesting that she “begin with a discipline, even if it is arbitrary, because the site is so screwy. You can always break it open later...” (p. 358.) He continues to demonstrate to her what her design can be, provides her with information and resolves some of the design issues that had troubled her.

Let us consider this example in the light of “stuckness” situations discussed in the previous chapters. Petra identified a “stuckness” situation by saying that she was having trouble proceeding beyond a certain stage of the design, and went further to identify what it is in the design that made her realize she was having problems: she cannot resolve a crucial aspect that will inform the next stage of the design, the site plan. Quist listens to her problem and assumes he knows it’s cause: She has framed the it in a way that it cannot be resolved. By basing her decision on the shape of the site she is relying on information that is “screwy” and therefore useless. She should instead use the design procedure of imposing a geometry on the site and working through it. Quist proceeds to exemplify this process beautifully for Petra, and it seems from the description that Petra has understood him and will now be able to continue with her design: Quist has brought about a breakthrough in Petra design thinking.

What is “wrong” in this description? First, Quist has assumed that by demonstrating the effective design procedure Petra will learn to repeat it and to avoid such problems in the future. This method of teaching assumes that the student can reconstruct the instructor’s logic and use it as her own. Is this enough? In many cases it is; students do learn to design through following examples. In some instances, (often expressed in “stuckness,”) it is not. To help the student the instructor should find another method to describe the design
process, such as a verbal description of his actions that would include an exposition of the logic of the actions. Although such an explanation may also be insufficient, the student may be able to make more use of the verbal explanation, and will certainly benefit from the dual view of the problem and its solution.

Quist’s explanation confronts Petra with another difficulty: Given only the solution of the problem without understanding its cause (Quist does not even explain what he thinks the problem is) Petra must remember the procedure without a clear understanding of it’s motivation. Such rote learning will make it less likely that Petra will be able to use her knowledge in a similar but not identical situation. Exposing Petra’s problem as the basis of his design process would make it more convincing for Petra and for any other student who might have heard the desk crit. In this example the situation and its cause have gone un-discussed; the focus remained on “solving the problem.”

If the completion of the design project is regarded as the sole objective of the studio then a desk crit such as Quist’s is the most appropriate response to Petra dilemma. However, I believe that the studio is a place for more than just designing. It is an environment for learning about design and architecture. In this sense I feel that Quist has missed an opportunity to discuss with Petra what the process of design involves and why one needs procedures such as the one he has described to her. Why she should “begin with a discipline, even if it is arbitrary..." (p. 358)

Quist has also missed the opportunity to clarify whether this is the main problem that is keeping Petra back. Perhaps his demonstration of a solution is irrelevant since he is showing her a process that answers a question she has not asked. Furthermore, he may not realize that Petra could be struggling with questions related to issues other than the design project (see Chapter Three) and following this crit, Petra will have in addition to deal with problems and issue Quist has brought up.

Inquiries address these issues since in conducting the inquiry the student and instructor must discuss the situation and the difficulties the student is struggling with, and not only those that the instructor perceives. Moreover, the joint
formulation of a problem requires the discussion of design processes and rationales, which could explain many concepts that Petra may not yet have understood. The formulation and discussion would also relate the solution to the problem, and explain each one more carefully so that they make more sense to Petra. Finally, the inquiry as a special occasion is an opportunity to ask and answer questions relating to other issues in the studio.

Conducting an Inquiry Conversation
What does conducting an inquiry conversation consist of? It is, in short, a conversation where questions pertaining to the “stuckness” situation are discussed. It can cover the entire range of questions outlined in the framework for inquiries or focus on particular aspects that are of interest to the participating inquirers. In these conversations the burden of description and of first order interpretation lies with the person experiencing the problem, in our case the student. The role of a second inquirer, such as the instructor, is to assist the interpretation and to begin to analyze it. As Geertz remarks: “We begin with our own interpretation of what our informant are up to, and then systemize those. (sic)” (p. 15)

Following is an analysis of the inquiry conversation I conducted with a student I have named Lea, which will serve as an example of such conversations. (See Chapter Five: A Case Study.) This analysis will focus on the nature of the conversation: It’s content and the role of each participant. I will also examine the methods used to discover information, i.e. the types of questions asked. The complete transcript of this inquiry is provided in Appendix D.

The conversation can be seen as two parts that correspond to two of the stages described in Chapter Four: in the first sections of the transcript Lea and I discussed the identification of the situation and how Lea understood “being stuck.” Following this part we explored possible causes of the situation. Explore in this case meant that we each suggested causes and discussed them and any association they evoked. The final stages of an inquiry, formulating a problem and clarifying the situation, were not part of our conversation, since we had reached a natural conclusion before discussing them. However, other inquiries I conducted in the studio included problem formulations and situation clarification in the conversations as well.
It will perhaps be easiest to understand the nature of the inquiry conversation by comparing it to the desk crit that preceded it. In many ways they are similar, both are a conversation between two people- the student and an observer-collaborator. However the role Lea played in each is different. In the inquiry Lea did most of the talking. She provided the information and it was she who considered the suggestions I made. Throughout the inquiry, talking was the main mode of communication. This is in contrast to the desk crit, where Sara relied on drawing as much as on talking to communicate her ideas. The third most obvious difference between the desk crit and inquiry is the subject of the conversation. Sara and Lea discussed Lea’s design project almost exclusively, while the inquiry revolved around many aspects of the design studio: Lea’s attitude towards it, her relation to other students, her mode of working etc.

My role in the inquiry consisted of a several parts. In some ways I was a navigator: I assisted Lea to clarify the causes she was suggesting by asking probing questions. I also took the part of collaborator, especially in suggesting possible causes for Leas consideration. However, my most important role in the conversation was keeping the intentions of the inquiry clear. I was responsible for making sure we addressed the different questions outlined in the framework of the inquiry (Chapter Four.) Here this was expressed especially my insistence on discovering the observations Lea used for her interpretations. This usually meant asking Lea to be more specific in relation to this particular situation. Section 17 of the transcript gives an example:

A: So what made you think that there was a problem? What was the change?
L: It was less clear to me where I was headed, the problem was, let’s say, that I had to many open possibilities.
A: For example? Can you try to begin from zero, as if I know nothing about architecture. What happened when you were working that made you say, Ah, wait. Where the idea that come from, I mean, its not that you immediately realized that you had no idea.
L: Because formally everything was open, everything was open very simply... and I needed to take decisions in a certain subject and I didn’t want to make decisions because I didn’t want it to restrict me in principles that were crucial to me that I continue with them and to work with the principles I had decided upon at the beginning.

*Interruption*
A: OK, so how many days passed before you began to say this is too open, because in the beginning all the possibilities are open (anyway...)
L: What do you mean how many days had gone by?
A: I remember that last week you said that it had been two weeks that you were...
L: Yes, because I worked for quite a while, I mean I pretty much developed this thing (the “bridge”) and then each time, let’s say that between each crit all I did was a small change in this axis (the “bridge”) instead of the apartments, and I made a model and...don’t know...I can’t just work, in the air, to just draw an apartment, like, I need *inaudible* principles that will guide me. I have a paper of principles according to which I develop the project. I can’t just, just put shapes, OK, this will be the apartment, I need a reason. That’s the part in which I got stuck, I can’t explain it at all...

An analysis of this conversation would not be complete without considering what it did not include. In the conversation I felt that Lea, following the instructor’s example was reluctant to consider herself stuck that therefore hesitant to explore the causes of her situation. I was afraid to insist and so did not address a few issues that would have contributed to the inquiries. Questions that should have been asked include:

- Why did you bring so few drawings?
- Can you describe your design principles?
- Why is the topography of such importance?
- What do you think of Sara as an instructor?
- Do you feel comfortable with Sara?
- How do you evaluate yourself compared to the other students in the studio?

For further consideration of inquiry conversations in the studio please see Appendix A: Identifying “Stuckness” in the Studio and Appendix B: Guidelines and Useful Questions.
CONCLUDING REMARKS:
FUTURE ENDEAVERS

The two parts of this thesis addressed the subject of “stuckness” situations in two different ways. In the first, these situations were considered as a group and an attempt was made to distinguish them from other situations in the studio. The conditions, characteristics and causes of these situations were considered. The second part of the thesis focused on individual “stuckness” situations and explored the means with which to determine the cause of a particular situation in the studio. In these chapters John Dewey’s notion of inquiry was applied to “stuckness” and a framework for understanding these situations was outlined. The relevance of this framework to the design studio was considered in a detailed example.

The work presented in this study is not definitive. This is partly due to the indefinite nature of the subject matter and partly to the short length of time available. Therefore, the following remarks outlines possible continuations of the present study.

Though it has not been described in the thesis, the application of the research method in the studio yielded information of the type that was sought: Through studying and understanding these situations many aspects of the studio and the students response to its demands were revealed. A careful description of this information is one of the main projects this thesis suggests. However, a description of the information provided in studio inquiries should be prefaced, I believe by an extensive study of many more examples of “stuckness.” Such a study would allow the careful re-evaluation of the following questions:

• Are there differences between “stuckness” situations encountered by students at different stages of the design process, and if so what are they?
- How often do students get stuck in the design studio?
- What are the most common causes of "stuckness" in the studio?
- Is there a change in "stuckness" situations as the student becomes more experienced?

A fascinating subject of research, related to the topics discussed here, would investigate the relation between the breakdown and the breakthrough and the means to identify this relation. As described in Chapter Two, the breakdown and the breakthrough, the onset of getting stuck and of getting unstuck, need not be related to each other, since in the process of getting stuck the designers' situation changes. I would expect that this investigation would require methods similar to those used here: Inquiries and observations in the studio.

Conducting a survey of "stuckness" situations in the studio and further inquiries into specific situations would require the development of an a system for reporting the information retrieved. Creating such a system would seem to be a subject worthy of individual attention. This system could contribute to the design studio as well, since it would provide instructors and students with a vocabulary for discussing their difficulties in the studio, a vocabulary which is, I feel, sadly lacking today.

Finally, I would hope that the study presented in this thesis can be the basis for the development of new and effective teaching methods and tools and that it could prompt the conducting of inquiries in the studio between instructors and students. This would be the study's chief contribution.
WORKS CITED


- - -. “Designerly Ways of Knowing.” Design Studies 3/4 (October 1982) : 221-228


Kliment, Stephen A. “Academe or Boot Camp?” Architectural Record (July 1991): 189-193


Pause, Michael “Teaching the Design Studio, A Case Study: MIT’s Department of Architecture 1865-1974” Diss. MIT, 1976


Rapaport, Amos. “Architectural Education: “There is an Urgent Need to Reduce or Eliminate the Dominance of the Studio.” Architectural Record (October 1984): 100

Rauh, Richard P. and David G. Wright. Beginning Design Courses at Schools of Architecture in Western Europe, a Documentary Study. Cambridge, Massachusetts: Graduate School of Design, Harvard University, Architecture Research Office, 1975


APPENDIX A:

IDENTIFYING "STUCKNESS"

Identifying “Stuckness” in the Studio
The first step towards conducting an inquiry in the studio is to identify a student in a “stuckness” situation. Unlike the student who can rely on his own feelings, the instructor must interpret the existence of such a situation from observations. What does the design teacher have as ‘evidence’ of a “stuckness” situation? Firstly, he has the student’s design, which can be compared to previous work and to the work of other students in the studio. The advisor may also consider the student’s behavior during the desk crit and the entire class session. Secondly, he has the student’s testimony. Many crits do begin with “I am stuck with...”

Let us begin with the student’s design work: in comparing it with previous work and with the work of other students the instructor might note:

- The quantity. Is it sufficient?
- The complexity of the drawings. Do these drawings exhibit reflection and thinking?
- Progress in types of drawings and models, for example the addition of new perspectives. Has the design been approached in a new way?
- Relation between different types of description, is everything expressed verbally also represented in the drawings? Is the student having problems with the drawings or the model?
- The number of what might be easily defined as mistakes, such as discrepancies between section and plan and the exactness of site in plan. Are there many mistakes?
• What seem to be the influences on this particular design process? (For example, famous buildings or architects.) Could the student be fixated on a particular solution?
• Similarities to other projects. Is the student exhibiting original thinking?

An instructor can also consider the students behavior, such as:
• A student saying “I feel stuck”
• A student exhibiting a confusion of expression and explanation.
• Procrastination: Students who do not show up for studio or bring very little design work.
• Students consistently ignoring advice without producing alternative solutions.

Of course, observation is only the first step in identifying a situation. For the purpose of conducting an inquiry it is important to identify it as well. If the student refuses to do so an inquiry should not be attempted, since such a investigation must be the joint effort of the student and the instructor. However, in my study I found that the problem of identification is usually causes by insufficient understanding of what “being stuck” involves. Once I made it clear that I did not mean just being at a standstill or not resolving an issue (the most common understanding of being stuck,) students were willing to identify the situation and discuss it.
Appendix B:

Guidelines and Useful Questions

Guidelines for Inquiries in the Studio

Considering my own experience of conducting inquiries with students in the studio, I have complied the following list of guidelines, which I consider important for a successful inquiry. (The framework for conducting such an inquiry is outlined in Chapter Four.)

- An inquiry is not a desk crit, and should be separate from it, although it may occupy the time of a scheduled desk crit.

- Inquiries should be related to a specific situation: the intention is to understand why a student is stuck and not discuss the entire studio.

- Inquiries are a joint effort of the student and instructor. An important component of an inquiry’s success is the part played by the student. It is crucial that he feel free to express whatever doubts and concerns the situation has aroused.

- There is no fixed goal: The inquiry is an end in itself. However, it is important to explore as many causes as possible and useful to agree upon a formulation of the problem.

- An inquiry should last as long as it is interesting for all participants.

- There are always other ways to explain the same situation.
Useful Questions for Inquiries in the Studio

Beginning any conversation can be difficult. In inquiries I have found that it is useful to begin by making the intentions and scope of the conversation clear and to emphasize that the focus should be on what caused the situation and not what might be the "solution" (the breakthrough.) It is also important to point out that since this is an inquiry into the student's situation and not into the design project anything that the student feels is relative is important. However, it is usually effective to ask the student to begin by describing the changes in the project and the way "getting stuck" was expressed in it, since the description of the project serves as a reminder of what has occurred and establishes a common vocabulary to discuss the situation.

Following is a list of the sample questions noted in the discussion of inquiries in Chapter Four:

Stage 1: Determining the situation:
- What made you consider yourself stuck? On what occasion did this happen? For example: Did something happen before or after a desk crit?
- How long did it take you to realize you were stuck?
- What is the difference between this situation and "just" working?
- What made you identify the situation this way: What did you notice that made you realize you were stuck?
- Can you describe another situation that was in any way similar?

Stage 2: Exploring the causes:
- How was a particular cause expressed? For example, was it in the questions you were asking, or in something you were doing?
- Why is this a problem?
- Why is this a cause of the “stuckness” situation?
- Is there another way to explain the same cause?

Stage 3: Formulating a problem
- What seems to you the most important cause of this situation?
- Is this (...) a good way to describe your problem?

Stage 4: Clarifying the situation (a sample.)
• Why do you think that the instructor gave certain advice?
• Did you see the problem the same way before you discussed it with the instructor?
• Do you have friends here in the studio?
• Do you have help from other students?
• How do you evaluate yourself in relation to other students in the studio?
• Are there other issues that bother you?
• How does this studio compare with other studios you have attended?
APPENDIX C:

SAMPLE CAUSES OF “STUCKNESS”

In Chapter Three: Causes of “Stuckness” Situations I outlined the different aspects of the studio that can be at the root of a student’s “stuckness” situation. This appendix is intended to give examples of such causes. They are drawn from the study conducted in studios at MIT and the Technion, Israel Institute of Technology, and from my own reflection on “stuckness” situations. This list is by no means exhaustive and intended as an example only.

Causes Related to the Design Project

- ‘Dead end’
  One of the interesting situations I observed was that of the student “Miguel” whose transcript is quoted from in Chapter Two. Miguel was stuck because he had reached what he called a ‘dead end’ in the design: The concept he had been using as a basis for his design decisions was no longer fulfilling this role and instead of assisting him it was hindering his decisions. Miguel felt stuck because he could not immediately do what the situation required: Give up the design concept with which he had begun and to which he was attached.

Causes Related to Confusion over the Design Process

- Image of the Design Process
  Two students with whom I conversed in the studio told me that they were unable to continue with their design because they did not have an image of the next step of the process. Although they realized that developing their design required that they adopt a new design procedure, they did not know where to aim. For one student this meant she was unsure of what the next model in the series should represent, how it should be differ from the one she was working on. The other student had no idea what questions to address.
• Commitment
The student may not have grasped the meaning of commitment in design. He may feel afraid to commit to an idea and begin to develop it in case a better idea is suggested later. A more experienced designer will feel competent to deal with such a situation and be able to abandon his original intention or incorporate the new idea into it, but for a novice designer, who may be unable to abandon ideas once they are adopted, the fear of commitment may become a major issue that cannot be surmounted. In the study, one student told me that he was wary of commitment because he knew that the time he had for the design was limited, and so he was hesitant to put effort into an idea that might be abandoned later.

• Compromises
Effective designing almost always involves compromises in ideas and intentions. Students often avoid making such compromises before they feel they have really explored all possibilities and tried to reach the perfect solution, and thus put off making important decisions. More experienced designers have the advantage not only of more knowledge but also of a more realistic understanding of how crucial it is to compromise in design.

In this connection Marvin E. Goody remarked in *Processes in Architecture: A Documentation of Six Examples.* (Cruikshank, 1979) that:

“... but then my feeling is, let's scope the problem graphically. How many different ways can we go at it? Then by the review of that scoping process we say: “Here are the principles that we can abide by and here's some stuff that we better throw out of the problem,” otherwise well never get out of it. One of the difficulties I have in the office is that people who are working on the project aren't yet willing to accept that narrowing down. They still want to look for the better schemes elsewhere.” (p. 24.)

Causes that can be Attributed to a Lack of Skills
• Using ‘Feedback’ from Drawings and Models.
The student may not be able to be in (or may not be aware of the importance of being in) “conversation with the materials of the design situation” (Schon,
Since some information about the design is obvious only after it is represented in drawings or models, a student who is unable to perceive and use such 'feedback' may experience difficulties in the design process and "get stuck."

- Time Management
  The student may not be able to time his design work effectively. For example, the instructor may realize that the student must begin working on the floor plans so as to complete them in time, but the student, who may have never paced himself in a design process before, may feel that the plans can wait another day. In many cases such mismanagement leads to situations where the student is lacking parts of the design or important information and therefore gets stuck. (See Mann, 1986.)

Causes Related to Knowledge of Architecture
- Lack of Information
  The student may not have information that is needed to develop the design. This may be due to lack of knowledge or to a lack of awareness that this information is needed. An experienced reader will perceive the information conveyed in an architectural design drawing or model. The student may not yet be able to read such information himself, so he does not understand the importance of conveying it! In the studio I observed one such student, whose problem was caused in part by the fact that he did not perceive the difference between his plans (which were little more than sketches) and 'finished' detailed plans and therefore could not continue developing them.

Causes Involving the Studio Instructor
- Anger
  One of the students I interviewed was at a standstill because he had been offended by his design instructor's in the previous class meeting. She had met with him at the end of the scheduled class for a few minutes only, and the entire crit consisted of one piece of advice which he did not understand. As a result he felt that the entire effort of the studio was not worthwhile and stopped designing. (In this case there was a correspondence between the cause of the breakdown and that of the breakthrough, since in the next class meeting, following a more serious desk crit, the student began designing again.)
Setting Design Goals
In the studio design goals are set by more than one person: By the designer and by the studio instructor as well. This is an important component of teaching in the studio, since it through setting goals that the students may learn what is expected in architectural design. However, if a student does not accept or does not understand the instructor's goal, or if this goal interferes in some way with what the student would naturally aspire to, the student may feel pressure to do things he cannot or does not want to do and “get stuck.” (Simmonds, 1981 p. 163; Laseau; 1986 p. 28-29.)

Causes Related to the Studio Environment
• Social Pressure
In one of studios I visited a student told me she had abandoned her scheme because she felt it was “boring.” Following this decision she had been stuck for about a week until she began working on a new scheme that she found “more interesting.” Although she was unable to explain exactly what is “boring” in architecture and why she felt her project deserved this description, she clearly felt enough pressure to create something new and exciting so that her design process was affected and she “got stuck.”
I began by asking Paul to feel free to describe anything that was connected in his mind to the issue I was asking about, although I do have a few questions that can be used as guidelines. I also stressed that I am more interested in what caused the situation than what might “get you out of it.”

A: When did you begin to think... oh oh, I've been working on this shell and I'm...

P: I have to say that probably about a week into it is when I first realized that I was, was maybe running into a dead end or something like that. Ah...but I though I could resolve it, and I think when it I really hit me was trying to resolve the idea of like the docks or whatever, or whatever you want to call them, and just, just, it didn’t seem to fit with the shape I had created, which I liked as a sculptural piece.

A: Yeah!

P: I was kinda torn between this idea of a sculptural piece that I really wanted to place in the river, and ah, these docks that absolutely needed to be there and they had to serve a certain purpose. I didn’t just want to stick them out there which is what seems to have been done in the current boathouse, I wanted something elegant, but the shape just didn’t seem to lend itself to that. Even after Prof. Charles was telling me “well you know the floor plan doesn’t really have to be” (symmetrical) but in the sculptural piece that I made it really did. The floor plan was really, really was supposed to be underneath the shell, I couldn’t just do anything. And So I realized that maybe this shell is not is not exactly the right solution. And I tried, I tried to go ahead and pursue it, I changed the shell a bit and I tried to find ways to incorporate or make the ah, the docking idea work. Ahm...but I mean, after following different ideas, suggestions David (the TA) gave me,
suggestions Prof. Charles gave me I realized that especially, I realized, like right before I started presenting today, I realized that I had...

A: *laugh* I haven't done it yet!

P: Yeah! I was always hesitant on trying something else, because I didn't want to get this far and then not keep pursuing it, I didn't want to have to start all over, um, I don't think I have to do that, but I do think that...I think that it was just this ah, this shell really, I mean, is this idea of the sculptural piece that I wanted to place in the river. And I fell along with it and that's kind of a, what got me in this mess.

A: So would you try and describe this mess, just how you see this mess.

P: Well, to tell you the truth it's no longer too much of a mess, but

A: But it was?

P: What it was was ah...just the idea of having to resolve two different things, on the one hand you had this sculpture and it already has its form which can change and it can be something else, but it pretty much it was, it is a symmetrical shape, I really like and I wanted it to be symmetrical, to do all the things, well Prof. Charles said maybe it doesn't have to do this but those are the things that I want it to do, choices I had made, and I, so there was a conflict between that and em, the program that really, should be the idea of the dock, which they just conflicted so that was that was the mess. Two different elements were not, did not like each other very much...no real ways, I mean there are ways but...

A: And you kept on choosing the sculpture instead of the other things?

P: Right, I kept on just saying you know well, I'll have to try something else because obviously, if one of them had to go then the docks had to go, I'll have to something else with them. Instead of doing something else with the shell. But, ahm, yes, so..

A: So that's really been going on for two weeks?

P: Yea, well mostly for one week, because in the first week I first working on the idea of the shell, the shell was doing all sorts of stuff but I was really working on the idea of the shell. Then after that, then I decided alright, now I've got the shell, or got an idea of the shell, lets see how I can make, I put things inside the shell, I worked on it relatively, you know, I've done a pretty cool plan and it worked well and David kind of liked the thing and the ideas that I had going but Prof. Charles did not like them as much and the more I thought about it the more I realized it wasn't really resolved, you know, it was a way of resolving it, but it wasn't really satisfactory to myself and I was trying to kind of fool myself into believing that OK, this was alright...but it wasn't really alright, but just to save it...

A: Yeah! So, do you really see Charles part of this as being very important? I mean you keep on saying that Charles kept on saying...
P: Well, there is a certain I mean, what the professor thinks has a certain...to has a affect on what I am designing or what decision I make, because I know that in the end my grade comes from Prof. Charles and part maybe from David, so I listen to their suggestions...
A: Its probably only from Charles...
P: But, they know more than I do so I listen to them you know, for those two reasons. Uh, I think that if this had been a design competition I would not have been in the shell as much, because I like it as a sculpture but this may not be the right place, this may not be the right building to put my shell on...is what I am thinking now.
A: Do you feel that Charles convinced you or that you are doing it because he's the professor.
P: Probably because he is the professor. I am not sure how convinced I am. I mean I tried to convince him of why, of my reasons, he did not seem very convinced. laugh I didn't really sell him on the idea. and I tried I mean I spent maybe half an hour telling him why it was so important. And it is, it is important idea, but it is not the right idea on this case. But he didn't really tell me to was not the right idea I guess he doesn't really want to say it do it this way or bend in your idea but I think the truth of the matter is that I need to bend in my idea at least to a certain extent to move on.

Miguel

M- Miguel
A- Avigail

I began with a short introduction differentiating between getting stuck and getting “unstuck,” asking Miguel to consider his behavior especially in relation to getting stuck.

A: So tell me, what happened? What was going on when you got stuck?
M: There were, well, should I lead up into why I got stuck?
A: Yes, what was going on? What were working on, what were you looking at?
M: Well I was, well, to give you some background...
A: Yes,
M: The previous studios that I have taken have always...
A: You're answering all my questions before I ask them!
M: In the previous studios that I had taken I had always started with a drawing and then at the last moment built a model, I also had started from the spaces inside and worked out...in this project...
A: Whom were you with?
M: Gives the names of two instructors. So for this project everything for me was backwards.
A: Yeah!
M: I, first of all, I had to start from a general shape before I had a program and also I had to start on a model before the drawing. So that was a little unusual for me so, ah...
A: There was a lot to learn.
M: Yes, the first inaudible. And the point where I started to get myself started was a T (the shape of the letter.) The notion of a T and use that to generate spaces.
A: Yeah, I like that!
M: I got stuck when I got to a point where I was unsure how much I should hold on to the T. I had gotten to this sort of model plays with model to demonstrate
A: This is what you had last time, I have a drawing of that the drawing is found and discussed.
M: I was at this point and I was using the T to shape my space and to ah... you know and to create other spaces. And the T stopped working for me, there was only so much that I could do with it. And I was afraid to, well since I had started with the T and I like it a lot because I looked what I had gotten so far, I wanted to hold on to it but I couldn't clearly that I couldn't do much more with it, ah, and so that's where I was stuck, how the question of how much to hold on to an idea. Ah...
A: So what was that expressed in?
M: ?
A: Like what kind of questions were you asking?
M: Well, Um, let me see how I can, there were a lot of smaller details such as how do I end, how do I cap this off do I cut this off. How do I make the actual spaces have more reality to them, and I couldn't answer those questions with just the T concept, and I didn't have something else to help me to guide me in answering these questions. And also to create a pure T this would have to be flat, but I wanted to do other things, I wanted to put an observation deck here so how can I put an observation deck there with the T, yet I still wanted a T so that was ...
A: So what happened? You realized you were asking these questions and not finding answers?
M: Well, I realized that it was OK to let go of the T because it had given me a lot, it had gotten me to a good point, but that is was hurting me, it was limiting me, and I didn't need it any more and should move on and that's what I did. At this point I started working in sketches because I was doing some research on the web looking at pictures, I needed to get the details off and the idea that I got was if I take the element of the T from the tower
A: T for tower
M: And keep the horizontal element but screw them on so that this can be to the middle somewhere that create a lot more possibilities and I immediately saw either a suspension bridge or an inaudible so there were so many more forms open to me just from the suspension bridge idea there were now ways that I could connect make the structure work continues to describe the new possibilities
A: How long did it take you to get that conclusion?
M: It took me, it wasn't that I that I felt it, speaking to Lee (Another graduate student observing the studio for research.)
A: Today?
M: This was today and along my conversation with her about the strengths of the drawing versus the strengths of the models and what you can do best in either. And from that and from some more direct probing on her part on how could you best model this I sort of realized, I realized the limitation of not only the model but the shape that I had chosen, like the medium it helped me see that the shape was limiting me and I should free myself from it. We also talked about something like a scale, Charles (the professor,) right now wants us to work at one eighth but doing, one of the obvious advantages of something like this a sketch is that you can do it much faster many iterations as opposed to something larger which you can't make many iterations, so perhaps sketch models, I could do a bunch of little ones.
A: I'm sorry to cut you short but this seems to me to be you're getting out of this thing, I'm still interested...
M: Oh, yes...
A: I'm really glad you got out of it but I am interested in why you got into it. Why did you say I was stuck? Why did you identify the situation that way?
M: OK, when I started with this idea, and I started working to get it to a more real something that you can see as shaping real spaces, the I guess the idea, I'm not sure I can say that, but I started having lots of ideas I did some sketching and my modeling and I made this model and I immediately made this piece did that piece and once I finished a step I automatically got a bunch of ideas of how to play with this more I always had something I wanted to do with this, and then I got to this point and I did not have any other, I started getting very attached to this and I didn't know how to break it...
A: Afraid to touch it?
M: yeah, I was getting very afraid to touch it,
A: And did that go on for a while?
M: Um, Well, I didn't work on it for a while, in relative terms I yes. In terms of the amount of time I have been putting into this it went on for a good deal. In terms of over all time, no.
A: No, that's OK, time is only relative. Gives example
M: In relative time..
A: You sort of went on with one model that didn't change for quite a while.
M: Yeah, and I didn't want to be attached to it, I wanted to keep evolving it. And I stopped. You know, once I got to ...
Discuss other elements in the design. How did you realize the T was the problem? I realized its importance so when I realized there was a problem I looked for it there. Was Charles involved? No. Was David? Yes, but after I was stuck and not during. He was helping in the "unsticking." Why did you speak to no one during the stuckness? I tried to struggle with it myself. Did Lee suggest being stuck or was that just the outcome? Only the outcome, the subject was her research and not my design. A few questions in which I asked whether particular aspects of the design were part of the perceived problem (they were not.)

A: . . . I fine with your identification of the T as the problem, I want to understand though why you identify it that way.

M: Let me think myself.

A: That is what I am trying to get at, and the way I see this process is that first you need something to "look" at like your behavior or part of the model you know, this drawing has been sitting there for three weeks and then you think that "oh, I think that is a problem" or "I think that that is the problem." So that is why I am kind of wondering is this what you were looking at when... is this part of the identification process or is... what played into this identification process?

M: Two big things, the first one was my original prejudice against the T, I was both happy, I was wary I was on the lookout for it's being the problem in the first place. Secondly was we started talking about structure and how to just in general if this in reality would be an impossible cantilever, and then I sort of... I like cantilevers, and I would like to show. It would be nice to have a big thick cable suspending this, and I thought I would really like to do that if it were like this (not a T shape) and that moment I realized I can't because its a T. But if it weren't a T I could maybe I should let go of the T and then I could put something more like this. I have the structure work.... I guess it was discussing a specific...

A: Problem, that this T caused...

M: Problem that this T caused and that created a sort of... there was a conflict between me wanting a show something and the T wouldn't let me show it so...

A: Great!

Dalia

D- Dalia
A-Avigail

D: "... and then, and then it suddenly wasn't good in my eyes because of this I, I felt I was stuck."
A: "It (your opinion,) changed because of what they said?"
D: "No, not because of what they said, because I stood at the side and began looking critically at what I had done, although I always criticize myself as I said, but what..."
A: "So what did you suddenly see? You looked at it and what did you suddenly notice?"
D: They began their criticism and I constantly argued with them, like, I yes, I always argue, I stand my ground even if its wrong. But in the end I went home and saw it again and in the morning I woke up and, like, I started to look at the project in their eyes and its alright, its true/right what they said. What annoyed me was the idea, like I developed the idea to the end, till the inside of the apartment, and how it looks as to the composition of the roads, the nature, the walkway and from the functional aspect, and in the end it was ruined because of a structural problem, and then I left it and didn't deal with it and that annoyed me and I didn't have, its true what she (the instructor,) said, I didn't have the tools to deal with it. (The instructor had remarked in the desk crit preceding this conversation that she felt that Dalia, as a landscape architecture student who had 'missed' the second semester in the architecture studio sequence, was missing the tools to understand and design structural aspects of the building. )
A: Is that what you thought before she said it as well?
D: No.
A: then what did you think?
D: I thought, I don't know, I don't know what I thought. Its in all such as stands on columns and I was against this all the time, I always wanted it to soar and all, all the time I had these sketches and suddenly I had this sketch and then I dealt with the columns and dug here and dug here and made a side of a road here and a side of a road here and a inclined walkway here, but in the end someone who stands here, its true/right this entire mass cannot soar on this forest of columns but...
A: The problem in the end was not only that you didn't like the columns, but that they also were not enough?
D: No, because the soaring I was talking of was conflicted by the columns now, the truth is that I am not sure how many columns I could take off so that it would soar and give me, give me this feeling I wanted: the openness from below building above and all the nature below. I don't know. . .
. . . description of another crit that was complementary, . . .
. . . discussion of how she designed the columns. . .
good, but the main point is that I like this better.
A: You reached this...(I actually had a notion of how, but wanted her to repeat the description)
D: I reached this, I sat two weeks with nothing, I was just in shock. . . laugh. . .its true, how I didn't see this and I had a feeling that I know how to treat all types of people and I don't know how to criticize myself, but if I am looking in on the outside, I can criticize, But, I don't give myself that space to look at it so, eh. . .
A: Go on, that was interesting!

D: I started thinking, Sara (the instructor) recommended this idea and to begin from it. (To return to the conceptual model and to treat it as a formal diagram of the project.) And from this point Sara's attitude towards people (the students,) simply changed. She began to bust and that's what's good. Like, I am very pleased that and

A: It (Sara's attitude) changed after the pin up?

D: Yes, after that Sammy,

A: Cohen (A n instructor in the department, the most outspoken reviewer in the pin up.)

D: Yes, oy, he is a man, the way he criticized I really admire him but there are some points (about him) I don't like, but never mind, its OK, its actually what progresses us, if we don't get the criticism there is no way to proceed, and it was mostly good, and then he sort of gave... inaudible. ... liked me very much and now its OK its OK that I come to the studio and am not told all the time is good what you did, continue. You leave with that feeling that something is wrong, this way I feel that I have what to give and not that if I want something its OK and if I make this line its OK and then I have to deal with it (with its consequences,) no,

A: Did you feel this way before the pin up? That Sara was not giving enough?

D: It's not that, if I brought something it was OK and her attitude was you now have to deal with the problems your attitude will cause you. It was good, like, if I asked her something she comes up with ideas just like that, it would amaze me how she manages all these things, but now if I bring something, this for example, its not OK and that's good because I see things I didn't before... Description of another sketch possibility she had brought... and then she began asking questions about it and from the conversation, its true, it wasn't OK.

A: You feel that before the pin up you did not see things that were wrong or 'not OK'?

D: Yes, yes, we dealt with little things, like the space a person needs to pass, the general form (was considered) OK, the space for a person, how it stands and that is what finally got me in trouble in the pin up. It was dealing with things I bring, if there are problems I deal with them and not, like, principle issues and its good, like, if I have the principle then its OK, its what I want to give, the principle I have and then the developing I can deal and continue with. At least that I have this (the principle.)

A: I'll say something and please tell me if you agree. Is it OK to replace the word principle simply with larger or more primal questions?

D: Primal?

A: Like, there are decisions that must come first and those that come later, and you skipped the order of the questions.

D: Yes,

A: I just want to be sure I understood.
D: Its not that we skipped. She always wanted ... inaudible ...to give the freedom that the person can go crazy and then deal with what he made. In the beginning the truth is that I was very excited by my ideas and so was she, all these amorphous shapes and the different levels, that the roof of one is the entrance of the other was interesting, but in he end, in reality, how it, like, soars. In the apartment I had the different levels and this line, inside was this line from the entrance to the view, that every thing was divided around it, the levels, the roof that changes, it was interesting inside and out, but in the end, in actuality, how it would stand that was the blow up. And now I have learnt from all this I need to . . . and then to go into the like plans and I had everything, but not laugh now I have learnt that the first basic form
A: That there are questions that come first?
D: Yes, and that then you can go into (detail or the inside of the project,) well, its individual what you do first. . .”

Sara and Lea

L-Lea
S-Sara, the instructor
A-Avigail

1. Excerpts from Desk Crit

L: I have brought a lot (of work) for today. I want to tell you something, I’m not apologizing, though it may seem that I am in an apologizing position, you got the impression...
S: No, no, I don’t at all think that you are not working, there are other people in the group who are not working.
L: OK, like, I thought that maybe I don’t work enough because of what you said...
S: No, no.
L: I don’t know.
S: I’ll tell you what, you are very critical...
L: Yes,
S: And you are afraid to begin something very schematic and so you go into the criticizing (attitude) that what you do does not please you.
L: I didn’t make it, I simply didn’t make it, I really work a lot a lot on this project, just this took me a long long time.
S: OK.
L: To organize the form of the inner courtyard.
S: And do you like it?
L: Yes, I like it very much.
S: OK
L: I simply did not have the time to get into the units, it wasn't because...because...
S: So its not true that you are stuck?
L: I never said I was stuck.
S: Ah! OK. That's why I did not understand what the issue was.
L: Because I understood...(that you thought I was stuck because I wasn't working enough.)
S: I'm Sorry, I'm sorry, because I understood...
L: I feel that a lot a lot of, I, it took me long time to develop this but I know that in the end it's not as if I am standing and saying, oh, I'm stuck and I won't get anywhere...inaudible, both talk at once...no, now I truly, like, I truly need to and I didn't make it for today to work on it, but I did get to some kind of idea very interruption, I join them

also, I have many many types of apartments inaudible there is this thing, very schematic and the pergolas and with them actually inaudible and these I made from parts of ellipses, I really didn't have, I couldn't work without meaning, I started with a circle...

3.
S: Say, wouldn't it help you, now that I think of it, lets say digging in (excavating), something like those cities in Kapadokia, a soft rock and according to the need...
L: Yes!
S: I shape the space.
L: That's it, that's it, that is what...
S: That's why not yet ellipses or that thing, don't use shapes from...molds.
L: Yes inaudible
S: But take the shape as if it was a collection of clays and it has, and you can dig (excavate) according to your need and then it is an architecture of...subtraction from a volume.

4.
L: OK, in any case I have now left off this, I mean, maybe I will return to it according to ... There is the problem that I have two sides of a slope on the one hand, on the other I do have some kind of relation to a center, I haven't yet understood, I haven't decided exactly what I mean. In short, I will develop just one unit in the meantime, OK?
S: OK.
L: Because even if I continue...
5.
S: What you had in the short project we did about the volume of a outer skin and the entrance I remember that you had like, you had the inner part and you defined the wall, I don’t remember any more.
L: What, what was it?
S: The last project,
L: Yes,
S: And you had some kind of plane with lets say elements like this with lines that defined some kind of pergola, something very definite from the outside.
L: Ah!
S: So there was a sort of balcony with a bench.
L: Right, right.
S: That I could imagine it continuing for a longer length, a long corridor and every once in a while there is some kind of entrance, right in the section it would look something like this. If I like had some kind of stairs and this was turned over, I don’t remember what you had but it was something like this, there was a bench and every once in a while there was an entrance, right?
L: Yes.
S: That was your project.
L: Yes.
S: Then what is the problem to take this section and to follow with it, to take this principle, I have something, now this thing will be an element of movement, maybe something like this, like..
L: Yes yes, I mean...like we saw in that drawing I showed you with the pergola that covers above. (In a book they had discussed earlier.)
S: Right, you say that what you have here is, you have some kind some kind of courtyard that is roofed or partly roofed, it does not matter what with, and you have some kind of element that connects the units. But inaudible, both talk at once The other one continues here, yes yes...it also stresses the and also covers these elements, lets say that every column like this is a kind of element that continues, yes like, there is an element, I am just...I am not relating to this specific situation Lea tries to say something In principle you do not have a situation that the courtyard Lea interrupts and you do have a courtyard some kind of element of movement, and its possible that Lea interrupts and no, its not all around, its stops at a some point, if you have units, lets say one two three and you have some stepping of the heights, then this element that is that from it you have the entrances, in some place it is something more spacious, you have a type of care that is more spacious like, this element that within which, for example, one makes the difference in height.
6.

A few moments of quiet thinking

L: Ah, sort of in this direction?
S: Yes?

L: Like, this doesn’t really fit what I want, because I want the difference in height to be in accord with the topography. That is that when I enter here the building will be tilted to here, this building I actually lengthened it I want to make it really with the topography and likewise here...

S: That means the entrances are always from the same level?
L: Yes, the entrances are will be from the same level... *interrupt each other* this I thought during the pin up that it’s possible that it will all be double...

S: Yes.
L: And this will be at ground height and this will be the relationship to the topography...
S: OK, that means that the subject of the passages from the higher areas from the one platform to the other or to the main plane of the unit will be at this place.
L: Ah, sort of in the entrance area.
S: Whether it is in the outer part of the shell or already within the unit...
L: There will be one level and everyone will enter into some unit and will go here and enter some apartment and go up here.
S: Or they can enter the apartment and go up and down...
L: The yard will be one level.

7.

S: But what I mean, lets say I make a section through this, yes, like this, I have this plane and this plane, and at some point it continues...
L: That is...
S: And then lets say I have this covered walkway, this thing lets say, yes, and I have a bench as well that you sit on, and it can be continued inwards, as if it’s a section, ah, somewhere Lea *interrupts* Yes? Lea does not answer so I have the entrance area, and no one says that I have to enter the door into the apartment immediately, it’s possible that I come to kind of area in which *inaudible* and one enters the level of the apartment, and goes down and here is where the door really is. Or, that this area is a bit wider and within it are places to sort of sit and also the stairs that go down...
L: As I did in the units...
S: Ah, yes, good, OK
L: The truth is that until now I did not focus so much on the walkway, that is I thought about it about this pergola that I will really have space and exactly as you drew it, and I was more in the business
of the inside (of the apartments), because I was stressed by the pin up that I was the only one, that I don’t know...

8.

S: This is what I can say, this is what I am always trying to tell you. You something very strong, here you got to these things, continue developing it, connect, dig like a sort of mole, she need she digs some more, and she digs a bit more. You began from here then start...simply continue that is this thing is not right anymore because you probably have another layer...

L: Yes.

S: And sort of benches and the subject of the entrance are, like this wall is a very thick wall, that has both an passage and benches and the entry and the stairs are here, near this slope, that is this thing is a complete space only then comes the unit...

9.

L: Yes, like this I already thought...

S: Now...

L: I thought about the placing of this thing...

S: This thing...

L: I know, it isn’t right...

S: Right, why? because this here, it’s all missing.

L: True true, I simply did not bring it to the pin up, now...

interruption someone dropped something and Sara stopped to take part in the conversation that ensued

S: Is this like this?

L: Yes, because, I don’t know, it folds and it possible that it continues here like this, and this flower pot till the end. You talked at the pin up about the business of the meeting between the, between this street inaudible at the moment I need to look at this in section.

S: I am not reacting at the moment to the street, you need to work on the kitchen, to begin to develop it this way as a situation of a second space instead of opening...

L: Ah, is this a finished situation?

S: Of what?

L: Of the section.

S: Ah, from this point and to go to there, something like this?

L: Around this thing?

S: Even, you know, if you want to create a situation of here is the kitchen and think how many chairs will fit in here, how is it organized, this thing, also you make a kitchen that is only a kitchenette so something like this is already not...don’t begin working...you have space here...

L: The counter is larger than the table.
S: Yes, you should enlarge this, maybe not more than the table, but...

Two students talking loudly interrupt the recording

10.

L: This is more or less the area, it's possible that I will need to organize it somehow here, an elevated space. On the second floor is the bedroom with the bed that sort of looks from above, and the window is, I mean, in the direction of outside, I mean that people, I mean it's possible that I will slant it even more, my problem is that I need to deal with the people who look upon this from above from here, when someone will look at this, ah, my concept is I want this to faces the forest...

S: OK

L: I mean towards the forest,

S: You can also have it that all this will be a window, (someone) can lie here and look out...

L: Yes that is what I meant, that he can lie in bed and look out, it...

S: From here you need, like, if, I know what, he bends down naked and here there is no railing as needed then he will be seen,

L: So what..

S: What will happen is you will make a solid railing, (it's) not a matter of security but so he won't be seen.

L: Yes.

S: And then this distance becomes very small, it's better to give it up.

L: What? This thing?

S: Yes. Now, one possibility is really to make a space that is lets say, double, or whose diagonal is something like this, if it really is a sort of studio apartment, if lets say I live here, if I am asleep then no one else will be at home...

L: Yes this is the apartment for a single.

S: A single? Ah, OK, OK, then it can be a sleeping gallery and when he is here it remains open.

L: When he is in the living room, if no one is in the bedroom,

S: And then even, you know, the window of the living room is like this then he already sees out, you don't need to make here something like this, you can do something like this you are actually inaudible the flatness inaudible this thing is just an addition it's not that you make something like this, that this is like the living room, the kitchen, and this is a gallery and clean, a clean line...

L: OK, it's possibly true. At least that there will be windows...

S: It possible that...

L: I'll need to make a topography (model?) it's OK.

S: It can be straight...

L: Yes.
S: Or that you do something like this *draws* and then it depends what direction, south is a catastrophe...
L: Yes, but the truth I that this is trees so it is not a catastrophe...
S: No, if it is diagonal then trees don't help with the shading, if it's straight (vertical) the trees help shade, yes? If it is diagonal they don't help shading.
L: Ah, it's true, the sun will come here...
S: Yes, I'd go for... the transparency is in this plane and if you have then it is actually here and then if someone *inaudible* or can see through this window.
L: Yes.
S: And then you must make sure that the window is in the wall that is higher and he stands here or lies down.
L: Ah! and here is the living room. *Looking at a section being drawn*
S: And that means this section, the section is like this... *quiet contemplation*...but we are missing a few things more.
L: Also... *inaudible* like this, the bedroom is here, the entry the kitchen the living room. In terms of organization that's it. But the problem, again, first of all, I though, I mean I'll try to organize it here.

11.
S: What you should do is this: Don't take a unit separately, when you do a section and also when you make plans, don't take separately, you should take, develop the unit in plan and in section and show the, make it so you have a section that shows as many stages as possible.
L: Yes, I understand.
S: If...
L: ...From the square to the apartment...now the more important thing is..
S: For next time work it, develop it, show spaces, relative spaces in plan and section.

12.
L: Most important are directions, how to place it relative to this yard, my questions and my conflict is that people walk here, this is my axis...
S: Yes
L: This is the axis that people walk on above on the one hand, and on the other I need to relate to the topography, so if I make the diagonal, lets say, in this direction, then will find the window here, and people who come here simply look into peoples apartment, and if I do it lets say radial then it runs off in a direction that is a bit different from this then I lose the business of the topography (following the slope with the buildings,) Then I, I...
S: First of all, you'll have plans, a few, a few basic plans, I mean, Lets say here... *inaudible*... lets say symmetrical this side and this side and so I will relate to the wind direction in an upside down manner.
L: The direction of the wind and the sun and also the living room *both talk at once*

S: The reference is not to the wind but to the direction of the sky (North South etc. Named ‘Rose of the Winds’ in Hebrew.)

L: Yes, ah!

S: Em, but that means that you'll have this or this...

L: This also won't be the same thing.

S: Not the same, this will slope upwards and you'll have this that slopes downwards.

L: This and this don't really matter, because if for example I go down to the living room and here what, I'll have to go up to the living room?

S: It seems so, What? it's it's not bad, it means you'll have a section of a different type.

L: Does it make sense? Is it OK that someone comes for a visit and they climb up to the living room.

S: Why not?

L: Instead of going straight to, because it's customary, like, right at the entrance the living room, not customary but...it makes things more complicated..

S: It does not have to happen, you don't necessarily have the possibility to give the feeling that someone has a attachment to the topography, for example in the passage ways I have *inaudible*, *describing a situation* I rise with the topography, a connection with the natural topography very strong. But, ah, its true that its customary, quote or unquote, to come in and not to pass through all the bedrooms to try and reach the living room its customary to enter into the more public rooms.

L: Yes

S: But if in the same volume, with a change of level but in the same space you make it open you make an area of lets say entry and kitchen...

L: The kitchen is here?

S: Yes, and then you climb the stairs to reach the living room then what happens is the same thing, you have a situation of entry, right, and the living room like you have like this and then you have on the one hand, sort of a half level lets say...

L: Yes.

S: And here the slope will be less steep because here is the entrance to the living room and this will be at half level and a bit less.

13.

L: Ah! because you are not relating to the topography, I was thinking of another thing, this about going up to the living room, I meant something else ... I mean, I mean, that all the roofs from both sides of the...

S: Never decide something arbitrary. If you have to, if you want to develop some kind of entrance...and you want the bedroom to always be above the entrance area and that it will have a

125
continuation and a view through this window, then begin developing and afterwards it may be that
you will coordinate all the angles. If that is what you want, I don’t know what else, but don’t, don’t
take something arbitrary.
L: Yes.
S: So look, what you already have, principles, what we talked about the subject of the entrance
etc. Start working from that and get into one of the apartments, one, just one. But make plans as
well as a section. And try to show all the spaces, and really show the furniture (placement) so we
can relate to it and discuss it...continues in this vein.
L: But there is something I have to decide first of all. Do I really place my “place” in the direction of
the topography or in this direction, it’s very basic, because people come here and I can’t have the
window directed at where they are or that...
S: But can’t you, lets say, make the units according to the topography built not in its direction?
L: Yes, like. Its possible. Ah! make some kind of frame.
S: Don’t, look here, lets say that they enter through the living room, but here the living room faces
this direction and here the living faces here (a different direction,) Who said it has to be like this
(both facing the same direction.) This, you understand this...
L: Simply I started with the bedroom.
S: I can’t see it right now, that is the problem, but...try to think about it this way, that if you have a
certain location that is comfortable, if you have an attractive placement for the living room in
relation to the entrance and in relation to the rest of the unit, here you should assume that you
always have two sides, once the window is in this direction and once the window is in this
direction.
L: On the other hand, we said that the vertical plane will be the transparent one and will be at the
height of three meters and people walk further up. I don’t know, is that right? Because here I have
a space and here I have trees and people walk much higher up at the height of the roof...
S: Why don’t you organize them and then make, make this thing and also two units.
L: But...
S: Make the passage as well and then we can just look if they have or they don’t...
14.
L: Right, about the...I don’t know, I really lowered the passage as everyone said would look nicer
without this thing, (Sara suggested this change during the pin up.)
S: I’ll tell you what, If you out something more minor you suddenly put something, lets say wood,
take material lets say like wavy cardboard that is narrower, and lower it and make it into a sort of
element that is used, and passages and railings that divide between passage and place and its
also of different material, here really things like that, a sort of roofing that is walked on, it will be very
good.
L: I always have the possibility to lengthen or shorten this in the end, there isn’t in all these stairs...

15.
S: First of all solve the units, and don’t begin working on the *inaudible* before you develop the units. It’s possible that the units will require an opening...
L: Ah!
*inaudible* both talk at once
S: If you can (make) one or two units, different situation that seem similar to you and something else, with all the entrances and the relation to the passage and this thing, I think, try to solve it from all the aspects, in section and in plan, it will be very very big and it will help you see it all.
L: OK....

2. Conversation:

16.
A: So you are no longer stuck?
L: Maybe what I call being stuck and what someone else would call stuck is not the same. ... I feel stuck, I feel stuck in one place, it does not mean I have no where to proceed to. Actually, if I am stuck it means that I have many many unresolved aspects, nu, it means I need to suggest more and more solutions and in the end I will have the right solution, it does not mean I need to continue working or that I am waiting for someone to. . .(get me out of it)
A: Then what is the difference between this and “just” working?
L: ‘Cause, like, sometimes, no not sometimes, usually, I am very clear about the direction in which I am going, and I know that if I spend two hours of work I’ll finish drafting this plan, everything is, more or less, in my head and that I proceed in at a certain pace, that’s the way I got to this thing (the “bridge”- a part of the design that was very developed.)
A: Yes.
L: I mean I continued and continued and continued and here I got to something, I don’t know, if it’s a dead end, since I know there is a way out of it.
A: Yes.
L: It’s clear to me that everything has a solution, that it isn’t, I mean it can be solved.
A: Don’t assume anything about what I think getting stuck is, because I don’t necessarily think so.
L: It’s that I wanted to hear another opinion (when I asked you to help me the week before. She had said she was stuck two weeks now and preferred discussing the project to discussing the problem, which we did.) That’s it, like, you hear another criticism from a person and it takes you to another direction, and that’s what gives you the solution, many times it happens that I am stuck in some place and I hear criticism from someone else or I look in books or I just think myself and
suddenly something that seemed impossible then it is solved, but I know that, I believe that every problem has a solution.

17.

A: So what made you think that there was a problem? What was the change?

L: It was less clear to me where I was headed, the problem was, lets say, that I had to many open possibilities.

A: For example? Can you try to begin form zero, as if I know nothing about architecture. What happened when you were working that made you say, ah, wait. Where the idea that come from, I mean, its not that you immediately realized that you had no idea.

L: Because formally everything was open, everything was open very simply... and I needed to take decisions in a certain subject and I didn't want to make decisions because I didn't want it to restrict me in principles that were crucial to me that I continue with them and to work with the principles I had decided upon at the beginning.

Interruption

A: OK, so how many days passed before you began to say this is too open, because in the beginning all the possibilities are open (anyway...)

L: What do you mean how many days had gone by?

A: I remember that last week you said that it had been two weeks that you were...

L: Yes, because I worked for quite a while, I mean I pretty much developed this thing (the “bridge”) and then each time, lets say that between each crit all I did was a small change in this axis (the “bridge”) instead of the apartments, and I made a model and...don't know...I can't just work, in the air, to just draw an apartment, like, I need inaudible principles that will guide me. I have a paper of principles according to which I develop the project. I can't just, just put shapes, OK, this will be the apartment, I need a reason. That's the part in which I got stuck, I can't explain it at all...

18.

A short explanation on my part of the intentions of my study and the difficulty of answering such question as I am asking her.

Description of past semesters and different methods of work she has encountered:

L: Every professor has, tries to teach his students how, how to begin to design, Sara gave us all sorts of class exercises, and last year they said begin from a grid or the plan or the functional aspects. Each one adopts what most, what most, what he feels helps him most, because it is very personal, and I am the same, I have adopted a certain method of working.

A: That first and then go to something that fits them.

L: At least to come out of principles, from something, to come out of a concept and according to it to continue and develop. I'm not saying that all my projects till now have been marvelous and
excellent, but till now when I have used this method I have made acceptable projects that I am
pretty pleased with.

19.
A: That's enough (being pleased with them.) So why do you think that it has suddenly inaudible or
does it not seem crucial to you (what happened in the weeks preceding the conversation.
L: If I look what do I think will happen in the end, like, what I think in the end...
A: Lets put it differently, has this happened before, like, this is already your fifth or sixth project,
right? because you do two projects a semester.
L: It has not happened already because I had two very different semesters. We had a first
semester that was so stressed and I didn't really have time to get stuck, even if I wanted to get
stuck I could not because the next day I already had to present the project, so I collected what I
could and presented. That was the first semester, about five projects, I think. Then I had no time it
was really a very frustrating semester, I was constantly thinking and dreaming and living it (design)
and couldn't leave it. Really, it was really really all the time. And in the second semester it was the
exact opposite, it was relatively very light and I had professors who, as I told you, professors
whose requirements were rather mediocre and... I didn't work very much and came out with good
things, I pretty much waited for the last minute, the last week, I knew the whole time, I came to
them with ideas and “OK, that's a good idea” “good that, a good idea” and I proceeded in tortoise
steps and then in the end before the project (the review) I began to accelerate and it came out
OK. There were two projects, three projects last semester. All three, lets say in the third project I
could have developed it more but, like all three I was very pleased with.

20.
A: So then, the tempo of this semester does not fit your working tempo?
L: Its a new situation, now its a new situation, on the one hand I can't say its very stressed and that I
am constantly thinking of design, although since I have had these problems I have thought about
it, on the other hand its not, I don't have like in the second semester, so I don't know, you can't
define the situation, I have never come across it before.

21.
A: Here, this is a better answer than the one before laugh even if it does not seem so. (this is in
reference to our conversation about my study and intentions.) What I find curious is , I'm looking
here, can you see a difference between this bridge and the units?

22.
L: I'll tell you what, here's some I am just thinking of, lets say someone is excited by project, lets
say I'm told its good, then it puts me in a certain indifference.
A: Ah! the difference began when you reached the stage of the units.
L: Yes, till then it was “OK, OK, OK” and now its “no,” now I don’t feel OK. I don’t know, maybe that is what put me in this, like, there was here also in some way...yes, I tried, maybe its not urgent enough to find the apartments, maybe that is the answer. Maybe that it is not urgent enough. Maybe if someone...

A: And with this bridge it was urgent to find?

L: I don’t know, I needed something, something to begin with. Maybe because. Look, I really think that if the review was in a week then it would start flowing faster, not because...fact is that I had, its clear that if there were shorter projects I would certainly develop to a lesser level, but I would reach something. Maybe I’d get things done, well, it a matter of pressure. ‘Cause, like, now what you bring is OK, I’ll keep on talking to you about what you have brought, maybe if someone really was more...

A: More critical?

L: Not critical just more requirements, bring for next week a plan in 1:50 then I’d have to, like, I mean that I wouldn’t have time to play around with the time and say good, this I like this I don’t. I’d need to bring some kind of plan on paper, it’ll be busted, OK but I’ll have to bring something. But, it’s very individual and very personal, because I know that till I am made to sit and work I don’t sit down to. Until I am under pressure I don’t work, very simple.

A: So what will you do when you finish? You’ll have your own office, the truth is that you will have many people who will pressure you, clients, but they wont necessarily know what to demand (so that you will be pressured)

L: Ah, I don’t know, I hope I’ll change till then laugh this is the way I have always been, at the high school exams as well, and in the end I succeeded, like...it’s never happened to me...no, it has happened, it’s obvious that if you work earlier...but it has never happened that I presented a project and slept the entire night before hand, it hasn’t happened, never, never happened. In design, in the rest of the classes it doesn’t but in design, always always always at the last minute. Simply that’s the way I am, that’s my character.

A: But in the other classes it does not happen!

L: I don’t know, in the high school exams I also studied only at the last moment.

A: Maybe things that are more important you study at the last minute?

L: I don’t know..

A: No, this is interesting, I do know people who are like that, I’m not myself, but I know people who are. I’m sorry to be bothering you.

L: No, I simply need to be put under pressure. Maybe its good all that happened today (A remark of mine about Lea being “stuck” had sparked a discussion and a lot of emotion, involving the instructor, Lea and myself.) It seems that I am stuck and I felt that I wasn’t working and then laugh
24.
A: So in the end I have done a good deed without really intending to. Maybe you could think back a bit about the difference between the bridge and the housing units, if you have something against housing or something like that, that it simply interests you less.
L: I don't know, maybe.../laugh... really, its possible, I don't know why not...

25.
A: When you sat and thought, oof, it's been two weeks its not going anywhere then what did you think of, that you were not being pressured? Or did you have other explanations for this situation?
L: I don't know, I really, I also had many problems, that I didn't know.
A: Not connected to the project (the other problems)?
L: No, no, no, many problems with the project, you just heard the desk crit. Before there were many things that I want and many things that I need to take into account in the site, like the people who can walk above, and that there is a relation to the units and there is a relation to (?) and that all the units need to connect to each other, there are many things that I need to... and I have many restrictions and many requirements on the other hand so ah...maybe because the apartment needs to fulfill so many requirements, I guess it may be a bit impossible to design, or it would be easier. Really, I don't know, here I began thinking about the plan yesterday evening, maybe because in the pin up they asked why I hadn't begun thinking about the units, so I did think about a plan but it is less threatening, I do think I will be able to, also I told her (the instructor) “good I need to bring only ”...she said no, like, it is already more or less, I can see how it will look in my mind, I know I need to play around a bit here a bit there..
A: Sure, its obvious (that you'll need to do so,)
L: The moment you have an idea the moment you have, I don't know, the basis like with the bridge, the moment I had some kind of something, and I had to fit into the site and fit it to the people. OK, all those things of making things pretty, no not making pretty but to make the functional aspects, that was a bit easier to do than to begin a thing anew, that I had no idea what it would look like.
A: And this...I'll tell you why I look and I am surprised, because last week when we talked you actually told me many things about these apartments, were they not yet in your mind? or did they not yet crystallize?
L: They simply didn't connect yet, I had many many things, now as well, I know I'll have to give up some things...
A: Why did you reach that conclusion?
L: Because its impossible, I don't think that everything will be, maybe in the end yes, I don't know.
A: I wont press you. What caused these things to connect?
L: They haven't connected yet.
A: But they seem more connected?
L: Ah...a little, a bit, I don't know, suddenly I see a plan on paper and I suddenly saw the section Sara drew and things connect. But, I don't know, I need to draft it to see I laugh. OK, so why haven't I drafted something?

26.
Ah, I had another problem, now I remember it. Here I needed to put five units here and it bothered me very much, because I saw I did not have enough room, and I kept on asking you (in the meeting in which we discussed the project,) whether I have enough room, and I knew I did not have enough room and so I knew from the beginning that it was impossible, so maybe in my subconsciousness it passed. So first of all she (the instructor) took off three units (allowed her to include fewer units in her design) then I made this plan immediately, that what I did at home. Maybe because I knew it was impossible, maybe now that I have many principles, many requirements I know that it is possible.
A: So the fact that there was a problem that seemed impossible everything seemed impossible and when that was resolved...
L: Yes, her taking away three units, like, really really helped and I think I have really progressed since then, I don't know, I didn't even have units, I didn't have an idea at all how these inner courtyards are going to be, and I did bring it to the pin up (a second, informal one)

27.
and I worked on it a long time, a really long time, really long time. Because on Saturday I couldn't work (Lea is an observant Jew and Saturday is the Sabbath,) I worked on it all of Thursday, I came home from work...
A: In what do you work? Architecture?
L: No, I give private lessons at a school. So all of Thursday I worked on it, Thursday night and all of Friday and then it was the Sabbath. One the eve of the Sabbath I worked almost through the night and here. At the moment that I...the moment that I know what I am going to do it is a lot easier to work than when I have no idea what is going to be, like to just scribble on the paper. That's much harder for me. It's anyone, like to get to the first ideas.

28.
A: Yes, it's just that I am curious why it happened with the apartments because it seems to me that it did not happen before. Not that I don't think that these situations happen, on the contrary, if these situations did not happen (they would not interest me.)
L: The truth is that the last time (the last project) I also found it hard to design the plan in the beginning and I was stuck with it a long time...
A: Of apartments?
L: Yes, of that apartment.
A: So was it a similar situation? That you were not sure you had enough space or that there was another question that stressed you?

L: No, I don't remember any more what caused it...what caused it. It took time till I had the plan and...I don't know, the connection between the apartments, the rises, I don't remember, and sometimes, when something seems impossible then it makes it very very hard to design when I think something is impossible.

29.

A: Just a moment. I remember that you asked me the last time if I thought you had enough room and I remember we discussed it. Did you talk about it with Sara?

L: Yes, I spoke with her the moment I...I tried all the time to arrange, to arrange and then she said try it this way and try it this way and then I enlarged the bridge and I did not have enough room and then I said to her, after I spoke with you, I told her there was not enough room and she said, OK no problem, take off two units. She solved the entire problem in a minute.

A: So you did not have time to speak to her about it before?

L: I kept on telling her because I didn't...I kept on attending to this bridge and not the apartments so neither of us knew if there was or there wasn't enough room. I told her I wanted it more or less like this and I called her (to see) when it was a bit bigger and that's it. It really helped when she took off three units.

A: It sort of opened the door for all the other things?

L: I don't want to promise!

A: OK, but your feeling...is better)

L: Yes.

A: OK, thank you!!