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# ON BUILDING BUILDINGS: THE SOCIAL ORGANIZATION OF A TRANSITIONAL WORK SETTING

JEFFREY WARD RIEMER

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ON BUILDING BUILDINGS :  
THE SOCIAL ORGANIZATION OF A TRANSITIONAL WORK SETTING

by

JEFFREY WARD RIEMER

B.S., University of Wisconsin-Milwaukee, 1970

M.S., University of Wisconsin-Milwaukee, 1971

A THESIS

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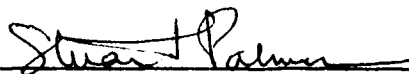
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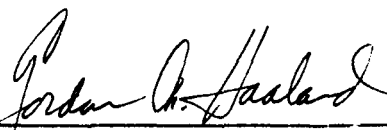
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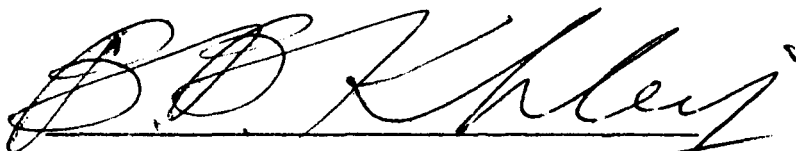
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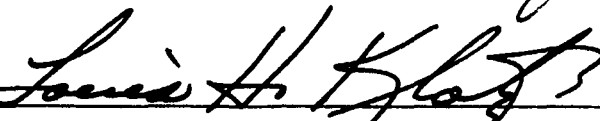
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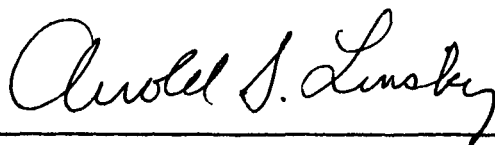
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ABSTRACT

ON BUILDING BUILDINGS:  
THE SOCIAL ORGANIZATION OF A TRANSITIONAL WORK SETTING

by

JEFFREY WARD RIEMER

This research was designed to illuminate the sociological aspects of building construction work. The social organization of the construction project and the social processes involved in the building of buildings are systematically described and explained.

More specifically the work culture of building construction workers was delineated by focusing on their "work world". Emphasis was given to their occupational identities, system of social stratification, and work and non-work activities on the job. Second, the transitional nature of the work setting was used to illuminate the relationship between persons' behavior and the inanimate physical setting in which that behavior occurs. Three alternative explanatory frameworks were simultaneously employed as informal hypotheses.

1. To what extent can the work setting (inanimate physical setting) be regarded as dominant and determining the nature of the existing behavioral system (workers behavior patterns), that is, are persons "used" (externally constrained and managed) by the conditions of their physical setting? Here it was expected that the work setting,

- including changes in it, influences workers' behavior.
2. To what extent can the behavioral system be regarded as dominant and determining the uses to which the work setting is put, that is, is the physical setting "used" (manipulated) by the persons' acting in it? Here it was expected that workers' behavior, including changes in behavior patterns, influences the work setting.
  3. To what extent can the work setting and the behavioral system be regarded as mutually inter-dependent. Here it was expected that workers behavior patterns would both influence and be influenced by the changing conditions of their work setting.

The research was conducted on a building construction project near a large mid-western city during the summer of 1973. This setting provided a natural location that was in constant structural transition while bounded in time and space. A longitudinal research design was used. The sample included all of the workers on the project. A phase analysis was used to compare the behavior patterns of three groups of workers (those who did the "roughing work"; those who did the "finishing work"; and those who did both) with two transitional phases of the physical setting (the roughing phase and the finishing phase). The methodological techniques employed included: participant observation; selective, focused interviewing; and the use of available records and documents e.g. architectural drawings and job specifications.

Considerable reliance was placed on the previous entree the investigator had in this city. He worked there for eight years as a building construction electrician.

Evidence indicates that there is a mutual interdependence between the physical setting and the persons acting in it. Tradesmen were both "used" by the physical setting and "used" it to their advantage.

The process of constructing a building progresses in an evolutionary manner with workers exhibiting cruder behavior patterns during the initial stage and more sophisticated behavior patterns during the latter stage. Buildings are not constructed in a systematic and organized manner. Rather, workers and management personnel, although skilled in their work, "muddle through" the entire sequence. This results in a completed building that is permeated with structural and processual imperfections. Mistakes are an essential aspect of building construction, and future owners end up accepting this unexpected product out of a compromise with the builder.

The continually changing inanimate physical structure of the building project (transitional work setting) is seen to hinder social organization among the workers. It is argued that the inanimate physical setting in which behavior occurs is of critical importance for understanding human social behavior. This variable, however, has been generally ignored or treated as ancillary in most social science research.

A behavioral setting model and typology for the study of work settings are developed and suggestions are offered for future research.

A study of the concrete situations which the individual encounters, into which he is forced, or which he creates will disclose the character of his adaptive strivings and the processes of adjustment. The study of the situation, the behavior in the situation, the changes brought about in the situation, and the resulting change in behavior represent the nearest approach the social scientist is able to make to the use of experiment in social research.

WILLIAM I. THOMAS

William I. Thomas, "The Relation of Research to the Social Process", in W.F.G. Swann, et al., Essays on Research in the Social Sciences, Washington, D.C., The Brookings Institution, Committee on Training, Kennikat Press, Port Washington, New York, p. 177, 1931.



## CHAPTER I

### INTRODUCTION

This dissertation is about the construction of buildings<sup>1</sup>. A sociological focus has been employed to reflect the social organization of the building construction project and the social processes involved in the building of buildings. Two equally important purposes are served here. First, to delineate the work culture of the building construction worker. Herein, the focus is on the day-to-day round of activities engaged in by building construction tradesmen in their "work world". Emphasis has been placed on their occupational identities, their argot, their reliance on tools, their costumes, their work and non-work activities. Concomitantly, emphasis has been placed on the relationships and inter-relationships of tradesmen, builders, designers, contractors, material suppliers, material transporters and handlers, building inspectors, future owners, and others associated with the building construction industry. The objective here is to describe and explain systematically the "work world" of building construction workers. Second, to use the natural setting provided by the building construction

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<sup>1</sup>The type of buildings referred to in this research are light residential structures. Observations were made during the construction sequence of four, two-story condominiums with underground parking, each to house twenty families, and a series of two-family town houses adjacent to the main condominium project.

project as a model for explaining the relationship between physical setting and human social behavior. Herein, attempts are made toward forging inroads for better understanding the relationship between persons' behavior and the physical setting in which that behavior occurs.

In most social science research the physical setting has been taken as a given, rather than as a unit of analysis for understanding human social behavior. It has been assumed to set the stage for and perhaps define the actors' roles with respect to particular relationships and activities; but the countless variations in design and substance of physical settings have been generally ignored or treated as ancillary in the attempt to establish the factors that facilitate or hinder human and social behavior (Goffman, 1961; Lyman and Scott, 1967; Somner, 1969; and Proshansky et al., 1970).

A transitional setting, in the form of a building construction project, provides a natural, real-life location that is bounded in both time and space. Such a setting has a distinct beginning and distinct end. For this study's purposes, it begins when the construction workers break ground for the building and ends when they leave the project and, in effect, turn the building over to its owner. Such a setting is continually in process; it is "under construction". It provides a physical setting that is being continually altered and permits a longitudinal analysis of the relationship between physical setting and exhibited behavioral patterns. The objective here is to determine the extent to which:

1) persons are "used" by the physical setting; 2) the physical setting is "used" by the persons acting in it; and 3) there is a mutual interdependence between the physical setting and the persons acting in it. In the first case persons are seen to be externally constrained and managed by the conditions of the physical setting. In the second case persons are seen to manage the effects of the physical setting to enhance their own behavior. In the third case an integration between the previous two conditions is seen to exist.

These two purposes make contributions to both sociological knowledge and practical knowledge. The sociological study of work, work settings, and occupations and professions have provided little knowledge about the building construction industry. Even though building construction in American society represents a multi-billion dollar a year industry<sup>2</sup> and provides employment for millions of workers<sup>3</sup>, little has been done in the sociological study of work to illuminate this industry. So too, the building construction project as a work setting has received minimal attention. However, this fact also holds true for other types of work settings. Furthermore, the majority of the occupations and professions associated with the construction industry have

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<sup>2</sup>The gross, private, domestic investment in building construction for 1972 was 178.3 billion dollars. Handbook of Economic Statistics. (October, 1973), p. 226.

<sup>3</sup>The total number of workers employed in contract construction for April, 1972 in the U.S. totaled 3.1 million. Statistical Abstracts of the U.S. (April, 1972), p. 225.

not been explored either individually or as an integrated and inter-dependent set of occupations. This study will provide needed information in these areas.

On a more general level, the study of environment and behavior or man and his physical setting, has received a recent revival in many of the social science disciplines. This work is seen to be a contribution to this endeavor.

On a practical level, this analysis can benefit those countless persons who engage themselves in building, buying, or renovating buildings. A "how to do it" handbook is not provided here, but the thoughtful reader will gain insight into the complexities and problems entailed with such a venture.

The contents of this study are based on considerable research and practical experience by the investigator. The majority of the data to be reported is the result of a four month, in-depth, participant observation study which took place near a large mid-western city during the summer of 1973. Some reliance will also be given to previous related research done by the investigator<sup>4</sup> and eight years of practical experience and observation done by the investigator<sup>5</sup>. Concern is placed on how a building gets built from the

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<sup>4</sup>See The Apprentice Construction Electrician: A Study of Occupational Socialization. Master's Thesis, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, 1971.

<sup>5</sup>The investigator is a certified journeyman construction electrician having completed a five year electrical apprenticeship (State of Wisconsin) 1961-1965, including technical education and on-the-job training and has worked an additional four years as a journeyman electrician.

points of view of those persons involved with emphasis placed on the construction workers point of view.

Chapter two provides the conceptual framework of the study. The literature from the behavioral science disciplines of anthropology, psychology, and sociology which focuses on the relationship between physical setting and human social behavior is explored and an attempt is made to integrate this body of knowledge. The importance of the physical setting as a unit of analysis, in and of itself, is explored and a typology of work settings is developed. Various existing studies are then applied to this typology.

Chapter three provides the methodological background for the study. An argument is made for "opportunistic research" and the importance of "entree" in social science research ventures. The advantages and disadvantages of doing "field work" and its associated methodological techniques - participant observation, selective interviewing, and unobtrusive measures - are discussed and an argument is built for methodological triangulation. A related section which discusses the ethics of disguised observation in social science research appears in an appendix.

Chapter's four, five and six are devoted to illuminating the work culture of the building construction worker. Their "work world" is explored by focusing on their activities, relationships, and participation in the construction of buildings. The attempt here is to portray the construction worker and his "work world" from the "inside", as he

sees it. Chapter four concentrates on the occupational identity of building construction workers. Chapter five is directed to the stratification system within the building trades, and Chapter six focuses on the tradesmens' non-work activities on the job.

Chapter seven provides an analysis of the relationship between the inanimate physical setting of the buildings under construction and the behavior patterns of the workers constructing them. A longitudinal analysis is used to compare the behavior patterns of three groups of workers (those who did the "roughing" work, those who did the "finishing" work, and those who did both) with two phases of the transitional work setting (the roughing phase and the finishing phase). A number of conclusions are drawn from the findings, and implications are made concerning the impact of the physical setting on persons' behavior and the adjustments of persons' to the physical settings in which they are located.

Chapter eight reflects on an important serendipitous conclusion arrived at in this research - that buildings are built on a series of mistakes. This developmental process of building on mistakes takes on an irreversible continuity. Buildings are seen to be permeated with imperfections which fall far short of the preconceived "model" structure. The nature and extent of mistakes are discussed as well as the techniques employed by tradesmen and others for managing these mistakes.

Chapter nine provides an extension of the previous chapter by focusing on the builders and the buyers of buildings. Their expectations for each other are explored in light of the complications that manifest during the building sequence. Their mutual problems and the resolutions of them are discussed. Some suggestions are offered to persons finding themselves in this relationship.

Chapter ten is a summary and conclusion for this work, and suggestions are offered for future research.

## CHAPTER II

## THEORETICAL FRAMEWORK:

## A CONCEPTUAL APPARATUS FOR THE STUDY

All human social behavior is situationally located. Man operates within a context of clearly defined, segmented, and bounded situations. The situation provides the backdrop for behavior; it sets the stage for behavior and within it behavior runs its course.

Situations include both the inanimate physical setting and the persons located therein. The inanimate physical setting encompasses the gross structural characteristics of situations, e.g., the macro-physical phenomena such as buildings, building complexes (including cities) and the very limits of the horizon itself as would be the case in "outside" physical settings where the backdrop might be the mountains or the sea; and the micro-physical phenomena of the "inside" variety including rooms, walls, partitions, and other relatively stable barriers and demarcations as well as their internal refinements, e.g., furniture. Persons provide the dynamic aspect to the situation. They bring to it and impose upon it their wealth of meanings, attitudes, and experiences. They provide the ongoing process of social action through the behaviors they exhibit and the interpretations they make.



Traditionally, it has been the latter (the persons and their behavior) that has received the major focus of attention from behavioral scientists. The disciplines of anthropology, psychology, and sociology, although approaching the matter from different perspectives and conceptual frameworks, have attempted to describe and explain human social behavior in the contexts of various physical settings but have treated the physical settings themselves as either ancillary to the behavior in question, or not at all.

This neglect has been particularly true in the study of work behavior. The physical setting has been typically treated as the place where the behavior under study is taking place rather than as a potentially important variable in and of itself. Although most work behavior does take place within a particular physical locale - a work setting, obviously, there are many varieties of work settings in which many varieties of work take place. The hospital, the school, the factory, the office building, and the construction project are all work settings and each has its distinct occupational types found therein - the nurse, the teacher, the assembly line worker, the secretary, and the mason. In the fields of occupations and professions and the sociology of work, an increasing amount of material and information is being accumulated from numerous studies of various types of occupations, but little material and information is available, in any direct sense, about the various types of work settings in which these occupational roles are carried out.

The emphasis has been on description and less frequently explanation, in most occupational research. Thus, we have many descriptions of many occupations while the work settings in which these occupational roles are carried out have been neglected or ignored altogether.

In the pages that follow the importance of the physical setting, and in particular the work setting, and its relationship to behavior will be illuminated. Section one will provide an integrated literature review of various theoretical approaches which will cast light on the study of behavioral settings. The behavioral science disciplines of anthropology, psychology, and sociology will be drawn upon along with a miscellaneous body of literature from other fields. Section two will provide a model for viewing work settings by borrowing liberally from the previously cited literature. Section three provides a typology of work settings. Existing research studies on various work settings will be used to illuminate this typology. Section four offers a modest proposal for future research.

#### Behavioral Settings - A Review of the Literature

It is necessary to state at the onset that the behavioral sciences have not individually provided an adequate theoretical framework for the analysis of behavioral settings and taken collectively they have not done much better. With this in mind an attempt is made to extract the relevant theoretical formulations from these disciplines in order to put into perspective first, the importance of the physical

setting and second, the existing framework with which work settings may be viewed.

The behavioral science literature has placed an unequal emphasis on the physical setting and the behavior that occurs therein. Two approaches have typically been taken. First, the physical setting has been viewed as subjective reality. Herein, emphasis has been placed on the meanings and interpretations persons' give to the situations they encounter. This approach has been the dominant one across all disciplines. Second, the physical setting has been viewed as objective reality. Herein, an occasional emphasis has been placed on the inanimate physical setting as it facilitates or hinders human social behavior. This approach has been taken only infrequently in the behavioral science literature. These two approaches will be elaborated and documented in what follows.

#### The Physical Setting as Subjective Reality

The subjective interpretation and evaluation of situational criteria by persons' has dominated the focus of attention in most sociological and social-psychological theories. This is evident in the works of W.I. Thomas, and the recent contributors to his "definition of the situation" construct - Peter McHugh, Norman Denzin, and Robert Stebbins.

The "Thomas Theorem", relied upon so frequently in sociology today states that "If men define...situations as real, they are real in their consequences" (1931:189). For Thomas the social situation encompasses many elements

(including the inanimate physical elements), but he argues that it is the individuals interpretation of the social situation confronting him that is the most fruitful to study for an understanding of human social behavior.

Thomas (1927:68) conceived of a social situation as, the set of values and attitudes with which the individual or the group has to deal in a process of activity and with regard to which this activity is planned and its results appreciated. Every concrete activity is the solution of a situation. The situation involves three kinds of data: 1) the objective conditions under which the individual or society has to act ... 2) The pre-existing attitudes of the individual or the group which at a given moment have an actual influence upon his behavior. 3) The definition of the situation, that is, the more or less clear conception of the conditions and consciousness of the attitudes. And the definition of the situation is a necessary preliminary to any act of the will, for in given conditions and with a given set of attitudes an indefinite plurality of actions is possible, and one definite action can appear only if these conditions are selected, interpreted and combined in a determined way and if a certain systematization of these attitudes is reached, so that one of them becomes predominant and subordinates the others.

Although Thomas was primarily concerned with the situation of social relationships and not with the "spatial-material situation" (Thomas, 1931:176), he was well aware of the importance of the physical aspects of social situations and consequently always included them in his writings if only in an ancillary manner (Thomas, 1951:2). As Thomas has stated (1931:189),

The total situation will always contain more or less subjective factors, and the behavior reaction can be studied only in connection with the whole context, that is, the situation as it exists in verifiable, objective terms, and as it has seemed to exist in terms of the interested person.

Thomas can be thought of as a forerunner of the "situational approach"<sup>6</sup> in sociology, and he continues to draw the attention of current day scholars<sup>7</sup>.

Peter McHugh (1968) has provided one of the most extensive laboratory based empirical studies of the "definition of the situation"<sup>8</sup>. However, McHugh like Thomas dismisses at the onset the importance of the physical objective setting and tends to concentrate on the inter-subjective aspects involved in social relationships. For McHugh, a definition of the situation is possible only when physical space and chronological time are transformed into social space and social time (1968:3). His concepts, "emergence" and "relativity" (taken from Mead<sup>9</sup>) are taken to be the two parameters

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<sup>6</sup>For a fuller coverage of the historical development of this approach, see Sheldon Stryker, "The Interactional and Situational Approaches", in H. Christinsen (ed.), Handbook of Marriage and the Family, New York: Rand McNally, 1964; Calvin J. Larson, Major Themes in Sociological Theory, New York: McKay, 1973, pp. 102-108; and Don Martindale, The Nature and Types of Sociological Theory, Boston: Houghton Mifflin, 1960, Chapters 14, 15, and 19.

<sup>7</sup>In addition to those persons to be mentioned in the following pages, others are indebted to Thomas's seminal thinking for the disagreement he has generated. They have argued that Thomas can be interpreted as saying the person makes definitions of the situation only prior to his action in them and that these definitions remain constant and stable. Among them (Schutz, 1964, 1971; Garfinkel, 1959, 1967; Cicourel, 1964, 1968; and Zimmerman and Wieder, 1970) have emphasized the ongoing accomplishments of situational definitions, in the sense that they are made prior to, during and after situational encounters; that is, the definition of the situation (account) is constantly under negotiation and review.

<sup>8</sup>Other empirical studies focusing on the definition of the situation include: Gorden, 1952; Lerner and Becker, 1962; Deutscher, 1964; and Stebbins, 1969, 1971.

<sup>9</sup>See George Herbert Mead, The Philosophy of the Present, (Chicago: Open Court, 1932).

of the definition of the situation. Emergence refers to the temporal dimension of activity. Past events and inferences about the future are seen to influence the ongoing events in the present. Activity is seen to be located within a configuration of time with past experiences and future expectations adding to the determinations for present behavior. Relativity, on the other hand, refers to the spatial dimension of activity. Previously "lived through" situations provide models for current situations. The notion of reliance on "multiple realities"<sup>10</sup> is used to portray the actor's ability to construct action from knowledge about previous situations. Both concepts rely heavily on the actor's subjective interpretations of his situation at hand. Although McHugh could be credited with expanding upon Thomas's work he does little to take into account the objective physical setting as a potentially important variable.

An exception to this is found in the writings of Norman Denzin. He has clearly and concisely delineated the fundamental components of situations. According to Denzin (1969:926),

If behavior occurs within social situations and if the meaning attached to those situations influences subsequent behavior, then the situation becomes the dimension of analysis. Four components of the situation may be distinguished: the interactants as objects, the concrete setting, the meanings brought into the situation and the time taken for the interaction.

Denzin more than the others previously mentioned emphasizes

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<sup>10</sup>See Alfred Schutz, "On Multiple Realities", in Collected Papers, I: The Problem of Social Reality. 1962.

both and objective and subjective situational elements. Furthermore he argues that changes in behavior can best be accounted for by taking all of these elements into account. As he states (1969:926),

Variations in behavior can arise from definitions given the respective selves, the other objects that constitute the situation (e.g. furniture, lighting), the meanings and definitions for action that are held before interaction occurs, and the temporal sequencing of action.

Denzin can also be credited with expanding upon Thomas's initial framework. Even though he does draw attention to the physical inanimate qualities of situations in only a minor way, he does indicate that both the subjective and objective elements of situations must be considered in the analysis. Furthermore he provides a link to the spatial/temporal dimension of situational analysis that McHugh had elaborated earlier.

Perhaps more important for our purposes is the contribution that Robert Stebbins has made to this matter. In his writings Stebbins makes an important distinction between the "objective" and "subjective" situation. He defines "the objective situation as the immediate social and physical surroundings and the current physiological and psychological state of the actor" (1967:150). The subjective situation, on the other hand, is defined "as those components of the objective situation which are seen by the actor to affect any one of his action orientations and therefore must be given meaning before he can act" (1967:150). Stebbins, in effect, calls for an important separation of elements in the

analysis of social situations. Although the objective and subjective elements of the situation are circularly linked in his conceptualizations, he points out a distinction that has here to fore been largely ignored by social scientists. By viewing the objective situation "as the total collection of situation elements and their interrelationships", he provides a set of observable elements out of which persons' can be seen to select out their interpretation of the situation at hand (1967:150). This elementary distinction is important for our purposes.

It must be made clear, however, that Stebbins' major concern is not with the "objective" situation, per se, but rather with the social, physical, and temporal boundaries of "subjective" situations. This concern, which is similar to others<sup>11</sup>, has done much to expand the original conceptualization of Thomas. All, however, do little to portray the distinctions between or across various types of physical settings and how these settings may or may not influence or be influenced by behavior occurring therein.

The "definition of the situation" tradition forces by its very label a reliance on the subjective interpretations

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<sup>11</sup>Worthy of note here is the work of Glenn M. Vernon. He has provided the only introductory sociology text book that I know of that devotes an entire chapter to the "definition of the situation" and has additional chapters devoted to spatial and temporal definitions. See Glenn M. Vernon, Human Interaction. New York: Ronald Press, 1972, Chapters 11, 12, and 13. Also worthy of note is the work of one of Vernon's students, Jerry D. Cardwell, who has devoted a chapter to the "definition of the situation" in his social psychology text. See J.D. Cardwell, Social Psychology. Philadelphia: F.A. Davis, 1971, Chapter 3.



persons make about the situational contexts in which they find themselves. Persons are seen to select out through perception and interpretation certain objective elements and to act in terms of these after a "stage of examination and deliberation" during which they also employ their pre-existing attitudes and past situational experiences (Thomas, 1931a:42). The view of the physical setting as "subjective" reality provides only part of the framework felt to be necessary for the analysis of behavioral settings.

Another equally important perspective is offered from an anthropological tradition, and herein the concern is placed on cultural relativism. Implicit here is the physical setting as "subjective" reality whereby persons are seen to have learned and internalized through a process of acculturation (socialization) the appropriate and not so appropriate ways of doing things. Persons are seen to have internalized the complex whole of learned behavior particular to their culture and are influenced in turn by the ideas they hold, the norms they live by and the materials they employ.

Within this cultural orientation to man and his physical setting, the concepts of "space" and "territory" have come to the fore, and the work of Edward T. Hall has been most influential<sup>12</sup>.

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<sup>12</sup>Also worthy of note but not critical for the purposes here is the current interest in the study of kinesics. Kinesics, or body language, also employs a cross-cultural orientation in the study of body movements as communication. The body orientations of persons to one another in social interaction and in particular social situations are seen to

"Proxemics" is the term used by Hall to define "the interrelated observations and theories of man's use of space as a specialized elaboration of culture" (1969:1). Working at the micro-cultural level, Hall deliniates its three aspects: fixed-feature space, semi-fixed-feature space and informal space. This deliniation is useful for the purposes here in that it provides a series of levels which are, in part, applicable for the analysis of behavioral settings.

Fixed-feature space is one of the basic ways of organizing the activities of individuals and groups. It includes material manifestations as well as the hidden, internalized designs that govern behavior as man moves about on this earth (1969:103).

Buildings and clusters of buildings (including cities) are examples of fixed-feature space. They represent stationary physical boundaries that tend to guide and shape human behavior along culturally designed parameters. Semi-fixed-feature space refers to the movable objects present within a fixed-feature space that can, by means of their location, further influence the behavior taking place there. Furniture would be an example of semi-fixed-feature space. Informal space is a category of spatial experience rather than an inanimate, concrete dimension. It refers to distances

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reflect the culturally established, learned behavior patterns employed by persons. The current spokesman for this orientation is Ray L. Birdwhistell. See Ray L. Birdwhistell, Kinesics and Contexts: Essays on Body Motion Communication. Philadelphia: University of Pennsylvania Press, 1970. Also, Albert E. Scheflen, Body Language and the Social Order. Englewood Cliffs, New Jersey: Prentice-Hall, 1972; and How Behavior Means. New York: Doubleday-Anchor, 1974.

maintained in encounters with other persons (1969: 103-112). Herein, the reference is made to "situational personalities" and Hall argues that each of us has learned a number of these, and they are associated with our responses to intimate, personal, social, and public transactions (1969:115). This thought can be expanded by not only including interaction distances but also types of behavioral settings in which these distances would be likely to manifest themselves. Here the settings that could be referred to are the bedroom (intimate setting); the office (personal setting); the church (social setting); and the arena (public setting) as possible locales in which one may expect to find these "situational personality" types<sup>13</sup>.

Also of importance here is Hall's discussion of "territory" as a relatively fixed extension of the organism (1969:103). Based on and modified from numerous studies of infra-human species (1969:7-40), territoriality involves laying claim to an area by a person (or group) which they can then call their own and are willing to defend as their own. Of interest here are the territorial dimensions of behavioral settings. Persons or groups can lay claim to buildings and regions within buildings and other structures<sup>14</sup> or

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<sup>13</sup>A similar approach has been taken by Stanford M. Lyman and Marvin B. Scott. See, "Territoriality: A Neglected Sociological Dimension", Social Problems. (1967) 15: 236-248.

<sup>14</sup>For an interesting account of "territoriality" aboard a naval war ship, see Philip D. Roos, "Jurisdiction: An Ecological Concept", Human Relations. (1968:75-84).

to areas of land and label them explicitly as "private property" or implicitly control intrusion of unwanted others by merely locking<sup>15</sup> or shutting a door.

This cultural orientation like the "definition of the situation" orientation relies heavily on viewing the physical setting as "subjective" reality. Where the latter has placed emphasis on the subjective interpretations that persons make concerning the situations in which they find themselves, the former emphasizes the learned and internalized, culturally established parameters for behavior that persons adhere to. Each provides added detail and tend to compliment one another; but taken collectively they remain insufficient in providing an adequate framework within which behavioral settings can be viewed.

Yet another source can be drawn upon. Arising out of a psychological, social psychological tradition but bearing a close resemblance to the previously discussed cultural orientation, this orientation places emphasis on the concept "personal space".

Most recently the work of Robert Sommer has reflected this approach, but there is a long tradition<sup>16</sup> implicit

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<sup>15</sup>This point converges with the topic of privacy as Peter K. Manning has aptly shown. See Peter K. Manning, "Locks and Keys: An Essay on Privacy", in James M. Henslin (ed.), Down to Earth Sociology. New York: The Free Press, 1972, pp. 83-94.

<sup>16</sup>Important here for the sociological tradition is the grounding of this concept in the work of Georg Simmel. Although Simmel's reference is to an "ideal sphere" (1950: 321) which surrounds every individual and which is difficult if not impossible to penetrate, the meaning implied by "personal space" is the same.

in the concept "personal space". Sommer defines "personal space" as, "an area with invisible boundaries surrounding a person's body into which intruders may not come" (1969:26). This conception is similar to Hall's conception of "territory", but Sommer draws some important distinctions between the two concepts.

The most important difference is that personal space is carried around while territory is relatively stationary. The animal or man will usually mark the boundaries of his territory so that they are visible to others, but the boundaries of personal space are invisible. Personal space has the body as its center, while territory does not (1959:248).

Another usage which Sommer occasionally employs refers to personal space as "the processes by which people mark out and personalize the spaces they inhabit" (1969:VII). This second definition better serves the immediate purpose of this research since it points to the use of space and the boundaries of space within situational contexts<sup>17</sup>.

Sommer's studies and observations, ranging from quasi-experiments dealing with seating patterns within small groups and spatial invasions of mental patients and others (Felipe and Sommer, 1966; Sommer, 1959, 1961, 1962, 1969) to his keen observations dealing with behavior and the architectural design of buildings (Sommer, 1969), provide a strong case for the importance of the physical setting and the spatial dimensions of behavioral settings.

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<sup>17</sup>This conception has been employed in various ethnographic studies focusing on restaurants (Whyte, 1949); bars (Cavan, 1966); and an illegal abortion clinic (Ball, 1967).

Although his research at times does focus on the physical setting as "objective" reality, the thrust of his work takes on an orientation similar to Hall's. For Sommer, persons within situations are influenced by their cultural orientation. Space is experienced and it, in turn, structures conduct; that is, it either facilitates or hinders conduct along culturally established parameters. In this sense, as with Hall, the focus is on the physical setting as "subjective reality."

Taken together<sup>18</sup>, these three orientations (the "definition of the situation" approach; the cultural (proxemics) approach; and the "personal space" approach) provide a basis for one half of the framework felt necessary for the

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<sup>18</sup>Of note here is the recent attempt by Donald Ball (1973) at integrating the "microgeographical" (essentially the work of Sommer), the proxemics (Hall), and the kinesics (Birdwhistell) approaches under the rubric of "microecology". He limits his concern at the onset by stating that "irrespective of any other situational properties, all face-to-face social encounters take place within an intimate spatial context - a microecological environment within which interactants are territorially located; spatially defined vis-a-vis one another as their interdependent outcomes, evaluations, and experiences are geometrically enclosed" (1973:3). This attempt at integration only borders on the present focus of this work. Ball's concern here is with intimate spatial encounters and not with behavioral settings, as such. Ball does, however, offer an alternative - "macroecology" - which he only defines and labels as an alternative to microecology. Here the emphasis is on "space as an objective factor - a physical property, a geographical attribute, precisely measurable, and with such procedures automatically replicable, non-problematic in its meaning to actors located within it" (1973:6). This perspective, perhaps, comes closer to the focus of this research. See Donald W. Ball, Microecology: Social Situations and Intimate Space. New York: Bobbs Merrill, 1973.

analysis of behavioral settings. In the section that follows the basis for the remaining half - the physical setting as "objective" reality will be elaborated and documented.

#### The Physical Setting as Objective Reality

In viewing the physical setting as "objective" reality, emphasis is placed on the inanimate physical setting as it facilitates and hinders human social conduct. This perspective in no way discounts the importance of the "subjective" aspects involved in the interpretations persons make of their surroundings, but rather it treats as equally important the surroundings in which those interpretations are made. This perspective has appeared only infrequently in the behavioral science literature, and when it has it tends to be mentioned only "in passing". Those who have given more than minimal attention to this potential unit of analysis are Roger Barker and Erving Goffman.

Barker (1968), one of the leading proponents in the area of ecological psychology, focuses on "behavior settings" and their concomitant behavior patterns. Barker defines a "behavior setting" as a standing behavior pattern together with the context of this behavior, including the part of the milieu to which the behavior is attached and with which it has a synomorphic relationship (Barker and Wright, 1956:9). Behavior settings have both dynamic and structural attributes. The structural aspects are of interest for our purposes. Structurally, behavior settings consist of one or more standing patterns of behavior and a milieu, with the

milieu surrounding or encompassing the behavior and also synomorphic or similar in structure to the behavior. A standing pattern of behavior is an extra-individual behavior phenomenon, that is, bounded by specific temporal and spatial coordinates. For example, a football game has a standing pattern of behavior. It is a bounded pattern of behavior to all those persons present, and it is limited in terms of time and space. Furthermore, it has unique characteristics that persist even when the participants change. These standing patterns of behavior are connected to particular groups of non-behavioral phenomena. This is the milieu of the behavior setting. The milieu exists independently of the standing behavior patterns and independently of any person's perception of the setting. For example, a university class has a milieu consisting of a particular room in a particular building at a particular time with particular objects distributed in a particular pattern. When the class is not in session, the milieu and its component parts are still in existence.

The milieu with its physical and temporal boundaries, encloses all of the behavior patterns, as in the case of an office that is open from 9:00 a.m. to 5:00 p.m.. Furthermore, the milieu is similar in structure to the behavior. There is a common relationship between the behavior and the milieu of a behavior setting. The milieu components of a behavior setting and the behavior therein, are not independently arranged; there is an essential fit between them. For example, in



a university classroom, both the seats (milieu) and the listening students (behavior) face the lectern (milieu) and the lecturing professor (behavior). The milieu components are called behavior objects (Barker and Wright, 1956:10). They are the part of the milieu to which behavior is anchored. "They are the furniture of behavior settings." They are related to behavior settings as stage properties are related to the scenes of a play.

Behavior settings represent person-place units of analysis. The study of behavior settings focuses on the behavior of persons within a particular milieu. Here offices, theaters, bars, schools and shops become the settings for study. Behavior settings have a variety of attributes: they can be short or long lived, large or small, and may be single or multi-purpose. Most important is that they are situated in both time and space and include both human and non-human elements.

The majority of work by Barker and his associates<sup>19</sup> has focused on entire communities or portions thereof<sup>20</sup>.

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<sup>19</sup>See Roger G. Barker and Herbert F. Wright, Midwest and Its Children. Evanston, Ill. Row Peterson and Co., 1956 and Roger G. Barker and Phil Schoggen, Qualities of Community Life. San Francisco: Jossey-Bass, Inc., 1973.

<sup>20</sup>This emphasis appears to have parallels with the ecology ("Chicago School") tradition in sociology. See Robert Faris, Chicago Sociology 1920-1932. Chicago: University of Chicago Press, 1970. The more contemporary followers of this tradition, the human ecologists who rely on the urban community for their laboratory, have, of late, begun referring to themselves as urban sociologists.

This emphasis on "public" behavior settings as opposed to both "private" and "public" settings is one of the only conceptual shortcomings that this work provides for the present research.

This shortcoming is made up for in the work of Erving Goffman. Goffman provides a wealth of information and conceptual apparatus for the study of behavioral settings. He is well aware that the behavioral sciences do not have an adequate way to classify "social establishments".

Social establishments - institutions in the everyday sense of that term - are places such as rooms, buildings, or plants in which activity of a particular kind regularly goes on. In sociology we do not have a very apt way of classifying them. Some establishments, like Grand Central Station, are open to anyone who is decently behaved; others, like the Union League Club of New York or the laboratories at Los Alamos, are felt to be somewhat snippy about who is let in. Some like shops and post offices, have a few fixed members who provide a service and a continuous flow of members who receive it. Others, like homes and factories, involve a less changing set of participants. Some institutions provide the place for activities from which the individual is felt to draw his social status, however enjoyable or lax these pursuits may be; other institutions, in contrast, provide a place for associations felt to be elective and unserious, calling for a contribution of time left over from more serious demands (1961:3).

Goffman is also aware of the encompassing nature of institutions.

Every institution captures something of the time and interest of its members and provides something of a world for them; in brief, every institution has encompassing tendencies (1961:4).

In line with this, Goffman has singled out one category of institutions for analysis - "total institutions". Total institutions are those organizations which constitute a

complete world for their members, involving them continuously with their fellows and segregating them from the outside world. Their encompassing or total character, which segregates them from the outside world is often built right into the physical plant by means of high walls, barbed wire fences, locked doors, or other barriers which tend to restrict or prevent social intercourse with the outside world. Under this rubric we could include such institutions as: homes for the blind, mental hospitals, homes for the aged, prisons, boarding schools, and monasteries or convents. In a general sense, Goffman is mainly concerned with (1961:176),

formal organizations that are lodged within the confines of a single building or complex of adjacent buildings, referring to such a walled-in unit, for convenience, as a social establishment, institution, or organization.

In a more specific sense, Goffman tells us that social establishments or institutions are buildings or plants in which a particular kind of activity regularly goes on. Each institution has certain encompassing tendencies which tend to capture, to a greater or lesser degree, something of the time and interest of its members and provides a bounded world for them.

Conjunctive with this, Goffman has provided another conceptual framework that could be useful for our purposes. Where his "total institution" framework provides more of an external differentiation of various buildings, his analysis of "regions and region behavior" provides a framework that could be useful within such structures. A "region", for

Goffman, is any place that is bounded to some degree by barriers to perception (1959:106). Regions may be isolated either orally or visually or both. Barriers could include such things as partitions, walls, curtains, panes of glass and doors. However, regions can also be bounded by time, that is, a region may be open for a period of time and closed for the remainder, as in the case of a shop or an office that is open only for the stated hours. Regions can be separated into "front regions" and "back regions". Front regions refer to the place where the performance is given (1959:107). A performance for Goffman (1959:22) refers to all the activity of an individual which occurs during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers. A back region, on the other hand, refers to those places where the performance is prepared for by the actors. These are the relatively private areas where it can be expected that no unwanted persons will intrude without some prior notification to the person or persons therein. Both regions have a setting, that is, there is some assortment of physical objects involved in both. The front region, however, is much more structured in terms of its set characteristics. This is evident from the following,

the setting, involving furniture, decor, physical layout, and other background items.....suppl(ies) the scenery and stage props for the spate of human action played out before, within, or upon it. A setting tends to stay put, geographically speaking, so that those who would use a particular setting as part of their performance cannot begin their act until they have brought themselves to the appropriate place and must terminate their performance when they leave it (1959:22).

The back regions are also structured as to their setting; but the structure here is geared more to the individual whims of the users of this space. Favorite objects and possessions of the inhabitants will be found here. The arrangements will be a reflection of likes of the individuals therein. Thus, Goffman provides us with a useful framework which could be used, in part, for the analysis of various types of internal arrangements of behavioral settings.

Taken together, Barker and Goffman complement one another and provide a partial conceptual framework useful in the analysis of behavioral settings. When this basic framework is combined with the previously elaborated dimension - the physical setting as subjective reality - they collectively provide a general conceptual framework which can be used as a basis for the study of behavioral settings in general and work settings in particular.

Thus, the section which follows will be devoted to the development of a classificatory model, based on an eclectic utilization of the previously discussed works.

#### A Model for the Study and Comparison of Work Settings

In an overall sense, work behavior is the product of the interaction between the work setting and the activities of the person or persons therein. The work setting is the encompassing physical locale in which the work behavior takes place. It is the outer shell for the work behavior. It is bounded to some degree in time and space, and is composed of all of the materials and objects (including persons) found therein, and their situational locations and

arrangements. The activities of the person or persons within the work setting take into account all of the relatively enduring behavioral actions that could be considered to be a part of the particular location. Work behavior includes both of these interacting variables. An analysis of one necessarily includes an analysis of the other.

In order to analyze the specific relationships which exist between the physical (work) setting and human social (work) behavior, it is necessary to establish precisely which components or dimensions may affect human conduct<sup>21</sup>. The following table is an attempt to delineate the critical elements involved.

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<sup>21</sup>For two excellent edited sources which explore the relationship between the physical setting and behavior from various orientations, see Harold M. Proshansky, et al., (eds.) Environmental Psychology. New York: Holt, Rinehart, and Winston, 1970; and Robert Gutman (ed.), People and Buildings. New York: Basic Books, 1972.

TABLE I.

COMPONENTS AND DIMENSIONS OF BEHAVIORAL (WORK) SETTINGS

## A. Structural Components

1. The setting: the inanimate physical boundaries for human social behavior, including:
  - a. The macro-physical dimension: the objective external parameters which serve as the "outside" boundaries for the behavior.
  - b. The micro-physical dimension: the objective sub-parameters or "regions" which serve as the "inside" boundaries for the behavior.
  - c. The object network: the inanimate physical objects and their arrangement within the setting.
2. The persons as objects: the persons within the setting and their location to one another.

## B. Dynamic Component (Behavior)

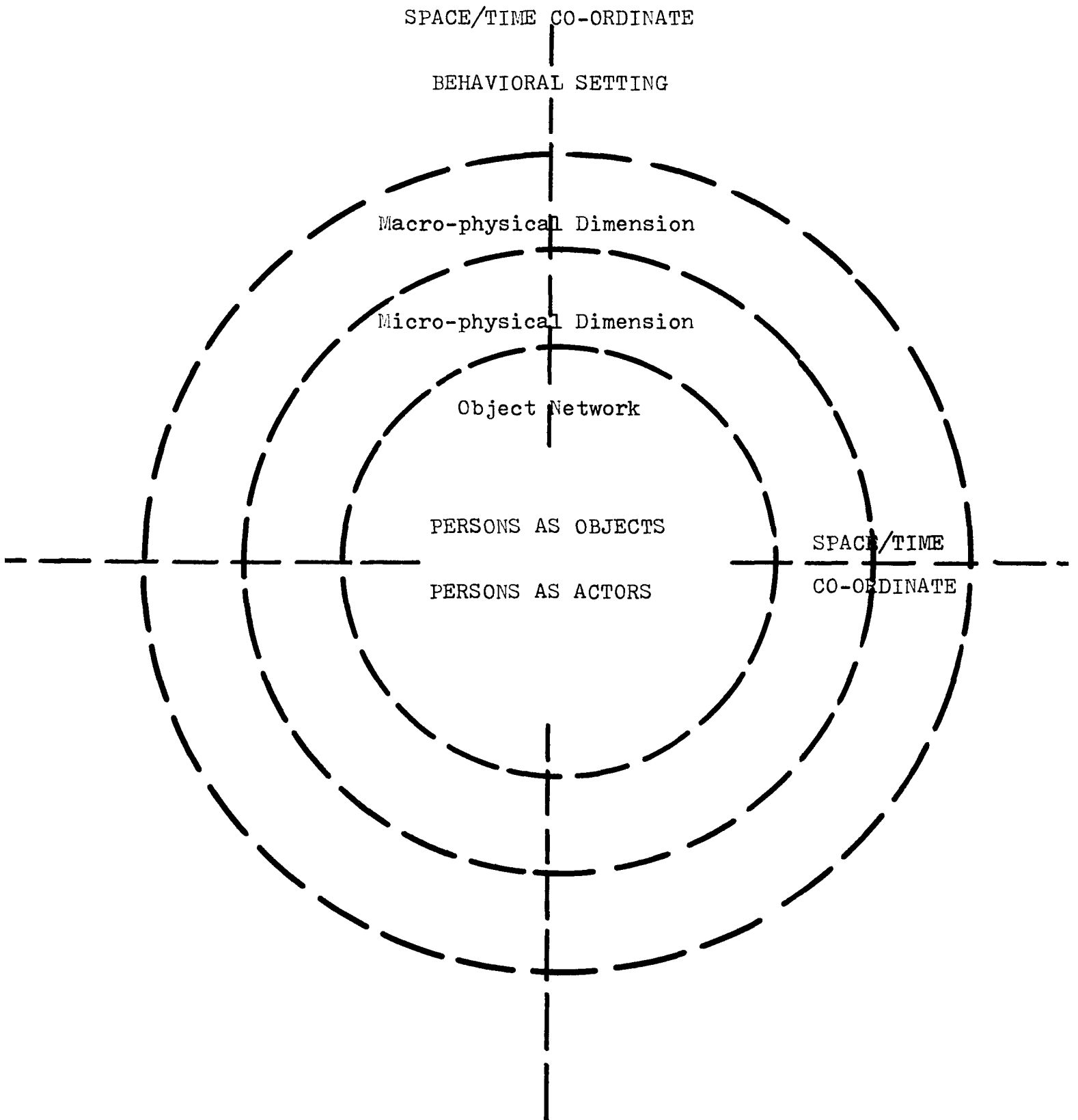
1. The persons as actors: the persons as reality processing organisms who give meaning and value to their actions through the on-going interpretations they make.

## C. Co-ordinating Dimension

1. The spatial/temporal location: the location of activity within the coordinates of time and space.

This model can be diagrammed in the following way. (See Figure I.)

FIGURE I.

A BEHAVIORAL SETTING MODEL



To elaborate (Figure I), the behavioral setting represents a complex inter-linkage of structural components and dynamic components within a spatial/temporal field. The structural components represent the "objective" elements of the behavioral setting. These are the external criteria which have the potential of exerting influence on the dynamics of the behavioral setting through the constraints they place upon the actors. Included among the structural components are the setting and the persons as objects. The setting encompasses the gross structural characteristics present in the inanimate physical boundaries and includes three interrelated elements: the macro-physical dimension, the micro-physical dimension and the object network. Using a school building as an illustrative example of a setting, the macro-physical dimension of the building would be the outer shell of the building and the grounds surrounding it. This would represent the objective external parameters which serve as the "outside" boundaries for behavior. Persons upon entering the school grounds or entering the entrance to the school building would immediately be obliged to conduct themselves commensurately. The micro-physical dimension of the school building would be the internal regions such as classrooms, auditorium, gym, swimming pool, teachers' lounge, toilets and principal's office. Furthermore, connecting this multiplicity of regions and acting as links between them would be the vast network of interstitial areas including corridors, stairways, and elevators. These micro-physical

dimensions represent objective sub-parameters or regions which serve as "inside" boundaries for behavior. Persons going, here and there, passing from one internal region to another and spending some time in some of the various regions would be obliged to conduct themselves accordingly. The object network<sup>22</sup> of the school building would include all of the internal "furniture", props and paraphernalia of school buildings from the principal's desk, the janitor's mop, the students' books, to the gym classes' volleyball. These represent the inanimate physical objects within the setting, including their arrangements and interrelationships. Persons would expect to locate and be able to employ certain objects within certain regions of the school building while other objects would be deemed inappropriate and not likely to be found in those regions.

Persons as objects represent the other structural component of settings. Persons and collectivities of persons are viewed both quantitatively and qualitatively as objects. The quantity of persons present in the setting, the kinds of persons present and their location to one another influence the resulting dynamics of the behavioral setting. To return to our illustration of the school building, the number of persons present, if they are all students, all teachers, or students and teachers and how they are located

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<sup>22</sup>Barker and Wright have referred to this "furniture of behavior settings" as "behavior objects" (1956:10). By object network I wish to convey the added qualities of arrangement and interrelationship between the various objects located in the setting.

within the setting all, in part, influence the resulting behavior.

The dynamic component of the behavioral setting refers to the behavior of persons within the setting. Persons are seen as actors, as reality processing organisms who give meaning and value to their actions through the on-going interpretations they make. Persons are seen to have the ability to influence and often determine the ways settings will be used. Emphasis here is placed on the "subjective" elements of the behavioral setting. Persons' actions become the result of their selective perception of the surrounding milieu, culturally based interpretations, and the pre-existing attitudes and beliefs the persons' hold which may or may not be further based on their past experiences. Returning again to the illustration of the school building, both the students and teachers are seen to act in accordance with previously established cultural expectations concerning school behavior. Order is established and perpetuated out of a continual processing of the dynamics of the setting by the persons involved.

Both the structural and dynamic components of behavioral settings are mediated by the co-ordinating dimension. The co-ordinates of time and space both limit and enhance behavior within settings. The spatial/temporal co-ordinates reflect the process and sequencing of activities. As an illustration, the school building's location in time and space determines the course of events for the setting

and its inhabitants, if, in fact, any inhabitants are present. School buildings in different spatial locations are perhaps constructed, or laid out, differently. Their inhabitants may engage in quite different routine activities. The time of day, month and year will reflect the activities of the members, who the members are or if they are present at all.

It is argued here that this model will be of use in the study of any behavioral (work) setting and in the comparative study of multiple settings. It provides for the illumination of critical variables and facilitates appraisal of their interactive qualities. Both the "objective" elements which exert external constraints on behavior and the "subjective" elements which exert internal constraints on the actors receive equal emphasis. Both the setting and the behavior occurring therein are viewed as equally important for analysis.

It is from this theoretical rationale that the following informal hypotheses are developed.

1. To what extent can the work setting (inanimate physical setting) be regarded as dominant and determining the nature of the existing behavioral system (workers behavior patterns), that is, are persons "used" (externally constrained and managed) by the conditions of their physical setting? Here it was expected that the work setting, including changes in it, influences workers' behavior.

2. To what extent can the behavioral system be regarded as dominant and determining the uses to which the work setting is put, that is, is the physical setting "used" (manipulated) by the persons' acting in it? Here it was expected that workers' behavior, including changes in behavior patterns, influences the work setting.
3. To what extent can the work setting and the behavioral system be regarded as mutually inter-dependent. Here it was expected that workers behavior patterns would both influence and be influenced by the changing conditions of their work setting.

These hypotheses serve to isolate the important variables necessary to illuminate the relationship between persons' behavior and their physical setting. Collectively they provide the means to offer an integrated comparative analysis of this relationship. The elaboration and test of these hypotheses is detailed in Chapter VII.

To further buttress the claim that the physical (work) setting is important and can be productive for study, the following section is devoted to the development and elaboration of a typology of work settings.

#### A Typology of Work Settings

Work behavior takes place in a wide array of locales. Most occupations require that the persons holding those occupations must travel to work. Few occupations, with the

exceptions of artists, writers<sup>23</sup>, and housewives are carried on in the home. Some occupations require more traveling to and from the place of work than do others, as in the case of the traveling salesman who must journey from client to client, some of which are vast distances apart. Other occupations are traveling occupations, as in the case of the airline pilot, truck driver, and ship's captain. The persons holding these occupations literally travel while they are working. Many other occupations require a variety of work settings, as in the case of the medical doctor, whose work settings could include: his office, the hospital, and the homes of his patients. By and large, however, most occupations are carried out in one type of work setting, or at least, the majority of the work in most types of occupations takes place in one type of work setting.

Work settings vary by physical structure and by physical location. Some work settings are permanent in structure and permanent in location. Buildings such as schools, hospitals, factories, and business offices are examples of this type. Other work settings are permanently located but rather temporary in structure. These are transitional work settings, as in the case of a building construction site or a mining project. The building or mine changes in physical structure each day it is worked upon and only

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<sup>23</sup>This is also not true for some writers. J.D. Salinger, for example, walks a hundred yards from his New England house to a small concrete block cell with a skylight to do his writing. See Salinger. H.A. Grunwald (ed.) (New York: Harper and Row, 1962) p. 4.

becomes structurally permanent upon completion or as in the case of the mine - abandonment. Farms and national forests would also fall into this category, however, their physical structure never becomes permanent but is always seasonally changing. Other work settings are permanent in physical structure but only temporary in physical location. Such would be the case for the many mobile work settings: taxi cabs, airliners, ships, trains, police cars, and mobile health units. Still other work settings are temporary in physical structure as well as temporary in physical location. Examples of this type could include: circus or carnival tents and army field command posts and interim buildings.

Each of these types of work settings are mutually exclusive from the others in terms of physical location and physical structure. Each of these types of work settings are externally unique from the next and house many varieties of occupations. It can also be argued that taken together these are collectively exhaustive of all varieties of work settings. Thus, any type of physical locale in which work takes place can be categorized in terms of its structure and location and placed within the proposed typology. The following table will clarify this argument.

TABLE II.

TYPOLOGY OF WORK SETTINGS

	Permanent Physical Location	Temporary Physical Location
Permanent Physical Structure	Permanent Work Settings	Mobile Work Settings
Temporary Physical Structure	Transitional Work Settings	Temporary Work Settings

A permanent work setting is a physical locale in which work takes place that is permanent in structure and permanent in location. Examples include all buildings: schools, hospitals, "total institutions", factories, and office buildings.

A mobile work setting is a physical locale in which work takes place that is permanent in structure and temporary in location. Examples include: airliners, trucks, taxi cabs, police vehicles, ships, and trains.

A transitional work setting is a physical locale in which work takes place that is temporary in structure and permanent in location. Examples include: building construction sites, farms, mines, and national forests.

A temporary work setting is a physical locale in which work takes place that is temporary in structure and temporary in location. Examples include: circus and carnival tents, army field command posts and interim buildings.



This typology provides a means to classify and compare various work settings and the occupational types found therein for their common features and distinct characteristics. Furthermore, it provides a rationale for studying occupations outside of the permanent work setting category. Although it is certainly true that most of the occupations would fall into the permanent work setting category, this does not negate the importance of the other types of work settings and the occupational types usually found there. The research to be reported on here will focus on a building construction project - a transitional work setting. To locate this study within the typology will enable comparisons to other types of work settings.

To further clarify the comparative utility of this typology, a number of existing research studies can be analyzed in terms of the content they provide regarding the relationship between physical setting and behavior occurring therein.

#### An Application of Various Existing Studies

William Foote Whyte (1949) provides a useful study dealing with the restaurant and its social structure. He characterizes the restaurant as a combination production and service unit. It differs from the factory, which is solely a production unit, and also from the retail store, which is solely a service unit (1949:302). Each of these are considered permanent work settings, that is, they are permanent in physical structure and physical location.

Whyte sees restaurants as having the potential of passing through five stages of growth.

In the first stage, we have a small restaurant where the owner and several other employees dispense short orders over the counter. There is little division of labor. The owner and employees serve together as cooks, countermen and dishwashers (1949: 303).

The counter here represents a barrier to accessibility. It separates the customers from the workers. Moreover, the workers within this particular setting engage in a variety of occupations - cook, dishwasher, and counterman - and their regional locations at any one time may be the counter area, or the kitchen.

In the second stage, ...the organization has grown in complexity as it has grown in size. ...we have dishwashers and kitchen employees, as well as those who wait on customers. ...As business continues to expand, it requires a still more complex organization as well as larger quarters. ...In time, the owner-manager finds that he can accommodate a larger number of customers if he takes one more step in the division of labor. ...Therefore, he sets up a service pantry apart from the kitchen. The cooks now concentrate on cooking, the runners carry food from the kitchen to pantry and carry orders from pantry to kitchen, and the pantry girls serve the waitresses over the counter. ...perhaps he (the manager) begins serving drinks and adds bartenders to his organization (1949:303-304).

The above points out an increase in the number of regions within the work setting as the establishment grows in size. Concomitant with this is an increase in the specialized occupations that are found within these regions. There is an increase in the number of and space devoted to back regions: pantry, kitchen, back bar, and manager's office. Barriers between these regions are also constructed within the

separate regions. This is evident from the following passages.

...there was no direct face-to-face interaction between waitresses and counter men, and, indeed, the warming compartment was so high that only the taller waitresses could see over its top (1949:306).

...The kitchen people will block ...the invasion of an upstairs supervisor (who) tends to disrupt relations in the kitchen (1949:308).

This study does provide some insight into one kind of permanent work setting - the restaurant. It offers some differentiation of the various regions and the regional behavior found therein.

Another type of work setting is discussed by James Henslin (1968). In his study of cab drivers, Henslin provides us with relevant information on the taxi cab as a mobile work setting. A taxi cab is an example of a work setting that is permanent in physical structure but temporary in physical location. Furthermore, taxi cabs have certain areas within them that could be called front regions and back regions. Henslin provides us with an example of a back region in the following passage.

He opened the back door of the cab, and my first thought was, "Well here goes! I'm going to be robbed. I better turn on the tape recorder and get this on tape!" (1968:148)

It is evident from this that the driver did have a private area within his cab, a back region, where he had a concealed tape recorder for use in case of a robbery. Equally important was the mention made by Henslin to the seating location of passengers and how it affected the drivers. In effect, he

is talking about the arrangements of persons within the front regions of the cab and how the location affects the activities of the driver.

The passenger's sitting behavior is important for the driver because it makes certain activities possible. ...A single passenger will almost invariably sit on the right-hand side of the back seat (the side diagonal from the driver), or at times, in the front seat opposite the driver. The driver views either of these positions as being appropriate for his passenger. Occasionally, however, a passenger will sit directly behind the driver in the back seat. ...Interaction between the driver and passenger is more difficult in this position, and it is more difficult for the cab driver to "keep tabs" on what his passenger is doing (1968:149).

A different kind of concern over regions, region behavior, and barriers to perception and accessibility, is offered by Howard S. Becker (1951) in his analysis of the professional dance musician.

The musician is, as a rule, spatially isolated from the audience, being placed on a platform which, being inaccessible to them, provides a physical barrier that prevents any direct interaction. This isolation is welcomed because the audience, being made up of squares, is felt to be potentially dangerous. The musicians fear that direct contact with the audience can lead only to interference with the musical performance. Therefore, it is safer to be isolated and have nothing to do with them. (1951:142).

Becker gives an example of a situation where such physical isolation was not provided for the musicians, and they had to construct their own barriers.

Jerry pulled the piano around so that it blocked off a small space, which was thus separated from the rest of the people. ...Jerry had moved around in front of the piano but, ...had put two chairs in front of him, which separated him from the audience. When a couple took the chairs to sit on, Jerry set two more in their place (1951:142).

The musicians mentioned are carving out a back region for themselves by setting up their various barriers. Although their work setting is usually a permanent one, their regions are usually variable depending on the existing circumstances. This is evident from the following.

Another thing about weddings, man. You're right down on the floor, right in the middle of the people. You can't get away from them. It's different if you're playing a dance or in a bar. In a dancehall you're up on a stage where they can't get at you. The same thing in a cocktail lounge, you're up behind the bar. But a wedding - man, you're right in the middle of them (1951:142).

Marcello Truzzi provides another study based on the American circus (1968) that exemplifies yet another type of work setting - the temporary work setting. Focusing on the worker in the American circus, Truzzi provides some indication of the regions and region behavior that is found in a work setting that is both temporary in physical structure and in physical location.

The status of the workingman in the American circus was always exceedingly low. In addition to very low salaries...and very poor living conditions..., interaction with performers was highly limited, and definite forms of segregation were maintained. For example, a canvas partition was maintained between artists-and-management and the workingmen in the cookhouse (1968:321).

The decline of the circus in American society, according to Truzzi, is due to a number of reasons, both of which reflect the temporary nature of this work setting.

The problem was two-fold: 1. to obtain a lot large enough to locate many tents, equipment, and customers' automobiles; and 2. to be located in such a manner as to make crowd attendance optimal through maximum audience comforts such as toilets and water (1968:321).

An interesting comparative study is offered by Joel Gerstl (1963). The purpose of the study was to examine the links between occupational milieu - including the nature of the work performed, the setting of the work situation, and the reference group norms - and leisure behavior. Three occupations were compared; admen, college professors, and dentists. It was found, in terms of the work setting, that the dentists did all of their work in their offices, while the admen brought some work home and the college professors did a good deal of their work at home. In fact, it was found that even vacation time was used by the college professors to engage in their work. From this we could infer that for the dentists their office is their permanent work setting, whereas, for the admen and more so for the college professor the permanent work settings include both their office and their home.

Robert Dubin (1963) did a study focusing on the influence of the place of work on industrial workers to determine its standing as a "central life interest" for the workers. Defining "central life interest" as the expressed preference for a given locale or situation in carrying out an activity, Dubin found that for almost three out of four industrial workers studied, work and the workplace are not central life interests (1963:54).

Louis Orzach (1963) did a replication of Dubin's study, but this time used professionals (registered nurses) instead of industrial workers. In contrast to industrial

workers, professionals still consider work and workplace as important and valued centers of their activity. Social relations within work settings are salient for professionals but not for industrial workers (1963:80).

Not all of the material concerning work settings need come from studies as those mentioned above. In fact, much information is readily available from the news media, as can be seen from the two following examples.

In the status conscious White House, office space often is the best index of prestige. Offices in the West Wing, nearest the president's oval office, are preferred to those in the East Wing. And offices in the East Wing, in turn, are more desirable than those in the Executive Office Building next door. The problem is that space in both wings and the Executive Office Building is cramped and the White House is eager to convince some staffs that their status will not decline if they are moved a block away, ...

George P. Schultz, Director of the Office Management and Budget...plans to ask that the building be renamed "New Executive Office Building" which would sound more impressive on letterheads. And Shultz intends to have the General Services Administration guards now in the building replaced by spit and polish officers from the White House Police Corps (The Milwaukee Journal, 1970).

Straight out of a Hollywood scene, a "playroom" was opened to newsmen...hidden deep in the confines of the now defunct Community National Life Insurance Co. Building. The lavish entertainment area featured ankle deep rugs, mirrors, draught beer facilities, a "his and her" shower stall, and a super king-sized bed. ...Secret doors led into the plush, gold carpeted entrance, decorated with gold lamps and fancy planters. A wine cellar, now empty, led off the formal lobby, and a chandelier lighted stairwell of gold walls and black fretwork. The TV room featured a five cushion divan, and a hanging Persian lamp over a brass planter. The bedroom was off the TV room. The huge bed, with a magnificent emerald green velvet head board, was draped with an opulent white sheep or llama skin bedspread which tumbled over onto the floor (The Milwaukee Journal, 1970a).

Both of the preceeding reports have value for our purposes. They both provide how persons use and feel about space in work settings. The first offers insight into the status value of space, and the second provides an unusual view of how a special type of "work" space was secretly confined within a large office building.

Many more studies and media reports could be mentioned, but those already mentioned should suffice to show the importance of the work setting in sociological analysis and also the neglect it has received in the literature. If studies yet to come could include information on the work setting and the regions within, then some significant comparative studies could be done.

#### A Modest Proposal

Over two decades ago Everett C. Hughes argued for the comparative study of occupations. He suggested that much could be learned "about doctors by studying plumbers; and about prostitutes by studying psychiatrists" (1951:320). He assumed that "all kinds of work belong in the same series", and that they should be studied as such. He suggested that we should search for "common themes" that cut across all occupations and offered that "routine and emergency" is one such theme (1951:320).

Both the physician and the plumber do practice esoteric techniques for the benefit of people in distress. The psychiatrist and the prostitute must both take care not to become too personally involved with clients who come to them with rather intimate problems (1951:320).



Hughes proposal did not fall upon deaf ears and as any student of the sociology of occupations and professions would attest, his proposal has born fruit.

A complementary proposal is made here in the hope that it would be equally bearing of fruit. It is proposed that much could be learned by the comparative study of work settings. Much could be learned about hospitals by studying prisons, and about schools by studying factories. The assumption made here is that behavioral (work) settings are not uniquely different from one another but rather, common "themes" can be shown to exist among them. One such theme is service and production. Both the hospital and the prison are "servicing shops" where persons with malfunctions spend considerable time in an effort to be made anew. Both the school and the factory are "production shops" where "raw materials" enter and "finished products" emerge.

It is suggested that much could be learned if researchers would include in their reports information on the work setting and the regions within. Work settings could be compared as well as the occupational types found within them. It is proposed here that there is a need to stop looking at the behavior for a moment and take notice of where that behavior is taking place.

## CHAPTER III

## METHODOLOGY

In the majority of behavioral science research the actual "doing" of the research is seldom reported upon. This is unfortunate because the research endeavor is usually a learning experience for the researcher and could also be for the reader. Beginning with the inception of the "problem" and ending with the final reporting of the findings, the research sequence involves many unforeseen difficulties and obstacles as well as minor rewarding experiences. Managing the problems and overcoming the obstacles represents the "mechanics" of doing research. It deals with the "nuts and bolts" of the research process. It entails "putting it together" in a scholarly fashion and reflects a real world test of the mastered skills and techniques of one's discipline. This information should be shared<sup>24</sup>, and it will be shared here.

The following then, will be a methodological background for this research. A less formal, yet detailed, running commentary will be provided for the research sequence as well as a more sophisticated elaboration of the study

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<sup>24</sup>In at least two cases entire books have been devoted to separate elaborations of how investigators went about "doing" their research. See Phillip E. Hammond (ed.), Sociologists at Work. Garden City, New York: Doubleday, 1967 and Jack D. Douglas, Research on Deviance. New York: Random House, 1972.

location, sample parameters, research design, and types of methodological techniques employed, including their advantages and disadvantages. In addition, a related section which discusses the ethical problems entailed in doing this type of research appears in an appendix.

### Opportunistic Research

The idea for the present research had its inception in 1971 at the University of Wisconsin-Milwaukee. I had just successfully defended my Master's Thesis before my committee, and the conversation turned to the progress of a building under construction on the campus which could be viewed from the window. It was suggested that since my thesis had dealt with construction workers<sup>25</sup>, perhaps my dissertation should also. One member suggested that it would be "opportunistic"<sup>26</sup> to pursue that line because my background and knowledge made me an expert<sup>27</sup> even before beginning, and that I could make a distinctive contribution to sociological knowledge. I

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<sup>25</sup>My Master's Thesis dealt with the occupational socialization of building construction electricians and utilized survey methods and participant observation to obtain data from 199 Milwaukee area apprentice construction electricians in various stages of their five year apprenticeship program.

<sup>26</sup>I am indebted to Professor Nason E. Hall, Jr. for this concept.

<sup>27</sup>I had at this time successfully completed a State of Wisconsin endorsed five year construction electrician apprenticeship including classroom education and on-the-job training and had worked an additional four years as a journeyman electrician. Consequently, after having worked on countless building construction projects I "knew" rather than "knew about" the work world of building construction workers.

thought about this suggestion often during the remainder of my graduate career at the University of New Hampshire, and when it came time to select a topic for study, I found that I already had one.

"Opportunistic research" has a tradition in sociology, and it has provided a wealth of insightful knowledge on a wide range of topics. Illustrating this are the works of Howard S. Becker on Jazz musicians (1951, 1963); Ned Polsky on pool hustlers (1969); James Henslin on cab drivers (1968); Theodore Caplow and Reece J. McGee (1958), and Alvin Gouldner (1957, 1958) on academicians; and Julius Roth on the tuberculosis patient (1963). Each of these researchers took advantage of past experiences, unique expertise, or present events and circumstances to facilitate their research endeavors. They "knew" rather than "knew about" their particular research area before they began; they were "insiders".

Opportunistic research facilitates entry into the research setting. One's entrance can be done with finesse, being fully aware of what to expect and how to handle it correctly. Opportunistic research facilitates rapport with the members to be studied since the researcher is a member himself. He already possesses and has command of the, perhaps, privileged vernacular of the members; he has been socialized as they have, and he can interpret "their world" as "his world". The opportunistic researcher will seemingly be better able to discount any misinformation he may receive, he will probably be more welcomed into the members' world

and would offer less chance of contaminating the research setting. In essence, the researcher who takes advantage of his circumstances or his special abilities or knowledge not only helps himself, he also helps his scholarly community through the reliable and valid information he can provide.

#### Entree - "Getting In"

To want to study construction workers in order to learn about their work culture or to want to study the sequence of a building being built to learn more about the relationship between physical setting and behavior is admirable and could be considered "good sociology", but to carry out such a venture presents certain problems at the onset. Construction workers are a difficult group to study, and building construction projects are dangerous places for the inexperienced. Add to this the fact that builders, architects, contractors, union officials, as well as the construction workers themselves are not receptive to having an "outsider" on their project, studying them. The reasons for this vary. The builders, architects, and contractors are primarily interested in getting the building built as quickly as possible. Their money and time are "tied up" in the building, and the profit margin for some decreases the longer the building takes to be completed. They are concerned with production and don't want anything or anyone to disrupt the project or distract the workers from their work. Coupled with this are the things they may want to hide from outsiders. Building code violations or union violations might,

if made public, jeopardize their future endeavors. Union officials, on the other hand, are concerned with representing the rights of the workers and enforcing the current labor contracts. A researcher provides the potential for complications and problems for the union official. Furthermore, they are under constant pressure from the public to justify the felt exorbitant wages paid to building construction workers. A researcher is seen as someone who could only cause unnecessary problems for them. The construction workers themselves are also threatened by an "outsider". They are paid to produce; they either work or get laid off. Their jobs are, in many cases, seasonal, they must work when the work is there; "no work, no pay". As is the case with most workers, regardless of their occupation, there is a tendency to not be productive all day, everyday. Persons have "off days" when they aren't as productive or even want to be, or times during the day when they work at "looking busy" instead of being busy. An outsider is seen as a threat to the livelihood of the building construction worker. They would sooner not have the researcher there.

"Getting in" to do the research, then, becomes the immediate problem. The problem is, of course, lessened considerably if the researcher is himself a construction worker "by trade", as is the case here. Even so, many associated considerations must be taken into account. Among these are the study location, the desired sample characteristics, the research design, and the methodological techniques to be employed.

### Study Location

The present study was conducted near a large mid-western city<sup>28</sup>. This location was selected for the following reasons.

1. The investigator had entree to a large number of persons engaged in the building construction industry and related occupations within this city. This includes personal ties with union officials, building contractors, apprenticeship directors for the construction industry, building code inspectors, building material distributors, job superintendents, foremen and construction workers in various trades.
2. The investigator was familiar with the city having lived there for 29 years. Eight of these years were spent working as a construction electrician on innumerable building construction projects.
3. The investigator holds an honorary withdrawal card from a Local Union of the International Brotherhood of Electrical Workers, which is located in the city. This union card certifies journeyman status as a construction electrician.
4. Buildings being constructed in this city are representative of the majority of the buildings being constructed in the nation.

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<sup>28</sup>Following sociological tradition, the names of places and persons will remain anonymous in this research report.

- a. This city with a population of over 700,000 persons can be considered a large urban area. This is particularly important since the majority of buildings in the nation are constructed in large urban areas.
- b. This city is similar to other large urban areas in its adherence to strict building material and work codes. These codes are similar to those in other areas of the nation, but they are enforced to a greater extent in large urban areas. This practice insures that buildings built here are similar in workmanship and material to buildings being built in other large urban areas.
5. The sample of workers studied are felt to be representative of the majority of building construction workers in the nation. (See the sample section which follows.)
6. All building construction projects in this city must adhere to regulations of health and safety set down by the State Industrial Commission and the more inclusive federal standards<sup>29</sup>. This also insures representativeness, as other large urban areas, although not all, are similarly influenced by their industrial commissions and all are influenced by federal standards.
7. The investigator has completed a related study in this city (Riemer, 1971).

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<sup>29</sup>See Safety and Health Regulations for Construction. Department of Labor, Occupational Safety and Health Administration, Washington, D.C. Volume 37, Number 243, 1972.



The present study was conducted on a number of large residential buildings (four - two-story condominiums with underground parking, each to house twenty families, and a series of two-family town houses adjacent to the main condominium project).

Residential buildings were chosen for study over industrial or commercial buildings for the following reasons.

1. Residential buildings represent the largest category of constructed buildings. They are the easiest to study since many more of them are available to choose from at any given time. This is particularly important if the research time is limited as it was in this case. Roughly four months of "field work" time were available during the summer of 1973. Within these parameters a building had to be constructed which was large enough to employ a large number of workers from various building trades. As it turned out, this was not entirely possible even with a good deal of planning and forethought in the selection of the "right" site to study. What did occur, which was perhaps better, was that observations were carried out on a series of buildings on the same and adjacent projects which were in various stages of completion and which employed the same workers in the majority of the cases. This enabled comparisons to be made between the workers' behavior and the stages of the buildings under construction, and it provided the additional and valuable feature of having repetition. The same workers could be seen

going through the same procedures on different buildings at different times.

2. Residential buildings represent the type of building that most persons are familiar with and most likely to have built, buy, or have repair work done on sometime during their lifetime.

3. Residential buildings, in general, offer a great deal of similarity in the work required to construct them. The internal arrangements of homes are very similar. This also allows for continual and repetitive comparisons of workers behavior patterns under very similar conditions.

#### Study Sample

The sample for the study is comprised of all of the workers who were present on the project during the time of study, approximately 70 workers. Of course not all of these were present all of the time since different tradesmen work during different stages of the building process. Painters, for instance, work during the latter phase of the building sequence, while bricklayers work during the beginning phase. Trades such as electricians, carpenters and plumbers are present for the majority of the building sequence.

The majority of the workers were union members and were skilled in their particular trade. In actuality this should have been true for all of the workers. However, a few of the workers were not union members, and it was usually these who were not as skilled in their work. Of interest also is the fact that the project could have been shut down by union officials if it had become known that there were

non-union workers present. This did not happen.

All of the workers were males and in the employ of specific building construction contractors. The type of contractor depended on the specific type of skill the workers provided i.e. plumbing, electrical, masonry, carpentry, etc.. The sample includes workers from the following building trades: bricklayers, carpenters, cement masons, plumbers, painters, laborers, electricians, telephone installers, drywallers, carpet installers, asbestos workers, operating engineers, tile setters, wall paper hangers, surveyors, elevator constructors, and truck drivers. Others associated with the building construction industry include: architects, building inspectors, engineers, builders, building contractors, material suppliers and future owners.

It is felt that the building tradesmen and others associated with the building construction industry who were under study are nationally representative in terms of union membership, knowledge and skill requirements, professional affiliations and contractor employment.

#### Research Design

A longitudinal research design was used in this study. Observations were made during the entire sequence of the building construction process. Observations were made when the ground was first broken for some buildings, when others were being completed and turned over to their new owners and during the entire range of stages between these two extremes.

Any building under construction can be seen to progress in a systematic fashion from its beginning to its completion. That is, the physical structure of the building progresses through a consistent sequence of phases that ends with the completed building. Each phase, regardless of the specificity involved or the number of phases that are taken into account, represents a physical structure different from the previous or following phase. Thus, this transitional nature of buildings under construction is amenable to a phase analysis, an inter-phase comparison and a intra-phase comparison.

Concomitantly, work behavior on a building construction project varies according to the building construction sequence. Workers perform different skills during the various phases in the construction of buildings. Some workers are present on the project for only a short period of time, such as, surveyers and telephone installers, while others are present for the majority of the building sequence, such as, electricians, plumbers and carpenters.

A common differentiation is made in the construction industry between "roughing" and "finishing" work. This same differentiation will be used here. The "roughing phase" is a common sense term that refers to the initial work that is done in the construction of a building. This is the longest of the two phases and entails the construction of the external structure of the building and also the internal regions within the building. These regions, however, are

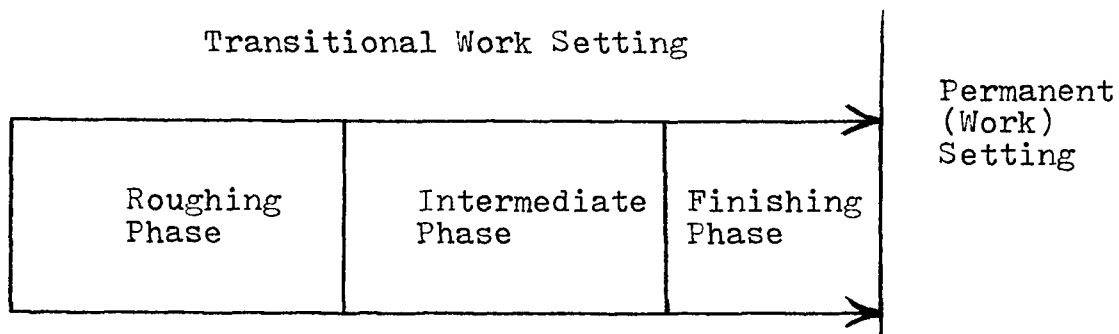
unfinished or "rough" in form. Examples of the kinds of work taking place during this phase would include: excavation of the site, most of the masonry and concrete work, framing out the internal regions (rooms) and enclosing the building by sealing off the external walls and roof.

The "finishing phase" is a common sense term that refers to the completion work that is done on a building. This entails the installation of fixtures and the general addition of the "final touches". Examples of the work taking place during this phase would include: installation of the plumbing and electrical fixtures, i.e. toilets and electrical switches, finish carpentry, painting, ceramic tile work, wall papering, carpet and telephone installation.

Although these two phases are distinct from one another, in actuality some overlap does occur. Therefore, it is necessary to include within the building construction sequence an intermediate phase that will take this overlap into account. The following diagram should clarify this point. (See Figure II.)

FIGURE II.

PHASES IN THE BUILDING CONSTRUCTION SEQUENCE



Compatible with each of these phases of the building construction sequence are the kinds of workers or tradesmen on the building project. Each trade is responsible for a specific type of work and collectively they work together to build the building. Some tradesmen do only the "roughing" work, others do only the "finishing" work, and still others do both types of work. Thus, the following three groups of workers, by trade, can be differentiated on most building construction projects. (See Table III.)

TABLE III

## WORKERS IN THE BUILDING CONSTRUCTION SEQUENCE

Group I ROUGHING WORKERS	Group II FINISHING WORKERS	Group III BOTH
Cement masons (Most) Laborers Operating engineers Surveyors Drywallers Iron workers Roofers Bricklayers Lathers	Painters Telephone installers Tile setters Wall paper hangers Landscapers Asbestos workers Elevator constructors Glaziers Marble setters Terrazo workers Stone masons	Carpenters Electricians Plumbers Pipe fitters (Some) Laborers Sheet metal workers

Each of these groups represents a separate category for analysis. And taken collectively these three groups provide a basis for comparative analysis. The workers in Group I are present on most building construction projects during its earlier phase; the workers in Group II are present on most building construction projects during its latter phase; and the workers in Group III are present on most building construction projects during all of the phases. This provides a basis for analyzing the relationship between physical (work) setting and workers' behavior. (This will be done in Chapter VII and VIII.) This also provides for a longitudinal analysis of the "work culture" of building construction workers. Herein, the routines and regularities of the day-to-day work world of building construction workers can be shown. (This will be done in Chapter's IV, V, and VI.)

#### Methodological Techniques

The methodological techniques used in this research include participant observation; selective, focused interviewing; and certain unobtrusive, non-reactive, methods such as use of architectural drawings of the buildings and some after-hours and week-end photography which provided visual benchmarks for the phase analysis of the buildings being constructed.

These types of research techniques were chosen over others<sup>30</sup> because of the advantages they provided for the particular study at hand. Construction workers are not receptive to filling out pencil and paper questionnaires, sitting and responding to formal interview questions for an hour or two, or submitting themselves to a laboratory experiment. They are, by and large, not verbose, analytical or sedentary, nor do they want to be or, for that matter, have to be. They are "doers" rather than "thinkers". They are expertly skilled in the manipulation, application, installation, and construction of things, not ideas. Thus, the most advantageous research techniques for the study of construction workers are ones which can be employed in the workers' own work milieu and ones which require the least amount of change in their ordinary, everyday, way of doing things. Participant observation, selective, focused interviewing and certain unobtrusive methods were ideally suited to this task.

Participant observation<sup>31</sup> refers to a research

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<sup>30</sup>Other frequently employed sociological research techniques, such as the social survey, the standardized formal interview, the laboratory experiment, and their variations were not chosen because their disadvantages far outweighed their advantages for the study at hand. See Norman Denzin, The Research Act. Chicago: Aldine, 1970; Claire Selltiz, et al., Research Methods in Social Relations. New York: Holt, Rinehart, and Winston, 1959; and Julian L. Simon, Basic Research Methods in Social Science. New York: Random House, 1969.

<sup>31</sup>For further elaboration on this methodological technique see, George J. McCall and J.L. Simmons, Issues in Participant Observation. Reading, Massachusetts: Addison-Wesley, 1969; Buford H. Junker, Field Work: An Introduction to the Social Sciences. Chicago: University of Chicago Press, 1960; and William J. Filstead (ed.) Qualitative Methodology. Chicago: Markham, 1970.



technique in which the investigator participates as a member of the group he is studying. His observations are made under the usual conditions facing the members in their everyday life activities and setting. The investigator's role as researcher may or may not be concealed from his subjects.

More specifically, Gold (1958) has distinguished between four research roles in sociological field observations. The first is the "complete observer" role. Here the researcher does not interact to a large extent with his subjects. He rather locates himself at the periphery of a social setting in order to gather information<sup>32</sup>. Examples of this might include taking on certain "non-person" roles such as elevator operator, janitor, maid, or observer behind a one-way mirror. The second is the "complete participant" role. Here the researcher conceals his scientific intents from his subjects and attempts to become a full-fledged member of the group he is investigating. Examples of this might include posing as a patron in a social establishment<sup>33</sup> or as a member in a particular group<sup>34</sup>. The third is the "observer as participant" role. Here the researcher is not concerned with establishing an enduring relationship with those he is

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<sup>32</sup>For a detailed coverage of a variation on the "complete observer" role see, D. Strickland and L. Schlesinger, "'Lurking" as a Research Method", Human Organization. 28:248-250, 1969.

<sup>33</sup>For an application of this type of research role, see Sherri Cavan, Liquor License. Chicago: Aldine, 1966.

<sup>34</sup>For an application of this type of research role, see Leon Festinger, Henry Riecken and Stanley Schachter, When Prophecy Fails. New York: Harper and Row, 1956.

studying. The contact is formal and brief and can best be characterized by a researcher conducting a formalized interview or administering a questionnaire. These are typically one time events. The last research role delineated by Gold is the "participant as observer" role. Here the researcher makes his presence known and attempts to establish relationships with his subjects. This role has been used extensively by sociologists and is exemplified in the research work of Becker (1953) on marihuana users, Maurer (1962) on confidence men, Gold (1964) on janitors, Hall (1948, 1949) on types and stages of medical careers, and Whyte (1955) on life in an Italian-American slum.

It is this latter role, the "participant as observer", that comes closest to the role employed in this research. Although my presence as investigator was made known, the importance of this was minimized. Heavy emphasis was placed on my role as construction worker. My role as researcher was not concealed, but neither was it flaunted. If asked, I would simply provide only minimal information and follow it up with my "real" role as construction worker. In this sense the full intent and purposes of the research were disguised. The ethical problems of this approach are discussed in an appendix. The arguments both for and against doing this type of research are presented in this section. It is concluded that the ethical questions which arise throughout the research process must inevitably rest upon the individual

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researcher's value commitments as they pertain to the particular research situation and the persons' being studied. In this particular research the decision was made to protect the anonymity of all subjects by not mentioning names, places, or organizations. In this way the sanctity of "privileged information" was maintained and all persons involved were protected.

Participant observation as a research technique blends well with various other techniques<sup>35</sup>. Among those

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<sup>35</sup>For an elaboration on this point see John Lofland, Analyzing Social Settings. Belmont, California: Wadsworth, 1971.

used in this research were selective, focused interviewing and certain unobtrusive methods. Selective, focused interviewing<sup>36</sup> involves a face-to-face interchange in which the investigator attempts to elicit information or expression of opinion or belief from another person. The topics addressed are specific rather than general, and the respondents are selected for the expertise or information they are thought to possess. This method of informal interviewing was used when the occasion arose or when the situation could be managed to make it arise. Being in close contact with tradesmen and others during the work day facilitated guiding the topic of the usual spontaneous conversations. Questions concerning the focus of the research could be "slipped in" at appropriate times, and a good deal of probing on specific topics could be managed without jeopardizing the relationships and rapport that had been developed<sup>37</sup>. In this way information gleaned from previously observed events could be substantiated or refuted, new areas for future exploration could be developed, and at the same time rapport building could be taking place.

Unobtrusive methods<sup>38</sup> refer to any method of

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<sup>36</sup>For a full coverage of interviewing and its variations see Raymond L. Gordon. Interviewing. Homewood, Illinois: Dorsey Press, 1969.

<sup>37</sup>A similar approach is discussed by Henry W. Riecken in "The Unidentified Interviewer", in George J. McCall and J.L. Simmons, Issues in Participant Observation. Reading, Massachusetts: Addison-Wesley, 1969, pp. 39-45.

<sup>38</sup>See Eugene J. Webb, et al. Unobtrusive Measures. Chicago: Rand McNally, 1966.

observation that directly removes the investigator from the events or interactions being studied and thus provides a non-reactive quality to the procurement of data. A wide range of data was procured in this way. Architectural drawings and job specifications for the project were obtained and used in privacy as checks and recording aids to supplement observations. Workers could be located in time and space by employing the architectural drawings ("prints") for the project. So too, materials and workmanship could be compared with those called for in the job specifications. In addition, printed information was obtained from a variety of organizations, including a local union, a building contractors' association, a regional office of the Department of Labor, and a regional office of the AFL-CIO<sup>39</sup> which provided regulations on health and safety for building construction projects and current information on working conditions and pay scales for workers. Observations were made and photographs were taken of the project after hours and on weekends in order to provide visual benchmarks for the building sequence, documentation of mistakes that occurred in the construction process, and evidence of things left behind ("accretion evidence") by the workers, i.e. empty beer bottles and the like.

In total, the employ of these various methodological techniques was a move toward methodological triangulation

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<sup>39</sup>American Federation of Labor and Congress of Industrial Organizations.

wherein a combination of two or more methodological techniques are used in the study of the same phenomena. The advantage here is that each method can be played off against the others to maximize the validity of the total methodological effort<sup>40</sup>.

Further advantages of this particular methodological stance for the study at hand include: flexibility, proximity, and convenience. Flexibility of method enables the researcher to dispense with prejudgements about the nature of the "problem" under study. Latitude is provided and specific direction is established in an on-going or "in process" manner. A constant interplay is maintained between observation and analysis. Both run concurrently, and it is out of this mixture that the specific focus of the research is established. Proximity of the investigator to the data that is being gathered is an added advantage. This places the investigator in a position to look behind the facades set up for the general public and to penetrate the interaction sequences that may be guarded by the subjects. It provides for the use of informant and impressionistic data. It is suited to handle data that are in change and provides for an intimate sharing of the work situation of those being studied. Convenience is an added advantage. Opportunities exist for checks and re-checks of questionable data since the

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<sup>40</sup>See Norman K. Denzin, The Research Act. Chicago: Aldine, 1970, and Eugene J. Webb, et al., Unobtrusive Measures. Chicago: Rand McNally, 1966.

investigator spends a considerable amount of time on the field work site. Furthermore, the investigator can in most cases help to finance the research through the work he is being paid to do<sup>41</sup>. The choice of the site in which the field work is to be carried out can also be chosen for convenience.

The disadvantages<sup>42</sup> of this particular methodological stance for this study included problems with data saturation, time, money and concerns over replication. Problems with data saturation occur simply because so much is going on, and it becomes difficult to establish a focus. Once a focus is developed, it is only at the sacrifice of other data. This dilemma is quickly encountered in "field work" ventures, and a choice must be made. Time and money are common problems in most research ventures, but in doing "field work" all of one's time becomes devoted to the research. My typical day for nearly four months began at 7 a.m. when I arrived on the job site in order to observe workers arrival and behavior and extended until 5 p.m. when the last workers usually left the work site<sup>43</sup>. Although the usual

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<sup>41</sup>In this case, I was able to work half time for pay on the construction project for the majority of the research sequence. The specific participant roles taken on will be elaborated on later in this chapter.

<sup>42</sup>For a complete coverage of the disadvantages of doing "field work" see George J. McCall and J.L. Simmons, Issues in Participant Observation. Reading, Massachusetts: 1969.

<sup>43</sup>Of course, as all field workers already know, this was only the beginning. After dinner, the night of each day was devoted to the typing of the days field notes, usually from 7 p.m. to midnight. Weekends were used to "catch up" and to analyze previous observations and strategize for future ones. In essence, "field work" is extremely demanding.

work day for most construction workers in this area is 8 a.m. to 4:30 p.m. with a half-hour unpaid lunch period, a great deal goes on before and after work. For example, stealing building materials, drinking, general "bullshiting" and preparatory work behavior such as selecting tools, putting on extra clothes and gulping a cup of coffee.

Replication or concern over whether this study could be replicated by another researcher also is problematic. To my knowledge only a very small number of social scientists are also skilled building tradesmen and building trade union members. Since this added expertise appears to be critical for conducting this type of research, it is doubtful that a replication could or would take place. Also the added relativistic factors prohibit this. The specific location is no more, and the workers studied are by now working on **many** different projects.

Taken together then, the study location, the desired sample characteristics, the research design, and the types of methodological techniques employed must all be taken into account when considering how to "get in" to do the research. Although the "field work" for the present research took place for roughly four months during the summer of 1973, the actual planning for the entrance into the field began a full nine months before. Letters were sent to a few close friends living in the city where the study was to take place. These persons were also building construction electricians. I asked them to "fill me in" on the work situation in the city,



which persons were in high positions at the union, their prognostications for work in the coming summer, and any other information they thought could be useful. I simply stated that I was planning to work "at the trade" during the following summer. They provided optimistic feedback about the work situation in the city and gave me the desired names of persons I knew in official positions in the local union. This correspondence enabled me to strategize before journeying to the city.

The real test for my entree occurred when I arrived in late May of 1973. The telephone was used extensively. First, the same persons I had written were contacted by phone. They substantiated their earlier expectations. I then proceeded to contact persons in positions who could arrange for my entry and location on the "right type" of building project. An appointment was made with the second largest electrical contractor in the state whom I had worked for both during my apprenticeship and afterward as a journeyman. He had no jobs going which met my needs but referred me to the President of the Electrical Contractors' Association in the city. He in turn referred me to another large electrical contractor who referred me to his job superintendant, and a construction project meeting my expectations was finally secured. These referrals in all cases were not of the typical kind usually encountered by social researchers. They were not passing me on to others in order to get rid of me. In all cases they were interested in my research and sought to help.

Countless phone calls were made, and the power network of electrical contractors in this city was employed. In each referral the person doing the referring impressed upon me that if their lead was not satisfactory to me then I should get in touch with them again so that something else could be worked out. In effect, no "dead ends" were intentionally created.

Entree inevitably involves trust. It is essential to establish links based on mutual trust between the investigator and the persons who can make the study possible. The trust here arose out of a long lasting and proven ability on my part to respect that trust. Concern was only voiced on one occasion about two things: 1) Was I going to disrupt the workers on the project in any way?, and 2) Did I expect to be paid full time (40 hours per week) for this? I indicated in the first case that I was only interested in the normal activities of the workers and had no intention of destroying that continuity, and in fact was taking every step to insure that I would not be disruptive of the ordinary flow of events. In the second case, I stated that my primary purpose was to be present on the job site as an observer and that the pay I would receive for any work done was considered secondary. I suggested, however, that perhaps being paid for half time when in fact I would be on the job full time would be equitable for the "productive" work I would be doing.

While inroads were being made with electrical contractors, I was also beginning to establish the union ties

necessary to carry out this research. A former work colleague who was also a union official was contacted by phone, and an appointment was made. I discussed my research needs, my progress with the electrical contractors, and he and others I knew in the union circumvented the usual "red tape" required in being re-established as a union member, the depositing of the Honorary Withdrawal Card, and moving through the referral process.

This two sided approach to "getting in" is interesting in and of itself. On the one side are the electrical contractors and their representatives, and on the other side are the union officials. The relations between them are formalized through the "contract" they have both agreed to uphold. A major part of this contract deals with referrals, that is, how workers will be sent out to contractors in need of workers. The formal nature of this contract requires that the union be the only source of referrals, but that the contractor has the right to reject any person referred. The union is also obliged to provide a non-discriminatory system of referral guided only by a distinction between four groups of workers based largely on years of experience as a journeyman electrician and geographic residence. What this means is that when a contractor needs a man he calls the union and one is referred to him. The referree is taken off the top of the list in the highest priority group available. Thus it is extremely difficult within these parameters to choose one's employer or employee. This system of referral was circumvented in my behalf.

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Approximately one week's time was devoted to the actual "getting in". Interviews, phone calls and informal discussions were carried out during this time. It was only after this successful location sequence that the actual research could begin.

#### Rapport - "Getting On"

Field work begins, in a real sense, when the investigator first exposes himself to those he intends to study. The first days in the field become critical for a successful carrying out of the research. The investigator has many things he must do in order to achieve this. First, he is confronted with the same pressures that face any newcomer to the construction project. He must prove himself a worker. He must "pass" and gain the approval of his fellow tradesmen and fellow construction workers. This can only be done by showing, doing, and responding correctly to the "tests" created by those already present. He must provide information about himself to those inquisitive others, and the information conveyed must be acceptable if he is to be accepted as a member of the work culture. As Goffman has put it (1959:1)

When an individual enters the presence of others, they commonly seek to acquire information about him or to bring into play information about him already possessed. ...Information about the individual helps to define the situation, enabling others to know in advance what he will expect of them and what they may expect of him. Informed in these ways, the others will know how best to act in order to call forth a desired response from him.

Information can be conveyed in a variety of ways; it can be "given" or "given off". Information given in a verbal

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context is important and substantiating, but information given off in most cases precedes this. Therefore it becomes important for the investigator to dress and act in compliance with the role he is attempting to convey. The first days on the job were an attempt to convey this symbolic information. A hard hat, bib overalls, work boots, and other assorted paraphernalia were worn or carried. Care was taken to display worn apparel and used tools, since it is not difficult for an experienced building construction worker to "make" another's trade simply by observing his apparel and tools<sup>44</sup>. I was "made" as an electrician by the workers, and when the verbal interchanges began I merely had to substantiate what was already known. While using the vernacular<sup>45</sup> of the building construction worker, information was "eased out" as to my contractor affiliation, status, previous experience, jobs I had worked on and persons I knew. This initial acceptance provided the essential base for rapport building with the workers. This, of course, took time to do, but my continual presence enhanced this process to the point of complete acceptance. It was then that I was able to be confided in about personal problems, job related problems, workers' leisure time activities and the like. And it was during this time that I was able to become part of the work culture of the building project, to observe or engage in

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<sup>44</sup>This point will be elaborated in the following chapter.

<sup>45</sup>This will be elaborated in the following chapter.

"lunch hour" and coffee break conversations, beer drinking on and off the job and the entire range of work and non-work activities<sup>46</sup>.

Two additional factors fostered the success of this venture. First, the geographic layout of the project facilitated a completely unobtrusive recording of observations. A twelve foot high berm of dirt ran for the entire length of the project concealing the project from the roadway that ran parallel to it. Some workers, including myself, would park their cars on the shoulder of the roadway. This provided an ideal location to verbally record my observations. About every two hours I would walk out to my car, switch on my tape recorder and record the observations that had been made during the previous time period<sup>47</sup>. In this way no one was ever aware that observations were being recorded. This, I feel, enhanced the quality of the data that became available to me.

The second factor that enhanced the success of this research involved a chance occurrence which enabled me to shift to a more advantageous participant observer role. About halfway into the study I was approached by the owner of the project who wanted to know if I would be interested

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<sup>46</sup>These activities will be elaborated in Chapter VI.

<sup>47</sup>A similar sheltered location was used by Sherri Cavan in her study of bar behavior. She used the rest-rooms in the various bars she observed to write up brief notes which were later expanded when she left the establishment. See Liquor License. Chicago: Aldine, 1966, p. 17.

in working for him as an expeditor-consultant. His other expeditor had been hospitalized and was unable to continue. After consulting with my dissertation advisor, the choice was made to accept the new position. The major advantages provided by this shift in roles were greater mobility on the job site, a chance to observe the office operations of the project, and closer contact with builders, contractors, architects, future owners and others not as easily accessible to a building construction tradesman. The major disadvantage involved with this role change was the possible breakdown of the rapport already established with the workers. This occurred to a minor extent, but in some cases the rapport was actually increased by over-compensating. I would go out of my way to maintain the trust that had already been established. In addition, the arrangement worked out with the owner was for me to be on the job during working hours (which I was anyway), to have access to all operations, to act in his behalf, and to be paid for twenty hours of work per week. The job was flexible and involved mostly making phone calls for materials and to line up contractors when their work was ready to begin. Many of the job demands could be met at times convenient to me. In essence, this opportunity opened up new levels for observation and enhanced and strengthened the scope of the study.

#### Taking Leave - "Getting Out"

The last phase in any field work venture involves taking leave of the field site after all of the observations

have been made. This last phase, however short, is equally as important as the previous phases. In order to perpetuate the future research ventures of one's colleagues and one's self, it is necessary to take one's leave in the best possible fashion. Future research and the credibility of one's discipline depend on this. It is easy to leave after exploiting all available data sources and in essence leave a "soiled nest" for others, but this only creates a bad name for one's discipline and hinders any future research attempts. Therefore, time was spent on farewells and the like. I left feeling that those who were studied were comfortable with my performance as both a researcher and a worker.

I feel that many researchers in many social science disciplines simply "get in" and "get out" with their data as quickly as they are able with little thought for the persons they used in the study. This is professionally wrong in that it only jeopardizes the future research attempts of others. Public confidence must be respected and maintained if we are to have an opportunity for replication of our empirical studies and if we are going to be able to continue and expand into new areas with our research ventures. Respect for a profession can only come through professional respect.



## CHAPTER IV

## WORK CULTURE: OCCUPATIONAL IDENTITY

Building construction workers are frequently thought of and referred to as "hard hats" by much of the general public. They are seen as crude, brawny<sup>48</sup>, overpaid workers<sup>49</sup>, with weathered faces and callused hands<sup>50</sup>, who whistle at pretty girls, drink beer to excess, and are conservative in their political preferences<sup>51</sup>. The "hard hat" has in this sense become a symbol for a distinct occupational group much the same as the white coat has become a symbol for medical practitioners and the attache' case has become a symbol for business executives. This process of stereotyping is not unusual nor unexpected. It occurs most frequently when persons know little about a particular group and, in turn, rely upon a set of biased generalizations which may be exaggerated, unfavorable or oversimplified. Such is the case with the "hard hat" conception.

Although building trades craftsmen represent the largest group of skilled workers in America's labor force - almost three million were employed in 1970<sup>52</sup>, most persons

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<sup>48</sup>Newsweek. "The Hard Hats", May 25, 1970, pp. 34-35.

<sup>49</sup>Time. "\$94,000 Hardhat", September 18, 1972, p. 88.

<sup>50</sup>Time. "Protest", June 1, 1971, p. 12.

<sup>51</sup>F.J. Cook, "Hard Hats: The Rampaging Patriots", Nation. June 15, 1970, pp. 712-719.

<sup>52</sup>Occupational Outlook Handbook - 1972-1973. U.S. Department of Labor, Washington, D.C., 1972: p. 372.

do not have the opportunity to enter the work place of the construction worker - the building construction project - because of the danger it presents for the inexperienced. Thus, persons tend to be more accurate in their representations of other occupational groups that they see and deal with on a day-to-day basis than they are with building construction workers.

This and the following two chapters will serve to illuminate the occupational culture of building construction workers by focusing on their "work world". This chapter will focus on their occupational identities, Chapter V will focus on the stratification system within the building trades, and Chapter VI will focus on their non-work activities on the job. The objective here is to not necessarily debunk the "hard hat" myth but rather to offer evidence which will portray building construction workers as they really are.

Persons are not at once construction workers; they "become" construction workers. As with any occupation or profession, persons are processed, managed, manipulated, and trained to become construction workers. They, in turn, adapt, learn, and internalize the accepted expectations for their vocation. This reciprocal process of occupational socialization is requisite; it provides for both the mastery of the skill requirements necessary to perform in the occupation and the accompanying internalization of the appropriate occupational identity. The impact of occupational socialization as a basis for developing the construction workers

identity with his particular occupation can best be seen as a sequential process beginning prior to the actual work experience, passing through the on-the-job training period, and culminating when the worker is accepted by his co-workers as a tradesman and concomitantly his own acceptance of that fact<sup>53</sup>.

### The Pre-work Stage

The sequential process of occupational socialization often begins prior to actual work experience and can be thought of as a pre-work stage. Here the family, the school and the peer group become the primary socializing agents.

### Familial Influence

The familial influence on the occupational choice of some construction workers can be seen from an earlier research conducted by the investigator on the occupational socialization of apprentice construction electricians. It was shown that 13% of the 190 respondent's fathers were either electricians or electrical contractors (Riemer, 1971: 31). The present research and previous observations tend to support the influence of the family as an agency for

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<sup>53</sup>This view of occupational socialization as a sequential process is not new. It has been demonstrated in numerous studies involving a variety of occupations. For example see, Davis (1968) on student nurses; Lortie (1968) on graduate students; Becker, et al. (1961) on medical students; Letkemann (1973) on a variety of criminals; Polsky (1969) on pool hustlers; Riemer (1971) on apprentice construction electricians; Bryan (1965) on prostitutes; and Haas (1972) on high steel ironworkers.

anticipatory occupational socialization<sup>54</sup> for construction workers. For example, the masonry contractor on the project reported on here represented a three generation family operated business. The grandfather and founder of the company was retired, but his son was running the business, and he had two of his sons employed - one as an apprentice bricklayer and the other as a journeyman bricklayer and "working foreman". The painting contractor is composed of two brothers running the business, and one of the electrical contractors is a father-son operated business. In addition, two of the laborers on the job are father and son. This provides a basis for the claim that construction workers in a number of cases have been partially prepared for their work careers prior to their actual work experience. In essence, there appears to be an occurrence of anticipatory occupational socialization for construction workers which arises in a familial context. This, however, has not been shown to be the case for most other types of occupations. (Goode, 1964; Clausen, 1968; Borow, 1966; and Ginzberg, et al., 1951).

#### School and Peer Group Influence

Coupled with this, the educational institution can serve to prepare persons for a career as a construction

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<sup>54</sup>For an elaboration of the concept anticipatory socialization, see Robert K. Merton and Alice S. Kitt, "Contributions to the Theory of Reference Group Behavior", In Robert K. Merton and Paul F. Lazarsfeld (eds.), Continuities in Social Research. Glencoe, Ill.: The Free Press, 1950.

worker. Trade schools and technical schools go to great lengths to teach basic skills in artificial "shop" settings in an effort to provide new recruits for the construction industry. In an earlier research conducted by the investigator, 31% of the 196 apprentice construction electricians sampled had attended a technically oriented high school (Riemer, 1971:35). The present research and previous observations tend to support the influence of educational institutions as agencies of preparatory occupational socialization for construction workers. It was not uncommon, for example, to hear workers reminisce about their "good times" at \_\_\_\_\_ Technical High School (the major trade school in the city under study). These early learning settings serve not only to instill the appropriate skills and techniques in the young would-be construction tradesmen, but they also establish a basis for long lasting friendships among classmates.

Related to this are the pre-work experiences some persons encounter subsequent to high school in the form of adult education courses, college courses, and technical courses taken during military training. In these types of situations both the educational setting and the peer group serve to influence future occupational choice. In an earlier research conducted by the investigator on the socialization of apprentice construction electricians, 43% of the 195 apprentices sampled indicated they had attended college or specialized training courses subsequent to high school. Of these, 15% indicated they had received their educational

experience in the military service, 47% indicated they had attended college, and 38% indicated they had taken technical courses. The present research and previous observations tend to support this. It is not uncommon to hear tradesmen talk of their military experiences and trade related training or of courses they had taken in welding, electronics, or engineering prior to their actual trade experience. An example of this was found with the masonry contractor in the present study. He was both a journeyman bricklayer and an engineer - holding a Master's Degree in civil engineering, and had extensive training in construction work during his stay in the Marines. His son was also a journeyman bricklayer and had recently completed an engineering degree. Although this example may be atypical, many construction workers do partake in a variety of lesser educational experiences prior to their decision to work at a building construction trade. This apparent educational influence, however, has not been shown to be as strong for most other occupations (Goode, 1964; and Clausen, 1968).

#### Self Motivation

Another equally important factor serves to explain a person's choice to become a construction worker. This influence is self motivation, and in part it is an outgrowth of the influences of the family, school and peer group. When apprentice construction electricians in an earlier research were asked "What one reason would you give for your becoming an electrician?", the majority of their responses were of

two varieties. First and most frequently were a class of intrinsic reasons that reflected an internal satisfaction with their work. Responses such as, "I enjoy working with my hands", "Challenge", "Accomplishment", and "Feeling of self-satisfaction", fall into this class.

Second, were a class of instrumental reasons that represented an external means of satisfaction for the worker. Responses such as, "Money", "Skilled job with good money", and "Job security - no machine will ever take my job away from me", fall into this class. Of the 188 apprentices that responded to this question, 54% provided intrinsic reasons, 32% provided instrumental reasons and 14% gave social reasons centering on family and peer group influences (Riemer, 1971: 32-35).

The present research and previous observations tend to support the influence of self motivation on the decision to work at a building construction trade. Intrinsic satisfaction is displayed continually by all construction workers. They enjoy the challenge of difficult tasks and relish the self satisfaction that a "well done" job brings. They are masterful at working with their hands and skillful at mentally working through their tasks before actually engaging in them. Their work is both hard and dirty, and they are good at it.

Tied to this is their love of the out-of-doors. Although they occasionally complain about the elements, they can and do perform in foul weather as well as fair. Since

the vast majority of construction work is carried on without the comfort of heat or air-conditioning, one might expect that their leisure time activities would. This, however, is not the case. When leisure time activities were mentioned by the workers, they frequently were of the following out-door variety: gardening, fishing, baseball, traveling, farming, "side-jobbing"<sup>55</sup>, boating, snow mobiling, hunting, camping, sailing, tennis, and archery. Indoor activities included bowling, barroom drinking and card playing.

Instrumental satisfaction is equally displayed by construction workers. Earning power becomes a critical element, and many workers display a strong "money motivation". As one worker remarked, "Construction workers are "hungry"; they work as much as they can to make as much money as they can". This motivation was exemplified frequently in the comments made by workers. Many workers invest their time and money in housing. They frequently buy flats and small apartment houses that are in need of repair and restore and improve upon them through their own labor. Sometimes a number of tradesmen of various specialties will pool their money, time and expertise in such a venture. The purpose of course is to make money through the increased rents they can expect to charge or simply selling the refurbished property for a profit. This process becomes expansive with either more property being purchased or smaller apartment houses being

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<sup>55</sup>Also referred to as "moonlighting", it consists of working at one's trade as a second job, after the regular work day or on weekends usually with the purpose of earning extra money.



sold in order to buy larger ones.

As a foreman for an electrical contractor related,

He and his brother buy up property in the ghetto area of the city and remodel. They buy all of their material in large quantities at good prices. They do the majority of the work themselves and then they rent to welfare recipients for whatever they can get.

He added that "in order to "make it" you have to make money every time you turn around and must work at it all of the time".

A good deal of extra money can also be made "side jobbing", and most workers do this at one time or another even though trade unions and building contractors do not approve. Side jobs cut into the work available both for the contractors and the tradesmen. The unions want all of their members to be employed, and the contractors are usually always searching for work. Side-jobbing by workers already employed does not help either the unions or the contractors. Many unions fine workers caught side-jobbing, but this does not seem to deter them.

The opportunity to engage in this type of activity presents itself frequently for many construction workers. Friends and acquaintances seeking to save money on some needed work often request the service of skilled tradesmen instead of a contractor. In fact, many tradesmen become motivated to become self-employed contractors themselves because of the availability of this "easy money".

A more legitimate way to earn extra money is to work overtime ("O.T."), and most workers seldom refuse the extra

work while others actively seek it out. A special class of construction workers known as "boomers" or "travelers" represent this latter type. They attempt to work only on "O.T. jobs" and often travel great distances to do this. Since overtime jobs are usually large construction projects taking several years to complete, workers of this type usually flock from one to another. They search out the most favorable financial arrangement they can; they try to work as many hours as they can. Since overtime can range from time-and-a-half, double time to even triple time for holiday work, it becomes very lucrative for the worker. The "straight time" (usually 40 hours per week), hourly wage is also important, but since these projects are usually in or near large urban areas where unions are well established, the pay scale is usually high. Equally important are the working conditions on these overtime projects. If they are "good" which means the workers do not have to do much work, this also makes the job attractive to the "boomers". As a laborer commented in reference to a nearby nuclear power plant project, "They are working "seven-tens" (ten hours a day, seven days a week) there, and some of the workers are making \$25,000 and \$30,000 a year." And an electrician when referring to the same project mentioned, "the electricians on the project are told by the union how productive to be", and this was minimal.

Both instrumentally and intrinsically based motivations are apparent among construction workers. These serve as a means for self satisfaction for them. Furthermore, they

are of sufficient degree and frequency to be considered at least partially contributory in the occupational choice decisions made by persons planning to "become" construction workers. It has been pointed out that persons become differentially attracted to an occupation on the basis of accessibility, income and the fit of the occupation to their skills and personalities, and this squares well with these research findings. (Inkeles, 1964).

Collectively then, the pre-work experiences stemming from the family, school and peer group coupled with the motivation of the individual serve to prepare the individual and incline him toward a career choice as a building construction tradesman.

#### The On-the-Job Socialization Stage

In order to learn a trade one must work at that trade. This is best accomplished through on-the-job training. Here, the building construction project becomes the classroom and tradesmen become the instructors. The training course consists of learning the various skills and techniques of the chosen trade which are taught in the context of the daily round of activities typically confronting the tradesmen.

This is not an easy time for the new recruit, nor is it meant to be. The journeymen instructors are not all sympathetic and understanding when the new recruit makes mistakes and some simply don't like the role of teacher. The job conditions are typically dangerous, dirty and uncomfortable, and the inexperienced worker is usually given the work

no one else wishes to do. Construction work requires hard and dirty work, and the aspiring worker must be adequately trained to handle it.

Today, as in years past<sup>56</sup>, the apprenticeship serves as the primary vehicle for learning a building construction trade. Formal apprenticeship programs exist in the majority of states for the majority of the building trades. Apprenticeships usually range from three to five years with the apprentice earning wages on a progressive scale culminating with journeyman scale upon completion. The training periods are usually a combination of on-the-job training and classroom training<sup>57</sup>. Although the classroom experience is essential, it is the on-the-job training that becomes the most critical aspect for successful completion. Here the

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<sup>56</sup>Apprenticeship as a form of occupational training has a long tradition. In medieval Europe craft guilds became the primary organizing agents of medieval towns. Through the apprenticeship system communities were able to keep themselves supplied with all of the necessary skills. Even prior to this period, the notion of apprenticeship was employed. It was assumed that sons would learn the occupations of their fathers, or the father would send his son to another craftsman who would accept them into their work and home until such time that the skills were mastered and the apprentice became a journeyman. Apprenticeship represents the oldest form of training the young for work. For further elaboration on the historical development of apprenticeship see, Nels Anderson, Dimensions of Work. New York: David McKay, 1964; Elliott A. Krause, The Sociology of Occupations. Boston: Little, Brown and Company, 1971; and Paul H. Douglas, "Apprenticeship", Encyclopaedia of the Social Sciences. New York: Macmillan, 1948, Vol. II, pp. 144-46.

<sup>57</sup>During my own electrical apprenticeship actual classroom time amounted to 720 hours spread over a three year period.

apprentice is continually and critically evaluated as he progresses toward mastery of the various skills and techniques required of his chosen trade.

In some cases a formal apprenticeship is not required, but the worker must have had sufficient training and previous experience to enable him to perform as a skilled worker. Some workers learned their trade many years ago when formal apprenticeship programs were not in operation as extensively as they are now or they learned their trade in rural areas or in other countries which may also not offer such programs. This, however, is becoming less frequent with the increased nationalization of formal, state approved, apprenticeship programs.

In any case, the on-the-job training of the new worker focuses on two equally important areas, each of which is necessary for the resultant skilled tradesman classification. First, the new worker must learn the appropriate skills and techniques associated with his trade. These explicit aspects of occupational socialization are exemplified in the gradual mastery of the occupational skill requirements. Second, the new worker must learn to identify himself with the particular building trade he has chosen. This is an implicit and often taken for granted aspect of occupational socialization. Both aspects go hand in hand and can be thought of as the essential components necessary to establish occupational identity in the worker.

### Acquisition of Skills and Techniques

In order to become a skilled tradesman the appropriate skills and techniques must be acquired. This acquisition takes place in the context of social interaction with established tradesmen. Since on a day to day basis many types of work must be done and the complexity of the tasks vary, the workers typically do the type of work commensurate with their skill level. For the new inexperienced workers, regardless of trade, this means that they usually end up doing the "dirty work" or other tasks that require hard work in extreme conditions. This is the dull, undesirable work that no one else wants to do. This condition does change as the apprentice or new worker progresses and his skill level improves, but they typically refer to this early period in their careers as "serving time" analogous to a stay in prison. A typical comment illustrating this and heard often on building construction projects is, "Which contractor did you serve your time with?"

The trainers of apprentices are usually the older and more experienced journeymen. This is done for a number of reasons. First, these workers have a vast amount of previous experience to draw upon for their trainer role. They are the "craftsmen"; the "mechanics" of their trade. They are the "old line" workers who have seen it all and done it all. Second, these workers are not usually able to perform as quickly as they once could when they were younger and a young "helper" to handle the heavy ("bull") work and routine

work provides them with the time to teach the correct techniques and answer any questions that arise.

Learning, however, does not always take place in a context of friendship and sociable relationships. The inexperienced worker is often criticized and made to feel incompetent as the following examples illustrate.

The laborer "lead man" gave the new worker a hard time when he was "puddling" (spreading and leveling) the newly poured concrete to the top of the wood forms for the footings. He took the young workers shovel away from him and began doing it himself. As he did this he kept on watching the youth while shaking his head in disapproval. Another laborer, older than the "lead man", came over and helped the youth "puddle". He treated him in a more congenial manner, showing him how to do it. He then asked the youth to get a length of 2 x 4 (stock rough lumber) to level the poured concrete between the two footings. (The concern here was to level the concrete quickly and to give it a rough finish before it "set up" (became too hard to work).

And,

as the bricklayer crew was in the process of constructing a block wall the bricklayer foreman openly criticized an apprentice in front of the other workers for being "slow, clumsy, and guilty of "watching the clock" too much to ever make it in the trade".

It is within this context, then, of either harmony or discord that the inexperienced worker learns the skills and techniques of his chosen trade. He learns when to work, how to do the work and how much work to do.

Since workers in any occupation or profession do not work at the same pace all of the time during the work day, it becomes crucial for the new worker to learn when he is actually expected to work. The specifics of the construction workers work day will be detailed in a latter section, but

for our purposes here it is essential to note that the new worker learns very quickly that certain times during the work day have different meanings for the workers. The new worker maximizes his efforts according to the established and agreed upon times. On this project, which is typical of others the investigator worked on, the workers usually slowed down in their work effort shortly before lunch time and quitting time.

The new worker also learns how to do the work. This involves, to a great extent, how to use tools. Tools are the vehicles by which the worker is able to apply his skill. Tools are to the construction worker as books are to the college professor; they provide the basis for his skill. Tools must be selected correctly; "the right tool for the right job". Tools must also be used correctly for they enable the worker to perform efficiently. Thus, the new workers spend considerable time learning to become familiar with the variety of tools particular to their trade and learning how and when to use them.

Added to this the new worker is confronted with the multiplicity of installation situations which he must learn to manage. Construction work in the majority of cases involves new installation. A building is built and new materials or internal components are installed. The building construction tradesman must be able to co-ordinate his activities and his installation with the other tradesmens' activities and their installation. This process of installation



takes place in three steps and the new worker must become adept at them. First and the most difficult is the "layout". Here the worker is required to construct mentally the installation prior to actually doing it. It requires mentally following the installation process through its course from beginning to end and selecting the most efficient installation procedure. It requires compiling a material list and the needed tools must be sought out. This is not a hurried phase or at least it should not be; it requires the highest degree of skill.

In actuality many tradesmen do not take the time to "think through" their installation, and it will be argued later that this is one reason why many mistakes occur. One problem here is that the "layout" step often appears to the inexperienced or unconcerned observer as if the worker is not working. Architects, builders, and even some foremen and other tradesmen portray this with comments such as "fucking the dog again?" or "when do you start working?". The importance of taking time for the "layout" is best portrayed through a phrase made by a journeyman electrician who taught me much about my trade. As he used to tell me, "If you don't have it in the head, you have it in the back and the feet"<sup>58</sup>. If the tradesman does not foresee and adjust for all of the difficulties prior to actually doing the installation, there is a good chance that he will have to modify it along the

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<sup>58</sup>My thanks to a good working companion, friend, and "mechanic" in every sense of the word, Elmer Holnagel.

way and this will cost extra time, effort and money in the end result. The "mechanic" foresees difficulties prior to the installation.

The second step is the actual installation. It consists of building or connecting all of the various materials together to form a complete unit or a completed sub-portion of the project. This involves the mechanical ability of the tradesman. It exhibits the skill level of the worker. An installation that is skillfully done and mechanically or structurally sound reflects the work of a "craftsman" or "mechanic", whereas, a sloppy installation is usually referred to by other tradesmen as the work of a "shoemaker".

The third step in the installation process can be referred to as "inspection". The completed installation is tested under actual conditions and inspected as to its soundness. For example, a new roof is put to test during a rain storm; an electrical installation is tested when the power is first put on; and a new block wall is inspected for water leaks and cracks. The new worker must be able to handle each of these three steps in the installation process. Success and ability to do this in all types of installation situations reflects journeyman status.

The new worker must also learn how much work to do. The work culture relies to a large extent on an implicit normative structure of social relations to control productivity of tradesmen. Workers learn not to overproduce and be considered a "rate buster"; nor to underproduce and be

considered a "chiseler"<sup>59</sup>. The new worker must adhere to the prevailing normative system if he is to be accepted by his fellow workers.

In general then the acquisition of skills and techniques is learned in social interaction with experienced and established workers. The actual mastery of these enables the worker to become an accepted member of his trade and journeyman status is bestowed upon him.

#### Occupational Identification

Concomitant with the acquisition of the requisite skills and techniques is the internalization of the trade label which he has earned. This, of course, is clearly exemplified through a workers statement that "I'm an electrician" or "I'm a bricklayer". However, most tradesmen need not ask another's trade, since that information is already apparent in the clothes they wear, the jargon of their trade, and the tools they carry<sup>60</sup>. These implicit indicators of occupational socialization reflect the tradesman's identification with his trade. Furthermore, the progressive appropriation of the costume, jargon and tools of ones' trade has been shown to be an excellent indicator of the on-going

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<sup>59</sup>This distinction is commonly found at all levels of all occupations. See Donald Roy, "Quota Restriction and Goldbricking in a Machine Shop", American Journal of Sociology. (March), 1952:427-442.

<sup>60</sup>Goffman has aptly referred to these types of information carriers as "sign vehicles". See Erving Goffman, The Presentation of Self in Everyday Life. New York: Doubleday, 1959, pp. 1-16.

process of occupational socialization (Riemer, 1971). Most tradesmen do dress in a certain way, communicate in their own technical language, and use certain types of tools particular to their trade.

### Costume

The building construction workers' costume<sup>61</sup> is both functional and symbolic. It typically consists of a hard hat, overalls and work boots. The hard hat, worn for safety reasons<sup>62</sup> often takes on an additional meaning. The particular color or insignia on the hard hat, whether it is shiny or dull, old or new can provide information about the identity of its owner. Different tradesmen often wear different colored hard hats. This occurs most often when a contractor provides hard hats for his workers, and then they typically have the name or insignia of the contractor on the sides for all to see. It has also been observed by the investigator that tradesmen on very large projects frequently wear color coded hard hats and foremen, job superintendents and engineers have their own colors. This makes it easier to locate persons when so many workers are present on the same job.

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<sup>61</sup>For an illustration of the significance of clothing and identity in the general sector of social life see, Gregory Stone, "Appearance and the Self", in Arnold M. Rose (ed.) Human Behavior and Social Processes. Boston: Houghton Mifflin, 1962, pp. 86-118.

<sup>62</sup>The Department of Labor-Safety and Health Regulations specify that workers are required to wear hard hats if they are working in areas where there is possible danger of head injury from impact, from falling or flying objects or from electrical shock or burns.

Newly hired workers typically have shiny new hard hats as do the "bosses" and "pushers" (foremen). It is not difficult to spot the builder, architect, job superintendent or area foremen, and various inspectors since they usually display shiny hard hats which indicate a lack of physical work. They are not obliged to crawl, climb or work in difficult places, and of course, they also serve as status symbols for their owners<sup>63</sup>.

The experienced workers, on the other hand, typically wear old and dull hard hats which reflect many hours of hard work. They also frequently add their own markings to their hats. A workers name on his hard hat for all to see serves two purposes. First, it helps the owner quickly identify his hat from others in the morning before work, and second, it reflects the owner's identification with his occupation<sup>64</sup>. This latter fact is sometimes carried over into the public sector when workers wear their hard hats home from work. The investigator has observed this on numerous occasions especially among workers residing in lower class areas of the city and minority group members. They drive home from work wearing their hard hats and may even wear them into their neighborhood tavern.

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<sup>63</sup>The investigator has observed on one occasion two electrical foremen painting their hard hats with a spray can of white paint because they had become scratched and dull.

<sup>64</sup>In a related research (Riemer, 1971) on the occupational socialization of apprentice construction electricians it was found that there was a linear progression between year of apprenticeship (1-5) and placing ones' name or nickname on the outside of their hard hat.

It should not be assumed from what has been said that all workers enjoy wearing hard hats or do wear them even when required to do so. Hard hats require some getting used to, and after wearing one for eight hours it is a relief for many workers to put it on the shelf. They are difficult at times to work in, especially for overhead work or when bending over to work. They pose problems during windy days unless a chin strap is worn, and during the winter they are extremely cold unless a cloth liner is used.

Because of this many workers wear their "buckets", "lids", "helmets", or "shit cans" reluctantly or simply don't wear them when they can get away with it. On the project being discussed here about half of the workers did not wear their hard hats. Their rationalization for this, in part, was that the buildings were not high and therefore posed little chance of being hit by falling objects.

Thus, the hard hat when worn, either reluctantly or enthusiastically, serves to identify the worker to others, and more importantly it serves to enhance the workers own identification with his occupation.

Overalls ("bibs") are frequently worn by tradesmen. They protect the worker's street clothes which are worn underneath from dirt and damage and provide additional pockets for carrying material and tools as well. In cold weather they serve as an additional layer of clothing and in the rain they help to keep one dry. In this sense they are a functional article of clothing for the construction worker

and many wear them even during the hot and humid summer months.

"Bibs" are also symbolic in that they often distinguish one trade from another. Painters and plasterers typically wear white colored overalls, while carpenters' are frequently blue and white striped and electricians' and plumbers' dark blue.

The investigator's observations over the last eight years indicate that it is primarily the older workers who wear overalls on the job and although the taking on of this traditional dress by new workers does occur<sup>65</sup>, it appears to be done reluctantly by the younger workers. Even so, when they are worn they do serve to identify particular tradesmen, and the fact that they are worn by some serves to buttress those persons' identification with their particular trade.

Footwear is the last aspect of the construction workers' costume that will be dealt with here; for the most part selection appears to be standardized across all building trades. High cut, 9-inch boots that lace in the front are preferred by the majority of workers. An alternative is a lower 6-inch boot sometimes referred to as a "Swiss hiking boot". It has been shown in a previous research that new workers adapt to this type of footwear very quickly and with

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<sup>65</sup>In an earlier related research (Riemer, 1971) on the occupational socialization of apprentice construction electricians there was found to be a fairly consistent progression of apprentices choosing to wear bib-type overalls as their apprenticeship time (years 1-5) increased.

little experimentation (Riemer, 1971).

Since building construction projects are rough in terms of accumulated debris and terrain these work boots serve the purpose of protection. With lower shoes the frequency of cuts, scraps and the like would surely increase.

For a few building trades, the soles of the work boots are important. Electricians wear boots that have stitched or glued soles rather than ones that are nailed because the nails could act as an electrical ground when they are making connections "hot" (working live wires). So too, some trades such as iron workers and roofers depend on a good deal of traction in their work, and the soles of their work boots must provide that safety factor.

In general, all that need be said in terms of occupational identification and footwear is that the majority of building construction workers wear the same type of footwear. Collectively, however, the costume of the building construction worker including footwear provides an excellent indicator of occupational identification.

### Jargon

Jargon or argot is used here to refer to the specialized or technical language of an occupation. Its acquisition and moreover its internalization reflects and supports the workers identification with his occupation. In order for a worker to become fully integrated into his chosen work group or building trade, he must literally be able to communicate in the specialized language of that group.



Furthermore, a work group's jargon helps to set that group apart from other closely related groups and provides solidarity and cohesiveness within that group. Thus, while electricians, plumbers, carpenters and bricklayers all have their own specialized jargon which sets them apart from one another, they collectively share a general vernacular common to all building construction trades.

Occupational jargon is learned and internalized in exactly the same way that the other requisite information is acquired. It has been shown, for example, that the jargon of building construction electricians is acquired by apprentices in a progressive manner throughout their five year apprenticeship (Riemer, 1971). Twenty five electrically related jargon terms were selected at random and included as part of a mailed questionnaire sent to the total population of construction electrician apprentices in Milwaukee, Wisconsin, 241 persons. They were asked to define these terms and their responses were later graded for correctness. The 192 apprentices that responded to this question were then divided into their respective apprenticeship years (1-5), and the mean correct scores were computed for each. The data reflected a systematic progression in jargon knowledge from first year through fifth year. The fact that this finding squares well with common sense expectations does not alter its theoretical importance. It does reflect the on-going process of occupational socialization.

In the present research the focus on the jargon of building construction workers has been used to illuminate their work culture. Examples are inserted throughout this report in an effort to portray this culture through the workers own symbolic representations<sup>66</sup>.

### Tools

Tools used by tradesmen, the "tools of their trade", become the most salient identification symbols of their occupation. Each trade can be portrayed in terms of their most frequently used tools, and they serve to set one trade apart from another while providing unity to members within a particular trade. The "sidecutters" or "Kleins" (8" or 9" sidecutting pliers) of the electrician; the hammer of the carpenter; the brush of the painter; the "channel locks" (pump pliers) of the plumber; and the trowel of the brick-layer all serve as examples of this. Not only do all members of the particular trade possess this kind of tool, but they also have them close at hand when working. Thus, the phrases "hand tools" or "pocket tools" take on a distinct meaning for each trade. These phrases are frequently heard on construction projects. A worker may ask the foreman what he will need on a project he has just been told to work on, and the foreman will simply reply, "pocket tools". This phrase

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<sup>66</sup>The investigator does not feel that the jargon of building construction workers is as colorful as that of railroaders (Cottrell, 1940); professional thieves (Sutherland, 1937); or pool hustlers (Polsky, 1969). In any case, jargon does provide a useful occupational shorthand for the workers.

implies essential tools, no special tools required. These are the tools that the worker is probably carrying around at the time since they are the tools most frequently used in his trade.

Furthermore, many tradesmen rely on specific "brand name" tools. The investigator has observed that a particular trade will frequently use a particular brand of tool even though various brands are on the market. It appears that certain brand name tools have been proven "the best", the one to own and use, by the tradesmen and this is the brand most of the workers buy. Thus, it is not uncommon to see a bricklayer crew all using the same brand of trowel, a carpenter crew all using the same brand of hammer or electricians all having "Kleins" (a brand name of sidecutters).

The importance of this in terms of occupational identification can best be described through the first appraisals workers make of newly arrived workers on a project. Tradesmen in most cases have the ability to judge a new worker's competence prior to his actual working. This is due in large part to the established workers appraisal of the new workers tools. Brand name tools, used but well taken care of tools, and most of all tools correct for the job at hand convey and connote skill and craftsmanship. This appraisal is of course coupled with other previously mentioned indicators such as costume and jargon, but tools alone are important.

Some construction workers such as truckers - the material haulers, and operating engineers - the bulldozer, crane and other heavy machinery operators drive their "tools", but the previous comments are no less appropriate for these as is shown from the following examples taken from the field notes.

An operating engineer discussed a "rig" (semi-truck-tractor trailer) that had just pulled onto the job site. He indicated that a tractor (trailer not included) such as the one we were looking at would cost about \$35,000. He commented that the driver took great care in handling his rig. He added, "You don't beat a rig like that", as the driver started off very slowly. There was a definite admiration conveyed in his comments. He also admired the interior of the cab (the work space for the driver) noting the presence of a tape deck and two speakers. The tractor was immaculate - bright red and shiny - a MACK truck.

And,

A crane operator taking a short break from work discussed the skill of another operator working on the project. (His hard hat was the same color as his crane, and his name was neatly printed on the front of his hat and the door of his crane). He said "it took four to six weeks for most trainees to learn the crane operation, but some never learned it". He said the pay was good and he had only lost two days of work last year due to the weather. I asked how he could tell if the other operator we were watching set pre-cast concrete planks was a good one. He responded without hesitation, "by the condition of his crane". If the crane is well kept up in terms of being properly oiled and greased and it is clean appearing, it evidently conveys a pride that passes over to the quality of an operator or his skill level.

Still another type of worker, the expeditor, relies on a different set of "tools" - a telephone and note pad. These "tools" are inappropriate in terms of some of the previous comments, but are none the less essential to the building of buildings. Here an ability to communicate via

the telephone "to get things done" becomes critical. Added to this is the ability to foresee problems and record them and to be able to take copious notes on workers and contractors problems. These become criteria for skill evaluation. What is appropriate in terms of the previously made comments is that the expeditor's "tools" do reflect his occupational identity for himself and others on the project.

In summary, occupational identification for the building construction worker arises out of the process of occupational socialization. It occurs concomitantly with the acquisition of the skills and techniques of the occupation and can be thought of as the end result of occupational socialization. Occupational identity is socially bestowed, socially maintained and socially transformed (Berger, 1963). It is clearly manifested in the costume, jargon, and tools of the worker and reflects his and others acceptance of that fact.

## CHAPTER V

## WORK CULTURE: THE STRATIFICATION SYSTEM

The area of social stratification is also pertinent to our analysis of the work culture of the building trades. Status inequality does exist here, and workers are organized and do operate under this system of inequality. The occupational statuses of workers are differentiated both within trades and between trades, and a clear system of ranking exists on various levels. The specific status levels felt to be most critical and which will be discussed here are the economic status level, the informational status level, the political status level, and the social status level<sup>67</sup>. In addition a distinction will be made in each case in terms of the social differentiation within trades and between trades.

Economic Status Level

Building construction workers can be differentiated in terms of their economic status levels. Here, I am referring to their relative status within their own trade and among other trades as determined by their relative earning power. This is a differentiation made solely in terms of their relative pay scale, however, it serves to locate

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<sup>67</sup>I will be using these four status levels in a very specific sense in what follows, and this should not be construed as their typical usage. For an elaboration of these status levels and the field of social stratification see, Kaare Svalastoga, Social Differentiation, New York: McKay, 1965.

workers relative to others and thereby provides one facet of the status differentiation within the building trades.

Within any building trade, workers are paid commensurate with their skill level<sup>68</sup>. Building trade contractors pay workers according to the pay "scale" established under their current working agreement made with the workers' union. These agreements vary from year to year and from place to place, but in general the status differentiation among classifications of workers within any trade are uniform.

It was mentioned earlier that apprentices represent the entry position for the majority of trades and that they advance along a sliding pay scale until they reach journeyman status. Journeyman scale represents the modal pay rate for any trade. At a higher level are the foremen and area foremen. Their pay is an increment above that of journeyman scale<sup>69</sup>. Within the building trades, the apprentice is at the lowest economic status level, followed by the journeymen at the middle level and the foremen at the highest level.

In terms of the representation of workers in these three categories, the journeymen make up the majority with

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<sup>68</sup>In this discussion, I am referring to union workers exclusively. The majority of building construction workers are unionized. Since unions have flourished in large urban areas (and are starting to make inroads in non-union rural areas) where the majority of building construction takes place, this is seen as an appropriate position to take. Furthermore, all of my experiences and observations have taken place among union workers.

<sup>69</sup>In general, foremen receive approximately \$1.00 per hour above the current journeyman scale.

the apprentices and foremen making up the minority and the foremen representing a slightly smaller minority.

The economic status level of journeymen between building trades can also be differentiated. This is best illustrated in the following table.

TABLE IV.

JOURNEYMAN PAY SCALE AMONG A SAMPLE OF BUILDING TRADES*	
Iron Worker	\$8.41
Electrician	8.39**
Bricklayer	8.28
Plumber	8.27
Elevator Constructor	7.82
Carpenter	7.80
Operating Engineer	7.70***
Tile Setter	7.60
Cement Mason	7.54
Painter	7.26
Glazier	7.05
Laborer (General)	6.87

\*This listing represents tradesmens' pay scales on the project under study as of June 1, 1973. These figures represent wages for each hour worked and do not include over-time rates, and additional pay for vacation, pension, welfare or other fringe benefits. Fringe benefits would add approximately \$2.00 per hour to these figures and most trades receive time and one half or double time for overtime work.

\*\*At the time of this listing, electricians had an \$.45 per hour increase, but it had not been broken down into wages and/or fringe benefits. In effect, the adjusted per hour wage rate could be as much as \$8.84.

\*\*\*This represents an average figure since operating engineers are paid according to what equipment they are operating. This could range from \$8.52 per hour for a tower crane operator to \$6.98 per hour for a fork lift operator.

Table IV indicates that the pay scale differentiation between trades is not great. The range is only slightly over



\$1.50 per hour. In general, it can be said that economic status level distinctions among tradesmen cannot be considered significant except perhaps between the extremes - laborer and iron worker or electrician.

However, a related consideration must be taken into account. Since many of the building trades are confronted with seasonal work, their yearly income in relation to other trades that do have the opportunity to work all year must be adjusted for a realistic picture of their economic status levels. This varies from year to year and from place to place, but in general it can be said that building trades doing their work out of doors would be affected most, and those that work inside at least some of the time would be affected least. Thus, iron workers, bricklayers, operating engineers, and cement masons are faced with a seasonal job and less yearly income, while electricians, plumbers, carpenters and painters enjoy, for the most part, yearly employment. In this case, the relative economic status level between tradesmen does appear to be clearly and perhaps grossly differentiated.

#### Informational Status Level

Building construction workers can further be differentiated by informational status levels. Here, I am referring to their relative status within their own trade and among other trades in terms of the amount of trade related skill or knowledge possessed. This distinction provides an additional perspective of status differentiation in the building trades.

Within any building trade, workers are recognized as holders of particular skills and knowledge relative to other members in their trade. Apprentices, for example, are seen as "still learning" and are therefore considered weak and inexperienced in their trade knowledge and skills. Foremen, on the other hand, are special persons who are expert in the knowledge and skills of their trade and perhaps also possess the ability to lead (or "drive") men. Journeymen, the modal category, are "well rounded" with an appropriate knowledge and skill level. They possess at least a base knowledge and may also be well skilled in some specialization within their trade. In this respect, apprentices are at a low informational status level while foremen are at a high level and journeymen are at a middle range.

The informational status level of tradesmen across trades represents a further differentiation. Each trade has its own educational entrance requirements and training requirements, and these can serve as indicators of knowledge and skill differentiation between trades. Some building construction occupations require little or nothing in terms of educational entrance requirements and training. To become a laborer or a truck driver, for example, it is not necessary to complete a formal apprenticeship or even complete a high school education. On the other hand, to become a plumber or electrician a four or five year apprenticeship is usually required along with a high school degree and successful completion of courses in algebra and geometry.

The informational status levels between trades is best conveyed by the suggested training qualifications for various building trades. These are seen to reflect the level of knowledge and skill required of journeymen or workers in these building trades. (See Table V.)

TABLE V.

TRAINING REQUIREMENTS AMONG A SAMPLE OF BUILDING TRADES*	
Plumber	5 year apprenticeship
Electrician	4 or 5 year apprenticeship
Carpenter	4 year apprenticeship
Bricklayer	3 year apprenticeship
Cement Mason	3 year apprenticeship
Glazier	3 year apprenticeship
Tile Setter	3 year apprenticeship
Operating Engineer	3 year apprenticeship
Painter	3 year apprenticeship
Iron Worker	3 year apprenticeship
Elevator Constructor	2 years as a "helper"**
Laborer	No formal training***

\*Source: Constructed from Occupational Outlook Handbook, 1972-1973. U.S. Department of Labor.

\*\*The term "helper" places emphasis on job training while minimizing formal classroom education.

\*\*\*Construction laborers are usually classified as unskilled workers, but this is a misleading conception. Their occupation, in fact, requires a broad knowledge of construction methods, materials and procedures, and they are expected to work in close contact and give assistance to many tradesmen. They are not "unskilled".

Table V indicates that the building trades are differentiated in terms of formal training requirements. It reflects varying informational status levels between trades in terms of trade related knowledge and skills of trade members. This differentiation among the building trades is

considerable ranging from no formal training to five years of training.

#### Political Status Level

Building construction workers can also be differentiated in terms of their political status levels. Here, I am referring to their relative status within their own trade and among other trades in terms of power they possess or can exert for determining their own and others courses of action. This differentiation is solely in terms of power of influence and serves to provide an additional facet of the status differentiation within the building trades.

Within any building trade, the foreman possesses and displays a power of influence over other workers under him. He not only can tell journeymen and apprentices what to do but how to do it and when to do it. The foreman is the "marginal man" of the building construction industry (Wray, 1949). He receives his orders from the "boss" (the contractor or owner), communicates these orders to the workers, and is expected to see that the desired work is completed, and on time. The foreman is neither a worker or a boss but rather a quasi member of both sectors. He is not completely loyal or committed to the values of either sector, nor is he fully accepted by either sector even though he may identify himself with one more than the other. The foremans' role is contradictory; he is frequently caught between worker demands, while any decision he makes places him in disrespect with the opposing sector. Many workers feel the additional pay

received for being a foreman is not commensurate with the "headaches" and "bullshit" entailed with the job. The journeymen argue that "they can leave their work at work at the end of the day, but the foreman must take his work home with him". In this sense, the advantages of personal power provide equal, if not greater, disadvantages of personal discomfort and loss of freedom.

The political status level between trades represents a further differentiation. Here, however, the distinction is implicit rather than explicit. The exercise of power is seldom called for since tradesmen recognize and respect the installation requirements of others and strive for harmony. In effect, they "work together" to build a building. Often the installation sequence may be held off or slowed down so that each trade can finish their work. Seldom does a trade move too quickly and not take into account the work requirements of the other trades.

If any disputes do result, they are discussed and a compromise is usually reached. If the installation requirements are such that many trades are required to put their installation into a small area, the trades with the least installation alternatives will receive priority and the trades that have options or can "work around" use these options. Such a case sometimes occurs in installations in false or "drop" ceilings where the electrician has lighting to go in, the plumber has sprinkler lines and other pipes to go in and the sheetmetal worker has heating ducts to go in.

The ducts will have priority since they are difficult to modify. Next the plumber will receive priority since his pipes are more difficult to bend and modify than those of the electrician. The electrical work would be left until last, and the conduits (electrical pipe) would be "snaked" around the other installations.

In general, the exercise of power does not occur between building trades. Rather, compromise, "helping out" and mutual consideration are the typical taken-for-granted rule. In this sense, political status levels and status differentiation among the building trades is almost non-existent.

#### Social Status Level

Finally, building construction workers can be differentiated in terms of their social status levels. Here I am referring to their relative status within their own trade and among other trades in terms of the deference<sup>70</sup> (prestige and esteem) accorded them. Deference refers to a bestowed expression and recognition of another's priority. It reflects an accorded honor, respect, or preferential treatment. Deference is seen to take into account both prestige and esteem. Prestige refers to a favorable evaluation and social recognition that a person receives from others by virtue of the social position he holds, whereas, esteem refers to a like evaluation based upon the person's own unique

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<sup>70</sup>For a slightly different variation on this concept, see Erving Goffman. Interaction Ritual. New York: Doubleday-Anchor, 1967: 47-95.

qualities or how well he performs in a particular role.

In the building trades, deference is accorded a few persons holding high positions (prestige), and a few persons who perform well in their roles regardless of position (esteem). Thus, a person with a high prestige position may be regarded with low esteem because of poor performance in his position, whereas a person in a low prestige position may be regarded with high esteem because of his exceptional performance. This additional social status dimension provides a further means to illuminate the status differentiation within the building trades.

Both within trades and between trades, deference is sometimes accorded those persons who hold high positions. Foremen for the various building trades are accorded respect from members within their own trade and from members of other trades. They are sought out when problems arise or when decisions have to be made. In certain cases they are shown preferential treatment on the job and occupy positions of prestige.

So too, deference is accorded those persons who display an extraordinary ability at their work. The "craftsman" or "mechanic" in any trade is shown this deference, and it is sometimes recognized across trade lines. Occasionally, workers that possess unique personal characteristics or interesting personalities will also be shown deference by the majority of workers regardless of trade. This may be done even though they are only average workers. In total,

however, the number of tradesmen that are accorded a higher social status level is small<sup>71</sup>. Showing deference to other workers in the building trades appears to be an exception rather than the rule. The majority of tradesmen treat one another as specialists in relatively equal standing. A differentiation of the building trades in terms of social status levels is not evident to any great degree.

This condition can be best illustrated through the interrelationships which typically occur between tradesmen. They frequently engage in "binging"<sup>72</sup> which amounts to verbal bantering or kidding. This occurs between trades and among members of the same trade.

Other tradesmen will frequently refer to all electricians (foremen included) as "sparks", "sparky" or "Alec" (a pun on electrician). Plumbers are similarly referred to

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<sup>71</sup>Tradesmen may also be accorded low deference. The foreman who is recognized as inept is an example of this as would be the worker who does not "know his trade". However, the cases of this are also rare.

<sup>72</sup>The term "binging" was used by F.J. Roethlisberger and William J. Dickson in Management and the Worker. Cambridge, Mass.: Harvard University Press, 1966, p. 421. They describe workers as "binging" one another by punching each other on the shoulder. This was done to warn a worker that he had exceeded the work groups' informally agreed upon standard of production and served as a mechanism of social control. More recently, Haas (1972) adopted this term and uses it in a slightly different manner. In referring to the occupational socialization of high steel ironworkers, he uses the term to reflect verbal bantering and testing between journeymen, and journeymen and apprentices. It is used to test poise, courage, and provides a way to establish trust among workers who must rely on each other during their work on the high steel. It is more in this latter sense that I am using the term in this report.



as "leaky", as are carpenters ("wood butchers") and iron workers ("rod animals").

Standard, almost ritual, jokes exist along these same lines. Electricians are routinely asked if they have "blown any fuses lately?". Plumbers receive the same when told, "My shit is your bread and butter" or "You put your face where I put my ass" or "All you have to know to be a plumber is that cold goes on the right and shit flows down hill".

This activity is not intentionally malicious or cruel, but rather it serves as a diversionary activity for all the workers present, foremen and apprentices included.

A similar activity takes place within work groups of the same trade, but here the focus is on either the quality of work being done by the workers or the personal qualities of the workers themselves. The following excerpts from the field notes serve to illustrate this.

A bricklayer commented to another as the crew was constructing a wall, "You know Bob, a man usually settles into what he can do best and we are still waiting for you".

And,

A bricklayer crew engaged in "binging" each other about drinking ability and being "cheap". One mason said he was going to buy a six-pack of beer but didn't think the others could handle it. The others in turn "binged" him saying that whenever he goes to a tavern he hurries to finish his drinking so he would not have to buy a drink for someone he knew who might come in. They began referring to him as "short arms and deep pockets".

And,

Among the carpenter crew, one worker referred to as "easy money" is "binged" by the other members about his being lazy and "sleeping on the job". This becomes a daily routine and all of the crew takes part.

In each case "binging" serves to "pass the time" for the workers by providing a diversionary activity while they work. Many workers become skillful instigators and pride themselves on being able to start something among the workers and then "sit back" and enjoy the verbal bantering. In this sense workers are expected to be able to "take it", and in fact, new workers soon learn this as part of their training.

In summary, each of these status levels serve to reflect different aspects of social differentiation within the building trades. Status inequality is shown to exist in many respects while in others it is seen to be nearly absent. Workers are seen to be organized and operate under this complex system of status differentiation.

## CHAPTER VI

## WORK CULTURE: NON-WORK ACTIVITIES ON THE JOB

Much can also be gleaned about the work culture of the building trades by focusing on the work and non-work activities of building construction workers. Their work setting, the building construction project, represents an arena for a wide range of activities, some of which might be expected and considered conforming while others may be unexpected or even considered deviant by the uninitiated.

Activities are behavioral routines. They refer to collective conduct that becomes repetitive, lasting for days, weeks, months or even years. They represent collective and conjoint actions which take up large segments of the members time and effort and can be distinguished from acts which are relatively sporadic and short-lived (Lofland, 1971). It is these behavioral routines that will be focused on in this chapter.

Workers behavioral routines can be differentiated into work and non-work activities. The former refer to activities that can be considered productive and in the interest of the worker's employer, while the latter refer to activities that cannot be considered productive or in the interest of the worker's employer. It is the latter that will receive the majority of attention in this chapter. First, however, work activities will be briefly discussed in order that a clear distinction can be maintained.

### Work Activities

Building construction work is full of change; no two jobs are exactly the same. A new job brings together new workers, new contractors, new materials, and new working conditions. Adaptation becomes the mainstay in construction work. In order for a building to be built the newness must be quickly turned into routine. Workers and contractors must adapt their idiosyncrasies to the prevailing conditions. A collective harmony must develop out of initial chaos, and this must be done quickly and permanently if all is to go well.

The success of this adaptation is grounded in routine. Here workers' and contractors' previous experiences come into play. Similarities from previous jobs and previous experiences provide a groundwork from which to draw, and it is out of this context that individual and eventually collective adjustments are made. Resultant routines enable social organization to develop and through this organization a building can be built.

Work activities vary according to the time of day. Using a standard eight hour work day, the following table distinguishes the productive from the non-productive periods. (See Table VI.)

TABLE VI.

A DELINEATION OF A TYPICAL WORK DAY	
Morning:	
7:30- 8:00	Workers arrive for work. This period is characterized by sitting and talking, drinking coffee, getting on work clothes and getting tools together.
8:00-10:00	Work begins at 8:00. Workers receive orders from foremen, proceed to work areas and begin to work.
10:00-10:15	Some workers have a sandwich and coffee (referred to as "lunching" or "coffee break"). This is not a uniform practice since workers are being paid to work during this time. However, some "sneak" their break.
10:15-11:45	Work period is continued.
11:45-12:00	Workers begin to slow down their work activity in preparation for the "lunch hour".
Afternoon:	
12:00-12:30	Lunch period. Workers are not paid during this time. Most eat on the job site while a few go to nearby restaurants or taverns.
12:30- 4:15	Work period is continued.
4:15- 4:30	Generally recognized as a "pick up" and "clean up" time when workers pick up their tools and materials. This is not always true however, as some contractors expect "productive work" up until quitting time.
4:30- 4:45	Workers depart for home (or tavern).

Table VI indicates that work activities typically occur between the hours of 8:00-12:00 and from 12:30-4:30. These are the productive periods in the work day, the periods in which the workers are being paid to perform. Ideally

this is true, but in actuality it is, of course, false. Workers do not produce consistently. They may at times be more productive than expected, while at other times they may produce less than expected and at still other times produce nothing at all. Generally then, it can only be stated that during the work day, activities do occur that can be considered productive and in the interest of the workers' employer.

These work activities take on two basic forms. First, there are those work activities that are performed in an acceptable manner for all concerned. These represent the majority of all work activities. The foreman gives the worker or crew of workers a task to do and they employ their skill and knowledge to carry it out to completion. This is work that conforms to everyone's expectations. It represents "a fair days work for a fair days pay".

Second, there are those work activities that are seen to be performed in an unacceptable manner for some persons while remaining acceptable for others. Here I am referring to special or technical instances whereby work is performed in an illegal or "shoddy" fashion. On occasion a work situation will necessitate "cutting corners" or "not following the print". These situations are encountered by all contractors and all workers from time to time, and they are usually handled skillfully so that few persons are ever the wiser, including building inspectors and architects. This second category of work activities is as productive and in the interest of the worker's employer as were the first. The

exception being that the latter would be seen to be bordering on deviant work activities for certain architects, builders, building inspectors or future owners.

It is out of a confirmation of these two types of work activities that buildings are built. Work activities include not only those types of skills that most persons expect construction workers to perform but also those types of skills that they do not expect them to perform. The specifics of this distinction will be elaborated in the next three chapters. The remainder of this chapter will be devoted to an elaboration of the non-work activities occurring on the job.

#### Non-work Activities

Where the previous section has dealt with activities that can be considered productive for the worker's employer, this section will focus on those activities that are not. The purpose here is to portray an additional facet of the "work world" of building construction workers.

Some non-work activities are accepted as part of the normal work day by both contractors and workers. These are activities for which the worker does not receive pay but in which he chooses to engage. Such is the case with certain pre-work activities, with lunch, and occasionally with post-work activities.

#### Pre-work Activities

Workers frequently arrive for work early and engage in a number of pre-work activities. These activities can

include: getting dressed for work, selecting the tools for the day, having a cup of coffee from one's thermos bottle, listening to the news on the car radio, "bull-shitting" with other workers or even collecting scrap lumber off of the job site to burn in one's fireplace.

This can be thought of as a getting ready to work period, and most workers follow a routinized sequence each morning. Pre-work activities serve the purpose of preparing the worker for a day of labor. By engaging in these activities he can "work himself up" for a days work. He can relax and leisurely think through what he has to do before actually doing it.

#### Lunch

Lunch time for many workers is the highlight of the day since it provides a welcome break from work, and it means there are "only four more (hours) to go". Lunch time, although only a half-hour long, is a time to relax. It is the worker's own time; he is not being paid for it.

Most workers eat on the job site while a few go to nearby restaurants or taverns (often to "drink their lunch"). Most workers eat (or drink) with members of their own trade. There is little inter-mingling between trades during this period, except when members of one's own trade are not available. But then too, the lone tradesman may choose to eat alone rather than with others from another trade.

The phase of the job, the weather and where the workers are working on the job site determine where they



will choose to eat. When buildings are near completion, lunch rooms are usually set up by many of the trades. These also serve as places to keep workers tools and clothes and gathering places in the morning before work. However, if the project is in an early phase the workers may choose to eat in their cars, or out-of-doors (if the weather is pleasant), or close to their work area. During the early phase of the project under study most workers chose to eat in their cars, sometimes alone and at other times with one or two others. Paul Harvey's "News and Comment" (a politically conservative syndicated radio commentary aired at noon in many regions of the country) was listened to faithfully by many workers.

During days when the weather was pleasant most workers sat out-of-doors and engaged in conversation<sup>73</sup>. This ranges from politics, sports, talk of leisure time activities, to "work stories". Examples of the latter from the field notes illustrate the relaxed atmosphere of the "lunch hour".

A bricklayer related a story about a job he had worked on where two laborers drank whiskey all day from a bottle they had in their car. Each hour they would make an excuse to go to their car and by the end of the day they were so drunk they could hardly stand up and could do no work. One of them in trying to maintain his balance fell against the new block wall and knocked it over.

And some of these stories border on the "sensational".

A worker told of a crane operator who was drunk everyday by 10:00 in the morning but never missed a

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<sup>73</sup>Other less frequently observed lunch time activities include: sleeping, girl watching, card playing, and the investigator has on one occasion seen stag movies in a trailer parked on a job site.

day of work and was the most skilled crane operator he had ever seen. He told of a situation where the operator had to rely on hand signals ("to work it blind") for dropping 6000-pound pieces of face brick into a tight area on the face of a building ten stories above the ground, while workers on a "swing stage" (scaffold) guided him. Any error could have resulted in injury. The operator, although drunk, worked skillfully and consistently without error.

And some stories border on the bizarre.

A worker recalled a story about a job where he and another worker were on a "swing stage" (scaffold) half-way up the side of a building and the other worker had to "take a shit". To lower the scaffold would have taken too long and would have required too much work so the worker "hung his ass over the side and shit on the roof below".

Almost all workers eating on the job bring lunch boxes. These metal containers house a thermos bottle (usually containing coffee, even in hot weather) and a packed lunch from home. Although cold sandwiches are typical, a few workers provide the extreme with unexpected "ethnic meals" or well prepared "picnic lunches" such as fried chicken, salad, rolls, and cake for dessert. One German bricklayer was observed eating three or four sausages, cutting off large pieces with a dagger shaped knife. This was followed by "home made" pickles, cheese, and some "home made" cake (strudel) for dessert.

Some workers choose to eat off the job site, and if this is the case they usually go to a nearby tavern. Many workers just "drink their lunch" (usually beer), and it often becomes a feat to see how many beers they can consume in

less than a half an hour<sup>74</sup>.

#### Post-work Activities

Occasionally workers may stay on the job site after work to relax, talk or drink beer. Both the carpenter and bricklayer crews on the project under study did this on occasion. They argued that it was "cheaper than going to a tavern". On occasion the contractor's would provide the beer (as an incentive for a good days work), but usually the workers themselves would "chip in".

These post-work activities reflect a "coming down" after a hard days work in the same way that the pre-work activities served to "bring the workers up" for their task. Collectively this variety of non-work activities represents how workers typically use their "free time" while not being paid to work. Such activities are an accepted part of the work day for both contractors and workers.

Another variety of non-work activity is accepted or at least tolerated by contractors and workers alike even though the workers are being paid to work when engaging in them. Such is the case with general "bull-shitting" among workers during work, girl watching while working, and in some cases "10:00 lunching".

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<sup>74</sup>The investigator also observed drinking before work, referred to as "drinking one's breakfast" by those who do it frequently. Workers simply stop at a convenient tavern (many cater to this type of drinker and open at 6:00 a.m.) prior to work and "fill-up". Of course, the ones who do this regularly also "drink their lunch" and head for the tavern as soon as work is over. On occasion some of these same workers smuggle beer or whiskey onto the job to tide them over.

### "Bullshitting"

Workers are always stopping to talk among themselves during working hours. This appears to serve more as a diversionary activity than anything else. It enables workers to break up their work day, and it is extremely difficult for the contractor to curtail. Conversations cover any and all topics and occur between any workers willing to take the time from their work. "Bull-shitting" is usually done carefully, when the "pushers" (foremen) or "bosses" are not nearby. Some workers observed always seemed to be talking while others did it only occasionally. This activity occurs so frequently that it is extremely hard for foremen to control and is further facilitated by the largeness of the building project. When caught, workers are typically told, "You're getting paid to work - not "bull-shit"", and this temporally gets them back to work.

### Girl Watching

Few construction workers pass up the opportunity to view pretty, young girls. In fact they often go to extremes to engage in this pastime both during work hours and during their "lunch hour". It is not uncommon, for example, for workers to eat their lunch in a place where they can view pedestrians. They may sit near a sidewalk and comment on (or whistle at) the females passing by.

Occasionally construction projects facilitate this activity<sup>75</sup> during working hours. On the project under study, for example, housewives and their daughters sun bathed in bikini's on the partially completed project to the north. When this occurred many workers found excuses to be working within view of these sometimes shapely women.

This activity is accepted or at least tolerated because the foremen enjoy it as much as the workers. It represents still another type of diversionary activity workers engage in during working hours.

#### "Lunching"

Workers frequently take a 10:00 sandwich and coffee break in the morning. This is referred to as "lunching", and it is frowned upon by many contractors since they are paying their men to work during this time. Many workers, therefore,

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<sup>75</sup>The investigator has observed workers on numerous occasions going to great extremes to engage in "girl watching". On one occasion binoculars and telescopes were brought onto a project being built across the street from a hotel. Workers would arrive at work early and depart for home late in order to have more time for "peeping" into the windows of the twenty or so rooms that were clearly visible (when the drapes were open). In fact, some workers were said to have returned at night. During the work day at least one worker would keep a lookout for any "action" and if it occurred he would call to the other workers nearby. Lunch hour was spent with a sandwich in one hand and binoculars in the other.

Another job produced a similar situation. A girls' locker room in a high school was being remodeled, and a canvas was used to wall off an area so the facilities could still be used while the construction work went on. The workers, of course, spent much of their "work time" and all of their free time "peeping" at the young girls going to and from the showers after their gym classes.

"sneak" a quick cup of coffee or a sandwich and may go to elaborate means to do this as the following example from the field notes illustrates.

One bricklayer had a sandwich concealed inside a rubber glove in a five-gallon bucket which served as his tool box. Daily at precisely 10:00 he would eat his sandwich while continuing to trowel mortar and set block. (The bricklayer contractor did not allow 10:00 breaks.)

Other workers are allowed to have their 10:00 lunch by a sympathetic contractor. Then as the following example from the field notes indicates it may in fact turn into a second "lunch hour".

The carpenter crew take their "coffee break" at precisely 10:00 daily. They stop work, sit down on whatever is handy, open their lunch boxes and have a sandwich and cup of coffee. They usually take ten or fifteen minutes for this ritual each day, and the foreman usually determines when it is to end.

This variety of non-work activities can be considered conforming behavior in that they are accepted or at least tolerated by contractors and workers even though they occur during working hours. They occur mainly because the contractors can do little to curtail them.

Another variety of non-work activities can be considered deviant in that most persons within and outside of the construction industry<sup>76</sup> would deem them unacceptable, or

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<sup>76</sup>A distinction must be made here between what is unacceptable behavior to the workers themselves as opposed to "outsiders" who may happen along. Each case is relative, of course, but I have chosen to include the following as examples of what would probably be received by "outsiders" as unacceptable behavior. It is important to recognize that many workers would not agree that these examples are unacceptable behavior on a construction project.

even illegal. Among these activities are stealing, urinating in the work area, and drinking on the job.

### Stealing

Stealing occurs frequently on building construction projects. Workers take tools (usually electric drills and saws) and materials. They either sell these or use them for "side-jobbing". Every contractor and builder is confronted with this problem. Locks are used, chains are put up, and security guards are employed, but the stealing continues. On the project under study actual stealing was observed on occasion, but usually only the loss was left for observation. The following example taken from the field notes provides an illustration of stealing.

A worker stayed after work under the guise of working on his truck. When the other workers had left, he loaded 4' x 8' x 3/4" sheets of plywood into his pick-up truck, perhaps 10 sheets, and left the job. (These sheets of plywood retail for about \$12.00 each.)

The investigator has observed more stealing on larger building construction projects than occurred on the project being reported on here. It appears that when more workers are present and more tools and materials are available, the incidents of stealing increase. It has been observed, for example, that during the course of a year while working on a large hospital project, a worker filled his lunch box each day with perhaps twenty pounds of copper wire. He simply cut off "into lunch box size" pieces of expensive cable from large reels around the job. (Scrap copper at that

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time brought about \$.50 per pound.) During the course of the year, he was able to buy a new car with the money he "made" from selling the copper wire.

#### Urinating in the Work Area

This activity has only been observed during the early phase of construction. Although chemical toilets ("honey buckets") were on the job, bricklayers and laborers were seen on numerous occasions urinating on the block walls they had recently constructed. This was done within easy walking distance of the chemical toilets. So too, carpenters were seen urinating down what was to be the elevator shaft in the building they worked on. This exemplifies I feel, the "primitive" and rough condition of the job site in its early stage. Lack of dignity or concern for future workers is apparent here, but it soon disappears as the building progresses toward completion.

#### Drinking on the Job

Drinking while working does occur occasionally on construction jobs. This, of course, is dangerous since accidents can occur in what is an already dangerous setting. Thus, when drinking does occur it is done covertly, and all evidence is hidden from view. This is best exemplified in the drinking practices among the bricklayers. They would have the foreman or myself, make a "run" to the nearby liquor store to get beer, usually in the afternoon. We would then drink the beer and hide the empty bottles in the block walls they were constructing.



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Just as stealing appears to occur more frequently on larger building construction projects so does drinking on the job. The investigator has observed and occasionally engaged in drinking on the job during his construction work career. Again, the size of the project and the increased number of workers present appear to facilitate this activity.

Collectively these varieties of non-work activities represent behavioral routines for many construction workers. They are an essential part of building construction work and reflect an additional facet of the work culture of building construction workers.

In summary, this and the two previous chapters illuminate the work culture of the building trades. It was shown how new initiates "become" building construction workers, how workers are differentiated along stratification lines, and what their work and non-work activities on the job entail. In this sense, a glimpse of the "work world" of building construction workers has been provided.

## CHAPTER VII

## WORK SETTING AND BEHAVIOR

Building construction projects are transitional work settings. They vary in physical structure from day to day, and each new work day provides a new basis from which to build. In this light, building construction workers differ from factory or office workers for they are confronted with a slightly different and continually changing work milieu each day they arrive at work.

This transitional nature of the building construction project can best be portrayed by describing the more salient changes that occur during the phases of the building sequence<sup>77</sup>.

In the beginning of the "roughing phase" the site is leveled, surveyed and excavated. Concrete footings are poured and weight bearing columns and concrete block walls are raised on these footings. The basement is capped off (in this case with pre-cast concrete planks), and the rough carpentry work begins. The building is "framed out", and the plumbing, heating and electrical systems begin to be roughed in. Outside the building, the various "life line" systems

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<sup>77</sup>Here the project researched will be used as a guide, but it must be made clear that building projects vary by location and type of building being constructed. The general construction sequence presented here is felt to be typical and generalizable for most light residential structures in most areas of the country.

(electric, gas, water, sewer and telephone) are being brought over and connected to the building. Once this is completed, the site is backfilled and leveled to finish grade.

As the roughing phase continues, drywalling is installed creating the rooms and other internal regions of the building. When the sewer and water lines are completed, the basement floor is leveled and poured with concrete. During this period the external walls and roof of the building are completed while the internal roughing work continues.

Before the roughing work ends, the finishing work begins. Walls are painted, telephones are installed and wallpaper is hung. Outside the landscaping is being done, and finished roadways are being completed. Electrical and plumbing fixtures are installed along with cabinets, carpeting and appliances. The final phase consists of testing and inspecting the systems of the new building and putting on the final touches of paint, stain and fretwork. When the last of the cleaning is complete, the building is complete.

Just as the physical structure of the building changes from its inception to completion, so do the workers and the working conditions facing them. In the beginning of the roughing phase few workers are present on the site, and their working conditions are crude and primitive. Few, if any, basic conveniences are present including drinking water, shelter or sanitary conditions. These are the working conditions for operating engineers, laborers, bricklayers and cement masons and finishers. They are at

the mercy of the weather and must carry out their activities in an element of dust, dirt, noise and the open air. As the roughing phase continues, other workers arrive, and the working conditions begin to improve. Chemical toilets and drinking water are available and the building being constructed becomes a shelter during foul weather as well as a place to eat lunch out of the wind and sun. These are the working conditions for drywallers, carpenters, electricians, plumbers, and roofers.

As the project moves into the finishing phase, the working conditions are vastly improved. The majority of the work has become "inside work", and many of the various trades have selected rooms within the building to store their materials, tools and equipment. These also serve as lunch rooms and gathering places for the workers in the early morning and late afternoon. These are the working conditions for painters, wallpaper hangers, tile setters and asbestos workers.

As the project comes to completion the working conditions are at their very best, but the number of workers present to enjoy these conditions is considerable reduced. Here work is done in relatively clean and quiet comfort. The heating, air-conditioning, plumbing and electrical systems are completed and available for use, and the work to be completed involves only minor refinements and alterations. These are the working conditions for telephone installers, a few painters, electricians, carpenters, plumbers, wallpaper

hangers and carpet installers. Table VII will serve as a guide to the phases in the building construction sequence in relation to the types of building trades present, the type of work performed, and the typical physical conditions of the job site.

TABLE VII.

PHASES IN THE BUILDING CONSTRUCTION SEQUENCE BY TYPE OF TRADE, TYPE OF WORK PERFORMED, AND THE PHYSICAL CONDITIONS OF THE JOB SITE

	Roughing Phase	Intermediate Phase	Finishing Phase
Typical Workers by Trade	Cement masons Most laborers Operating engineers Surveyors Drywallers Iron workers Roofers Bricklayers Lathers	Carpenters Electricians Plumbers Pipe fitters Sheet metal workers	Painters Tile setters Stone masons Telephone installers Wall paper hangers Asbestos workers Elevator constructors Glaziers Marble setters Landscapers
Type of Work Performed	<u>"Roughing Work"</u> Surveying and leveling, excavation of the site, concrete and block work, "framing out" of the buildings, "roughing in" electrical, plumbing and heating systems, backfilling, roofing dry-walling		<u>"Finishing Work"</u> Painting, wallpapering, finish carpentry, tile work, stone work, landscaping, installation of cabinets, carpeting, plumbing and electrical fixtures, telephone system and appliances, testing of mechanical and electrical systems.
Typical Physical Conditions of the Job Site	<u>Crude Conditions</u> Open air working conditions "outside work"; workers at mercy of the weather. Few basic conveniences, i.e. inadequate shelter, drinking water and sanitary facilities; dirt, dust and noise prevail.		<u>Refined Conditions</u> Clean, quiet conditions, mostly "inside work". Many conveniences; i.e. air-conditioning, heat, electricity, running water, telephone, plumbing.

This transitional nature of the building construction project is important in that it provides a natural, real life setting in which the variable, inanimate physical setting and the behavior patterns of persons<sup>78</sup> therein are open to observation and analysis. Furthermore, this type of work setting is bounded in time since building construction projects have a distinct beginning as well as a distinct end. This condition, then, provides for a longitudinal analysis of the relationship between the inanimate physical setting and the behavior of persons within that setting.

Of importance here is the extent to which persons within the setting are constrained or controlled by the physical conditions of the setting or conversely the extent to which the setting is manipulated by the persons acting in it for their own behalf. The social theorist who comes closest to portraying this understanding is Peter L. Berger. Although stemming from more of a classical and philosophical theoretical orientation (largely Durkheim, Marx, Weber, Mead, Schutz) than the one taken here, the essence of his argument is similar. He envisions the dynamics of social organization to rest in the paradox that "realities" have subjectively assigned as well as objectively given significance for human actors. "Objective realities" constrain behavior, while the subjective interpretation of such realities direct actors to

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<sup>78</sup>As outlined in Chapter III, the research design takes into account the variability of workers present on the job during the building construction sequence. Thus, each phase (See Figure II, p. 60) of the project has its associated tradesmen (See Table III, p. 61), and these serve as comparison groups in the following analysis.

change these constraining boundaries. There is a continuous dialectical process in which objective realities become subjectified by human actors. Reality is therefore conceived as simultaneously objective and subjective<sup>79</sup>.

To supplement this, others, in particular Mead, Blumer, and the followers of the Symbolic Interaction School, have suggested that inanimate physical objects (or settings) only exist to the extent that they have meaning for the human actor. "Objects do not have an inherent or self-constituted character" (Blumer, 1961:548). Rather, an object consists of the meaning bestowed upon it as persons intentionally act toward it. Persons live in a world of physical objects and physical settings and their actions and activities are formed around them. This interactive quality between the "objective reality" and the "subjective reality" will serve as a major theme in this chapter.

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<sup>79</sup>See the following sources for an elaboration of this perspective - Peter L. Berger and Thomas Luckman, The Social Construction of Reality. New York: Doubleday-Anchor, 1967; Peter L. Berger, The Sacred Canopy. New York: Doubleday-Anchor, 1969; Invitation to Sociology. New York: Doubleday-Anchor, 1963.



The purpose then of this chapter is to provide a delineated description and explanation of the relationship that exists between workers and their work setting. More specifically, three objectives, which can be considered informal hypotheses, are focused upon.

1. The extent to which the work setting (inanimate physical setting) can be regarded as dominant and determining the nature of the existing behavioral system (workers behavior patterns). In effect, to what extent are the persons "used" by the physical setting, that is, to what extent are the persons externally constrained and managed by the conditions of their physical setting. By taking this approach, one would expect that the work setting, including changes in it, influences workers' behavior.

2. The extent to which the behavioral system (workers behavior patterns) can be regarded as dominant and determining the uses to which the work setting (inanimate physical setting) is put. In effect, to what extent is the physical setting "used" by the persons acting in it, that is, to what extent do persons manipulate the effects of the physical setting to enhance their own behavior. By taking this approach, one would expect that the workers' behavior, including changes in behavior patterns, influences the work setting.

3. The extent to which the work setting (inanimate physical setting) and the behavioral system (workers behavior patterns) can be regarded as existing in a condition of mutual

interdependence. In effect, to what extent is there a mutual interdependence between the physical setting and the persons acting in it. By taking this approach, one would expect that the workers behavior patterns would both influence and be influenced by the changing conditions of their work setting<sup>80</sup>.

These hypotheses may require some clarification and elaboration. Taken collectively they are meant to illuminate the relationship that exists between workers' behavior (behavioral system) and the inanimate physical context (work setting) in which that behavior takes place. Three alternative models can be drawn out of this context which can then serve as possible explanatory frameworks. First, the work setting may dominate or determine the behavior of the workers. Conversely, the behavior of the workers may dominate or determine the uses to which the work setting is put. And third, both the work setting and the behavioral system may exist in a condition of mutual interdependence.

From this, the first hypothesis simply states that if the work setting is dominant over the behavioral system, then the work setting, including any changes in it, would influence workers' behavior.

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<sup>80</sup>These three alternative explanatory frameworks have been modified and expanded from those provided in a study by William R. Rosengren and Spencer DeVault in which they simultaneously applied their frameworks to an obstetrical hospital. See "The Sociology of Time and Space in an Obstetrical Hospital", in The Hospital in Modern Society, Eliot Freidson (ed.) New York: The Free Press, 1963.

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The second hypothesis simply states that if the behavioral system is dominant over the work setting, then the behavioral system, including any changes in behavior patterns, would influence the work setting.

The rationale for this choice is based on a similar study of an obstetrical hospital conducted by Rosengren and DeVault (1963). The authors researched what has been referred to here as a permanent work setting, that is, a physical locale in which work takes place that is permanent in physical structure and permanent in physical location. Using similarly stated hypotheses they attempted to explore the relationship between the physical setting of the obstetrical service area and the exhibited behavior of staff and patients.

Although the researchers acknowledged the exploratory nature of their research, the short-comings of researching a work setting that was permanent and not transitional became evident. They could not know if the patterns of behavior they observed would have remained substantially the same in the context of a different physical setting. It is from this

critical point that the research reported on here was developed. A transitional work setting provides the necessary variation in physical setting and appropriate conditions for a comparative analysis. The second hypothesis of the research reported on here was constructed to deal with this important question.

The third hypothesis simply states that if the behavioral system and the work setting are mutually interdependent, then it would be expected that the workers' behavioral system would both influence and be influenced by the changing conditions of the work setting. This hypothesis is meant to be an integration of the former two.

A building construction project is also influenced by factors external to it, and before the project itself is discussed some mention of these external, yet impinging, factors must be considered.

#### External Influences on the Behavioral Setting

The behavioral setting is influenced by a number of conditions external to it. Two of these external influences, the weather and time (of day, of week, of year) are singled out for scrutiny because of their impact on building construction work.

The weather has always been a dominating factor in construction work. Bad weather (rain, snow, heat, wind) can slow or even stop work. Weather becomes an uncontrollable threat to builder and worker alike. If progress is slowed,

the builder is affected, and if the weather makes work impossible, the worker is hurt by losing pay<sup>81</sup>.

Temporal influences are an equally important factor<sup>82</sup>. The time of day, the day of the week and the month of the year all affect work behavior. Workers and subsequently the work site itself are affected by this temporal influence.

Both the weather and time are important factors in building construction<sup>83</sup>. Where the weather is variable by locale and somewhat unpredictable, time represents a constant and impervious factor. The impact of these two important influences on the building construction project can best be illustrated with examples taken from the field notes.

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<sup>81</sup>Workers occasionally prefer some time off from work and bad weather can provide this. Thus, comments such as "I wish it would rain so I could go home" or "I hope it rains, I could use a day off", are occasionally heard on the job.

<sup>82</sup>Industrial psychologists have provided a wealth of information on worker behavior and the effects of time on their efficiency, motivation, boredom and fatigue. See Bernard M. Bass and Gerald V. Barrett, Man, Work, and Organizations, Boston: Allyn and Bacon, 1972; Abraham K. Korman, Industrial and Organizational Psychology, Englewood Cliffs, N.J.: Prentice-Hall, 1971; and Milton L. Blum and James C. Naylor, Industrial Psychology. New York: Harper and Row, 1968.

Also see Georges Friedmann, The Anatomy of Work. New York: The Free Press, 1961 on this point.

<sup>83</sup>Moreover both are interdependent in some respects. For example, certain seasons of the year are associated with certain weather conditions.

### Weather Influence

The working conditions on a building site are always open to the influence of the weather<sup>84</sup>. The most critical time occurs during the beginning stage of the building construction process when both workers and the site itself are at the mercy of the weather conditions. During the latter stage the impact of the weather is less critical since most work can be done under cover of the building.

The builder and contractor are perhaps affected most by the uncertainty of the weather as the following illustrations taken from the field notes indicate.

The builder told me the project was behind schedule because of the recent rain. He said he loses \$1,000 per day if it rains enough to stop work.

During a discussion with the builder about CPM (Critical Path Method) diagrams<sup>85</sup>, he indicated that these methods were difficult to use in construction because it is an unstable business which is especially dependent on the weather. He said "if we could tell what that cloud up there (pointing to the sky) was going to do, then we could rely on CPM diagrams. Now all we could do is keep revising them".

After receiving rain almost daily for over a week, the weather started to look better. I mentioned to the masonry contractor that maybe it would not rain today, and he angrily said, "Don't talk rain".

Simply stated both the builder and the contractor lose time and in turn money when production falls off due to the

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<sup>84</sup>Since this research was conducted during the summer months, rain, heat and wind were the only weather conditions observed that affected construction work. Previous experience during my nine year career as a construction electrician provided like experiences with all kinds of conditions including hail, ice and snow and cold. The data reported on here square well with those observations.

<sup>85</sup>See Chapter VIII for an elaboration of the CPM and similar methods.

weather. They are at the mercy of the elements particularly during the early stage of construction. As the project progresses, they usually have the option of doing "inside" work when the weather is bad.

Tradesmen, on the other hand, can either cope with bad weather or not work and consequently lose pay. They are apt to choose either depending on how much time they can afford to lose and the group pressure involved. The following illustrations taken from the field notes portray this.

I asked one of the laborers if he was going to be pouring any concrete today, and he said he was. I mentioned that it was already 2:30 p.m. and he would probably be getting some O.T. (overtime). He said that he did not want any O.T. and has told the foreman that "eight hours was enough especially on a hot day like today".

While talking to a bricklayer I mentioned that the crew had gotten rained out yesterday, but the afternoon turned out to be sunny and clear. He said, "Yeah, but by that time these guys (the bricklayer crew) were all too drunk to work".

When it rained one afternoon the bricklayers went under some canvas covering the bags of mortar mix and waited it out. One of the laborers said they were "hungry" (for money) since they are sometimes off of work in the winter.

It rained one night and began again shortly after the work day began. The bricklayers retreated to their cars with the initial downpour but returned to work later under a light rain.

The choice to work or not when the weather creates an option is typically determined by the work group. This may involve talking the foremen into going to a tavern because of a light rain or the contractor actually asking the work crew if they wish to go home or "wait it (the inclement weather) out". It was observed on a number of occasions that some work crews would remain on the job during a rain storm while others would

leave with the first few drops.

And on rare occasions the tradesmen simply cannot physically take the weather and are forced to not work.

I became increasingly nauseous throughout the day. It was bright and sunny, and the temperature was in the upper 90's. (I had suffered from heat prostration about five years before while working construction and have not been able to take prolonged periods of work in the heat since.)

Other workers on the job have mentioned similar difficulties with the heat. One indicated that he had missed a few days last year until he began taking salt tablets. Another said that he knew a worker on another job who had to be taken to the hospital last week because of the heat. The first worker felt the problem occurred mainly from drinking too much water, especially cold water, while working and related a story about a worker he knew who drank a lot of water and could not work through the morning on an extremely hot day. The second worker agreed saying that he tries to get through the morning without taking a drink of water and only has coffee at 10:00. He added if he doesn't make it through the morning without water he knows he is in trouble for the rest of the day.

Here the "survival strategies" of construction work are portrayed. The word of mouth suggestions to take salt tablets or not to take a drink of water in the morning become part of the coping strategy for tradesmen working in the hot sun. Stories are told and advice is given to enable fellow workers to make it through the hot and humid days.

The physical setting of the building site is also affected by the weather. Rain or snow create muddy conditions which can virtually stop all progress and certainly slow it considerably.

There was a big rain storm one night, and the job site showed it. There were mud and puddles everywhere. The pre-cast column setters were to start on building #3 the next morning, but the mud prohibited it. Their heavy crane would surely have gotten stuck.



The crew that installed the pre-cast concrete planks were on the job unloading semi-truck loads of pre-cast. They were unloading and stacking the planks near the entrance to the project because of the mud and slippery conditions. After the ground dried, they had to re-load these on a truck and transport them over to the building where their crane could be used for setting them.

The job had trucks coming and going all day long. The drivers are expert at maneuvering their "rigs" around the site. They often had to back into hard to get places over very rough and sometimes muddy and slippery terrain. One truck delivering concrete block got stuck in the entrance after dropping off his load. He was stuck in the mud for twenty minutes and blocked the entrance to other trucks. The driver got out of his truck five or six times and shoveled sand under his wheels from a nearby pile. He finally got out, but his clutch started smoking in the process. More rain was expected that day.

It seemed that when the weather was beautiful the whole job livened up - happiness prevailed. The workers shirts came off, and the work got done in good time. Everyone seemed pleased - especially the builder and contractors.

Wet weather is perhaps the worst type of condition for building construction work. The resultant mud slows work, often to a standstill. Heavy machinery and cargo trucks with materials are critical for construction work, and they simply cannot navigate efficiently through the mud.

#### Temporal Influences

Construction work is similarly influenced by time. Worker productivity varies by the time of day, day of the week and season of the year. Worker efficiency runs according to clock and calendar time. When workers begin work in the morning, they are at peak efficiency. This declines constantly with a slight up-lift with a mid-morning break. After lunch they are again close to peak efficiency, but this declines even more rapidly than in the morning. Again

there is a slight up-lift with a mid-afternoon break, but the work day ends in low efficiency.

The day of the week is also important. On Mondays workers do not look forward to beginning another week of work. By Wednesday they have adjusted, and by Friday they are looking forward to the weekend<sup>86</sup>.

The month or season of the year also affects construction work. Most new work begins in early spring and declines in late fall. The summer months are the peak months, and winter is the slowest with many workers being laid off. This varies by climatic conditions and geographic region. The following illustrations from the field notes exemplify this.

The builder indicated that this time of year was prime time for most building contractors. They were overloaded with work, and consequently if the work was to be completed on time, the contractors had to be coerced all along the way.

One of the young tradesmen said that Tuesday's were the worst day of the week for him. Monday's came so quickly that he was still following through from the week before, but by Tuesday he realized that he had "four miserable days left before another weekend".

Given the influence and impingement of factors external to the actual work setting, attention will focus on the the relationships and inter-relationships internal to the work setting, i.e., the varying physical conditions of the work setting and the associated behavior patterns of workers.

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<sup>86</sup>On this same theme see Harold L. Wilensky, "The Uneven Distribution of Leisure: The Impact of Economic Growth on "Free Time"". Pp. 107-145 in Erwin O. Smigel (ed.), Work and Leisure. New Haven, Connecticut: College and University Press, 1963.

### Internal Influences on the Behavioral Setting

For purposes of analysis the inanimate physical work setting will be dichotomized into its roughing phase and finishing phase, and these will further be refined according to their various structural components and physical variations during the building construction sequence. Each of the two phases will be discussed in terms of their inanimate physical boundaries for human social behavior, including their macro-physical dimension (the objective external parameters which serve as the "outside" boundaries for behavior); their micro-physical dimension (the objective sub-parameters or "regions" which serve as the "inside" boundaries for behavior); and their object network (the inanimate physical objects and their arrangement within the setting). In addition, the persons located as objects within the setting during each phase will be discussed as structural components.

These structural components will be compared to the dynamic or behavioral component of the work setting during the building construction sequence. Here the persons (workers) are viewed as reality processing organisms who give meaning and value to their actions through the ongoing interpretations they make of their behavioral (work) setting.

Two general varieties of worker behavior are singled out and drawn together for analysis. These are work activities and non-work activities on the job site. Worker behavior patterns are considered behavioral routines; they are

reoccurring varieties of worker behavior. They represent categories of behavior that were observed to occur throughout the building construction sequence and therefore provide the dynamic component for this analysis.

Work activities will refer to the activities of workers that can be considered productive and in the interest of the workers' employer. These are work routines that workers are paid to perform and do perform. Non-work activities will refer to the activities of workers that cannot be considered productive and in the interest of the workers' employer. These are behavioral routines that workers engage in on the job site that they are not paid to perform.

In addition, limited attention will be devoted to deviant activities of workers as a special variety of non-work activity. However, worker deviance was not observed frequently enough during the construction sequence of this project to be considered a routine reoccurring activity among workers. Deviant activities will refer to those activities that most persons within and outside of the building construction industry would deem unacceptable, or even illegal<sup>87</sup>.

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<sup>87</sup>The "insider", "outsider" distinction on this usage has been previously discussed (See Chapter IV, p. 132). For further clarification of the field of the sociology of deviant behavior see the following sources: Howard S. Becker, Outsiders. New York: Free Press, 1963; Marshall B. Clinard, Sociology of Deviant Behavior. 4th ed., New York: Holt, Rinehart and Winston, 1974; Stuart Palmer, Deviance and Conformity. New Haven, Connecticut: College and University Press, 1970; Albert K. Cohen, Deviance and Control. Englewood Cliffs, N.J.: Prentice-Hall, 1966;

Collectively these varieties of worker activities are drawn together to provide a contrast between worker behavior patterns (dynamic component) and the inanimate physical setting in which that behavior occurs (structural component). The goal of this analysis is to provide a longitudinal analysis which compares the behavior patterns of three groups of workers (those who did the "roughing" work or work done during the initial stage of construction, those who did the "finishing" work or work done during the completion stage of construction, and those who did both) with the two phases of the transitional work setting (the roughing phase and the finishing phase).

#### Work Setting Influences on Behavior

This section will offer evidence for the research question, to what extent are persons (workers) externally constrained and managed by the inanimate physical conditions of their (work) setting?, i.e., are workers "used" by their work setting? With this approach, one would expect that the work setting, including changes in it, influences workers' behavior.

It will be shown that, in fact, this is the case; the work setting does influence worker behavior. When the behavior patterns of workers (work activities and non-work activities on the job site) are sequentially compared to the

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Simon, Dinitz, Russel R. Dynes and Alfred C. Clarke, Deviance. New York: Oxford University Press, 1969; Earl Rubington and Martin S. Weinberg, Deviance. 2nd ed., New York: The Macmillan Company, 1973.

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phases in the building construction process (roughing and finishing phases), behavioral changes are seen to occur both between workers present during the roughing and finishing phases and among workers present during both phases. An overriding theme that becomes apparent in the analysis is that as the building progresses, the behavior patterns of workers become more sophisticated and refined. Where rather crude behavior patterns were observed during the initial phase of construction, the completion phase brought with it more sophisticated patterns of behavior. The evidence for this conclusion is apparent in the following discussion and the accompanying excerpts taken from the field notes.

#### Worker Behavior During the Roughing Phase

The roughing phase of the building construction project is characterized by rough conditions and crude behavior. The site conditions provide a constraining quality on the exhibited behavior patterns of workers. The workers, upon arriving at work, become "locked in" to a setting that is rough, dirty and noisy. Their subsequent behavior is seen to reflect these coarse and primitive conditions.

#### The Work Setting

During this beginning phase of construction, one is immediately and continually impressed with the rough physical conditions of the site. The external boundaries of the project (macro-physical dimension) set it apart from surrounding areas and accentuate this rough condition. The northern

boundary extending for approximately 800 feet separated the project from another almost completed, residential project developed by another builder. To the east and across a shallow and meandering ravine lay a fully completed residential area. This eastern boundary extended for approximately 770 feet. On the south and west the boundaries were secondary roadways. Here the project extended for approximately 780 feet on the south and 750 feet on the west. This plot was naturally sectioned by a ravine running east and west through the southern portion of the project and then extended north and south at its eastern boundary. This ravine was bordered by a variety of trees and shrubs and served in part as an internal boundary for the project (micro-physical dimension). To the south of the ravine but within the larger project were a series of eight previously constructed residential buildings located in two collections of four each in a cul-de-sac arrangement. These were side-by-side "town houses" providing homes for sixteen families. Three-fourths of these were occupied with the remainder near completion.

On the west and running for the entire length of the project was a ten foot high berm which separated the project from the adjacent secondary roadway. Access to the project was by a roadway cut through this berm. The major portion of the project lay to the east of this berm and to the north of the ravine. It was this portion of the project that was in the beginning phase of construction.

Four similar excavations were made and all of the surrounding area was free of foliage. All that remained was red mid-western clay in occasional mounds and an uneven, rut-filled, laid bare, work site. This work area was scorched hard from the sun, dusty from the free-wheeling wind and became a virtual sea of mud when it rained. These excavations located four similar two story buildings each approximately 66' x 236', two stories high with a basement for underground parking. They were arranged peripheral to a future central parking area. Each building would house twenty families and collectively they would be presented to future owners as condominiums. Each of the four buildings were known and referred to by numbers (1 - 4) by the workers and represented separate work "regions" (micro-physical dimension) within the larger project.

Various associated objects littered the site (object network). These included stacks of material (concrete block, sewer pipe, elevator equipment, lumber), various work machinery, chemical toilets and workers' cars. Materials and machinery were located near to the location they were to be used with the exception of a front-end loader used by the bricklayer crew. This was always parked at the entrance to the project during non-working hours to deter vandalism. The two toilets were conveniently located on the site within easy walking distance from all areas. Workers cars were parked out of the way of the continual truck traffic on the project, and some preferred to park on the shoulder of the secondary highway bordering the western edge of the project.



### The Workers

The workers on the project represented structural objects in terms of the number of persons present and their location to one another. During the beginning of the roughing phase few workers were present, but as the project progressed toward its finishing phase the number of workers increased. Throughout this period workers typically worked in pairs or in small crews of four to eight men in various locations around the site.

On a typical day during the roughing phase the brick-layer crew (eight men) would be seen constructing concrete block basement walls on one of the buildings. Six bricklayers would be doing the actual construction of the walls, and two laborers (hod carriers) would be assisting them by providing materials (mortar and blocks). In another area of the project cement masons (2 men), rough carpenters (2 men) and laborers (2 men) would be working on concrete footings for the support of the building. Holes were dug, wooden forms were built and concrete was poured and leveled. In another area the plumbing crew (5 men) would be installing drain pipe in the basement of one of the buildings. Outside the electricians (3 men) would be working on the installation of a temporary electrical service. In still another area the carpenter crew (5 men) would be beginning to "form out" one of the buildings. While these work activities were going on around the project there would be a continual flow of trucks entering and leaving the project. Trucks carrying lumber, pipe, concrete block, and concrete would be

maneuvering around the ruts, holes, and piles of dirt on the site to complete their deliveries. These collective activities are representative of the roughing work on the building construction project. It is within this structural context of workers located within their work setting that the varieties of worker activities (dynamic component) can be analyzed.

### Analysis

The following analysis will rely upon illustrations taken from field notes. Two varieties of worker activities will be discussed in terms of work setting influences on behavior. These include: work activities and non-work activities on the job site.

#### a) Work Activities

This is the most frequent variety of worker activity on the job site. It includes all worker activity that can be considered productive and in the interest of the workers' employer.

Immediately upon entrance into the work setting the worker is confronted with the constraints of the work setting on his behavior. The workers' movement into their "work world" and its associated coercive quality on them is reflected in the following.

#### Type of Work

On my first day on the job I talked about the project with a bricklayer who was just getting his tools out of his car and getting ready to start work. He didn't say much except that "it was all underground work" (structural component). (This, of course, described the job from a bricklayer's point of view.) For him the job consisted of "underground work", and

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this indicated for him the type of work he would be required to do (dynamic component).

#### Getting to Work

The building site in its beginning stage was too rough to drive into with a passenger car (structural component). Thus, the workers parked on the shoulder of the highway bordering the project. The project was full of pot holes and remained muddy and slippery after a rain because of the heavy consistency of red clay. Only those workers with trucks or old cars parked on the site. This provided considerable inconvenience for the majority of workers since it required that they carry their tools, clothes and lunch onto the project (dynamic component).

Here the very nature of the setting dictates not only the type of work that is to be engaged in but the inconvenience placed on the workers as they attempt to get to their work.

Once on the job, the workers are continually plagued with the noise, dirt and associated rough conditions of their work milieu. This is illustrated in the following.

#### Noise

After frequently observing the bricklayer crew, I became aware of the influence of noise on their social interaction. A gasoline powered mortar mixer (structural component) was going almost continually and made a noise that was not really loud but rather middle range (comparable to a truck motor idling). However, the noise was constant throughout the work day. This over-riding noise did not facilitate conversation (dynamic component) between workers as it required shouting to all but the crew member closest by. Occasionally the mixer would stall or run out of gasoline, and this is when its influence became most apparent. Workers on the crew began talking, joking and cussing, particularly in reference to the loud mixer. They were pleased with its silence, but in turn created their own noise. It appears that it is extremely frustrating to work in close contact with others and not be able to communicate freely with them.

#### Rough Roads

Three truckers arrived on the job with loads of pre-cast concrete planks. They sat down and talked for about an hour while their trucks were being unloaded. I joined them. They talked about their "rigs" and about getting stuck (dynamic component) in the basements of the buildings because of the poor approaches (structural component) provided on this and other sites. One driver said his clutch was almost burned out; it was smoking. Another driver said he was going to see

if someone would sign for any damage that might occur to his truck. They all agreed that the construction workers expect them to drive into difficult places without regard for their trucks. "All they want is the material delivered and bitch if it is broken or damaged and won't pay for the damage to truck or material."

#### Heat

During a two week period the weather was extremely warm with temperatures in the upper 90's each day. During these days some trades by virtue of the work that they were doing were located in areas out of the direct sun (structural component). This was the case with the plumbers who were installing (dynamic component) the drainage system in the basements of the building. Here it was cool, moist and dark. Meanwhile other tradesmen were not as fortunate. The carpenter crew was working on the roof, the mason crew was pouring concrete, and the electricians were installing part of the electrical service.

Concomitantly, the crude behavior exhibited by some of the workers illustrates the primitive condition of the work setting and its influence on the behavior of workers.

#### Close Quarters

Bricklayers appear to be the least mobile of all the building trades. In most cases their work day is spent in the same limited work area (structural component). If constructing a wall, they may spend their entire day moving about a limited area atop a scaffold. Their materials ("mud" and block) are brought to them by the laborers tending them. They only need to shout "mud" or "block" and it is brought within their reach (dynamic component). Even when they have to relieve themselves it is common for them to come down off their scaffold and urinate on a nearby wall they have recently constructed. (This occurred many times although chemical toilets ("honey buckets") were available within easy walking distance - perhaps 30 yards away.) It appears to be a physically demanding and repetitious job.

#### b) Non-work Activities on the Job Site

This is a less frequently occurring variety of worker activity. These are activities that cannot be considered productive or in the interest of the workers' employer.

One such activity, lunch, reflects the ever present constraint of the work setting on the behavior of workers.

### Finding a Seat

Lunch hour (actually one half hour) provided the workers an opportunity to enjoy a relaxed meal and conversation (dynamic component). During the early phase of construction the locations available to sit down to relax and enjoy lunch were minimal. For those that chose to eat on the job site (and many didn't), the hard ground, a stack of lumber or a concrete block (structural components) were the available alternatives aside from ones car (structural component). Thus, many chose the latter for comfort and a place out of the elements.

This was also true in many cases even before the work day begins.

### Car Shelters

Before the work day began, workers that arrived early typically remained in their cars (structural component) to listen to the radio and enjoy a cup of coffee (dynamic component). Their car appeared to serve as a shelter from the less hospitable work setting.

This constraining quality of the work setting is equally reflected during the last few minutes of the work day when the workers leave the job site.

### Punching Out

At 4:30 the work day was complete. There was a rush for the cars and trucks (dynamic component). Workers wasted no time leaving the site (structural component). Although they were being paid only until 4:30, it appeared to be more than simply that. With the gravel flying off their spinning tires and the clouds of dust settling over the now quiet job site, it appeared to be more of a hurried and welcomed break with the job site itself.

Stealing as a type of deviant activity provides an additional illustration of the constraining quality of the work setting.

### Locks and Chains

The builder being very concerned about losing lumber to thieves (dynamic component) had me oversee the installation of a chain and two poles at the entrance of the job site. This make-shift gate (structural component) was locked at the end of the work day and opened early in the morning prior to starting time. Its purpose was to deter stealing.

There is no doubt that materials were taken from the job site even though my observations of actual stealing were few. My previous construction work experience has convinced me that stealing does occur on construction projects. What is taken is determined by what can be taken. During the roughing phase of construction a variety of materials are present. Thus the builder in the previous illustration made a wise decision by installing a chain. This added structural dimension of the work setting perhaps did serve to deter stealing, and if not, its symbolic presence at least let the potential thieves know that precautions had been taken. In addition the builder was protecting himself by the installation in that he would be able to easily collect damages through his insurance if the lock and chain were broken.

#### Worker Behavior During the Finishing Phase

The finishing phase of the building construction project is characterized by improved conditions and refined behavior. Here too the site conditions provide a constraining quality on the exhibited behavior patterns of workers. Workers display more concerned and refined behavior patterns as the physical structure of the setting becomes more ordered.

#### The Work Setting

As the building construction sequence progressed toward completion the actual work setting began to look more and more like the already completed surrounding areas adjacent to the project. This closer resemblance to areas

surrounding the project came about only gradually, but as it did the once easily disernable external boundaries (macro-physical dimension) became harder to distinguish. Newly laid sod joined existing grass and fresh asphalt driveways joined others already being used. As the buildings moved toward completion, it became difficult to disern the completed structures from the near completed ones (micro-physical dimension). In a word the transitional nature of building construction emerged toward a condition of permanency.

With the finishing phase, order within the project became the goal. All effort was geared toward cleaning-up and providing the finishing touches on the buildings and surrounding landscape. Material and equipment was now stored within the buildings with most trades having rooms (micro-physical dimension) for material (object network) storage. Furthermore, as the landscaping neared completion the workers were able to park their cars (object network) on the project near their work.

### The Workers

The number of workers (structural objects) on the project increased as the project progressed. The high number (approximately 50) was reached about midway into the building sequence. As the project moved toward its completion, the number of workers gradually decreased.

On a typical day during the finishing phase telephone installers (two men working separately) would be testing their equipment and installing phones in various units

around the project. Painters (three men working separately) would be putting on the final coat of paint in some of the units. Plumbers (three men working separately) would be testing lines and installing and adjusting hardware. Electricians (four men working separately) would be installing switches, receptacles, plates, and fixtures in the unfinished units. Wallpaper (two men) and carpeting (four men) would be in the process of being installed.

Outside the finishing touches would be taking place on the landscaping (two men). The last of the sod would be laid and trees and shrubs planted. Meanwhile carpenters (two men) would be finishing off the outside fretwork. These collective activities are representative of the finishing work on the building construction project. It is within this structural context of workers located within their work setting that the varieties of worker activities (dynamic component) can be analyzed.

### Analysis

As before the following analysis will rely upon illustrations taken from field notes. Two varieties of worker activities will be discussed in terms of work setting influences on behavior. These include: work activities, and non-work activities on the job site.

#### a) Work Activities

The external constraint placed on workers doing the finishing work by virtue of their impinging and increasingly



ordered work setting is reflected in the following illustrations centering on their work activities.

#### From Dirty to Clean

As expeditor, I would occasionally have to take a tradesman away from their work in one section of the project and have them work on another installation that had to be completed quickly. Workers didn't like this as it usually required that they "pick up" all of their tools and put their materials away before leaving. Then at the new job they had to again get organized before beginning work. Furthermore, additional problems occur when the two jobs are at different stages of completion. Such was the case when I needed a plumber to install an ice-maker on a refrigerator in one of the nearly completed units. He was working in the basement of building #3 and was dirty, sweaty and his shoes were caked with mud. He objected vehemently while looking down at his muddy shoes and clothes. He would have to be working (dynamic component) in an almost completed kitchen (structural component) where there was newly installed carpeting, and the owners would be present.

#### Care and Concern

Most tradesmen doing the finishing work exercise extreme care while working to not damage the surrounding area. The wall paper hanger, for example, spent considerable time covering the new carpeting (structural component) with a cloth and removing or covering (dynamic component) the furniture in the area he had to work in.

This refinement in the behavior of workers is also displayed in their dress, demeanor and expressed behavior as the following examples illustrate.

#### Clean Clothes, Good Manners

Tradesmen doing the finishing work dress differently, in cleaner clothes, than do the roughing workers. They must, on occasion, meet with the new owners to discuss alternatives in their installations. They appear clean, and usually well groomed, plus profanity is heard less. It is not uncommon to see a tradesman remove his shoes (dynamic component) before entering a unit that is almost complete (structural component).

#### Being Inspected

When a building is almost complete, building inspectors come to approve the installation. In particular, the electrical inspector must give his approval that the installation (structural component) is sound and safe meeting all of the federal and local regulations. This is a time when the electrician on the job presents his best side (dynamic component).

His concern is to have his work approved with minimal violations. In one instance the electrician present when the inspector came treated him royally showing him around the building and chatting about unrelated matters. The inspector found four code violations in his search, none of which would take much time or material to fix up. The electrician appeared pleased.

This change in work setting also brings with it a change in the work routines tradesmen are expected to engage in and perhaps more importantly how they accept these changes.

#### Clean Up

"Clean up" becomes the rule during the finishing phase of construction work. Not only are the individual tradesmen expected to clean up their mess (dynamic component) after completing their installation (structural component), but a professional cleaning contractor was hired to come on the job to sweep, vacuum, remove scrap, remove dirt spots from walls and woodwork and paint spots from window glass. This is not the case during the rest of construction sequence. Here workers leave their scraps, boxes, etc. right where they happen to fall. Little concern is given to neatness.

#### Finishing Up

Most finish workers give the impression of enjoying their work. This is not always the case for workers during the beginning phase of construction. The carpenters, painters, electricians, plumbers and the other workers completing their installations appear more jovial (dynamic component) while doing their work. There are a number of possible reasons for this. First, they are working in a comfortable and "new" setting (structural component). They are also completing an installation that has been going on for some time. In this sense they are about to present a finished product; a product reflecting their sweat and toil. Added to this they know their boss, the builder, and the owner will be pleased when they are done.

#### b) Non-work Activities

This external constraint placed on the workers doing the finishing work by virtue of their impinging and increasingly ordered work setting is equally reflected in the following illustrations centering on their non-work activities.

This is displayed in a portion of the field notes taken during the finishing phase.

#### Table Manners

The lunch period became more civilized as the project continued. The painting crew actually put their sandwich papers and apple cores back into their lunch boxes after eating (dynamic component). This was a change from the bricklayer crew and other earlier workers who typically tossed them to the wind. Of course, the painters ate their lunch inside an almost completed unit (structural component).

This refinement in the behavior of workers was also reflected during their pre-work activities.

#### Multipurpose Rooms

In the morning workers arrived and entered the buildings they would be working in. Here in the few minutes before work they had coffee and conversed (dynamic component). With the plumbing and electrical crews this activity took place in rooms set aside for their material and tool storage (structural component). These rooms also served as lunch rooms and pre-work gathering places.

This behavioral change was equally apparent during the last few minutes of the work day when the workers left the job site.

#### End of the Work Day

Quitting time (4:30 for most workers) was the time of exodus from the job site. Although workers were glad the work day was over, there was a marked difference in their departure behavior. The rushing to leave was lacking as the project progressed. The departure was more ordered (dynamic component). Workers simply moved to their cars and left the site (structural component) without hurrying. The speed at which they drove off appeared to be markedly reduced.

This noticeable behavioral change brought to mind the emptying of an office building at quitting time as compared to the emptying of a factory at quitting time. Previous observations made by the investigator reflected a more ordered departure by office employees while factory workers were

seen to leave at a hurried clip, sometime running and frequently driving from the parking lot at dangerous speeds.

Girl watching during working hours as a type of borderline deviance provides an additional illustration of the changing behavioral patterns of workers during the finishing phase of construction.

#### Behaving Like Gentlemen

Girl watching during the beginning phase of construction typically took place from afar, but as the buildings progressed toward completion an increased availability to engage in close-up girl watching came about. As new owners moved in or stopped by to see the progress of the work on their unit (structural component), finish workmen would frequently be confronted with women in a face-to-face situation. This situation brought with it more sophisticated behavior on the part of the workers (dynamic component).

Looking from afar from a setting that was crude and dirty (structural component) at best provided like illusions (dynamic component) for workers, while the actual confrontations with females brought out only the best of their manners and demeanor. This refinement was manifested in polite behavior, careful and seemingly concerned answering of questions, and stares, lustful looks and off color comments only when discovery was not likely.

#### Conclusion

These field observations provide supportive evidence for the pervasive influence of the inanimate physical (work) setting on the behavior patterns of workers. Workers were "used" (externally constrained and managed) by the physical conditions of their work setting. When the inanimate physical structure of the work setting was viewed longitudinally from the beginning of the roughing phase through the finishing phase a change in workers' routine, re-occurring patterns of behavior became apparent. This occurred similarly for both work related activities and non-work activities on the job

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site. As the physical structure of the work setting changed from a rough condition to a finish condition, the behavior patterns of workers were observed to change from crude to refined. This behavioral change was apparent between the majority of roughing workers and the majority of finishing workers and among the majority of workers who were present during both phases of the building construction sequence. It was concluded that the changing physical setting was to a large extent responsible for these observed behavioral changes.

#### Behavioral Influences on the Work Setting

This section will offer evidence for the research question, to what extent do persons (workers) manipulate the inanimate physical conditions of their (work) setting to facilitate or enhance their own behavior?, i.e., do workers "use" their work setting for their own behalf? With this approach, one would expect that workers' behavior, including changes in behavior patterns, influences the work setting.

It will be shown that, in fact, this is the case; workers do intentionally influence their work setting. When the behavior patterns of workers (work activities and non-work activities on the job site) are sequentially compared to the phases in the building construction process (roughing and finishing phases), behavioral similarities are seen to occur both between workers present during the roughing and

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finishing phases and among workers present during both phases. An overriding theme that becomes apparent in the analysis is that workers "make conditions" for themselves throughout the building process. The evidence for this conclusion is apparent in the following discussion and the accompanying excerpts taken from the field notes.

#### Worker Behavior During the Roughing Phase

During the roughing phase the structural components (work setting and the workers present) are identical to those discussed earlier and will not be repeated here. What is unique, however, is the focus given to the dynamic or behavioral component. Here emphasis is placed on how workers "use" their work setting rather than how they are "used" by it.

#### Analysis

The following analysis will rely upon illustrations taken from field notes. Two varieties of worker activities will be discussed in terms of worker influences on their work setting. These include: work activities and non-work activities on the job site.

##### a) Work Activities

Again, this is the most frequent variety of worker activity on the job site. It includes all worker activity that can be considered productive and in the interest of the workers' employer.

From the onset of the building sequence workers are seen to manage the conditions of their work setting to make their work easier and their working conditions more bearable. This is accomplished by selectively altering the physical conditions of the setting, by using the existing setting to their advantage, or by introducing convenience items into the setting. This is evident in the following.

#### Saving Water

Water is a precious commodity on a building project (structural component). It is needed for drinking and for mixing mortar during the initial stage of construction. On this project no water was available, and consequently it had to be trucked in. The laborers assisting the bricklayers resolved the problem somewhat by having a small catch basin dug (dynamic component) on the periphery of the project. Here rain water was trapped and later pumped into 50-gallon drums as needed with a submersible pump. This water was then used to mix "mud" (mortar).

#### "Engineering" the Job

When tradesmen first arrive on the job site to do their installation they immediately work to adjust the setting to meet their needs and to maximize their control over the installation. Such was the case with two electricians who were to install a temporary electrical service. Upon arrival the electricians "engineered" (dynamic component) the proposed installation. They spent considerable time mentally going through what they would later do in actuality. They walked through the area (structural component) in which they would be working and discussed various installation strategies. This took about an hour. This appeared to be a standard procedure for most trades observed.

In each of these cases the physical setting was manipulated to the workers' advantage. In most cases this is easily done, but sometimes workers were actually demanding. They insisted the setting be modified to meet their needs. This is reflected in the following.

#### Demanding Conditions

At times certain trades will refuse to work on an installation until the project site is modified to suit their needs.

Two cases can be mentioned in this context. The carpenters refused to begin the "forming out" (dynamic component) of the buildings until the backfilling was completed. They argued that they needed approaches to the buildings in order to drive their lumber onto the concrete slab. The truckers who were frequently getting stuck because of the muddy conditions on the project complained (dynamic component) until a gravel roadway (structural component) was installed to give them the needed traction.

It is also not uncommon for workers to introduce convenience items into the setting to improve their working conditions. The following examples illustrate how workers went to great extremes to ameliorate their working conditions.

#### Making Conditions

Since this project was on the out-skirts of the city proper, no hook-ups were available for city water. This required that a well be dug by a contractor. Since they have to keep on drilling until they hit water they are sometimes on the job manning their drilling rig for days. The well drillers present on this project brought their own conditions (dynamic component) with them - a small shed (structural component) that served as a "tool crib", a shelter from the weather, and a place to sit down during the day. They simply truck it from job to job.

#### Providing Conditions

One of the rough carpenters had his pick-up truck outfitted with a camper top. He used this area of the truck for storage of tools and materials (structural component). He simply drove (dynamic component) his truck to the area in which he was working and immediately had at hand all of the tools and materials he needed. His truck became a combination "mobile tool bin and stock room".

A similar work technique was observed with one of the bulldozer operators.

#### Planning Ahead

One of the excavators, a bulldozer operator, carried a fifty-gallon drum of gasoline in the trunk of his car. Whenever his machine (structural component) was low on fuel he simply drove to his car and siphoned (dynamic component) gasoline from the drum. This technique enabled him to work throughout the day with few interruptions.



b) Non-work Activities on the Job Site

Again, this is a less frequently occurring variety of worker activity. These are activities that cannot be considered productive or in the interest of the workers' employer.

One such activity, lunch reflects the ever present management and manipulation of the work setting by the workers.

Eating Conditions

The lunch period is a highlight of the work day for tradesmen, and they frequently go out of their way to make their eating conditions pleasant. During good weather they typically sat out of doors in the sun while in extremely hot weather they retreat to the cool shelter of the basements of the buildings (structural component). When possible a radio is played and "Paul Harvey - News and Comment" (a politically conservative radio broadcast aired at noon in many regions of the country) is listened to (dynamic component).

Many workers choose to eat their lunch off the job site and their manipulations are equally important. As the following illustration indicates, one worker went to great extremes to do this.

Traveling to Lunch

Many workers prefer to eat (or drink) their lunch away from the project. Since the "lunch hour" is only 30 minutes long, this usually required some transportation especially if the restaurants (or taverns) were two or three miles away as they were on this project. Most workers have cars, but one worker could not drive his car to work since he, as crane operator, drove the crane to the job each morning. He, however, devised an ingenious way to manage this by attaching a tow bar to the crane and towing an old V.W. behind (dynamic component). This gave him mobility to leave the job site (structural component) whenever he wished.

This manipulation of the work setting for the workers' own behalf was also apparent during the last few minutes of the work day. This time period is not a productive period.

### "Jockeying for Position"

Few workers were observed to work up until quitting time. Instead they "picked up" and packed things away during the last half hour of the work day. They typically did this covertly. They were "jockeying for position" (dynamic component) or attempting to get an early start for the exodus from the job site (structural component). Thus, when quitting time came or shortly before they simply went to their cars and drove off.

Beer drinking as a type of deviant activity provides an additional illustration of the management and manipulation of the work setting by workers.

### Beer Bottle Walls

The majority of the beer drinking during working hours on the job was done by the bricklayer crew. They did not do their drinking openly, but rather sneaked a beer from time to time during most days. (Their boss, the contractor, was against drinking on the job as was the builder.) After finishing a bottle of beer they would hide (dynamic component) the empties in the hollow spaces of the block walls (structural component) they were constructing.

### Worker Behavior During the Finishing Phase

The structural components of the work setting and the workers present during the finishing phase are identical to those discussed in the previous section and will not be repeated here. But again the uniqueness here is the focus given to the dynamic or behavioral component. Concern is placed on how workers "use" their work setting rather than how they are "used" by it.

### Analysis

As before illustrations taken from field notes will be used in the following analysis. Both work activities and non-work activities will be discussed as they relate to worker influences on their work setting.

### a) Work Activities

The management and manipulation of the work setting by the workers does not cease once the finishing phase begins. Workers continue to make conditions for themselves during the remainder of the construction sequence. Workers were observed doing their work where it was to their advantage and when it was to their advantage. This is reflected in the following.

#### Girl Watching

It appears that since construction workers don't usually work with women, they become all the more attractive to work around. "Girl watching" takes place whenever possible and can be considered an extra benefit if a worker can carry out his work within viewing distance of attractive (and even unattractive) women. Such was the case when one of the new owners - a young, shapely brunette who appeared to enjoy tantalizing the workers with her skimpy clothing (short, low cut dresses combined with the bra-less look and at times less clothing) and titillating posturing. When required to work at this residence, tradesmen would "make a day of it" (dynamic component) even when the work could have been completed in less time (structural component). It appeared that problems would always occur that required their staying longer than expected, or they would have to return another day to finish up.

#### Taking Ideal Conditions

Workers typically take advantage of every opportunity to make their working conditions better. This was evident during the finishing of one of the units (structural component). The painter along with the wall paper hanger worked in air-conditioned comfort when the weather was blistery hot out of doors. They had a radio going and ate their lunch and later took a short nap on the newly installed deep pile, beige carpeting (dynamic component).

#### Relocating

As expeditor it was necessary to make numerous phone calls (dynamic component) each day regarding the finishing of the units. Two units on the south project were nearly completed, but considerable telephoning was still required to get the necessary appliances and the workmen out to finish their work. Instead of returning to the trailer on the larger project, or to the office two miles away, each time I had to

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call, I simply used one of the units as a temporary office (structural component). It was not only quiet there but air-conditioned also. This also provided the opportunity to oversee the work being done and to be there when any appliances or materials arrived.

In each case workers manipulated their working conditions to their advantage. They decided where and under what conditions they were going to work. This same conscious manipulation of the work setting exists when workers decide when they are going to do a particular type of work.

#### Waiting for Good Weather

Workers will often take advantage of good weather for outside work and save inside work for the bad weather days. Such was the case when the electrician was finishing up one of the units. He and his apprentice waited for good weather (dynamic component) before they installed the outside lighting above the garage (structural component). This job required some time since the fixture was heavy, large, and ornate. Wind or rain would have made their job much more difficult.

#### Waiting to Work

Tradesmen will occasionally refuse to work on an installation until other work has been completed. The insulation contractor refused to finish (dynamic component) his insulating until the plumber and electrician were done working (structural component) in the attic of one of the units. He argued that they would only "mess up" his work, and he would probably have to return.

#### Working Weekends

On occasion workers will choose to work on Saturday (dynamic component) (for straight time) in order to complete their work without interruption by other tradesmen. Such was the case with the terrazo setter who installed his tile in the foyers of some of the units (structural component). He simply did his work on Saturday without interruption, and by Monday morning it could be walked on.

#### b) Non-work Activities on the Job Site

This management and manipulation of the work setting by workers was equally apparent with various non-work

activities which took place during the finishing phase of construction.

Such was the case with certain pre-work activities of finishing workers.

#### Good Conditions

Finishing workers completing the units to the south were often observed using these units as places to relax before beginning work (dynamic component). Instead of waiting in their cars they would take advantage of the air-conditioning (or heat as might be the case), and generally plush physical condition of these almost completed units (structural components). A cup of coffee and small talk before work in these "good conditions" appeared to provide a relaxed and enjoyable atmosphere for the workers.

These same nearly completed work settings were used by contractors or foremen to check on or talk to their workers. They were frequently observed arriving during the lunch hour and in turn took advantage of the plush condition of the setting.

#### A Working Lunch

It behooved the contractor or foremen to visit the job site when workers were on their own time. Lunch hour provided this time. They would frequently arrive and relax (dynamic component) with their men in the comfort that the setting provided (structural component). It was a break in the busy routines of these overseers who traveled from one job to another throughout the day.

The workers were almost always seen to use the setting to their advantage especially during the lunch hour. The following selected observations taken during the finishing phase reflect how their nearly completed setting was used during the lunch hour.

#### Making Lunch Conditions

-carpet installers relaxing (sitting or lying) (dynamic component) on top of their newly installed product (structural component)

- electrician using (dynamic component) a kitchen side board (structural component) as a table for his lunch
- painters purposely sitting near (dynamic component) an air-conditioning vent (structural component) during lunch
- various tradesmen using (dynamic component) a newly installed refrigerator (structural component) to keep their lunches cool.

The nearly finished setting was also used by workers at the end of the work day.

#### "Washing Up"

It was common to see workers "wash up" (dynamic component) before leaving for the day. They would use the new toilet facilities (structural component) to clean up and of course these same facilities were used throughout the day for elimination purposes. Until the physical structure of the work setting reached this level "washing up" on the job was impossible.

Stealing as a type of deviant activity was also apparent during the finishing phase of construction. However this activity was not observed frequently.

#### It "Got Legs"

During the finishing phase many materials were scattered around the nearly completed buildings (structural component). In some cases these materials "got legs" (were walked off with) (dynamic component). It is no wonder because at this time in the construction sequence the selection is greatest and includes many items that could be used at home.

#### Conclusion

These field observations provide supportive evidence for the pervasive influence of workers' behavior on their inanimate physical (work) setting. Workers "used" (managed and manipulated) the physical conditions of their work settings for their own advantage. When the inanimate physical structure of the work setting was viewed longitudinally from the beginning of the roughing phase through the finishing phase a similarity in workers' routine, re-occurring patterns

of behavior became apparent. This occurred similarly for both work related activities and non-work activities on the job site. As the physical structure of the work setting changed from a rough condition to a finished condition, the behavior patterns of some of the workers were observed to remain essentially the same. This behavioral similarity was apparent between the majority of roughing workers and the majority of the finishing workers and among the majority of workers who were present during both phases of the building construction sequence. It was concluded that the workers themselves were responsible to a large extent for these observed behavioral similarities.

Taken collectively this and the previous section reflect the changing conditions on the building construction project and how the workers adapt to these changes. This interplay between workers and their work setting reflects, in part, an evolutionary development in both the physical structure being constructed and an overt sophistication in the behavior patterns of workers. In this sense workers are being "used" (managed) by the physical conditions of their work setting. Concomitantly, workers are continually managing various conditions of this work environment to facilitate their own ends. In this sense the work setting is being "used" (manipulated) by the workers.

Additional supportive evidence will be forthcoming in the following two chapters. It is appropriate, however,

to summarize at this time that material which bears directly upon this discussion.

Chapter VIII focuses on mistakes that occurred during the building construction sequence. "Mistakes at work" are shown to be an inextricable part of the building construction process and permeate the entire construction sequence. These mistakes are the unintended consequences of work activity. Workers commit errors routinely and they become cumulative throughout the building construction sequence. The varieties of mistakes that occur are delineated as are the management techniques employed by workers to cope with these errors.

For purposes of discussion, worker mistakes and the resultant techniques employed in the management of these mistakes represent an additional variety of worker behavior (dynamic component) which can be coupled to the transitional nature of the work setting (structural component). The data to be reported on suggest a mutual interdependence between workers' behavior and the inanimate physical context (work setting) in which that behavior occurs. Although mistakes occur for a variety of dissimilar reasons and a like number of techniques are employed in their management, the important point is that when structural imperfections do occur they serve to force the workers into some sort of action orientation for dealing with them. In many cases workers' employ a strategy that manipulates the physical setting to make it appear structurally sound and esthetically appealing. This



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interplay between workers and their work setting reflects a condition of mutual interdependence. Again, workers are not only "used" (managed and manipulated) by the structural imperfections with which they must deal, but they frequently "use" (manage and manipulate) the setting to their advantage in the management of these same mistakes.

This same interplay between workers and their work setting progresses to its natural end when the building is completed and turned over to its new owner. Chapter IX is devoted to this final aspect of the building construction sequence. It represents a natural extension of the previous chapter and focuses on the relationships between builders and buyers.

For purposes of discussion this chapter further delineates the relationship between work setting and worker (including builder's) behavior. Here it is the builder who must appease the buyer in order to complete the transaction. The buyer, as will be shown, is presented with a building which is something less than expected. In some cases the building as agreed upon is incomplete and in other cases the finished product as presented does not meet the buyers' expectations. The builder must, in turn, resolve these problems to the buyer's satisfaction. In this sense the builder and subsequently his workers are constrained by the discrepant physical condition of the building (structural component) they have to offer. This represents a final interchange between the work setting and the worker. Constrained by what is left to do, workers are forced to modify, manipulate and

complete (dynamic component) the building to the buyer's satisfaction. This can be viewed as a "funneling process" whereby the amount of work to be completed is steadily accomplished until the buyer accepts the "finished" product.

#### An Integrated View

It can be concluded from the observations made that an interdependent relationship exists between the inanimate physical (work) setting and the workers behavior occurring therein<sup>88</sup>. Worker behavior patterns (work and non-work activities on the job site) are seen to both influence and be influenced by the conditions of their work setting. Workers both manipulate their work setting for their own behalf and are constrained and managed by the conditions of the physical setting. In effect, these field observations give support to the third explanitory statement (informal hypothesis) stated in the beginning of this chapter. That is, workers' behavior patterns would both influence and be influenced by the changing conditions of their work setting.

This inter-relationship can be diagrammed as follows (See Figure III).

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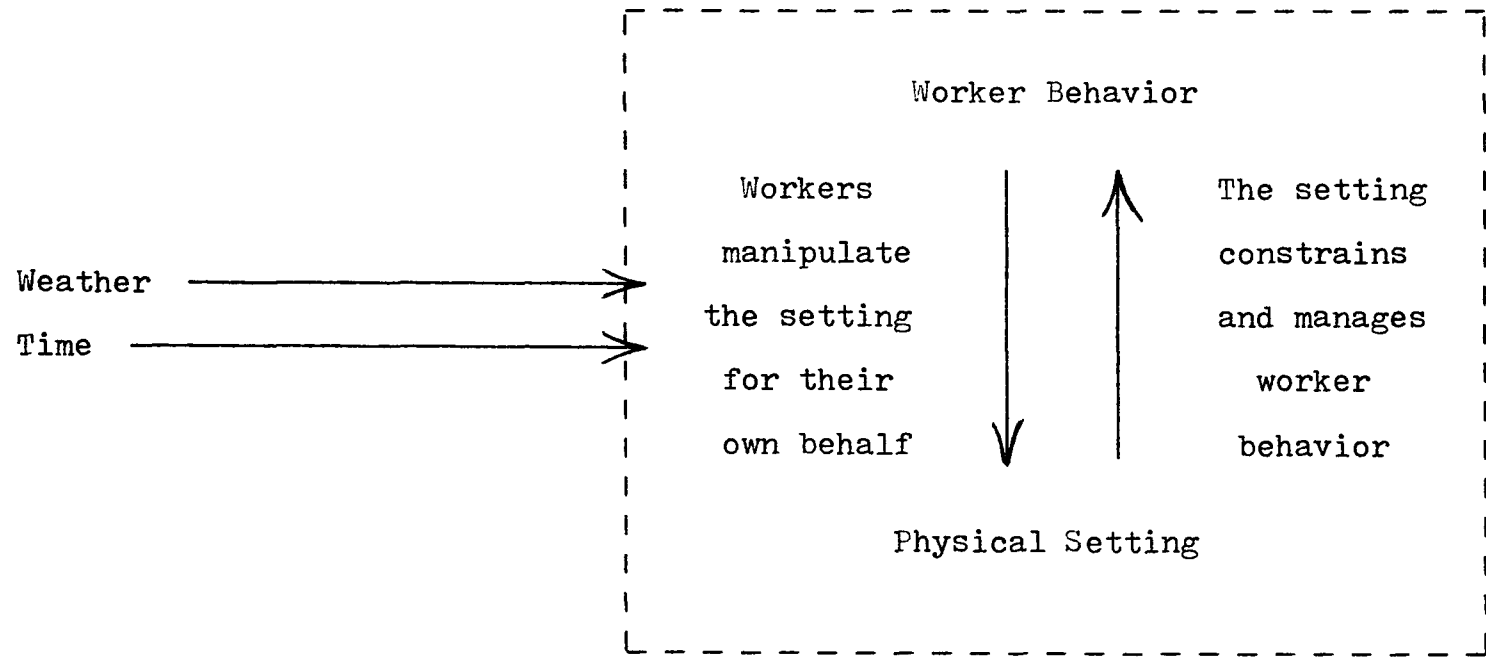
<sup>88</sup>It is worthy of note that this is essentially the same conclusion that Rosengren and DeVault arrived at in their research of the obstetrical hospital.

FIGURE III.

EXTERNAL AND INTERNAL INFLUENCES ON THE BEHAVIORAL (WORK) SETTING

EXTERNAL INFLUENCES

INTERNAL INFLUENCES



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Figure III summarizes the findings reported on in this chapter. The behavioral setting of the construction project is influenced by conditions both external and internal to it. Externally, both weather conditions and temporal factors exert an influence over the physical setting and the behavior of workers therein. Internally, the physical setting and the behavior of workers exist in a condition of mutual influence or mutual interdependence. Workers manipulate conditions in the physical setting for their own behalf, and at the same time are constrained and managed by the conditions of the physical setting.

On a more general level, the behavioral setting of the building construction project is viewed in terms of its structural components, its dynamic component, and its coordinating dimension. The structural components: the setting (including its macro and micro physical dimensions and object network) and the persons as objects, all serve to constrain and limit the behavior of the members. Collectively, this "objective reality" can be thought of as a behavior limiting aspect of the total behavioral setting. Here, the external boundaries of the building project (the macro-physical dimension), the regions within the project (the micro-physical dimension), the equipment and materials on the project, including their location and arrangement (the object network), and the workers and others present (the persons as objects), all serve to limit, manage and constrain the behavior of the workers.

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At the same time, the dynamic (behavior) component: the persons as reality processing actors, serves to enhance and expand the members' behavior. This can be thought of as a behavior expanding aspect of the total behavioral setting. Here, the workers (actors) are seen to select out and interpret various aspects of their work milieu and act in terms of these interpretations. This represents the workers "subjective reality" and provides the basis for their concerted and selective manipulations of particular aspects or conditions of their work setting.

Mediating this interdependent condition of mutual influence is the co-ordinating dimension. Here the structural components and the dynamic (behavior) component are located within a definite spatial/temporal field. This dimension serves to locate the behavioral setting within specific geographical parameters and along specific time dimensions. Here, the building project is identifiable and specific in terms of its actual physical location and all activity within the setting is identifiable and specific in terms of time.

These theoretical implications are important since additional support is provided for an integrated view of the study of human social behavior. Behavioral settings must be explored both in terms of their "objective reality" and "subjective reality". Actors not only influence their immediate surroundings by selectively perceiving, interpreting, and acting in terms of selected aspects of their physical

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world (the dynamic component), but they are also influenced by these same surroundings (the structural components). Furthermore, this condition of mutual-interdependence between the dynamic and structural components of the behavioral setting are influenced by conditions external to the actual behavioral setting (the co-ordinating dimension). Therefore, to fully grasp an understanding of human social behavior, these components must be collectively and systematically taken into account.

## CHAPTER VIII

## MISTAKES AT WORK

Buildings are seen to be constructed out of a series of mistakes. These mistakes become an inextricable part of the building construction process and permeate the entire construction sequence. Some of these mistakes lead to long-lasting discomfort and unanticipated "problems" for new owners while others are so deeply hidden in the confines of the building's physical structure that they remain virtually undetected. Still others simply hinder the progress of the construction sequence. In all cases, these mistakes impose an imperfect quality on the construction of the new building which may, in turn, lead to unexpected future difficulties with the esthetic and functional aspects of the building.

The majority of these deficiencies are brought about through work. They represent "mistakes at work". They are the unintended consequences of work activity. Workers, as part of their daily work effort, commit errors routinely. These errors become cumulative, with earlier tradesmen leaving their mistakes behind for future tradesmen who, in turn, build upon these and add their own to them in the process. This developmental process of accumulated mistakes takes on an irreversible continuity which culminates when the future

owner is presented with a "new" building permeated with imperfections<sup>89</sup>.

This chapter will focus on the nature and management of mistakes. Concern is placed on how and why mistakes occur, their variety, their consequence in terms of being critical or incidental and the workers' management techniques associated with these mistakes.

### The Nature of Mistakes

Hughes (1951) suggested that "mistakes at work" are a normal part of any work routine. Mistakes and failures represent a common "theme" found among all occupations regardless of their skill level or professional stature. Any work, regardless of the routine involved, is faced with the probability of error. Statistically, "the more times per day a man does a given operation, the greater his chance of doing it wrong sometimes" (Hughes, 1951:320).

Within the building trades, and identical rationale is typically expressed. The investigator has observed that when tradesmen are confronted with their mistakes, either by foremen or other workers, they typically respond, "If you're not working, you can't make mistakes". In this way workers are pointing out the inevitability of error. They are indicating that a necessary by-product of any work activity is

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<sup>89</sup>The resolution of these mistakes and associated problems occurring between buyers and builders will be dealt with in the following chapter.



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an occasional mistake. The credibility of this theme will become apparent in the following.

### Varieties of Mistakes

Even though mistakes occur routinely the reasons they occur vary. Some mistakes are simply the result of human error while others arise out of organizational deficiencies. Others occur because of the immediate and prevailing circumstances surrounding the work event while still others occur simply by chance where no person or persons could be deemed accountable for the error.

Four varieties of mistakes which routinely occur during the construction of buildings can be singled out. These are miscalculations, hold-ups, circumstantial errors and natural errors. The first three can be explained by human or social phenomena while the fourth can best be termed an "Act of God" in the same sense that the term is used in the fields of law and insurance.

#### Miscalculations

Miscalculations are the result of human error. They are probabalistic mistakes that result from a failure in individual perception, interpretation or understanding. They are common errors in judgment; everyone makes them at one time or another, and they are to be expected. They are often referred to as "simple mistakes" or "stupid mistakes" by those committing them and come very near to representing a mere accident.

The major problem associated with miscalculations is that the immediate others present or affected by the mistake will often not be willing to accept the person's failings or may use these failings to enhance their own deficiencies. Persons can be made to feel guilty and incompetent for these miscalculations.

This type of "mistake at work" was observed during all stages of the building construction sequence and had both major and minor consequences for either the person making the mistake, his fellow tradesmen or for persons who would be subsequently affected, either directly or indirectly by that mistake. The following examples taken from the field notes illustrate this.

The following examples of miscalculations were typical of those observed during the roughing phase of the building sequence.

Example #1.                      Low Blow

Background: Buildings began with the excavation of the basement. The excavation crew with their earth moving equipment removed and leveled the earth to the correct elevations as determined by the plot plan which was established in conjunction with the architect, builder, and survey crew. Within the four building excavations, concrete footings were poured to support the bearing walls and outside and inside concrete block walls were raised to finish grade elevation.

Mistake: The survey crew returned two months later to "re-shoot" the finish grade elevations for purposes of leveling and backfilling. They informed me that building #1 was one foot too low, and building #2 was two feet too low. The other two buildings were at the correct elevation.

This means that the excavator removed too much earth from those two basement excavations. The cement masons, in turn, poured their footings too low, and the bricklayers raised their block walls on these initial "mistakes" to the agreed upon number of courses which when completed were below finish elevation.

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By this time the storm sewer system was almost completed and had to be ripped up since it is dependent on correct elevation in order to have the pipes installed at the correct drainage pitch. In turn, this pitch determines the plumbers' elevations for drains in the basements of the buildings. The outcome was to revise the original survey to incorporate these mistakes and to dispense new prints to the affected contractors so that they might make their necessary adjustments.

Example #2.                      Too Many Walls

Background: The bricklayer crew is composed of six to ten men with a foreman. The foreman (actually a "working foreman") is responsible for keeping the crew busy. He lays out the locations for walls, snaps chalk lines, relies on the "print" for dimensions, uses a transit and measuring tape to get the correct locations and has the necessary material brought nearby by the mason-tenders (hod-carriers). When finished laying out and having enough for the crew to do, he joins the crew in constructing the walls.

Mistake: The bricklayer contractor arrived on the job and immediately went to talk to his foreman. In looking over the progress, the contractor pointed out that the wall of the boiler room should not have been built since the boiler must be put in the room first. The wall would have to be torn down. The contractor left, and the foreman who was quite disturbed threw his hammer to the ground in disgust with himself. He then began working extremely hard for the rest of the day taking no breaks and working through "pick-up" and "clean-up" time (ten minutes before the end of the work day).

The foreman had either mis-read the blueprint or overlooked the fact that the boiler would have to be installed in the room first, and the wall would be constructed afterward. His role as foreman ("leader of men") was brought into question, and he attempted to punish himself by over-producing as a compensation for his felt failing. As might be expected the members of the bricklayer crew said nothing to him about his mistake although they all realized the cost in time and material the contractor would have to incur.

Example #3.                      No "Juice"

Background: The role of expeditor (my role at this time) on the building construction project is to serve as problem solver and intermediary between the builder and contractors, workers, and owners. Phone calls must be made to order material, to get contractors on the job to do their work, to co-ordinate the various work activities and to manage the daily problems that occur. The expeditor works for the builder in this "buffer position" and is directly accountable to him.

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Mistake: One task for the expeditor on a construction project is to make sure temporary electrical power is provided for the workers to run their power tools and equipment. It was decided by the builder, the electrical power company engineer, and myself that the temporary electrical service pole should be located on the northern periphery of the project near an existing electrical transformer pad. I was to provide the exact location and communicate this to the electrical contractor doing the installation. The electrician installed the pole in the wrong place on my order. The underground power pedestal we were told to use was not readily noticeable, and I had the pole installed fifty feet away, adjacent to the main electrical transformer.

The consequences of this mistake were to have the electrical contractor return and reset the pole, to re-call the electrical inspector who had to approve it and to re-set the date for the power company to come and make the final connection. Meanwhile the project was without electrical power, and the workers either could not use power tools or had to rely on portable electric gasoline generators ("M-G Sets") - much to their displeasure. The builder was also concerned since this resulted in a slow down in progress.

These examples reflect miscalculations occurring during the roughing phase of the building construction sequence. The following examples do the same for the finishing phase.

Example #4.                      Tracks

Background: A critical part of the building construction process occurs during the final few weeks before occupancy. Here the finishing touches are put on the work, and the last remaining details are attended to. Many tradesmen are "in and out" completing their portions of the work.

Mistake: The front door of one of the units was left unlocked so that the various expected tradesmen could enter. During the day a worker had entered and left greasy footprints over the pale blue wall-to-wall carpeting that had been installed the day before. We thought it was the telephone installer, but could not be sure, however the tracks moved from room to room and stopped and concentrated at points where the phones were installed. Evidently, the worker was unaware of the damage he was causing.

The options open to the builder were to remove the carpeting at his loss (insurance) and replace it with new carpeting (cost of about \$1,000) or to try to remove the stains with a chemical cleaner at his responsibility. We chose the latter, and it worked successfully.

## Example #5.

## Scratches

Mistake: The painter arrived to touch up and finish the painting. One spot he had missed was a narrow one-inch strip in the master bathroom between the door jam and the vanity. After debating, he suggested that a narrow strip of wall paper should be used since the wall above the vanity had been papered. We agreed, and he began to cut a strip of matching wall paper with a razor blade on top of the simulated marble vanity top. When finished, the vanity top was marked with a number of long scratches.

This mistake required the company who provided the simulated marble tops (which were specially designed for each unit in terms of dimensions and color) to send a man out to buff out the scratches and re-polish the top.

## Example #6.

## Paint and Re-paint

Mistake: The kitchen cabinets in one of the units required hardware and some touch-up work. The cabinet men came out and spray-stained the cabinets (mahogany), but in the process also sprayed stain onto the white walls and ceiling surrounding the wall-hung cabinets. The painter had finished putting on his final coat of white paint the day before.

Evidently the cabinet men thought the white paint was a primer coat and that the painter could simply paint over any stain they got on the walls and ceiling, or that it was going to be wall-papered. The painter had to be called to re-paint the area.

These examples of worker miscalculations are representative of those observed during the entire construction sequence. They are illustrations of human error that result from a failure in individual perception, interpretation or understanding. They occurred frequently and should be considered an expected part of any work endeavor.

Hold-ups

Hold-ups represent failures in social organization. Mistakes occur through blockages or breakdowns in the communication network between essential persons or groups involved in the building construction activity. In order to function effectively and efficiently, the work oriented

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communication network requires clear, continual and exhaustive exchanges between all involved members. If this does not occur or if the network is impeded, distortions, misinterpretations and misunderstandings can result. It is from this condition of social disorganization that hold-ups result.

Hold-ups are portrayed best in the common adage, "the right hand didn't know what the left hand was doing". Information flow that is impeded prevents the necessary members or groups from unifying their actions in a common goal orientation. In effect, social organization is lacking, and members have an increased potential for making mistakes.

Hold-ups can be minimized by effective, managed social organization. Where miscalculations are to be expected, hold-ups should not and need not occur<sup>90</sup>.

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<sup>90</sup>The building construction industry is presently undergoing improved changes in the planning and scheduling of the major work activities on many construction projects. Methods previously found to be successful in other industries are being introduced into the building construction industry. These methods appear to be most successful on large, federally controlled projects, but they have also been used with limited success on other projects, including the one being reported on here.

Two methods are typically employed - the Critical Path Method (CPM) and the Program Evaluation and Review Technique (PERT). Both methods have the same fundamental characteristics and differ only in their orientation and computational techniques. Both are based on network analysis, which establishes relationships between activities and events within the project. CPM is activity oriented while PERT is event oriented. In each case the purpose is to organize systematically the flow of work so that time (and in turn money) is controlled and efficiency is maximized.

The exact details of these methods can be found in the following sources: Joseph Horowitz, Critical Path Scheduling: Management Control through CPM and PERT. New York: Ronald Press, 1967; and James L. Riggs, Guide to Cost Reduction Through Critical Path Scheduling. Englewood Cliffs, N.J.: Prentice-Hall, 1966.

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This type of "mistake at work" was observed during all stages of the building construction sequence and had both major and minor consequences for those persons and situations involved. The following examples taken from the field notes illustrate this.

The following examples of hold-ups were typical of those observed during the roughing phase of the building sequence.

Example #1.                      Deliver to ?

Truckers delivering pre-cast concrete planks for topping off the basements of the buildings were late, and in turn held up the five man crew who were to set the planks. Indirectly they were also holding up those trades to follow in the building sequence. The crew arrived at 8:00 a.m., but the first truck did not arrive until almost three hours later. The crew simply sat down and waited for the trucks to arrive.

The hold-up was caused by poor communication between the builder, the pre-cast contractor, and the truck dispatcher. The truckers were coming from a city eighty miles away, were not familiar with the city or the location of the project, and simply could not find the project. In addition, the project was hidden from view from the road by a ten foot high berm (mound of dirt running parallel with the roadway), it was not marked with the project name, and the truckers had not received adequate directions on how to recognize it.

Example #2.                      No Gas

It was critical to have back-filling done around the buildings as soon as the basement block walls and the pre-cast concrete planking were completed and sealed. Backfilling allowed the carpenter crews access to the buildings with their materials and heavy tools. The excavator provided one and at times two operators to run the bulldozers to do the back-filling.

For a few days only one operator was on the job since the excavator contractor had other jobs going at the time. A hold-up occurred when the operator ran out of gas for his "cat" two times in two days, each time before noon. The contractor was called each time, and he promised to have gasoline brought out immediately, but never showed. Meanwhile,

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I am indebted to Professor Louis H. Klotz and Mr. Sydney R. Crawford for providing me with an insight into these techniques.

the operator simply sat atop his "cat" and waited, while the various crews needing approaches to the buildings had to busy themselves with other work.

The problem was finally resolved by having the builder apply pressure on the contractor with threats of bringing in a bonding company. This meant that if the contractor did not live up to his contract (which he wasn't) a new contractor could be called in to do the work for virtually any amount of money, and the original contractor would be responsible for paying the bill. This, of course, would also affect his reputation as an excavator contractor.

### Example #3. Whose Work?

Truck loads of material arrive daily on the construction project. One morning at the beginning of the work day a truck had already arrived, and the driver was waiting to be unloaded. The cargo consisted of aluminum window and patio door frames - a semi-truck load of them.

A complicated problem existed here as with all construction projects that employ union workers. It must be established whose work something is. Unions are careful to hold onto all work they consider to be their own. Any infraction can bring forth the union business manager who has the power to pull his men off the job and in effect close it down.

Such was the case here. The window and door frames were to be installed by the carpenters as part of their contract, and this meant that they were responsible for unloading them. The carpenters, however, were not present on the job that day. This meant a hold up for the trucker who had to wait (for over four hours), and the builder and expeditor who had to drive ten miles to another project to inform the carpenter crew and have them come to unload (there was no phone where they were working).

The hold-up resulted from a communication breakdown between the builder and the carpenter contractor. Somehow they had gotten their "signals crossed". The builder said he had informed the contractor that the truck was to arrive that morning, but the contractor had misunderstood or forgotten. The result was a hold-up.

These examples reflect hold-ups occurring during the roughing phase of the building construction sequence. The following examples do the same for the finishing phase.

Background: Toward the end of the building construction sequence "loose ends" must be brought together. Incomplete work must be finished and systems (electrical, plumbing, and air-conditioning) must be tested, inspected and working properly for the new owner. This requires contractors to complete their work as quickly as possible since other contractors



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will be waiting for them to finish. This period required close and continual co-ordination by the expeditor since it was continually plagued by hold-ups.

Example #4.                      Togetherness

The plumber and electrician must both make their connections on the garbage disposals. I called to get them both to come in the morning of the same day in order to save time. The electrician arrived as promised, but the plumber never showed. The electrician could not make his connections until the plumber finished his, so he completed some other work he had and then left. Another hold-up. He then had to be recalled after the plumber completed his work. This meant at least a two day delay, and the owner was waiting to close and move in.

Example #5.                      Shades of Blue

The painter was called to re-paint the foyer cornice moldings in one of the units. The new owners had expected a slightly darker blue color to match their carpeting, and the wall paper they had ordered. The painter arrived but informed us that the original color mixture was thrown out, and he could only try to blend a new mixture. He could not guarantee the results since paint dries a different shade than when first applied, and he would be painting over another color. Meanwhile the wallpaper that had been ordered was delayed because of a mix-up in ordering. It would be another three weeks before delivery could be made, and then since it was a special material (silk base) the colors could not be guaranteed to match the original sample. This combination of hold-ups came at a time when the new owners wanted to close and move in.

Example #6.                      Money Talks

Six of the eight units in the south project were either missing marble splash moldings on the bathroom vanities or the ones they had were the wrong color or size. In ordering, making, or delivery some errors had occurred. New ones were reordered, and the plumber was informed they were now ready to be installed. The plumber promised to take care of this work promptly, but two weeks passed before it was completed. I called the plumber superintendent each day and he would promise to get a man out to do it, and each day the plumber failed to come. I even sought out the plumber myself as he was working on the adjacent project. He continually tried to put off the job saying he was busy with other work. While this was going on the owners were continually complaining as was the builder. I finally had the builder call the plumbing contractor, and he threatened to hold back money. This worked successfully, but the work progress had been held up considerably.

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These examples of hold-ups are representative of those observed during the entire construction sequence. They are illustrations of breakdowns in social organization. Information flow was impeded or distorted, and misinterpretation or misunderstanding resulted. Hold-ups occur frequently but need not and should not occur. They can be minimized through clear and continuous communication between all sectors involved in the building construction process.

### Circumstantial Errors

Circumstantial errors result from the immediate and prevailing circumstances surrounding a work event. Persons are more likely to err under pressure. If the work expectations are too great or conflicting for the worker, he will be more inclined to err in carrying out his duties.

Building tradesmen frequently find themselves in a role conflict situation. They are paid to be productive while at the same time they are expected to provide quality work done in a craftsman-like fashion. In many ways these associated work values are conflicting and mistakes at work often arise out of this conflict. In essence, workers are paid to do the job right but are not provided the encouragement to take the time to do it right<sup>91</sup>.

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<sup>91</sup>An interesting change appears to be occurring in the building construction industry along these lines although the evidence I have is slight. In an interview with one of the largest electrical contractors in the state where this study was conducted, the contractor mentioned that he and other members of the Electrical Contractors' Association were concerned by the lack of craftsmanship among workers. He

Occasionally on "time and material jobs"<sup>92</sup> tradesmen can devote more of their work effort to craftsmanship. They can often provide "picture book installations" which not only function perfectly but look perfect too. An electrical installation in an electrical contractor's new offices would require this type of installation. Here craftsmanship is emphasized at the cost of production in order to have the "perfect" installation serve as a selling point for the contractor's services.

At the other extreme and occurring much more frequently are those installations that are to be done quickly. Referred to as "rush jobs"<sup>93</sup> they require the tradesmen to get "in and out" as quickly as possible. Here productivity

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indicated that "the quality of work was diminishing and that workers were performing and feeling less like craftsmen". The implication was that he and the other members of the Association were trying to change this. In the same tone, however, he indicated that his method of contracting was to bid on all jobs instead of being selective, and that he was "concerned with making money". This again, portrays the potential conflict between productivity, in terms of "making more money", and craftsmanship, that is, providing a sound quality installation.

<sup>92</sup>With this arrangement the contractor charges the customer for all the man hours and material required to complete the job. In this case it behooves the contractor to have his men on the job longer and to use large quantities of quality material. Sometimes these arrangements are made as "time and material - not to exceed" an agreed upon figure. This added clause somewhat protects the customer from exploitation. The "time and material" job is, of course, the best kind from the workers point of view since he is not pressured to work harder and faster by the contractor.

<sup>93</sup>"Rush jobs" are usually considered synonymously with contract work. Here the contractor has agreed to complete the job for a stated bid. In this case it behooves the contractor to complete the work with the least man hours and material cost. Most building construction work is contract work.

is emphasized at the cost of craftsmanship. And, more importantly the probability of error is increased. Within this context, it has been observed that when minor mistakes do occur workers will often comment to each other, "Fuck it, they will never see it at city hall"<sup>94</sup>.

Circumstantial errors are similar to hold-ups in that they need not and should not occur. The major difference between the two is that where hold-ups result from a communication breakdown between workers, circumstantial errors occur because the communicated expectations for workers are clear and explicit, but also contradictory.

This type of "mistake at work" was observed during all stages of the building construction sequence and had both major and minor consequences for those persons and situations involved.

The following examples of circumstantial errors were typical of those observed during the roughing phase of the building sequence.

Example #1.                      Hurry up, But Save the Lumber

Background: Wood forms are used to pour concrete. After the concrete "sets up" the forms are stripped off and used again. The expense of lumber encourages the masonry contractor not to waste or ruin lumber in stripping, and in fact, precautions are often taken (such as spreading oil on the wood before the concrete is poured) to facilitate stripping.

In the same sense, stripping is regarded as menial work and is usually relegated to laborers. Moreover, stripping is usually viewed as a job that should be done quickly; it is seen as the necessary task after the "real" work has

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<sup>94</sup>City hall usually houses the offices of the various building inspectors.

been completed. In actuality, stripping requires a good deal of skill and experience if it is to be done correctly.

Mistake: A new laborer (actually a college student working a summer job) had been hired, and he was given the job of stripping forms. He was made aware of the expectations - to do a good job (don't ruin the lumber), but do it quickly. He had trouble with these contradictory role expectations. In trying to do the job quickly he was continually ruining the lumber to such a degree that much of it could not be re-used. The foreman, contractor, and other workers informed him of their displeasure, but his attempts remained with trying to work quickly rather than skillfully. He was "labeled" as clumsy, and there was some talk of firing him, but this did not occur during his stay on the project. In time his work skills did improve.

Example #2.

Hurry up, But Don't Spare the Nails

Roughing carpenters on all jobs I have been on appear to work extremely hard. They have to be able to be agile and often work in precarious places. Their work consists of erecting the wood framework in buildings including partitions, flooring, studding and joists.

All of the carpenters use heavy 21 ounce hammers with long handles. They also wear a webbed belt with two leather pouches around their waist. These hold various size nails which they use up quickly. Nails are all over the floor of their work area. Time is important, and they take no time to pick up fallen nails. They work at a fast pace seeking help from others only when they really need it. They regularly climb 2 x 4 wood braces like monkeys and walk on top of stud walls with agile footing.

The work expectations are clear for the rough carpenter crew members - to hurry up and finish. But within this context mistakes occur frequently and material is wasted routinely. Not only are nails and lumber wasted, but much of the work is sloppy and patchy. The reasons for this are clear.

The rough carpenter is working on the inner parts of the building. All of their work will eventually be covered up with paneling, siding, brick, paint and trim.

Example #3.

Hurry up, But Drive Safely

Background: In some cases when concrete is being poured the concrete truck cannot reach the desired spot, and the concrete must be transported there by wheel-barrow or "power buggy" (a motorized cart).

Whenever concrete is being poured it must be done quickly in order to complete the required work before the concrete sets up.

Mistake: While pouring the stoops for the building, a cement-mason apprentice driving a "power buggy" tipped it over. He was driving too fast and spilled the entire load over an already finished concrete pad. This required immediate clean up before it set up. The apprentice had been expected to drive the buggy both quickly and carefully. This conflicting situation facilitated the mistake that occurred.

These examples reflect circumstantial errors occurring during the roughing phase of the building construction sequence. The following examples do the same for the finishing phase.

Example #4.                      Hurry up, But Do a Good Job

In attempting to complete one of the units for the new owners who had already moved in, I (working in the capacity of expeditor) installed some release knobs on the combination storm and screens. In the process one of the knobs broke off from applying too much pressure when attempting to screw it in. I was hurrying to finish as I had other important things to do, and the tapped screw hole was not accepting the screw. It probably was tapped incorrectly at the factory.

I simply left it that way planning to work on it another time - I never did. The consequence will be that the new owner will have difficulty shifting from screens to storms on that window.

Example #5.                      Hurry up, But Do It Right

The electrical contractor was called to provide a man to hook up the pressure switch for the water pump in one of the units. The new owners wanted to close and move in, but they had no running water. The water and air-conditioning systems had to be completed, tested and inspected.

When the electrician arrived the owner, plumber, air-conditioning contractor and I were waiting. He worked quickly under scrutinizing pressure to make the necessary connections. In the process he hooked up the pressure switch wrong tripping the circuit breaker and arcing the contacts. Naturally he was embarrassed in front of his on-lookers.

Example #6.                      Hurry up, But Don't Break It

The circumstantial errors in building construction work come to the fore when a building is completed. Materials left over reflect the mis-orders and re-orders of material. The garage becomes the storehouse for the broken and the extra materials. In each case these parts and pieces illustrate

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the errors of hurried workers. The broken bathroom ceiling fan that the electrician hooked up wrong, the broken kitchen moldings that the painter removed in haste and broke in the process, the extra hardware for doors, cabinets, and windows that were forgotten and perhaps reordered, extra cabinets, plumbing fixtures - all these left over materials reflect the hurried conditions under which finish work takes place.

These examples of circumstantial errors are representative of those observed during the entire construction sequence. They illustrate a situation of contradictory role expectations - the worker is expected to take the time to do his job correctly and craftsman-like, but at the same time he is expected to complete his installation quickly.

Circumstantial errors occur frequently especially toward the end of a project, but they need not and should not occur. Any attempts toward providing realistic work expectations for tradesmen would reduce this type of unnecessary error.

### Natural Errors

Natural errors are simply accidents. They are unforeseen events in which no person or group can be deemed responsible. Where the previous "mistakes at work" could be explained through human or social phenomena, natural errors can only be termed an "Act of God" in the same sense that this phrase is used in the fields of insurance and law.

Natural errors do not occur frequently or routinely, but they can always be expected to occur without notice. When they do occur, their results can be as critical as with any other variety of mistake at work. The only difference is that with natural errors no one can be considered liable or

accountable for the mistake. The following examples taken from the field notes illustrate this.

Example #1.                   The Rough Road Did It

We had waited one month for delivery of a special simulated marble vanity top for one of the master bathrooms. It had finally arrived, and I informed the plumber who was going to install it and make his connections. He agreed to come the next day since the new owner wanted to move in within a few days.

The plumber and I uncrated the vanity top only to find it cracked and unusable. The plumber left, and I called the company to order another.

Example #2.                   The Rain Did It

The builder told me that he was receiving calls from irate owners in the project to the south. These houses had been built a year ago, and now some of the patios were beginning to collapse. The patios had been built adjacent to a ravine which had recently been used for drainoff during rain storms by the new expressway bordering the project. This had caused a great deal of erosion of the ravine and a subsequent undermining of the patios. In addition some of the houses would be in danger in the future.

Example #3.                   A Nail Did It

The bricklayer crew relies on their fork lift truck to do much of the heavy work and transportation of "mud" (mortar) and materials to the workers. A flat tire one morning put the vehicle out of commission. The "mud" had to be wheel-barrowed around the working area as did the concrete block and other materials. The crew (especially the mason tenders) complained from the first, but the repairmen from the garage did not come until late afternoon. By the time they repaired the tire the work day was almost over. It was not very productive.

Example #4.                   Nature Did It

The owners had moved into their new home the day before and upon arriving at work I received a call from them. When they awoke they found hundreds of dead bugs around the edge of their new carpeting. We later identified them as sow bugs, and the exterminator had to come in. He said that sow bugs thrive in moist areas, and the house was situated in a very conducive area and had no basement. The new owners would have to have the exterminator at least once a year. Each time they would have to abandon the house for most of the day while the chemicals were working. Needless to say



the new owners were not happy, after paying in excess of \$50,000 for their "new" home.

Example #5.                      God Did It

It was Monday and I had set a date with the electrician to come to one of the units to finish all of the electrical work. The range and garbage disposal had to be hooked up, and a few ceiling fixtures and switches had to be installed. Electrical inspection was set for late afternoon of the same day, and the new owners were waiting to move in. All of the other trades had finished.

I arrived at the unit, but the electrician did not show. I called the contractor but got no answer. Later I found out that the owner of the contracting firm had died over the weekend, and all employees had the day off in memorium.

Example #6.                      The Weather Did It

The workers on the project begin work at 8:00 a.m. except for the bricklayers who begin at 7:30 (This is their choice, and they go home at 4:00 instead of 4:30).

At precisely 8:10 one morning it began to rain extremely hard turning the project into a sea of mud. The workers sat in their cars until 9:00 a.m., but the rain didn't let up. They finally went home, and the job shut down for the day.

These examples of natural errors are representative of those observed during the entire construction sequence. Although they are not as frequent as the other varieties of "mistakes", they can be as critical and consequential.

These are accidents, "Acts of God", and no one can be held directly responsible for their occurrence. Yet they can be expected to occur without notice and do occur.

I have singled out four varieties of "mistakes at work" which occur during the construction of buildings. These mistakes are seen to be an inextricable part of the entire construction sequence. Some of these mistakes may be consequential for future owners while others simply hinder

the progress of the construction. In all cases, these mistakes render an imperfect quality to the new building.

### The Management of Mistakes

Tradesmen are the managers of mistakes. They are skilled craftsmen in the control, manipulation and treatment of problem situations. When mistakes occur it is the tradesmen who are called upon to deal with them.

Four options are always open to tradesmen in their dealings with mistakes. First, they can re-do the work affected by the mistake. Second, they can patch-up the work affected by the mistake making it reasonably and sufficiently sound. Third, they can cover-up or work to conceal the mistake and fourth they can completely ignore the mistake treating it as if it never happened.

The choices the tradesmen make are based upon many complex factors centering essentially on three questions - Is the mistake critical, that is, either dangerous to safety or clearly noticeable?; How much money or time will it take to fix?; and Who knows about the mistake?

The appropriateness of these questions depend, of course, on the variety of mistake and the events surrounding it, but in general the following resolutions were seen to occur.

1. If the mistake was critical in terms of safety or noticeability, the affected work was re-done or at least "patched up" sufficiently.
2. If the mistake was not critical but was costly in terms of time or money to fix, it was either ignored or covered up.

3. If the mistake was not critical and was not costly in terms of time or money to fix, it was either ignored or covered up.
4. If the mistake was not critical and no one knew about it or if only other workers knew, it was either ignored or covered up.
5. If the mistake was not critical but "important others" (future owners, building inspectors, builders, architects, and occasionally contractors) knew about it, it was not ignored.

Generally, few mistakes are resolved by completely re-doing the affected work. This choice is reserved for only the most critical type of mistake. Even then, a patch-up will usually be attempted first because of the time and money involved in re-doing any work.

Since most mistakes are not critical in terms of being dangerous to safety or even noticeable to the "untrained eye", they are typically covered-up or concealed from view.

A lesser number of these mistakes are simply ignored. These various adaptive practices in building construction work will become apparent in the following examples taken from the field notes.

#### Re-doing Mistakes

##### Example #1.

A bulldozer operator who had been back-filling around building #4 knocked in fifteen feet of recently constructed wall. His machine slipped down a small embankment and pushed in the wall. It had to be torn down and re-done since it was a bearing wall.

##### Example #2.

The builder informed me that he had been receiving phone calls from the owners of the houses in the project to the south. These houses had been completed less than a year ago, but the paint on the rain gutters was peeling, and the

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owners were complaining. They contended that the gutters began peeling shortly after they were painted. The builder told me to get the painter out there to do the job over.

### Patching-up Mistakes

#### Example #1.

The footings in building #3 were done sloppily. They were not even rough finished and were high in many cases. This morning one of the laborers drove onto the job towing an air compressor. He used an "air hammer" to even off the footings. Some of the footings were a full three inches too high.

#### Example #2.

In the project to the south seven of the eight units had been purchased. Two of these required some "patching up" before the new owners could move in. Most of the work required a finish carpenter so I talked the carpenter contractor into loaning me one for a few days.

The finish carpenter was excellent - he knew just what to do and how to do it. I showed him all of the little miscellaneous jobs that had to be done and told him to borrow any parts or material he needed from the "model" unit. (This is typical in building construction work. The model is the first unit to be completed but the last to be sold. Parts and materials are borrowed from the model to replace broken or missing parts or materials on the other units being readied for occupancy.)

### Covering-up Mistakes

#### Example #1.

While back-filling around building #1 the bulldozer operator had trouble filling in around the footings for the stoops. He found that when he pushed the dirt nearer to the building the concrete block footings jutting out for the stoops began to bow and crack. Instead of stopping he simply covered them with dirt.

#### Example #2.

One of the jobs of the finish carpenter readying the units for occupancy was to use plastic wood on scratches, chips and nicks on any of the woodwork. Later these spots

would be re-painted by the painter. (The tradesmen doing the finish work are skilled at "make-do's"<sup>95</sup>.)

### Ignoring Mistakes

#### Example #1.

Electrical work must adhere to a strict building code. In one case I overheard an electrician foreman tell his worker not to change a junction box that was too small for the number of wires entering it. This is a violation of the electrical code. The foreman said, "wait to see if the (electrical) inspector catches it. We can always change it".

(In many ways this is typical. I was trained as an electrician to leave a few obvious and easy to correct mistakes for the inspector to find. In this way he is inclined to pass over other mistakes you may want to conceal by busy-ing himself with the "constructed mistakes".

#### Example #2.

The builder received a certified letter from the pre-cast concrete column contractor. It stated that he would not be responsible for the columns he set in building #2 because some of the concrete footings had been poured (by the mason) with water in the holes. (When footings are poured, a hole is dug and filled with concrete. These footings serve as a stationary base for the superstructure of the building.) He said that the concrete had crusted and powdered because of the water, and that he could not be sure the footing would hold the weight of the building.

The builder showed the letter to the masonry contractor and asked for an explanation. The contractor only

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<sup>95</sup>I am using the term "make-do's" here to reflect the skillful ability of tradesmen to employ unusual or unorthodox materials and techniques to cover-up mistakes. For example, I have used a cork to plug up a hole inadvertently drilled through the outside wall of a house while attempting to drill from the second floor to the first floor inside of an outside wall. Shoe polish (white and black) are excellent paint substitutes in a pinch situation. Wooden matches can be used to plug up screw holes in plaster walls which have become too large to allow the screw to tighten. Match books serve as good shims when leveling appliances and glue can be used where nails or screws cannot.

Goffman employed this term to account for the techniques used by inmates in "total institutions" in which they would use available materials "in a manner and for an end not officially intended" (Goffman, 1961:207).

laughed and told him not to worry - the footings were fine and his building would not collapse.

This chapter conveys the inevitability of mistakes occurring during the building construction process. Mistakes occur in an interactional context between workers and their work setting. The causes for these mistakes vary. Some are due to simple human error (miscalculations) while others can be grounded in organizational deficiencies (hold-ups). Others occur by chance, and no person or persons can be held directly responsible for their occurrence (natural errors); and still others arise out of the immediate and prevailing circumstances surrounding the work event (circumstantial errors).

The consequences of these mistakes also vary. When mistakes occur, tradesmen as the managers of mistakes, are called upon to deal with them. Various options are open to them. They can completely re-do the work affected by the mistake. They can patch-up the affected work, making it reasonably and sufficiently sound. They can cover-up the mistake and thus conceal it from view, or they can completely ignore the mistake treating it as if it never occurred.

The outcome of these mistakes manifests itself at the end of the building construction sequence when the finished product - the building - is turned over to the new owner. Since errors occur routinely throughout the building construction sequence and become cumulative as tradesmen carry out their work activities, the new owner or buyer is presented with a product that is permeated with structural

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and processual imperfections. Some of these imperfections are so deeply hidden in the confines of the buildings physical structure that they remain undetected. Others are quite apparent even to the inexperienced eye and yet others manifest themselves only through time in the form of unexpected difficulties with the esthetic and functional aspects of the building. The problems and compromise between the builder and the buyer during the final exchange of the building will be dealt with in the following chapter, however, some discussion of the problem of mistakes is warranted at this point.

It was concluded in the previous chapter that an interdependent relationship exists between the inanimate physical (work) setting and the workers behavior which occurs therein. Worker behavior patterns both influence and are influenced by the conditions of their work setting. Workers both manipulate and manage their work setting for their own behalf and are constrained and managed by the conditions of their physical setting. It is within interactional context that mistakes at work arise and are eventually managed.

The transitional nature of the work setting - a building that is continually and progressively emerging - is not in itself conducive to reducing mistakes. The physical structure of an emerging building is simply changing at a rate that is difficult to manage and control. Even if checks and controls (quality control) could be imposed on the construction of buildings some mistakes such as miscalculations and natural errors would remain a problem as they do in any

work setting. Other varieties of error such as hold-ups and circumstantial errors are more manageable and could be reduced significantly. However, their reduction is more dependent upon organizational management than upon the management of the physical structure of the emerging building. Social organization is lacking in building construction work and the investigator will argue that this is not simply an arti-fact of the building project that was studied. Rather, all projects, including buildings being remodeled, which have been directly observed by the investigator during his career as a building construction worker and discussions with workers on other building projects in various regions of the country reaffirm this point. Workers "muddle" through their work adapting, modifying, and changing details as they go. The result is a building which is permeated with structural and processual imperfections.

The organizational deficiencies which lead to this "muddling" strategy are the responsibility of the managers of building construction work - the builders, architects, and contractors and their under structure personnel - foremen, superintendents, and expeditors. Suggestions for reducing this lack of social organization are discussed in Chapter IX, but essentially what is needed are clear and consistent lines of communication and increased social interaction between all members, workers and managers alike. These improvements could serve to ameliorate confusion, mistakes, and bungling by workers in all trades and by



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managers at all levels in the stratification system, during  
all phases of the building construction sequence.

## CHAPTER IX

BUILDERS AND BUYERS:  
THEIR PROBLEMS, RELATIONSHIPS AND RESOLUTIONS

The major characters in the outcome of a building construction venture are the builder and the buyer. Together they are linked by a transitory bond of mutual exchange. The builder provides a needed service for the buyer who in turn reciprocates for that service with a payment of money. The medium for both is, of course, the building being constructed<sup>96</sup>. When it is completed and paid for, the relationship is dissolved<sup>97</sup>.

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<sup>96</sup>The orientation of this chapter is toward house and condominium building. However, many of the findings, illustrations and suggestions reported on here are applicable to other types of building ventures such as, commercial and industrial buildings. In effect, the types of building problems don't change to any appreciable degree with the construction of various types of buildings.

<sup>97</sup>This relationship of mutual exchange between builders and buyers could be viewed through a "social exchange" perspective widely noted in the sociological literature. See, George C. Homans, Social Behavior: Its Elementary Forms. New York: Harcourt, Brace and World, 1961; George C. Homans, "Social Behavior as Exchange", American Journal of Sociology, 63(1961):597-606; Alvin W. Gouldner, "The Norm of Reciprocity", American Sociological Review, 25(1960):161-178; and Peter M. Blau, Exchange and Power in Social Life. New York: John Wiley and Sons, 1964.

Here both Blau and Homans are essentially viewing all social interaction as a complex exchange of mutually rewarding activities. Human behavior is seen to be directed toward maximizing rewards and minimizing punishments for the members. Interaction is increased out of this exchange condition. When a reward is provided to another it is seen to obligate the other. This felt obligation leads to reciprocity.

Essentially, Homans sees this relationship as an economic exchange. Man is viewed as an economic being attempting to maximize his "profit" and minimize his "loss".

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This temporary relationship is not without its problems. Both builders and buyers have their own expectations for one another, and these are not likely to be mutually fulfilling throughout the duration of the relationship. In effect, problems do occur, and they must be resolved within an exchange context before the two parties can part.

This chapter will focus on this intricate, yet transitory, relationship between builders and buyers. Their problems and the attempts at resolving them will be explored. Lastly, some suggestions will be offered for those persons who plan to have a building constructed in the future and the builders and contractors who do the building.

#### The Role Set

Builders and buyers do not act alone. Rather, each functions within a cadre of skilled technicians, specialists, and professionals who act in their behalf. Within this context, both the builder and the buyer can be said to have an

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Persons continually evaluate their "outcomes" according to an implicit "rule of distributive justice" which states the rewards of each should be in proportion to his costs.

Blau, on the other hand, sees exchange relations as essentially power relations rather than economically based relations. Here exchange is perpetuated through a condition of balancing (when the needs for the members are equal) and rebalancing (when the needs for the members are unequal) the power between the members.

It would appear that Homan's formulation would be the most useful for explaining the relationship between buyers and builders.

auxiliary "role set"<sup>98</sup>. Each has a cadre of others in their service who act in a capacity of assistance and support. Moreover this is a special purpose relationship occurring only for limited periods of time.

In order for the builder to carry out his role with the buyer he relies on the following cadre of skilled technicians, specialists and professionals (See Table VIII).

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<sup>98</sup>The concept "role set" has been used to refer to "that compliment of role-relationships in which persons are involved by virtue of occupying a particular social status" (Merton, 1957:110). See Robert Merton "The Role Set: Problems in Sociological Theory", The British Journal of Sociology. June 1957, Vol. 8, No. 2, pp. 110-118.

I am using this term in a slightly different manner by adding the adjective auxiliary to the "role set" concept. Here I mean to show that some of the roles within a person's role set are transitory and special purpose, serving to maintain or enhance the status position of the person for only a limited period of time. This variety of role relationship can be distinguished from those that are relatively long lasting and multi-purpose. The latter could be characterized by the person's family members whereas the former could refer to the person's lawyer, doctor and banker.

TABLE VIII.

THE AUXILIARY "ROLE SET" OF THE BUILDER

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BUILDER	
Expeditor <sup>1</sup> Architect <sup>1</sup> Lawyer(s) Accountant(s) Banker(s) Insurance Representatives Office Staff Sales Staff Personal Contacts (Friends, acquaintances, other builders, etc.)	Building Contractors <sup>2</sup> a. Superintendents b. Estimators c. Foremen d. Tradesmen e. Office Staff f. Union Officials <sup>3</sup>  Material Suppliers a. Sales Representatives b. Office Personnel  Public Service Agencies a. Utilities (electric, water, telephone, gas) b. City, State and Federal Agencies (rule establishment and building inspectors)

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1. Architects may be in the hire of either the builder or the buyer. In the research being reported on here the architect was employed by the builder.
2. I am including sub-contractors here. In some cases a building contractor may sub-contract portions of his work to another contractor (sub-contractor). This is often done when specialized services are required in which the contractor may not have the equipment or expertise.
3. Union officials are included here since the contractor often has the power and knowledge to deal with union problems that may arise during the building construction sequence.

This complex network of personnel provides service to the builder which enables him, in turn, to provide service to the buyer.

Buyers' also have an auxiliary "role set", although smaller, acting in their behalf. (See Table IX.)

TABLE IX.  
THE AUXILIARY "ROLE SET" OF THE BUYER

BUYER
Banker Lawyer Insurance Representatives Personal Contacts (Friends, acquaintances, etc.)

Where the builder's auxiliary role set centers on providing a service, the buyer's auxiliary role set essentially provides protection to the buyer.

It is within this array of roles that an exchange formulation arises. The potential buyer taking the initiative seeks out a builder to have his building constructed. The builder, in turn, attempts to sell his service and product to the prospective buyer. Here begins the first of three stages. This exchange relationship begins with the contract in which a mutual written agreement is made between the buyer and the builder, moves onto the parley in which problems are delineated and discussed, and finally culminates in the compromise in which each of the parties yield some of their original aims in the form of mutual concessions. These

stages<sup>99</sup> in the builder-buyer exchange formulation will be elaborated and exemplified in the following.

### The Contract

The first meeting usually occurs between the potential buyer and the builder's sales representative. An elaborate staging effect takes place here in order to portray the builder's product in the best possible light.

An appointment is made by the potential buyer to see the "model" unit. The "model" is outfitted with the best features and furnishings. It is carefully finished off to enhance the building. Quality furniture is either rented or purchased for the model, and carpeting, painting, wall paper, electrical fixtures and the like are all carefully selected to "fit in" perfectly with color coordination and contemporary styling. It is "brand new", clean, and sparkling - reflecting excellence in craftsmanship and offering all of the modern conveniences. Everything works properly. It is made as close to ideal as perhaps is possible.

This elaborate arrangement is, of course, the major selling point, and it provides the salesperson<sup>100</sup> with the best possibility of making a contract.

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<sup>99</sup>A similar sequence of stages has been used to describe the selling of automobiles. See Stephen J. Miller, "The Social Base of Sales Behavior", Social Problems. 12: 15-24, 1964.

<sup>100</sup>In this research one of the sales persons was the builder's nephew. This family tie provided for a very close relationship between the builder and his sales representative.

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Much of the success in making the contract is due to the presentation and demeanor of the salesperson. Here too, only the best is portrayed. The smile, the handshake, the dress, the conversation of pleasantries all become a part of this presentation and enhance the chance of a contract.

Once the contract (offer to purchase) is signed, an agreement between the buyer and the builder has been reached and a commitment is established to engage in the agreed upon exchange.

### The Parley

The parley represents the middle and longest stage in the exchange sequence. This is the problem-ridden stage. It is during this period that the buyer is first confronted with discrepancies between what he thought he had agreed upon and what he is actually presented with. This is a frustrating, yet realistic, period for the buyer and brings forth a confrontation between the buyer and the builder. The following examples taken from the field notes illustrate this point.

#### Example #1.

The builder related to me that when he arrived home last night (at 12:30 a.m.) a telephone message was waiting for him. The message, from one of the buyers, stated that he should return the call "no matter what time, even 3:00 a.m.". The problem concerned getting the various finishing work done on their house so that they could move in. They were especially concerned because much was yet to be done (lighting fixtures, carpeting, painting, wall papering, appliances, etc.), and they were going on vacation for a week and would not be around to see that progress was being made. They hoped to move in on their return, prior to their actual closing date. (With the amount of work left to do, this would be impossible.)



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This confrontation between builder and buyer illustrates the pressure that buyers will often exercise on builders. They demand more than they can realistically expect hoping to only have some of their demands met.

Example #2.

Buyers in two units complained to me about one of the electricians doing the finishing work. One commented that he was a "mean man" referring to his lack of being helpful and civil to her and her husband. He was terse with them when they asked any questions or requested extra work. He simply told them that they would have to talk to the contractor (his boss) about "extras", that he only did the work. The other buyer also complained to me about the same worker remarking about his personality and workmanship.

Given these complaints, I told the builder, and he suggested I call up the electrical contractor and complain. I was to "tell the contractor that we did not want that electrician on the job again". (I did call but did not phrase the problem that strongly.) The contractor assured me he would talk to the electrician, and when he did return to complete his work both buyers were impressed by his favorable change in personality.

This represents a clear example of buyer clout. They have, in effect, exerted their influence over the builder to request which tradesmen should work on their houses and how the workers should act toward them. The tradesman, although skilled, becomes a victim of circumstance in the buyer-builder exchange. This same theme has been observed with other victims - material suppliers, appliance distributors, and landscape workers.

Example #3.

The builder informed me that I should expediate the complaints voiced by the buyers in Phase I as quickly as possible while keeping the cost down. His philosophy on this was "to do something quick, dirty and cheap that will satisfy the customers at least for the short run". I visited each of them and recorded the problems they had and promised to work on them as quickly as possible. The list was quite long and included the following:

water spots on one of the kitchen carpets; painting touch-ups on the inside of all of the units; grills missing on base-board heating ducts; various landscaping problems (including burned out grass and dead shrubs, etc. from lack of watering); splash moldings missing or installed incorrectly; paint chipping off many of the rain gutters; ceiling insulation never installed or only partially completed; driveway (asphalt) buckling and settling leaving a rough and uneven condition for driving; heating unit problems in some of the units; various electrical problems; various plumbing problems; and windows in most of the units would not stay open (or they would not open) and had to be held up with bottles or sticks. (Mrs. R. told me her Persian cat had gotten caught between the window and the screen when it knocked the bottle away that was holding open the window.)

Here the builder is forced to make concessions to the buyer. His concern is to appease the buyer and move toward closing. The buyer in turn pressures for the quality product they were led to expect.

These examples are representative of the problems confronting both builders and buyers. The builders must call forth the necessary members of his auxiliary role set to resolve these problems to the satisfaction of the buyer. Alternatively, the buyer is concerned with the rectification of these problems and poses a continual threat of calling forth members of his auxiliary role set, namely his lawyer, to act in his interest and behalf. This is the parley stage; a stage of confrontation and deliberation.

#### The Compromise

The compromise is the natural extension of the parley. Where during the parley stage problems between the buyer and the builder are brought to the fore, in the compromise stage these problems become mutually resolved. This is the last stage in the exchange relationship. After mutual

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concessions are made and the problems are resolved, the relationship is dissolved. It culminates at the "closing" when all matters are completed to the satisfaction of both parties, and they sign the closing documents.

The seriousness of the compromise between the builder and buyer is illustrated in the following example taken from the field notes.

Example:

At the closing the builder was presented with the following list of work that was incomplete or done incorrectly. The closing took place, but \$3,000 was held in escrow for ten days. If the work was not completed in that time the money would be forfeited.

1. guest closet doors do not close
2. pull ring missing from kitchen door
3. doors on heating closet do not close
4. lock on master bedroom door handle not installed
5. window latches need screws
6. metal window guides in kitchen need adjusting
7. all storm windows need pull knobs
8. toilet tissue holder missing
9. towel bars missing
10. mirrors not installed
11. vanity marble trim missing
12. pull handle missing on cabinet door in master bathroom
13. screen on east window in dining room torn
14. metal heating grills missing in living room floor
15. air-conditioning doesn't work properly
16. remove cement and debris from ravine to north of property (to best of sellers ability)
17. light fixture above work area missing in kitchen
18. change shelf arrangement in utility area to accommodate washer and dryer
19. heater and fan in powder room bathroom not connected - not working properly
20. kitchen and bedroom windows do not stay in an open position
21. drawers in powder room vanity missing
22. shower doors missing
23. automatic garage door motor not installed
24. new ladder in garage not installed after first one broke
25. screen and storm windows on garage missing
26. lock on garage window missing
27. garbage compactor not installed
28. clean up garage

29. handle missing on outside garage door
30. wall paper in foyer not installed
31. washer and dryer not installed
32. patio door plate missing - cannot lock door
33. gouges in doors and woodwork
34. carpeting in kitchen missing
35. storm window for north side window cracked
36. bathroom (master) drawer works hard

The builder immediately put me to work to take care of these problems. He had no intention of forfeiting \$3,000. We did meet the deadline, but only with the buyer accepting some of the faults as not repairable and promises to finish others at a later date. In the end, the majority of the work was completed to the buyers satisfaction, and his money was paid in full.

This example is representative of others encountered. It reflects the final stage in the construction process and the social reality of persons engaged in that process. Collectively these last two chapters reflect the frustrations of both builders and buyers as they engage in the construction of a building.

No research report is complete without offering some suggestions for ameliorating the problems discussed. This will be done in the following two sections. In part, these suggestions stem from the previous analysis with the remainder being drawn from insights gained during the investigators eight years of work experience as a building construction worker.

The previous analysis has demonstrated a lack of social organization among tradesmen and other management related personnel. Building construction work by its very nature entails an emergent quality. It has been argued here that this built-in emergence carries with it less systematic

work organization and social control. This does not mean that buildings are haphazardly constructed without planning and organization, but rather they are constructed "in process". Tradesmen and other building construction personnel "muddle their way through" the entire building construction sequence. As the building progresses toward completion it is continually changing in physical structure. Blueprints serve as guides and builders and architects do have visions of a completed structure, but these are continually open to change and modification. It is suggested here that the "real" building, the finished product emerges as something less than the "ideal" or symbolic building envisioned at the beginning. It is this product that is presented to the new owner. It is a product lacking in quality which is permeated with structural and processual imperfections. The following suggestions are meant to minimize the impact of an unexpected product for future buyers and to maximize social organization during the construction sequence for builders and contractors.

#### Some Suggestions for Future Buyers

This section is meant for a limited audience - those persons who may be considering having a building built in the future. Within this social category it will appeal most to those persons who are having this done at a financial sacrifice.

Having a building constructed is an expensive venture; it requires time, money and personal frustration. It is not a pleasant time for those who had long held visions

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of a "dream house". It is perhaps more realistically described as a depressing and discouraging venture. It should be clear from the previous chapters that what may have been expected by future owners was only ideal and certainly not real. With this in mind, I offer the following suggestions to minimize the occurrence of personal frustration.

Suggestion #1.

Expect to have problems. This is the cardinal rule for persons having a building built. Problems are unavoidable in building construction work. As the previous chapter has shown, problems are inevitable and should be expected. The best that can be hoped for is to minimize these problems.

Suggestion #2.

If you desire a quality product, expect to pay for it - don't try to cut corners. Your dollar will buy only what it is worth, if that. Quality work requires quality craftsmen and a quality product requires quality materials. There are no cutting corners in building construction if a valued product is to be redeemed.

Suggestion #3.

Choose a reputable and reliable builder. This is the most important first task. The builder is the task-master; he is responsible for getting the work done, how it gets done, and when it gets done. Select an established builder and make sure to look at some of his finished work. Talk to owners who have had their work done through the builder. If time is taken along these lines in the beginning, time, energy and frustration can be minimized in the end.

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It is equally important to remember that when you choose a builder you are also (many times) choosing an architect, contractors and all of the craftsmen required to build the building. Thus, it may be important to check on the reliability and past work of the architect and some of the major contractors such as the plumbing and heating, carpentry, electrical and masonry contractors.

Suggestion #4.

Before building, make sure of exactly what you want. After the construction process begins it is often too late to make revisions. Pay particular attention to size of rooms, their location, features and what purpose they are going to serve. Make diagrams and lists. Take notes whenever you encounter something in other person's homes that you may wish in yours. Pre-select appliances, furniture, carpeting and lighting and plumbing fixtures. Select color schemes, paint and wall paper. In a word, build your building in your mind and on paper prior to the actual construction.

Suggestion #5.

Become familiar with the construction of buildings. Books of varying degrees of sophistication on building construction are available from local bookstores and libraries. Familiarity with the terms used, the work that tradesmen provide and the building sequence are important for developing a feeling for what is to come. Total unfamiliarity with what is happening during the construction sequence is an unnecessary disadvantage for the future owner.

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Suggestion #6.

Spend time on the job. After the building begins, visit the job occasionally. Simply appear concerned, but do not disturb the work flow. This is important. If it is one thing contractors and tradesmen dislike it is an inexperienced future owner acting as an overseer. To be present occasionally is accepted and expected. To ask occasional questions and engage in small talk is welcomed, but to give the impression of taking command will not be condoned by the workers.

The best approach is to build up a rapport with the workers (learn their names), and it would not hurt to buy the beer occasionally either. To have the workers themselves looking out for your best interests is the best possible arrangement money can buy. Even the best material can be used and installed incorrectly, but if the workers are working in your behalf and not only theirs it is the best situation you could have hoped for.

Suggestion #7.

Hire a good lawyer. Any problems you have will probably require a lawyer, and you will certainly need one for closing. The best choice is a lawyer who specializes in the intricacies and problems of building construction and has the ability and interest to act as your legal representative. It often takes a good lawyer to get what you rightly deserve.

#### Some Suggestions for Builders and Contractors

This section is meant to provide some practical suggestions to the managers of the building construction project.



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The problems facing the builder and the various building contractors are at times bordering on the unmanageable. The sheer complexity involved with getting a building "out of the ground" and completed involves an enormous number of man hours, money and co-ordination (and some would add luck). The suggestions offered here will in no way solve the many problems that confront the managers of this difficult task, but perhaps some insight can be provided to improve their situation.

Suggestion #1.

Work at developing a better communication network among contractors and others working on the project. Communication breakdown can be singled out as a critical problem in the building construction industry. Frequent and regular "job meetings" should take place, and all essential members (builder, contractor's representatives, architect, etc.) should be required to attend. Furthermore, decisions made at these meetings should be written up and copies should be distributed to the various members. All job related problems could be dealt with in this context, and if the project is large a separate person should be employed as co-ordinator to organize and carry out this function.

Suggestion #2.

Pay more attention to the individual workers on the project. The needs, desires, problems and suggestions of individual tradesmen should be taken into account, and they seldom are. It not only helps to have satisfied workers on a project, but

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the suggestions that they could provide would probably be the best available since they are doing the actual work. Builders and architects in particular could benefit by this practice. Suggestion #3.

Pay attention to the human relations aspect of building construction work. Any attempts toward developing a "community of workers" rather than the usual isolated trades working side by side with little communication could only add to the success of the building process. If tradesmen know one another they are in a better position to aid one another. Looking out for others work and offering suggestions to other tradesmen could do much to benefit the overall work effort. A common lunch room or an occasional after work beer party at the builder's expense could facilitate the inter-relationships between tradesmen.

Suggestion #4.

Provide a realistic time frame for the project. All members of the building construction industry already know that time tables are rarely met. Certainly these time tables are necessary, and their use should be continued, but they can only be useful if they are realistic. They should not be used as mechanisms to "drive" the contractors and the workers. Rather they should be used to "lead" the work effort by providing realistic goals that can be met. This would serve to reduce some of the chaos typically found on construction projects.

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Suggestion #5.

Don't sacrifice craftsmanship for increased productivity.

Every effort should be taken to see that craftsmanship in the building trades is maintained. Younger workers should have the opportunity to work beside and learn from the older, more experienced workers. Quality workmanship should be rewarded with at least verbal recognition. The skill of the tradesman rests in his ability to provide quality installations.

Suggestion #6.

Portray the realities of construction work to potential buyers. Buyers should be made aware of the frequent problems that arise in all building construction endeavors. They should be told that their expectations may be unrealistic and that no builder can provide a "dream house" free of imperfections. This approach may lose a few sales, but many of the resulting problems could be eliminated.

## CHAPTER X

## SUMMARY AND CONCLUSIONS

This research has focused on the construction of buildings. A sociological perspective has been employed to systematically describe and explain the social organization of the building construction project and the social processes involved in the building of buildings.

The work culture of building construction workers was delineated by focusing on their "work world". Special attention was given to their occupational identities, system of social stratification, and work and non-work activities on the job. The intent here was to provide an "inside" look at construction work from the workers' point of view.

In addition, the relationship between workers behavior and the inanimate physical setting in which that behavior occurs was explored and analyzed. Here the building project as a transitional work setting was used to illuminate this relationship. Three alternative explanatory frameworks were simultaneously employed as informal hypotheses.

1. The extent to which the work setting (inanimate physical setting) can be regarded as dominant and determining the nature of the existing behavioral system (workers behavior patterns). That is, to what extent are the persons "used" (externally constrained and managed) by the conditions of their physical setting. Here it was expected that the

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work setting, including changes in it, influences workers' behavior.

2. The extent to which the behavioral system (workers behavior patterns) can be regarded as dominant and determining the uses to which the work setting (inanimate physical setting) is put. That is, to what extent is the physical setting "used" (manipulated) by the persons acting in it. Here it was expected that workers' behavior, including changes in behavior patterns, influences the work setting.
3. The extent to which the work setting (inanimate physical setting) and the behavioral system (workers behavior patterns) can be regarded as existing in a condition of mutual interdependence. Here it was expected that workers behavior patterns would both influence and be influenced by the changing physical conditions of their work setting.

This research was conducted on a building construction project near a large mid-western city during the summer of 1973. The setting provided a natural location that was bounded in time and space while remaining in continual structural transition. A longitudinal research design was used, and the sample included all of the workers on the project. A phase analysis was used to compare the behavior patterns of three groups of workers (those who did the "roughing work"; those who did the "finishing work"; and those who did both) with two transitional phases of the inanimate physical setting (the roughing phase and the finishing phase).

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The methodological techniques used include: participant observation (as a certified journeyman construction electrician and later as an expeditor/consultant); selective, focused interviewing; and certain unobtrusive methods (available records and documents including architectural drawings and job specifications). Considerable reliance was placed on the "opportunistic" quality of this research endeavor. The investigator had entree to the building construction industry in this city having worked there for eight years as a building construction electrician.

It is concluded that tradesmen and other management related personnel, although skilled in their respective trades and professions, appear to "muddle their way through" the entire building construction sequence. This does not mean that buildings are haphazardly constructed without planning and organization, but rather they are seen to be constructed "in process". This emergent quality carries with it less systematic work organization and social control during the building construction sequence than might be expected. Buildings emerge; they are built out of an emergent process. Each day as the building progresses it changes in physical structure and provides a "new" basis from which to build. Although blueprints serve as guides and builders and architects do have their visions of the completed structure, these are continually open to change and modification as the building progresses. It is argued here that the quality of the finished product, the "real" building, is something less than

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the symbolic or "ideal" building envisioned at the onset.

Workers are seen to "muddle through" this complex and continually changing sequence by adapting, modifying and changing details as they go. The result is a building which is permeated with structural and processual imperfections. Simply stated, the end product, the finished building, is not as it was originally conceived, and this is the product that the new owner receives and eventually accepts out of a compromise with the builder.

This condition is not attributable to a lack of skill among workers but to the transitional nature of the work setting. Social organization is seen to be lacking because of the temporary and sporadic social interaction of the members involved in the building sequence. Workers, although expert at their trades and able to complete their tasks in a craftsman-like fashion, lack clear and consistent lines of communication and social organization. This results in a condition that facilitates confusion, mistakes, and bungling by workers in all trades at all levels in the stratification system, and during all phases of the building construction sequence. The transitional nature of the work setting is seen to facilitate this lack of social organization.

An inter-play between workers and their work setting is portrayed in the analysis. A condition of mutual interdependence was found to exist between the inanimate physical setting and the persons acting in it. Tradesmen were both "used" (constrained and managed) by conditions of their physical setting and at the same time "used" (managed and

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manipulated) it to their advantage. This condition of mutual interdependence was depicted, in part, through the workers' shift from rather crude and coarse behavior patterns during the initial phase of construction to more refined and sophisticated behavior patterns during the completion phase. Here the workers behavior patterns were seen to change as the physical condition of their work setting changed. As the work setting evolved from a "primitive", inanimate physical setting characterized by dirt, dust, noise and "open air" conditions to a more "refined" physical setting characterized by fresh paint, new carpeting, air-conditioning, operable plumbing and electrical systems, and a complete "newness" of the surrounding conditions, a like change was exhibited in the behavior patterns of the majority of the workers. This change in the behavior patterns of workers was seen to occur between those workers present during the roughing phase and those present during the finishing phase of the construction sequence and among those workers present during both phases. In this sense workers were "used" (managed and manipulated) by their physical setting.

At the same time workers were seen to "make conditions" for themselves during the entire construction sequence. Workers managed and manipulated their work setting for their own behalf, and in this sense "used" it to make their work easier and working conditions more enjoyable. From this it is concluded that a condition of mutual interdependence exists between workers and their inanimate physical work



setting. Workers behavior patterns both influence and are influenced by the changing conditions of their work setting.

This research is considered important for the following reasons. First, it provides an insight into the relationship between persons behavior and the inanimate physical settings in which that behavior occurs. The implication here is that since persons are continually interacting with their immediate physical setting, it is important to understand the extent and direction of this relationship. This analysis provides a basis for the understanding and will hopefully generate similar research<sup>101</sup>.

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<sup>101</sup>Worthy of note here is a recent and related research (Newman, 1971) that squares well with the importance given to the inanimate physical setting for better understanding human social behavior.

Newman has demonstrated that the architectural design of buildings can be instrumental in reducing crime rates in urban residential areas. "Our work over the past two years, ...has led us to conclude that the form of the static components of our living environment is, in and of itself, a factor which significantly affects crime rates" (Newman, 1971:xii). Newman points out quite succinctly that the architectural design of buildings has been neglected in most social science research, and that its demonstrated importance will have to call forth a reworking of the importance previously given to it. As Newman states, "It may be disconcerting for some to learn that the form of the physical environment has capacity for not only limiting activity but for evoking behavioral attitudes and responses from inhabitants. Where we are probably all familiar with the restrictive capacities of architecture when employed as a buffer against intrusion, both through the use of high walls and by clustering of buildings to create fortlike configurations, the evidence we have been compiling over the past two years indicates a far more significant capacity; that by grouping dwelling units in a particular way, by delimiting paths of movement, by defining areas of activity and their juxtaposition with other areas, and by providing for visual surveillance, one can create - in inhabitants and strangers - a clear understanding as to the function of a space and who are its intended users. This we have found will lead to the

Second, this analysis provides an illumination of the sociological aspects of building construction workers and their work. Building construction workers, their work culture and work world have been neglected in the sociological study of work and occupations and professions. This contribution provides a basis for comparison with other workers in other occupations.

Third, this research provides a theoretical statement on behavioral settings which integrates a diverse body of theoretical formulations from various disciplines. The hope here is that this integration will facilitate further research<sup>102</sup> on this neglected aspect human social behavior.

Fourth, this analysis provides a unique methodological stance which can be of use for similar research in natural, "real life" settings.

No research is complete without sharing some of the undeveloped insights culled from the research endeavor. "Leads" should be shared so that future researchers can benefit from the insight gained in past research. In any

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adoption by residents, regardless of income level, of extremely potent territorial attitudes and self-policing measures" (Newman, 1971:xiii).

See Oscar Newman, Architectural Design for Crime Prevention. Washington, D.C., U.S. Department of Justice, 1971; and Defensible Space, New York: Macmillian Co., 1973.

<sup>102</sup>This research is meant to be the first of four similar projects relating to the typology of work setting described in Chapter II. It is hoped that collectively these researches will provide an empirical basis for comparison and generalization in the area of work settings and work behavior.

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research a particular focus is adopted at the expense of other seemingly less promising areas. A number of suggestions for future related research can be mentioned in closing.

First, it might be profitable to focus on certain specific occupations in the building construction industry. Here the architect, the builder, and the building trades foreman seem to be the most promising. Architects have typically gotten most of the credit for a new building; it is their design that is praised or criticized. Architects could be viewed as combination artists and technicians. They subjectively create a building design, put it to paper, and follow through its actual construction. Here the process of building a building from the architects viewpoint would provide an interesting addition to further understanding of the building construction industry.

A study of builders could provide needed insight into the social and economic aspects of building construction. The process of contract bidding could be explored and the financial aspects of getting a building built could be delineated. The builder is a powerful person in this endeavor, and a study which would tap the work routine of builders would add a great deal to further understanding this industry.

So too, the building trades foreman as an occupational type could be profitably explored. Comparative links could easily be made between this "marginal" occupation and existing studies of factory foremen (Wray, 1949). In addition, the career lines of foremen in these various industries and work settings could be explored.

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Second, it would certainly be profitable to gain demographic information on building construction tradesmen through a cross-national sample. Here information on religious background, fathers' occupation, political preference, educational background, ethnic background, income and the like would provide a valuable background for future research.

It is suggested here that the building construction industry needs to be explored in detail. Workers in this industry, which is one of the largest in our society, have not received the attention of social scientists, and it is necessary that this be done. Social scientists could not only learn from the study of this sector of the work world, but the building industry could profit from the suggestions that such research could provide.

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APPENDIX

## THE ETHICS OF DISGUISED OBSERVATION

Disguised observation refers to a social science research technique in which the researcher either covertly or in some way deliberately conceals his role or his intent as observer from the subjects he is studying. For example, the researcher may make use of concealed recording devices such as a tape recorder or camera or may take on the role and attire of a fictitious person in order to unobtrusively observe the person or persons he is studying.

In this research this was only partially done. All of the intents and purposes were not revealed when asked. The "spiel" given out when confronted or when it was considered advantageous was this - "I am studying how buildings are built from their beginning when the ground is first broken to their end when the building is turned over to its new owner. I am interested in the process that buildings pass through in their construction sequence. I am doing this as a part-time summer research project for a course I am taking at the university." Usually this would satisfy most persons, but if it wouldn't the "spiel" would be restated in a slightly different manner. I would also continually emphasize my previous construction work experience, my present role as a construction worker, my union affiliation and the like, while de-emphasizing my role as investigator. This procedure worked, and no problems were encountered.

This, at least partial concealment of intent, of not being completely honest about what in fact were becoming recorded observations, how they were being made, and how they were going to be used might offend the reader and does require an explanation of the ethics involved in doing such research.

If the goal of the social sciences is the advancement of knowledge, then to what extent should the social scientist be constrained by moral or ethical standards when engaging in social research? To whom is the social scientist responsible when he makes his observations? Does he have the right to observe persons who are unaware of his presence? Does he have the right to make observations on anyone, in any type of setting - public or private, without the person or persons' consent, and justify this in the name of science.

Over a decade ago, Edward Shils (1959:124) argued that social scientists have no right to make observations on persons who have not consented to be observed, and that even "the mere existence of consent does not exempt the social scientist from the moral obligations of respect for another's privacy". Shils felt (1959:125) that the social scientist is not "justified in forgetting that privacy is a right conjoint with freedom and that its voluntary suspension, although it presumably promotes social science, does so through a morally opaque occasion".

More recently Kai Erikson (1967) who directly adheres to Shils position, has become one of the spokesmen

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for this argument. Erikson feels that observations by the social scientist, that are in some way disguised, pose significant ethical problems for the social scientist in his relationship to his subjects, his colleagues, his students and his data. Erikson's first argument against disguised observation is that it represents an "ugly" invasion of the privacy of the persons being studied and on this ground alone is objectionable. Buttressing this point is the added factor that (1967:368) "...this particular research strategy can injure people in ways we can neither anticipate in advance nor compensate for afterward". Taking this stand, he suggests that the researcher must weigh the scientific and social benefits of such techniques against the possible cost in human discomfort.

Second, Erikson argues that the social scientist who takes on a disguised role is actually placing the larger professional community in jeopardy. He feels that (1967:368) "...research of this sort is liable to damage the reputation of sociology in the larger society and close off promising areas of research for future investigators".

Third, Erikson argues that it is the obligation of the social scientist not to place his students in situations where they may have to assume a disguised role. He suggests that this would place the moral and ethical problems on the students as well as the investigator. As Erikson states (1967:369), "I am suggesting that they should not be asked to make what one defender of the method has called "real and

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excruciating moral decisions" while they are still students ...since they are so likely to be academically, economically, and even psychologically dependent upon those elders who ask them to choose".

Fourth, Erikson argues that the data the social scientist procures through the technique of disguised observation is faulty data. He feels that because an observer lacks the means to assess his disruptive effects on the setting and on those persons observed, this technique can only lead to blemished data. As Erikson states (1967:370),

We can impersonate other modes of behavior with varying degrees of insight and skill, but we cannot reproduce them; and since this is the case, it seems a little irresponsible for a sociologist to assume that he can enter social life in any masquerade that suits his purpose without seriously disrupting the scene he hopes to study.

Thus, Kai Erikson, a representative of those social scientists who are against the use of disguised observation, has proposed the following (1967:373):

First, that it is unethical for a sociologist to deliberately misrepresent his identity for the purpose of entering a private domain to which he is not otherwise eligible; and second, that it is unethical for a sociologist to deliberately misrepresent the character of the research in which he is engaged.

Concerning the opposition to this point of view, perhaps Julius Roth (1962:283) has entered the most general objection on the grounds that "all research is secret in some ways and to some degree". The reasons for this Roth states (1962:283-284) are: "The researcher usually does not know everything he is looking for himself when he first starts out...", "In many types of study of social behavior,



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the researcher does not want the subjects behavior influenced by his knowledge of what the observer is interested in"., and "...the subjects will not understand all the terms of the research in the same way the investigator does". Thus, as Roth points out, secrecy in research is not something that can be avoided. Social science research cannot be divided into the "secret" and the "non-secret", but rather must be shown as existing to a greater or lesser degree as along a continuum. This insight may have had considerable influence upon Erikson's major opponent in this argument - Norman Denzin.

Denzin takes the opposing position that the social scientist has the right to make observations on anyone in any social setting to the extent that he does so with scientific intents and purposes in mind. He further takes the stand that the goal of any science is not willful harm to subjects, but the advancement of knowledge, and that any method that proceeds toward that goal is justifiable. Denzin "holds that no areas of observation are in an a priori fashion closed to the sociologist, nor are any research methods in an a priori fashion defined as unethical" (1968:502). He feels that the only restriction the researcher has is not to deliberately damage the reputation of the subject.

In a more specific sense, Denzin addresses himself to Erikson's four previously mentioned points and attempts to justify his own position. Erikson's first point was that disguised observation represents an invasion of privacy.

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Denzin argues that this point of view assumes the perspective of those being studied. By categorically defining a behavior setting as private or public supplants the sociologists definition of the situation. Erikson also stated that the use of disguised observation could be injurious to the subjects involved. Denzin, in answering this point, uses a dramaturgical model prevalent in the works of Erving Goffman (1959). Denzin argues that sociologists assume a variety of masks depending on where they find themselves and (1968:503) "that any mask not deliberately donned to injure the subject is acceptable".

Erikson's second point was that disguised observation jeopardizes the professional community. Denzin argues (1968:503) "that any research method poses potential threats to fellow colleagues".<sup>103</sup>

Erikson's third point was that it is unethical to place students in the role of the disguised observer. Denzin argues that this ethical question can just as easily arise from the circumstances surrounding the students' first interview with a reluctant subject in a social survey. He suggests (1968:503) that "there is nothing inherent in the role that produces ethical or personal problems for the investigator".

Erikson's fourth point is that data gathered by using the disguised method is faulty because the observer

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<sup>103</sup>This does seem to be apparent in the case of a number of community studies as many have previously noted (Shils, 1959; Becker, 1964; Rainwater and Pittman, 1967).

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lacks the means to assess his disruptive effects on the behavior setting and on those persons observed. To this, Denzin suggests (1968:503) "the method of post observational inquiry ...during which the investigator asks the subject what he thought the experiment entailed". Denzin feels that this would offer empirical data for assessing the disruptive effects and the discomfort or harm to persons resulting from the use of disguised observation. Denzin concluded his argument by mentioning that the social scientist must also be cognizant of the fact that they lack the legal mandate to gain entry into any research setting; nor do they have the power to withhold data from any legal authorities.<sup>104</sup>

In retrospect then, we have two radically different ethical stances; one which is vehemently against the use of disguised methods of observation, and one that is in favor of their continued use, one that takes on a moralistic flavor and one that has a scientific emphasis, and one that places the emphasis on the subjects being studied and one that places the emphasis "on the personal-scientific conscience of the individual investigator" (Denzin, 1968:504).

I see the important notions of both arguments intersecting at two basic points: the "definition of the situation" (the publicness or privateness of the research setting) from the perspective of the observer and from the perspective of the persons being observed (Thomas, 1931; Denzin, 1969;

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<sup>104</sup>This has also been mentioned by others (Amrine and Stanford, 1956; Polsky, 1969; Burchard, 1957).

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McHugh, 1968; Stebbins, 1967, 1969); and the consequences of using disguised observation as a research technique which inevitably evolves into an issue of reportage. Thus, whether a social scientist is being ethical or unethical in his research technique can be viewed in terms of the "definition of the situation" and the complexities of reportage.

I feel the social scientist has an obligation, not specifically to the person he is studying, but rather to that person's "definition of the situation" in which he is being observed.<sup>105</sup> If the subject perceives the situation as public, then the researcher's obligation is unnecessary because the person should be in his "public character" and responsible for his own actions, but if the subject perceives the situation as private, then the researcher is obligated not to report any information which could harm that subject as a recognizable individual without his willing consent. As Dael Wolfe has stated (1968:831) "the right of privacy is really the right of an individual to decide how he will share his privacy or what intrusions or exposures he will permit".

Concerning reportage, if the subject perceives the situation as public, then the researcher should not be obligated to withhold information from his final report, but if the subject perceives the situation as private, then the researcher should be governed by his own personal-scientific

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<sup>105</sup>For further clarification on the "common sense" terms of public and private, see Hall (1969), Sommer (1968), and Goffman (1959, 1963, 1967, 1971).

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ethics. This is without a doubt the most crucial point; because at this point, regardless of the success of the unobtrusiveness, the researcher must confront himself with the problem of presentation of his information to a larger audience, and this information may be detrimental to the person or persons who have been observed.

This problem is dealt with specifically by Fichter and Kolb (1953), Becker (1964), and Beecher (1966). Henry Beecher, for example, takes the stance that data which has been improperly obtained (by this he is referring to data obtained by an irresponsive investigator, or one who is not intelligent, informed, conscientious, compassionate and responsible) should not be published. He states that (1966:46) "failure to obtain publication would discourage unethical experimentation".

Howard S. Becker has taken another stance. He concludes (1964a:284) that the choice (to publish or not) "must remain a matter of individual judgement" and "...one should refrain from publishing items of fact or conclusions that are not necessary to one's argument or that would cause suffering out of proportion to the scientific gain of making them public". A very similar point of view is offered by Joseph Fichter and William L. Kolb. They ask that the researcher address the four following statements when attempting to arrive at a decision concerning publication (1953: 547-550):

1. The sociologists' definition of the nature of science,
2. Determination of the extent to which a person or group will be injured by the publication of data concerning their behavior,
3. The degree to which people or groups are actually members of a moral community of which the scientist is also a member, and
4. The degree to which the larger society, the local community, or the groups, needs the data of the research.

It should be evident at this point that the ethical questions involved in doing social science research are present in all of the stages of the research process, and the individual researcher must recognize these problems and deal with them as best he can. Guidelines are useful, but it must inevitably rest upon the individual researcher's value commitments as they pertain to the particular research situation and the persons' therein.

The ethical problems concerned with this research were considered carefully. First and foremost, the subjects being studied were taken into account. Concern was placed on the potential of the publication of the data for the injury of anyone. The decision was made to protect the anonymity of all subjects by not mentioning the names of persons, places, or organizations. In this way and this way only could the sanctity of "privileged information" be both withheld from and shared with those concerned with the data of this study.