

APPROACHING BUILDINGS: A CONCEPTUAL MODEL OF THE ENTRY SEQUENCE

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ABSTRACT

Architects have devoted attention to the entry in all forms of architecture. Designers generally believe that the entry sequence is an important element of a building's design and that it can have a tremendous impact on its users. The importance of the entry is often stressed in design education. Despite such strong beliefs about what the entry can offer, little systematic study or documentation has been devoted specifically to the entry.

A recent study has begun to examine people's response to entry. It began by developing a conceptual model from issues found in the literature, such as "sense of place", "legibility" and "mystery", and testing a part of that model. This paper continues the examination of that conceptual model in order to further identify the characteristics of a "successful entry".

INTRODUCTION

The entry sequence has been an important element of the built environment to designers of all forms of architecture (Moore, 1974). Designers believe that a strong entry sequence can give a building's users an opportunity to celebrate, through approach and arrival, their use of a building. Designers can establish a desired mood in users at the start of a building experience. An entry to an opera house may help enhance or establish the mood for an evening of beautiful music; an entry to a state capitol can help instill respect for the government and people it represents. Eugene Raskin illustrates the belief that the psychological impact of an entry can be significant by asking, "how many architects have failed to realize the tremendous psychological concomitants of that transitional with the passage from outdoors to indoors, the man's whole relationship with his environment has changed radically and with it ...his own sense of being?" (Raskin, 1954, p.93).

In addition to simply allowing ingress and expressing the psychological transition of moving from outside to inside, the entry may also strengthen orientation to a building and its surroundings. It does this most effectively by being the part of a building that is first encountered by the visitor. The entry can also become a means of communication between occupants and visitors (Rapoport, 1982). Cues in the sequence can be used to

clarify who is invited in and who must stay out. In domestic architecture, for example, the doorway usually symbolizes the two opposing messages of protection and hospitality (Frary, 1937).

Architect Frederick Jules states that, the architecture with which we tend to have the most contact is usually a barrier, such as a door or wall. Much of our experience is based on negotiating those barriers (Jules, 1974). The door is one element of a building that we almost always use and experience. The entry sequence is our way of negotiating that barrier.

The importance of the entry is continually stressed in design education. A content analysis of jurors' written comments on 284 recent student architectural design projects at the University of Illinois School of Architecture confirmed this. Results revealed that 43% of the projects judged by jury members (design faculty) had one or more comments related to entry issues (Bain, 1989b).

Despite such strong beliefs about what the entry can offer, the tremendous impact it can have on users, and its importance to environmental designers in different cultures throughout time, little systematic study or documentation has been devoted specifically to the entry. There is speculation about what the characteristics of a successful entry are, but it is difficult to define

a successful entry precisely and to state which elements contribute to its success. A recent study has begun to examine peoples' response to entry. Bain (1989b) began by developing a conceptual model from issues found in the literature and then testing that model. This paper continues the examination of that conceptual model in order to further confirm characteristics that contribute to a "successful entry".

ISSUES IMPORTANT TO "ENTRY"

Although the literature has indicated that little attention has been devoted to the entry sequence alone, because of its innate characteristics, it appears that many of the qualities thought to contribute to the provision of a successful, enjoyable and humanistic environment can be easily applied at the entry. In fact, the entry's inherent characteristics may actually provide ideal opportunities to establish some of those qualities considered to be important in a pleasurable environment as a whole. The original literature-based model of a "successful entry" is shown below. Components that make it up are described in the following paragraphs.

Sense of Place

Sense of place is seen by many who write about a humanistic environment as one of the most important, if not the most important contributor to a pleasurable environment. The presence of a sense of place is

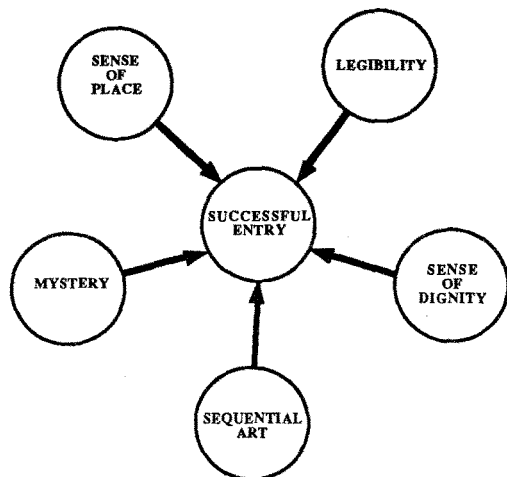


Figure 1: Preliminary Model of "Successful Entry"

thought to provoke a wide range of emotional impacts on its users, from "simple recognition for orientation, through the capacity to respond emphatically to the identities of different places, to a profound association with places as cornerstones of human existence and individual identity" (Relph, 1976, p. 63).

Though clear consensus on its meaning and potential strength of its impact has yet to be reached, the notion of a sense of place implies, first, that a place is delineated, distinct, and recognizable. Consequently, a distinction between the perception of 'inside' and 'outside' must be present (Relph, 1976, p. 49). But this necessary distinction can only be recognized if there is an effective connection between the two, if while one is inside, she or he is aware of the existence of another realm outside. In this vein, the value of the landing, for example, has been considered to be extraordinarily important because of its ability to integrate people inside with their 'universe' outside and thus enhance their sense of mutual belonging or place (Plummer, 1984, p. 61).

Thus, it appears that the entry's natural function of acknowledging the separation between inside and outside while simultaneously providing a connection between the two, inherently helps to strengthen sense of place in an environment. Other notions related to place also suggest the importance of attributes that are already inherent to the entry sequence such as, enhancing interaction between place and observer by providing paths with goals (Cullen, 1961, Norberg-Schulz, 1971) and offering distinction to a town by using gateways to mark the points where paths to the town cross its boundaries (Alexander, 1977).

Legibility

Sense of place, on its simplest level, requires the provision of orientation (Relph, 1976). Though the presence of orientation does not necessarily mean that a sense of place will offer a profoundly emotional experience, lack of orientation can be extremely emotionally disturbing (Lynch, 1960; Rapoport, 1977; Harrison and Howard, 1980; Passini, 1984). Lynch stated that "the very word 'lost' in our language means more than simple geographical uncertainty; it carries a tone of utmost disaster" (Lynch, 1960, p.4).

Legibility is established by way of environmental elements that help the observer to structure the environ-

ment and become oriented (Lynch, 1960). Cues as conveyors of information about how to use an environment can also contribute to legibility. Distinctions between inside and outside, front and back, public and private, for example, are established and delineated by the use of cues (Rapoport, 1982). Cues also convey information about a building's purpose and contextual meaning, so the observer can better understand the space he or she is approaching (Rapoport, 1982).

One of the major functions of an entry sequence seems to be to orient the observer and help clarify the direction to take in order to arrive at a building and how to use it once inside. Because it is the part of the building that is first observed by the user, it also can help to convey information about the building's function. In this way, the entry can help to contribute to the overall legibility of an environment.

Sequential Art

Architecture has been described as a form of art that uniquely embodies the dimension of time. It requires the observer to move through a space in order to fully experience it (Raskin, 1954). The necessity for movement calls into importance the effective use of spatial sequences and the perception that the composition of sequential spaces is what, in part, establishes the aesthetic qualities of a designed environment. The 'psychic' power of spatial variation (Colbert, 1987, p. 64), the effectiveness of 'in-between' realms (Moore, 1974, p.216) and Norberg-Schulz' argument that paths should always end with goals support the concept that sequences contribute to the effective composition of an environment.

Raskin maintains that sequences in design are generally used to prepare for a climax and in designing an entry, a designer must be able to predict where, in the approach to a building, the observer is going to want to know where the entrance is (Raskin, 1954). Indeed, it appears that the entry sequence provides an ideal opportunity to enhance the sequential aesthetics of a space. It is a building element in which the effective use of sequences, can contribute directly to the unique temporal qualities of a building's design.

Mystery

Mystery is another element that appears to be important to the presence of a successful entry. Mystery in an

environment requires the observer of a scene to use inference, or a cognitive effort, in predicting what is ahead but not yet in view (Kaplan, 1979b). A successfully mysterious scene slowly unfolds information as one moves through it. It reveals to the observer pleasant surprises that provoke feelings of anticipation and curiosity, luring the observer further along. Such an interpretation of mystery has been found to be a predictor of environmental preference (e.g. S. Kaplan and Wendt, 1972; R. Kaplan, 1973; R. Kaplan, 1977; S. Kaplan, 1979a, R. Kaplan, 1979). Though seemingly the opposite of legibility, mystery can be used to enhance an already legible environment by requiring the observer to make an effort to solve a solvable puzzle. Mystery cannot occur in a positive way without legibility, however (Lynch, 1960; Kaplan, 1979b).

Because it lures the observer further along, mystery provokes movement through a space. Entries to buildings require movement in order to be experienced and, by nature, do not disclose all of their information until the observer has arrived at the end. Thus, entries inherently have an element of mystery to them. It may be that varying degrees of mystery influence the perceived success of an entry sequence.

Sense of Dignity

Sense of dignity in designed environments as a whole has been an issue important to the mobility-impaired (Lyndon, 1987). A recent study related to entries has shown that mobility-impaired individuals prefer to use main entrances to buildings. When accessibility to a main entrance is not available, they tend to feel dependent, disoriented and degraded (Bain, 1989).

Sense of dignity can also be important to the able-bodied. In this respect, the entry has often taken on symbolic meanings, expressing relationships of power and control of one group over another. When people are not able to use a main entry sequence (usually the most important and emotionally potent approach to a building) they are often accorded a lower status than others. This is evidenced by the common placement of servant entries in the rear of older buildings or the denial of front entry access to blacks in the Southern U.S. prior to the Civil Rights Movement.

DEFINING A "SUCCESSFUL ENTRY"

The entry sequence by its very nature, can incorporate many issues considered to be important to good design. Devoting attention to the entry can help to establish a sense of place, sense of dignity, sequential art, legibility and intriguing mystery to an environment. A previous study began to examine the preliminary conceptual model of a "successful entry" comprised of these issues. By collecting information on people's response to a variety of entry sequences the five original concepts thought to be important to entry were examined and the model of "successful entry" was further refined (Bain 1989b).

In the previous study, "sense of dignity" and "sequential art" were found to be strongly related to "sense of place". They relate to positive feelings about an entry and, like "sense of place", seem to represent an entry's more abstract qualities. A strong statistical relationship was found between the concepts as well.

Because of this strong relationship, the original five-part model was condensed to a three-part model made up of "sense of place" (now an aggregate of "sense of dignity", "sequential art" and the original "sense of place"), "legibility" and "mystery". Further examination confirmed the importance of "sense of place" and "legibility" in predicting a "successful entry" (see fig. 2).

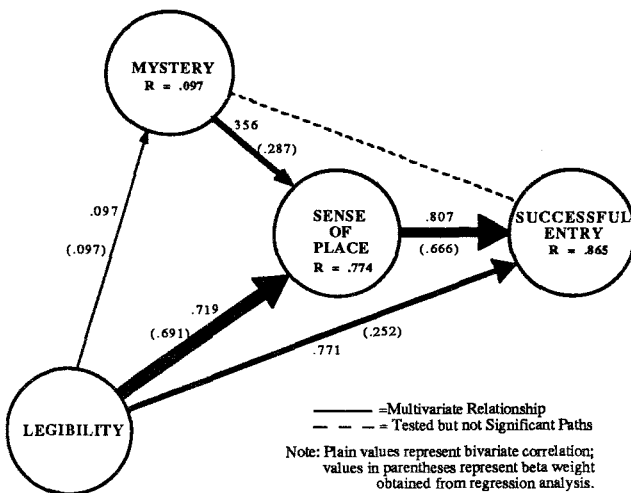


Figure 2: Tested Model of "Successful Entry"

"Sense of place" was observed to be the most general concept and strongest predictor of a "successful entry". "Legibility" was also found to be a predictor of a successful entry. The assumption that "legibility" is a fundamental component of "sense of place" was confirmed. "Mystery", with its intriguing playful qualities, requiring active participation on the part of the viewer, was also shown to contribute to a "sense of place", but not to contribute directly to a "successful entry". This supports the Lynch and Kaplan notions of legibility and mystery. Legibility is an essential component of a pleasurable environment while mystery can be used to enhance an already legible environment but without legibility cannot occur in a pleasurable way (Lynch, 1960, Kaplan, 1972).

Finally, "legibility" was examined further in depth (fig.3). A preliminary model of "legibility" developed from the literature was comprised of four issues: "obvious" (as opposed to confusing), "know how to get into the building", "know where to go once inside the building" and "can tell the function of the building". All four concepts were found to be predictors of a "successful entry" (Bain, 1989b). "Obvious" was found to be most strongly related to "legibility". Further examination found it to be predicted by the remaining three concepts as shown in Figure 3.

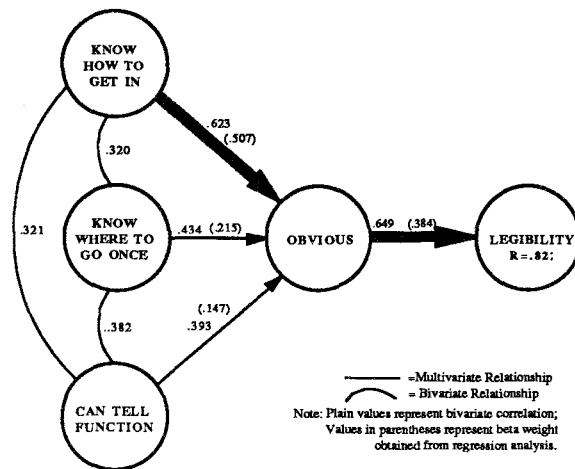


Figure 3: Tested Model of "Legibility"

The relationship between the two tested models together was not examined. It is not yet clear how they relate as one connected framework of a "successful entry". The nature of the relationship between the various attributes that contribute to "legibility" and "successful entry" are still undetermined. This study examines the two previously studied models of "successful entry" and "legibility" together as one connected model in an effort to further clarify the definition of a "successful entry". To do this, information about user perception of and preference for a variety of sequences will again be studied.

RESEARCH PROCESS

In order to obtain information on people's perception of "successful entries" it was important to use an approach in which a variety of entry sequences were experienced by users. Analysis of responses to the experiences gave insight onto observers' perceptions of the actual experience of the entry sequence and how they relate to components in the model. In taking this strategy, methods of presenting entries to users, selection of an adequate sample of entries, selection of a subject sample and use of an effective research instrument became important issues.

Simulations of Entry Sequences

Because of the various complications related to obtaining observer response on-site, simulations of the entry experience were presented via videotape. Dynamic simulations, such as videotape or movies, are generally viewed as being more 'ecological' or 'experiential' than static images (e.g. slides or photographs) for simulating roadside travel. Research suggests that dynamic simulations of real and modeled roadside environments produce responses similar to responses invoked by real road environments (Sullivan, 1988). As proceeding through the entry sequence involves movement and thus, is also a form of travel, video was the preferred medium through which to provide images to subjects.

The videotape was recorded in an effort to simulate the entry sequence, as closely as possible, to the experience of the user on-site. Efforts were made to record the tape candidly by avoiding intentionally composed images and keeping panning and zooming to a minimum. In addition, a standard 50mm lens was used as

it most closely approximates the normal angle of vision of the human eye (Sullivan, 1988).

Sequence Selection

Twelve entry sequences were chosen and videotaped in Columbus, Indiana. Using Columbus as a single, concentrated site from which to select a variety of entries had several advantages. Choosing sequences which the subjects did not experience in their daily routine decreased the chance of routine familiarity with the sequences, and thus potential bias from pre-established opinions about an entry and its success. In addition, Columbus' unique history of commissioning well-known architects to design many of its buildings provided the opportunity to evaluate sequences from buildings that are already generally considered to be well-designed.

The sequences were chosen in an effort to obtain a selection of entries that represented varying levels of each concept. Eleven buildings and a total of 24 sequences were initially videotaped during two trips to Columbus, Indiana. After two pretests, the final selection of twelve entries was confirmed. Figure 4 shows static views of each sequence. The final videotape presented the set of sequences in two parts. During the first part, the sequences were shown quickly, one right after the other. The second part presented the sequences with 2-minute pauses between each. The length of the sequences ranged from 1 1/2 to 3 minutes.

Subject Sample

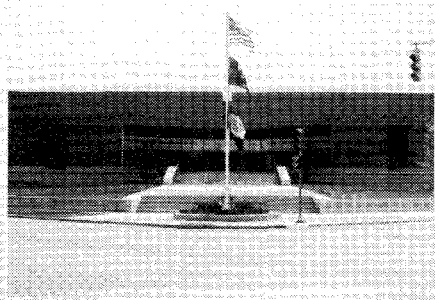
Twenty-nine design students and nineteen non-design students were recruited from the University of Illinois at Urbana-Champaign. The designers were to act as a 'panel of experts' used to rate the various sequences in terms of the design-related issues such as "sense of place" and "legibility". Both designers and non-designers were to act as evaluators of the general "success" of each sequence. The designers were first or second year graduate students in the School of Architecture. The non-designers came from a variety of disciplines ranging from engineering to ethnomusicology.

Instrument Used to Evaluate the Entry Sequences

The research instrument included an open-ended section of questions and a section of structured items to be



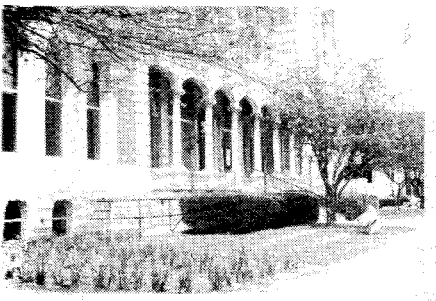
Mystery and legibility



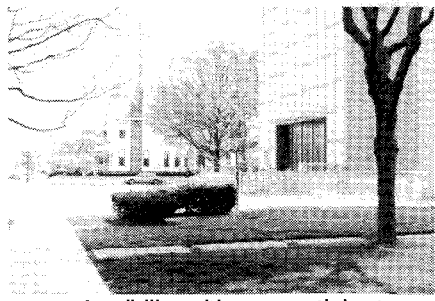
High degree of legibility



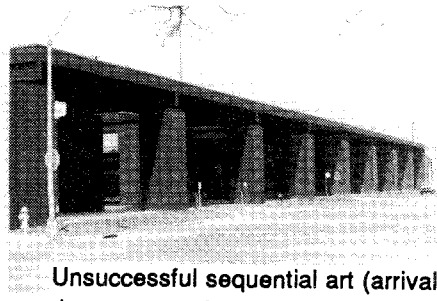
Illegibility and lack of sense of dignity



Sense of place and legibility



Legibility with sequential art



Unsuccessful sequential art (arrival does not match approach)



Sequential art and sense of place



Accessible route: Legibility without strong sequence



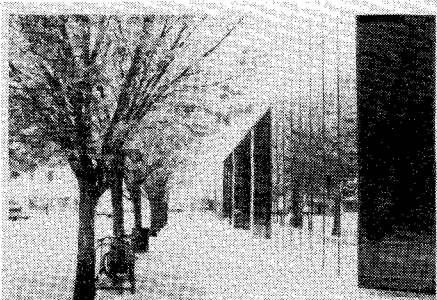
Illegibility



Mystery, sequential art, legibility



Illegibility



Mystery and legibility

Note: Captions describe entry characteristics that influenced their selection for study

Figure 4: Entry Sequences Chosen for Simulation

used respectively during the first and second viewings of the videotape. The open-ended section listed each sequence by number, in the order shown, and provided room for the respondent to make comments about the sequences as they were being viewed.

The second section was comprised of eighteen descriptive adjectives or phrases listed down the left side of the page. The descriptions varied from general positive-negative antonyms, to specific phrases related to proposed attributes of legibility. Success was measured with two ratings in the instrument: 'unsuccessful-successful' and 'dislike it-like it'. The designer instrument had four additional phrases related to the specific design issues in the conceptual model such as "sense of place" and "mystery".

Each entry was to be rated in terms of each item. In an effort to save space, a matrix was developed in which the respondent was asked to give their ratings in the appropriate box. Since pretest participants seemed to be more accustomed to rating topics on a scale from one to ten, a ten-point scale was used. Respondents were also asked questions related to their previous exposure to each entry, and general demographic information.

Procedure

Nine video sessions were conducted. At each session the basic goals of the study were explained. The first viewing was described as an initial preview of the twelve sequences, used to introduce participants to the variety of sequences chosen for study. During this viewing, the sequences were shown one immediately after the other. Subjects were asked to record whatever came to mind as they imagined moving through the space.

Before beginning Part 2, the term 'mysterious' was defined as a scene that is not completely unknown, but one that presents both known and unknown information and unfolds essential cues as one proceeds through the sequence. The second viewing showed each sequence placed in the same order as the first, with two-minute pauses in between (an image at the end of the sequence last shown was left on the screen during the pause). During the pause respondents rated the sequence just viewed in terms of each item.

FINDINGS

Information from this study provided the opportunity to examine many issues related to designer and non-designer response to entry sequence simulations. Some of these issues have been studied already. For example, frequency distributions of items related to various issues in the instrument such as mystery, legibility and success measured against each entry sequence have been studied. Comparisons between non-designers and designers also have been explored. And, portions of the original model developed from the literature have been further refined. Discussion on such topics can be found in Bain, 1989b.

The purpose of this study is to test a conceptual model composed of the two previously tested models of "successful entry" and "legibility". Before combining the two for testing, however, the hierarchical distinction between "legibility" and "obvious" was called into question. Originally, the term "obvious" was thought to be a slightly more specific characteristic of "legibility". In fact, the "legibility" model tested prior to the one shown in Figure 3, showed "obvious" as equal to the three other predictors of "legibility" in level of specificity. Further analysis, however, found "obvious", like "legibility", to be predicted by those three other attributes. "Obvious" and "legibility" may mean the same thing and may have been rated similarly by participants. In fact, there is a relatively high correlation between the two (.649).

Because of the strong conceptual and statistical relationship between "obvious" and "legibility", the two variables were grouped together to form one combined category called "legibility". The model to be tested is shown in Figure 5. "Sense of place" and "legibility" are shown as the two direct predictors of a "successful entry". "Mystery" contributes to "sense of place". "Knowing how to get into the building", "knowing where to go once in" and "being able to tell the function" of the building are shown only as specific attributes of "legibility".

"Mystery" and the attributes of "legibility" are not considered to be direct predictors of a "successful entry". As previously discussed, mystery, without legibility would leave the observer lost and disoriented. It can contribute to a "sense of place", however, and thus, indirectly enhance an already legible entry. The three attributes that predict legibility cannot directly predict a "successful entry" because of their high level of speci-

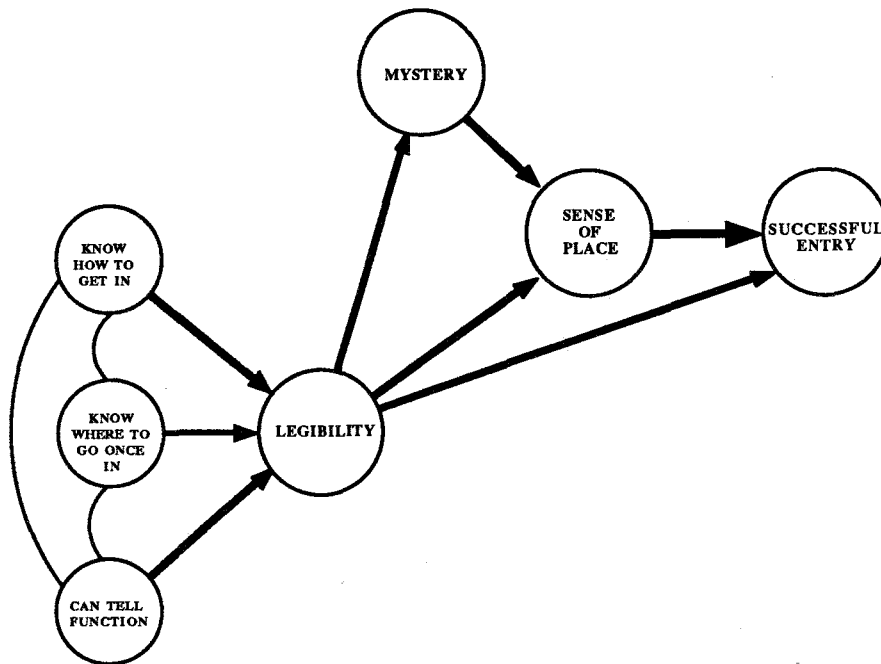


Figure 5: Model To Be Tested

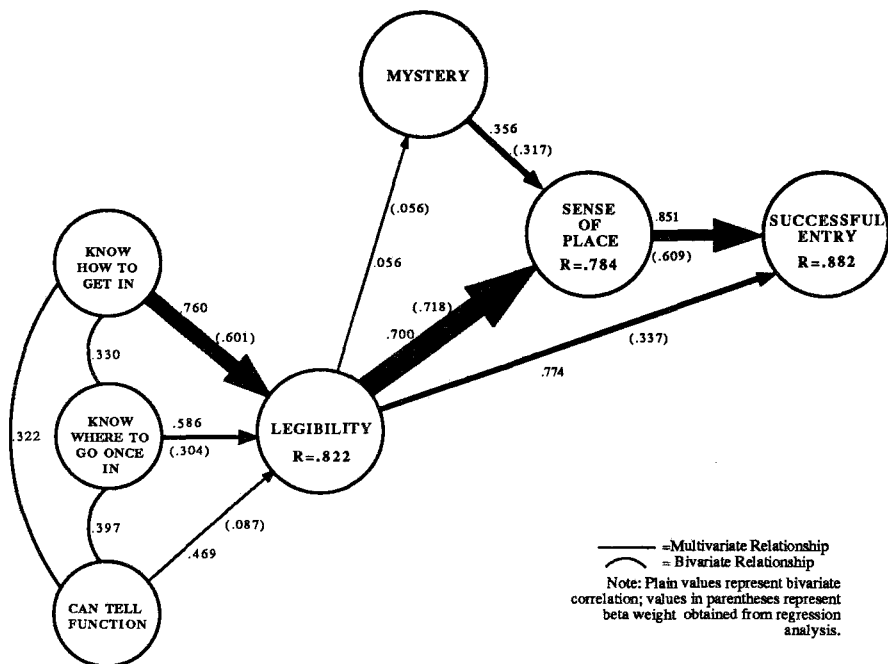


Figure 6: Tested Model

ficity. A "successful entry" cannot be predicted alone by such specific and distinct concepts.

A set of stepwise multiple regression analyses was used to confirm the relationships between the hypothesized concepts. Figure 6 shows the beta weights of each of these variables (beta weights represent the slope between two variables or the amount of change that a unit change in X will predict in Y).

SUMMARY OF FINDINGS

Results from this study provide further evidence for the likelihood of the hypothesized links between issues that contribute to a "successful entry". Sense of place appears to be the most important characteristic of a successful entry. Legibility, that is, providing for the observer necessary cues that indicate where to go and giving information to the observer about where he or she is, contributes strongly to the presence of sense of place. In addition, a certain amount of mystery used to create a positive interaction between the observer and the environment, can also contribute to a sense of place. Mystery, knowing how to get into a building, where to go once inside and being able to tell the function of a building cannot, by themselves, contribute directly to a "successful entry".

CONCLUSION

In contrast to the attention given the entry in architectural designs throughout the centuries and the apparent importance of the entry to those who write about or teach environmental design, surprisingly little systematic research has focussed on the entry sequence. A previous study developed and tested a preliminary model of a successful entry and a secondary model of legibility. This study combined the two to form one connected model.

Results from this study helped further define what contributes to the success of a building's entry sequence. Several directions could be taken in future research. Because the study of sequences involves a cross-sectional, non experimental set of associations, a cross-sectional panel design, where the sequences are evaluated across a series of points, may be appropriate. The direction of the causal arrows between concepts may then be substantiated with greater confidence.

The exact definitions of "sense of place", "mystery" and "legibility", from an empirical point of view are also not completely clear. Though attributes of legibility have been examined, additional research would help to further clarify its meaning. Further study of the attributes that make up "sense of place" and "mystery" must also be done to gain more comprehensive tested definitions of these concepts.

One approach would be to return to the literature to gain more specific information about each concept. A panel of design-trained experts could establish more specific, literature-based, definitions of each. It could then examine a variety of entries and rate them in terms of those concepts. Both designers and non-designers could be recruited to give their ratings of the success or failure of those entries. This would help to both further define each concept and gain a better understanding of the differences between designers and non-designers.

Further clarification of the actual physical cues that determine the presence or absence of each concept also needs to be studied, for example, the range and combination of physical details that contribute to there being a sense of place. This may best be accomplished by taking static images of parts of a sequence and distilling the sequence down to its finest details.

This exploratory study highlighted a number of important issues which relate to how people perceive and evaluate the entry sequence. Further research should provide additional information which may have even greater implications for the future design of entries.

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