APPENDIX K: EMPIRICAL

[Rapoport, Amos. History and Precedent in Environmental Design. p.205-206]

"**Need for an Empirical base.** One finds, in the archaeological literature, a commitment to an empirical content of any inferences, generalizations, hypotheses, and theories. There is, consequently, a commitment to and a concern with **empirical data**. One of the criteria distinguishing science and scholarship from other forms of human endeavor is the testing of ideas against empirical data. This is the case whatever the particular form of the ideas, models, or whatever. Thus, it is argued, even in the case of approaches that explicitly reject 'positivism' that the archaeological record is empirically constraining; that **the empirical data prevent the adoption of just any theoretical positions** (Hodder 1982a;cf. Bunge 1983; Jacob 1982). Hence, models are not completely speculative, and there is a continuous interplay of theory and data. All the papers or books that develop models or theory always explicitly and, in detail, apply them to the relevant bodies of evidence."

"Because the task of archaeology is now seen as that of **'decoding ' the information** revealed by the **patterns present in the record**, it follows that discovering the data, describing them and classifying them are important, indeed essential steps. One must have an adequate empirical base."

"often the availability of a large and varied body of data suggests major developments, models, and theories-"

"The development of new approaches, in turn, leads to the collection of more, and more valid and relevant data."

"Once these become even partly available, a field can progress through the constant interaction of ideas, concepts, hypotheses and theories, and data. It follows that such laws, generalizations, and theories in archaeology must have **empirical content; they must refer to the real world**. This then also raises basic questions concerning the kind of empirical data that constitutes evidence for or against a given hypothesis"

"This literature presupposes that the link with **empirical data is essential**."

"**Positive evaluation**, that is, confirmation, is related to: 1. The empirical falsity of empirical predictions. Those hypotheses for which test implications are false are less preferable. It is useful to note that the recent discussions in philosophy of science on falsification suggests that this is rather more complicated than it seems. 2. The number of observational predictions supported. Other things being equal, the hypothesis with the greatest number of supporting observational predictions is preferred. 3. The variety and independence of observational predictions shown to be empirically true becomes the criterion, other things being equal (Smith, 1977, p. 613). Although 'independence' is a difficult notion and all the criteria present problems that Smith (1977, 1978) and the literature generally discuss, it would appear that the three criteria taken together strongly support my discussion earlier about the need for the largest and broadest bodies of evidence, the greatest number of relevant disciplines, agreement with data and theories accepted in other fields, and so on. Correcting misconceptions is always related to data. Even when reanalysis of already existing data is involved in the first instance, it usually demands new data in order to support the corrected view. Often, the original misconception is due to a 'superficial reading of limited historical sources' "

"Third, it uses a wide range of methods applied to a wide variety of evidence, including written sources (ethnohistory), ethnographic analogy, and archaeological data, emphasizing daily life."

[Collins, John B. Perceptual Dimensions of Architectural Space Validated against Behavioral Criteria.

p. 16-18]

"Visual comprehension of architectural form has been based not on an **empirical understanding** of the user's perceptions, but rather on the designer's formalized intuitions deriving from various statements of an ideal. Little in the way of scaling of these terms has been attempted either with regard to an ideal image or to specific examples of architectural form. Disagreement among experts is apparent when terms are applied to physical referents. By using bipolar scales of attributes described in terms most frequently used by designers, consistency of descriptions was analyzed for both the ideal image and for specific examples of architectural form. Three specific aims of the experiments are discussed: (1) to develop a common vocabulary for describing environmental attributes, (2) to assess the relation between visual satisfaction and complexity, ambiguity, and novelty in a sample of existing environments, and (3) to develop a model which can be utilized by designer to produce the desired attributes (p. 20). A study seminar of graduate design students at the University of California at Berkeley, conducted by Kenneth Craik, produced and Environmental **Display Adjective Checklist** which was generated by the group of trained designers indicating an amount of agreement on dictionary terms A through K. The resulting pool of items yielded 169 checklist entries which could be used (according to these graduate students) to describe physical environment both in terms of its physicalistic attributes and its mood-affective attributes."

"It is when aesthetic questions become part of the public domain, affect the economics of public administration, and become questions of political debate that we require **objective measures** to settle differences of opinion. Even then the cost of the more accurate decision must be weighed against the consequences of failure. This kind of situation occurs to some extent in large architecture"

[Collins, John B. Perceptual Dimensions of Architectural Space Validated against Behavioral Criteria. p. 20]

"Since we have been dependent traditionally upon our **intuitive responses** for the manipulation of this physical world, not enough thought has been given to a more **empirical approach** towards the design methodology concerned with the visual manipulation of the environment."

"As **form creators** we must begin to look carefully at what is known about **human behavior**, insofar as it can be described by the social and behavioral sciences."

"we must begin to fill in the design equation with those **missing fragments** which can pattern themselves more closely into a truly human solution to the questions of environment."

"if we are to be responsible for the **total environment**, the human response to this environment must inspire the search for truth about what this **physical world** actually is."

[Barker, Roger G. Ecological Psychology. p.1-2]

"The descriptive, natural history, ecological phase of investigation has had a minor place in psychology, and this has seriously limited the science. Experimental procedures have revealed something about the laws of behavior, but they have not disclosed, nor can they disclose, how the variables of these laws are distributed across the types and conditions of men. Experimental work has produced a host of **'if...,then' statements**: If a one-inch red cube is placed on a table before an eight-month old infant, then he will attempt to grasp the cube (Halverson, 1943). If a person is frustrated, then he will exhibit aggressive and regressive behavior (Barker, Dembo, Lewin, 1941)."

"Psychology knows how people behave under the conditions of experiments and clinical procedures, but it knows little about the distribution of these and other conditions, and of their behavior resultants, outside of laboratories and clinics."

[Ittelson, William H. and Proshansky, Harold M. An Introduction to Environmental Psychology: Research Methods in Environmental Psychology. p.232]

"A form of direct observation that does fit into real-world environments is **behavior mapping**. Hence, we track the movements of people through existing physical settings and observe the kinds of behavior that occur in relation to these settings. Where ecological psychology stresses the social activity of a locale, mapping seeks to identify the uses of space as a factor in ongoing behavior. The two methods are complimentary rather than incompatible, for **the behavioral stream is always subject to the contingencies of its physical setting**. By making an accurate record of what activities take place where, mapping helps us study behavior in its functional relation to a particular environment. Behavior will be enacted in accordance with the opportunities or limitations of the milieu in which it occurs. By using mapping one avoids the difficulty of asking people to describe their reactions to an environment which is frequently inadequate; many people do not verbalize their experiences satisfactorily and they may also be unaware that any change in behavior is taking place. The technique is a reliable one and rigorous enough so that the categories of behavior can be used as dependent variables within an experimental framework, yet without cluttering this framework by control interferences."

[Hall, Edward T. Handbook for Proxemic Research. p.3]

"**Proxemic observations** were made in **19 dimensions:** (1) Posture (2) **Body orientation** (3) **Lateral displacement of bodies** (4) **Change of orientation** (5) **Change of distance** (6) **Body distance** (7) **Gestures: degree of movement** (8) **Kinesis isomorphism** (9) Affect: kind (10) Affect: intensity (11) **Eye behavior** (12) Auditory code: number talking (13) Auditory code: linguistic style (14) Auditory code: voice loudness (15) Auditory code: listening behavior (16) Olfaction (17) Thermal code (18) **Bodily involvement** (19) **Seeking avoiding touch**"

[Hall, Edward T. Handbook for Proxemic Research. p.57-62]

"**Body Orientation:** This scale describes the orientation of the subjects' bodies to each other."

"The shoulders are the reference points to observe in deciding orientation."

"**Lateral Displacement of Bodies:** Refers to the amount of displacement on the body orientation scale (63). Record the degree to which the subjects are removed from the base positions. The displacements spectrum is amplified by adding increments of space to the basic displacement of the subjects;"

"**Change of Orientation:** This scale refers to change of body orientation between closed position, and open position (see Col. No. 63). Record as closing any movement toward a closed position, and as opening, any movement toward an open position. No movement, or movement which does not change or is not related to either open or closed position, should be recorded no change."

"**Change of Distance:** Record whether the subject is moving toward or away from the person with whom he is interacting."

"**Body Distance:** This scale measures the distance between the subjects, employing the body's own measuring rods; that is, the distances are based on what people can do with their arms, legs, and bodies, and are formulated according to four basic potential touching distances: (1) Body or head contact (2) Elbow's or forearm's length away (3) Full arm's length away (4) Within reach by stretching (body leaning, arm and leg extended)."

"**Gestures (Degree of Movement):** This scale is used to record the degree to which the subject is gesturing or moving his body and its extremities."

"**Kinesic isomorphism:** This scale attempts to record the degree to which two people are mirroring each other's actions or body positions. This effect may be discovered by comparing the positions of both subjects' heads, hands, bodies, arms, legs, feet, etc."

"**Eye Behavior:** This scale refers to the gaze line. Record how the subject is looking at his interlocutor."

"**Bodily Involvement:** This scale records the kind or extent of physical contact between subjects-either actual or about to occur."

"Extensive body involvement includes such activities as pushing, shoving, necking, wrestling and making love. Holding hands or extremities also includes holding on to parts of clothing such as lapels, cuffs, skirt hems, etc."

"**Seeking or Avoiding Touching:** Regarding contact, subjects usually seek it, avoid it, or remain neutral. If Subject A is reaching to shake hands, he should be coded as 8 (seeking contact). If Subject B makes no move to take the offered hand, he should be coded as 2 (passively avoided contact). Two people passing each other on the street can seek each other out or avoid each other."