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Image Making As a Planning/Design Principle:
A Case Study of Andong Municipal Museum Complex (AMMC)

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Abstract

This study addressing the underlying strategies for Andong municipal museum complex development is in timely view that Andong has obtained a worldwide reputation as a treasury of traditional Korean Confucian culture. Thus far, there has been a tendency that various local museums are proposed to meet architectural aspirations architects and users commonly hold. Overall, though, the major role they play in making overall city image has not been considered in a systematic manner. Based on Lee's (2001) two previous studies, this study summarized the utility of cognitive distance and cognitive map concepts, which are proposed by Kevin Lunch (1976) to evaluate city image, in planning Andong municipal museum complex (AMMC). Sample is stratified into city residents and outsiders, and also into the general public and design-related professionals to see if there is any group difference in constructing their mental image. Three major findings are obtained. First, familiarity, so-called the degree of knowing, is the function of the length of stay in a designated area. That is, the longer people stay in Andong, the more likely they are familiar with its overall environmental aspects. Second, mental proximity of Andong municipal museum complex relative to existing cultural landmarks is closely related to the degree of how people value those landmarks in terms of their significance. Dosan Seowon and Hahoe folk village are most highly valued, which means higher proximity. Third, functional diversity turned out to be the most important design dimension, while display mechanism are least valued. Cognitive simulations of this sort are meaningful in that projected composite image might be a rough first approximation of true public image.

Keywords: Image Making, Cognitive Information Processing, Museum Architecture

1. INTRODUCTION

Public image on our physical environment is the result of mutual interactions that take place between a place itself and its inhabitants. Both physical and latent aspects intrinsic to the place might play an important role in making its overall image (Lynch, 1960). If visually or spatially well set forth, it may create a positive public image. Lynch (1976) pointed out that a legible and integrated physical setting might lead its inhabitants to a sense of belonging and emotional security. In support of Lynch's ecological proposition of city image, Rapoport (1989) argued that a visible thing could be evaluated and understood only under a particular system of physical settings it belongs. Trancik (1986) interpreted the spatial organization of various physical settings as an environmental art. In this regard, environmental perception at a city level is largely a matter of how each physical element fits into a larger spatial structure.

Gans (1968) perceived physical settings simply as potential environment, while the intrinsic values of those settings, such as cultural values and tradition, as effective environment. That is, true public image can be effectively created only if existing physical settings are understood in a longitudinal point of view, taking into consideration of extended public experiences with them. Walls (1990), an American folklorist, argued that tradition is not simply old and static ideas which are deeply rooted in time, but a continuous process of creating meaning based on a group's shared experiences. Within this context, tradition or culture may govern the ways in which people perceive their physical settings in an idiosyncratic manner.

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Despite all the efforts to preserve our cultural heritages spread all over the nation, the supply of cultural facilities (e.g., a museum complex) relative to demand in its many countryside cities is falling farther behind. The problem is especially acute in Andong where cultural landmarks or icons usually take precedence over industrialization, where wooden cultural assets preserving the vivid face of lives past are abundant, and where historical preservation is still incomplete. This study found that roughly 40% of Andong citizens are eager for a museum complex as the most urgent need for the years to come. This figure is even higher when other cultural facilities (e.g., Andong mask dance festival stadium, 23%) are spatially linked to the museum complex.

An ideal Location of cultural facilities (e.g., a museum complex) might be recognizable only by scrutinizing virtue or relations of some distinctive, separate symbolic landmarks (e.g., cognitive distance). Additionally, the overall shape of a cultural facility can be documented, if public images are to be made in some detail (e.g., cognitive map). Based on this cognitive point of view, this study proposed to provide underlying guidelines for Andong municipal museum complex development that otherwise is difficult to be recognized directly.

2. INFORMATION PROCESSING FOR IMAGE MAKING: AFFECT VERSUS COGNITION

Lynch (1960) construed a perceived image as the result of a two-way information processing between observers and observed. Thus, external characteristics of an object (e.g., city or building) are not a sole determinant of image making, but how an observer interprets a series of

information about the object might play a critical role in developing shared group image. This two-way information processing approach to image making is deeply related to environment-behavior relation (EBR) studies. Unlike the architectural deterministic point of view, EBR provides a more reliable framework for interpreting environmental influence on human behavior (Rapoport, 1989). Rapoport believed that there is a strong organic mechanism that links people and physical settings. Within this context, physical settings themselves are neither necessary, nor sufficient for understanding environmental behavior, independent of their mutual associations.

Sommer (1976) sorted out attitudes, beliefs, expectations, motivations, and aspirations as environmental behavior. That is to say, what people perceive their physical settings as an organic whole (e.g., city image), what they expect a potential spatial structure of main features in a way which is sympathetic to image development (e.g., cognitive distance), or what a newly projected object ought to be in an image development context (e.g., cognitive map), are regarded as an environmental behavior category.

Thus far, two contradictory, but complementary theoretical models of information processing related to environmental perception have been proposed: (1) affect and (2) cognition. Zajonc (1980) viewed affective reactions (e.g., like or dislike) to an environmental stimulus as occurring fairly independent of extensive cognitive appraisal or judgments of the stimulus. Affect is a term used to indicate generic subjective feeling states that are made in the absence of cognitive interpretation (Simon, 1982). Although affect and cognition interact each other in a variety of ways, Zajonc (1980) believed, they are more likely to be a separate system in information processing.

Mandler (1982), on the other hand, argued that affective responses to an environmental stimulus are pretty much dependent on how the stimulus is cognitively interpreted. Based on his argument, affect is post cognitive, occurring only after cognitive appraisal or judgments of the stimulus are successfully accomplished. Fiske (1981) supported Mandler's proposition by noting that a person's generic knowledge structure accumulated from prior experiences determine the degree of intensity of affective judgments. Under this notion, cognition (e.g., meaning analysis) might play a major role in environmental perceptions. Sommer (1976) defined the knowledge structure as a conceptual schema everyone keeps in different ways, which helps explain why some people like a feature; others dislike it. That is, schemas might vary between different groups of people, according to their situations in the life context. Based on his schema-driven interpretation of information processing, people are conceived as reasonable decision makers.

Mandler (1982) further explained the affect/cognition interface approach to environmental perception under the notion of schema congruity and incongruity. People usually seek a reasonable fit between evidence and schema. Schema congruity always produces positive judgments of value (e.g., liking), necessitating intensive cognitive efforts in a sense that a stimulus is continually weighted on a person's expectations. Table 1 shows several possible outcomes of schema congruity and incongruity in terms of both values and affective intensity, which is summarized based on Mandler's (1982, p.22) works.

Table 1. Possible Outcomes of Schema Congruity and Incongruity

Schema	Congruity	Incongruity		
Stimulus Discrepancy	None	Slight	Severe	
Appropriate Response	None	Assimilation	Accommodation	
			Success	Failure
Value Judgment	Positive	Positive	Positive or Negative	Negative
Affective Intensity	0	+	+~+	

Note. Stimulus discrepancy also can be overcome by seeking an alternative schema. Consequently, values of a stimulus are positively judged, and the degree of affective intensity can be sought in somewhere between slight and severe incongruity (+~+).

Affective intensity is largely a function of the degree of discrepancy that exists between what is presented and what was expected. For schema congruity, thus, the intensity of an affective response is zero, while it produces positive values on stimuli. As discrepancy increases, values are more likely to be judged in a negative manner, depending on how people respond to resolve it. If discrepancy is slight, people tend to judge values positively through assimilation as an appropriate response. Overall, though, this judgment is slightly emotionally tinged, necessitating a low degree of affective intensity. Additionally, accommodation is usually accompanied by a high degree of emotional intensity, resulting in judgment of negative values. This is largely because discrepancy is salient and intolerable. In support of Mandler's (1982) notion of schema congruity and incongruity, Wohlwill (1966) pointed out that each individual has its own adaptive level to a given stimulus. Minimal variations from the level lead to positive responses to the stimulus, while large variations result in negative responses to it.

Thus far, two alternative explanations on the nature of schema have been recognized. One is related to evolutionary theory, while the other is to learning theory. From the evolutionary point of view, people are innately predisposed to respond positively to a particular stimulus (Orians, 1986). Such predisposition is the outcome of natural selection that takes place over a long period of time, no matter how people intensively experience the stimulus. In this regard, people are believed to share a perceptual judgment mechanism that underlies their affective responses in a certain manner. Kaplan (1973), on the other hand, insisted that environmental perception could be modified through different learning processes across the life span. From this learning perspective, it might possible to posit an idea that groups of people with different backgrounds express differing responses to a given environmental stimulus. As a cumulated body of knowledge intrinsic to the stimulus is continually built up, its evaluation is more likely to be consciously tinged (Mandler, 1982). By the same token, ways of life which are typical of a group of people (e.g., culture or tradition) might serve as a unique judgment mechanism (e.g., default values).

3. CONCEPTUAL FRAMEWORK

Figure 1 presents a conceptual framework developed to show the utility of familiarity and professionalism in differentiating environmental perception in terms of information processing. Familiarity (e.g., the degree of knowing) is a term used to indicate the degree of how much people are familiar with a set of environmental stimuli. Professionalism, hereafter, is used to indicate the degree of how much people are accustomed to a designary way of thinking. Design-related professionals and the general public who lack specific training in design may have different knowledge structures in terms of environmental perception (Kaplan, 1973). Environmental perception is a specific term used to describe a person's information processing regarding both spatial cognition of Andong municipal museum complex relative to existing main cultural landmarks and imaginary presentations on its overall shape in a systematic way. These are labeled as cognitive distance and cognitive map, respectively.

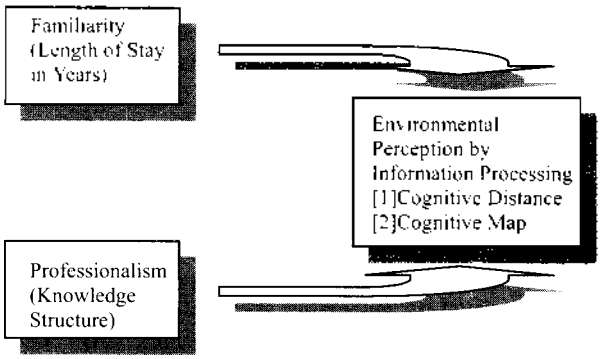


Figure 1. Conceptual Model of the Study

Based on the model developed (Figure 1), three propositions are posited. First, Mandler (1982) explained schema as a result of prior experiences with a set of environmental stimuli. In this regard, familiarity is a function of prior frequency of exposure to those stimuli. This study examined if familiarity can be reasonably defined by the length of stay in place. The longer people stay in an area, the more likely they are familiar with its elements.

Second, Mandler (1982) related familiarity to schema congruity. Schema congruity is usually accomplished as environmental stimuli fit in with a person's long-term expectations. He posited an idea that shared schema could be obtained by common experiences within a group of people. According to Rapoport (1989), environmental perception may differ significantly between members of a given group and outsiders. This is largely due to differences in the level of schema congruity that exists between the two groups. This study examined if environmental perception differs between emic and etic groups. This dual approach is expected to broaden an area of inquiry regarding environmental perception.

Third, Kaplan (1973) related schema differences to a person's educational background and conscious experiences. In addition to emic and etic group differences in environmental perception, therefore, design-related professionals and the general public might be exposed to different ways of perception to a set of environmental stimuli. This study examined if environmental perception differs between the two groups. This is a quite meaningful step to weight ordinary people's architectural ideas or aspirations against design professionals' ways of thinking.

4. METHODS

4.1 Study Population

One of the major tasks was to identify sampling strata to study. Sample was stratified into four groups for analysis purpose. The first group is Andong citizens, the second is outsiders who have stayed less than 1 year in Andong at the time of survey, the third and fourth groups are the general public and design-related professionals, respectively. A total of 107 individuals stratified by different age and sex groups were surveyed, comprising the sample population. Table 2 shows descriptive statistics of the survey respondents.

Table 2. Descriptive Statistics of the Sample Population

Sample Characteristics	Statistics				
	N	Mean	SD	Minimum	Maximum
Sex[1]	107	.6	.49	0	1
Age		30.0	9.53	19	54
Length of Stay In Year[2]		16.8	15.37	0	52

Note 1. Female is coded as zero, while male as one. Thus, the mean .6 indicates the relative dominance of male respondents over female.
Note 2. Minimum value 0 comes out because citizens of the city of Young-Ju as outside observers are included in this study.

4.2 Data Collection

No single data collection effort would be efficient or effective for this study, because of the incremental nature involved in data collection activities. Thus, this study used a three-stage data collection strategy.

First, the initial stage was comprised of site visits. Informal contacts with opinion leaders and an initial walk through in popular landmarks were simultaneously undertaken in order to obtain basic information regarding city image, public interests and problems. One interesting finding is that a majority of citizens viewed Andong as an undeveloped, physically disordered, and exclusive city.

Second, for the purpose of collecting primary data, 13 junior and 17 senior architecture students at the Andong national university (ANU) were asked to sort out a set of physical landmarks for the city of Andong. Identifying main physical landmarks and their spatial relations are a necessary step for this study. As a result, a total of nine environmental stimuli, representing a wide range of Andong's physical landmarks, were selected; Dosan Seowon, Bonggeong temple, Hahoe folk village, Imchunggak Gunjajung, Byungsan Seowon, Andong national university, Andong station, Andong Dam, and Chohung bank (CHB). Once developed in Korean, the questionnaire was subsequently pretested by potential users of the data with substantive knowledge of the survey topic. The survey questions were set up in a booklet format in order to create a positive overall effect on all respondents (Bailey, 1994; Dillman, 1978).

Third, self-administrated questionnaire surveys were undertaken by trained survey personals in a form of face-to-face interviews. A total of 107 subjects were participated in the present study. Design Professionals such as field architects, officers of the Andong culture and tourism department (ACTD), ordinary citizens, and outsiders, including citizens of the city of Young-Ju, comprised the sample. All the subjects were classified into city residents (75) and outsiders (32), and also the general public (41) and design-related professionals (34) for analysis purposes. In the latter case, outsiders were controlled so that between-group comparisons are appropriately made among Andong citizens. One possibility is that outsiders may not be familiar with a vest array of physical landmarks in the study area, thus, interpreting a same thing differently as do insiders (Brower, 1989).

4.3 Data Treatment

In order to make an image of AMMC through the environmental perception made by a different set of subjects, three major concepts - familiarity, cognitive distance, and cognitive map - were validated by survey questionnaires. Familiarity was measured by a single item, asking subjects to indicate the extent of how much they are familiar with, and know about each of the nine environmental stimuli, as prescribed in Table 3. Each was separately measured on a 5-point scale; 1 refers to as "not very well," 5 as "very well," and 3 as "just inbetween." As the length of stay is a continuous variable, a simple linear regression analysis was used to measure the dependent variable, familiarity. If the analysis is correctly done, and the relationship is strong anyhow, environmental familiarity should be explained, to some extent, by the years of stay attributed to observers in the study area. An independent two group t-test also supported the possible relationship in a sense that the longer stay group turned out to be more likely than the counterpart to be familiar with the city's overall image of physical landmarks ($t=5.5$; $p < .001$).

As to the cognitive distance measure of AMMC relative to each of the nine environmental stimuli, subjects were asked to mark its ideal location on a 5-point ordinal scale where the higher numbers represent greater proximity. Missing values were coded as 3, "neither very far away from nor pretty much close to." Consequently, nine pairs of spatial proximity questions were separately tested by subject ratings. Of interest in this study is to reveal group differences in determining the ideal location of AMMC on theoretical grounds. In this regard, difference between groups was examined by independent two group t-tests. The results are reported in Table 4. One sample t-tests also showed that all responses to each of the nine dependent measures are spread all over the proximity range at statistically significant levels. Thus, if group difference exists, its implications might be meaningful and open up for further examination. Possibly, the issue of spatial proximity, particularly if multiple locations are primarily concerned, might be reasonably explained by broadening the range of spatial organization. Studies of this sort should continue to test the utility of different sets of scale to obtain more reliable data.

One of the tasks to be resolved by the study is to develop architecturally valid planning and design guidelines for AMMC in terms of cognitive mapping. As fundamental elements of a cognitive map for Andong Municipal museum complex, five architectural domains reflecting contemporary trends in the field were carefully addressed for this study. The first refers to the issue of environmental ecology and is a combined measure of the responses to five items; (1) locational relations to existing cultural place or amenities, (2) balance with the surrounding natural scenery, (3) future additions or extensions, (4) building orientation, and (5) organic building structure with multiple layers. Subjects were asked to rank each item in a hierarchical order from higher to lower priority. The most important item was coded as 1, the second as 2, the third as 3, the fourth as 4, and the fifth as 5, respectively so that smaller numbers mean greater priority. The rank ordering technique might be appropriate, because all items can be considered in terms of their priority without missing values. This is particularly true when relatively many items need to be validated in a single question (Bailey, 1994). The other four domains - symbolism, accessibility, functional diversity, and display mechanism - were treated in the same way and presented in Table 5, with some statistical ramifications.

As a result, a total of 25 items under five domains were included in the present study. Basically, the data were treated in two ways. One sample mean priority rank ordering, first, as validated by Chi-square tests, was performed in order to test the equality of response distribution. As shown in Table 5, responses to 21 items out of the total turned out to be statistically significant within the range of acceptable standard deviations. Thus, the overall response distribution is deemed valid with a certain consensus among all the subjects. Second, a Kruskal Wallis test was operated to test if there is any group difference in subject ratings. The participant groups were treated as independent variables, while the cognitive image of AMMC as dependent variables. Consequently, the legibility of a cognitive map to be constructed is totally dependent of the organization ability of subjects involved in evaluating the given set of architectural elements. In this regard, comparison of groups which differ in environmental perception would be highly recommended.

Both short- and long-term residents were defined by a middle cutting point of the duration of stay in year as reported by subjects. Mean length of stay was 16.8 years and used as the point. Based on this rule, subjects who are located at below and above the point were coded as short- and long-term residents, respectively. Additionally, field architects and ACTD officers were assigned as design-related professionals, while Andong citizens not serving as design professionals characterized the general public. The results are reported in Table 6 and only design elements that are proved to be statistically meaningful are included for further discussion. As analyzed by gender and age, some design implications can be made by between-group comparisons. Nonetheless, the results are not reported in this paper, because the primary concern of the study is with environmental familiarity and educational background or personal experience in design-related fields as well.

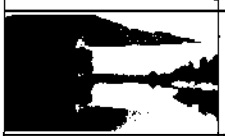
5. FINDINGS

Based on the conceptual framework developed (Figure 1), three major findings are obtained as follows.

5.1 Familiarity as a Function of length of Stay

The duration of stay in Andong explained why some people better know and are familiar with a set of environmental stimuli, while others not. Thus, this study supports the proposition that familiarity can be reasonably measured by the length of stay in an area dominated by those stimuli. The longer the respondents stay in Andong, thus, the more likely they are familiar with its environmental aspects as a whole ($t = 6.1$; $p < .001$). Table 3 shows the degree of familiarity with the nine environmental stimuli as measured by the length of stay. The relationship of familiarity with the length of stay is proved to be valid for all environmental stimuli, but ANU.

Table 3. Environmental Familiarity Related to Length of Stay

No. Stimulai[1]	Characteristics	p-value
	①DOSAN SEOWON As historic site no. 170, bordered by Andong Lake in front and dense pine forests to the rear, it creates lyric scenery.	< .001
	②BONGGEONG TEMPLE As a famous cultural treasure, it is characterized by Gukrakjeon and Daeungjeon, having a reputation for their architectural values.	< .001
	③HAHOE FOLK VILLAGE As an ideal place to understand traditional folk culture of Andong, it contains various typical Korean houses.	< .01
	④IMCHUNGGAK GUNJAJUNG As national treasure No. 182, it is characterized by clear water flowing in front and a pavilion placed on the sunny place.	< .01
	⑤BYUNGSAN SEOWON As historic site No. 260, it stands opposite a rock cliff encircled by the Nakdong River, boasting its beautiful scenery and architecture.	< .05
	⑥ANDONG NATIONAL UNIV. As a national institution, ANU stands as one of major focal points in Andong, presenting various modern architecture.	NS[2]
	⑦ANDONG STATION As the most popular public gateway to Andong, it stands as a transitional urban solid, visible from all the ways around the city.	< .01
	⑧ANDONG DAM As Asia's largest fishing site and Korea's first multi-purpose dam, visitors can enjoy lake's cruises and excellent scenic beauty.	< .01
	⑨CHOHUNG BANK (CHB) Located at the downtown area of Andong, it serves as a central place for personal meeting and various social interactions.	< .001

Note 1. Each stimulus is rank-ordered by means from higher① to lower⑨.
Note 2. Refer to "not significant" at 95% confidence level as measured by a simple linear regression analysis.

5.2 Cognitive Distance

An ideal location of Andong municipal museum complex relative to existing cultural landmarks is related to a person's familiarity with those landmarks. Dosan Seowon (17%) and Hahoe folk village (65%) are most highly valued by all the respondents. Consequently, spatial associations of the complex with the two landmarks turned out to be relatively stringent; 4.60 and 4.35, respectively, as measured on a 5-point scale of cognitive distance. One possibility is that people might predispose that an important cultural facility (e.g., the complex) need to be located close to places they know and are pretty much familiar, if no professional information or alternatives exist or are presented. This finding supports Mandler's (1982) proposition that people like what they know. Figure 2 shows the spatial relations of the nine environmental stimuli, which are deemed sympathetic particularly to Andong's overall image.

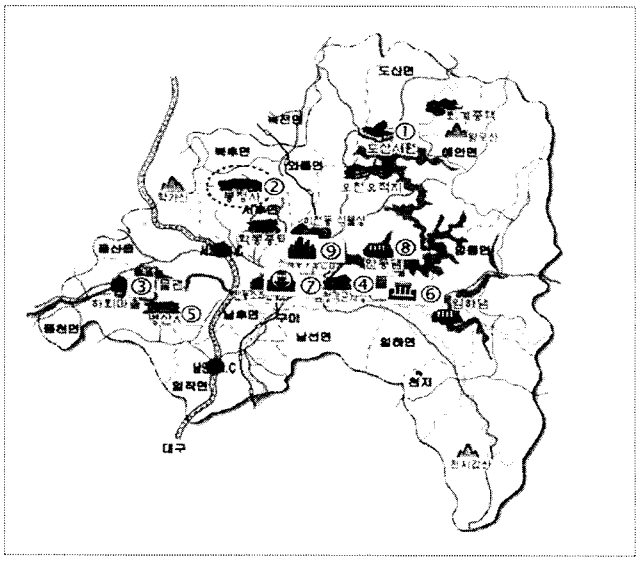


Figure 2. Locational Map of Environmental Stimuli

Table 4. Mean Cognitive Distance by Sample Characteristics (t-test)

Dependent Measure	AMMC-Andong Station[1]			
	N	Mean	SD	p-value
Length of Stay in Year[2]				
-Short-term Residents	47	3.0	1.69	< .05
-Long-term Residents	56	3.8	1.96	
Dependent Measure	AMMC-Chohung Bank[1]			
	N	Mean	SD	p-value
Length of Stay in Year[2]				
-Short-term Residents	47	2.2	1.67	< .05
-Long-term Residents	56	3.1	1.87	
Dependent Measure	AMMC-Hahoe Falk Village[1]			
	N	Mean	SD	p-value
Professionalism[3]				
-Design Professionals	32	3.7	1.92	< .05
-General Public	41	4.6	1.85	

Note 1. Each dependent variable is measured on a 5-point ordinal scale; very far away from is coded as 1, neither far away nor close to as 3, and very close to as 5. Larger number means closer distance.
Note 2. Short- and long-term residents are defined by mean length of stay in Andong as reported by all the respondents (16.8 years).
Note 3. Design professionals include field architects and ACTD officers, while the general public is characterized by Andong citizens not serving as design professionals at the time of survey.

As shown in Table 4, long-term residents are more likely than their counterpart to expect Andong municipal museum complex to be located closer to both Andong station and Chohung bank, which are located in the city's downtown area. Having a tendency to live close to the area, those residents might continually build up familiarity with the two landmarks. Lynch (1976) pointed out that people evaluate landmarks in their action space more positively than others. This may explain why long-term residents desire to put the complex around Andong station and Chohung bank particularly in their action space. Additionally, the general public is more likely than design-related professionals to desire the complex to be located near Hahoe folk village. In this regard, familiarity explanations of cognitive distance should be scrutinized with caution.

5.3 Cognitive Map

Table 5. Mean Priority Rank Order by All Respondents

Domains for AMMC Design & Their Properties[1]	Statistics			
	N	Mean	SD	p-value[4]
[1] Environmental Ecology[2]	106	2.8	1.53	*
①Vocational relations to existing cultural places or amenities	104	1.8	1.09	***
②Balance with surrounding natural environments	104	2.1	1.05	***
③Future additions or extensions	103	3.3	1.23	**
④Building orientation	102	3.7	1.16	***
⑤Organic building structure with separate layers	102	4.0	1.08	***
[2] Symbolism[2]	107	2.9	1.22	*
①Museum as a landmark	105	2.3	1.21	***
②Design reflects cultural features	102	2.2	1.14	***
③Balance of modern and traditional design elements	104	2.6	1.33	NS[3]
④Visibility from all ways around	102	4.1	1.16	***
⑤Need an outdoor symbolic tower	102	3.7	1.25	***
[3] Accessibility[2]	106	2.9	1.33	NS[4]
①Accessible by the general public	103	2.3	1.16	***
②Use of public transportation	104	2.1	1.03	***
③Spatially separated parking lots	102	4.0	1.24	***
④Accessible to neighboring cultural places or amenities	103	2.7	1.27	*
⑤Accessible at day and night	103	3.9	1.11	***
[4] Functional Diversity[2]	106	2.3	1.23	***
①Role as an information center	103	2.6	1.42	*
②Role as a place for socialization	102	2.8	1.20	**
③Role as a shopping mall	102	4.2	1.15	***
④Spatial linkage with a mask dance festival stadium	104	2.7	1.31	NS[4]
⑤Spatial linkage with theme parks	104	2.6	1.33	**
[5] Display Mechanism[2]	106	4.1	1.16	***
①Indoor and outdoor display	105	2.3	1.22	***
②Display both tangible and intangible cultural assets	103	2.5	1.22	**
③Display wooden cultural or architectural assets (e.g., houses)	102	3.3	1.31	NS[4]
④Separate display rooms for each theme	102	2.8	1.41	NS[4]
⑤Use of natural lighting	103	4.0	1.28	***

Note 1. A total of 25 design properties under five domains are included in the measure.
Note 2. Respondents also were asked to give priority values one to five for each domain itself.
Note 3. *, **, and *** indicate that relationship is statistically significant at .05, .01, and .001 significance levels, respectively.
Note 4. Refer to "not significant" at 95% confidence level as measured by one sample χ^2 tests.

As reported by the respondents, Table 5 shows a set of mental design prescriptions of what the overall shape of Andong municipal museum complex (AMMC) ought to be. Those prescriptions constitute a broad range of imaginary pictures, though their design potential should be opened up. Overall, this approach is essential in that it helps draw public image on the complex in an organizational context. On an empirical ground, functional diversity (2.3) turned out to be the most important design dimension, while display mechanism (4.1) is ranked as the least.

For environmental ecology domain, locational linkage to adjacent cultural sites is most highly valued, while organic building structure with separate layers are not highly ranked. On symbolism, the respondents strongly believe that design should reflect various cultural features (e.g., Hahoe mask or noblemen's hat). Contrarily, visibility is not a design priority. For accessibility domain, use of public transportation is highly recommended, while no public consensus is obtained in terms of pedestrian and vehicle separation. On functional diversity, AMMC's role as an information center and its spatial linkage to a theme park are emphasized, while its partial role as a shopping center is not encouraged. For display mechanism domain, the need of both indoor and outdoor display space is given a higher priority, but use of natural lighting for display is not highly valued by all the respondents.

Table 6. Mean Priority Rank Order by Sample Characteristics

Dependent Measure	Indoor and Outdoor Displace[1]			
	N	Mean Rank	χ^2	p-value
Length of Stay in Year[2]				
-Short-term Residents	56	60.6	7.98	< .01
-Long-term Residents	49	44.4		
Dependent Measure	Displace Mechanism[1]			
	N	Mean Rank	χ^2	p-value
Professionalism				
-Design Professionals	33	44.6	4.67	< .05
-General Public	73	57.5		
Dependent Measure	Use of Public Transportation[1]			
	N	Mean Rank	χ^2	p-value
Professionalism				
-Design Professionals	32	65.7	9.80	< .01
-General Public	72	46.6		
Dependent Measure	Spatial linkage with theme parks[1]			
	N	Mean Rank	χ^2	p-value
Professionalism				
-Design Professionals	32	41.8	6.18	< .05
-General Public	72	57.3		

Note 1. As analyzed by Kruskal-Wallis Tests, only design domain or properties which are proved to be statistically significant are included in this study.
Note 2. Mean length of stay (16.8 years) is used as a cutting point.

Table 6 shows group differences in constructing the cognitive image for AMMC. As implied by Lynch (1960), probing into group differences would undoubtedly be an interesting inquiry, because different groups may have widely different images on the complex. Long-term residents are more likely to value need of both indoor and outdoor display space which describes display mechanism. Design-related professionals, on the other hand, give a higher priority to both displace mechanism as a whole and AMMC's spatial linkage to a theme park, while use of public transportation is highly valued by the general public.

6. CONCLUSIONS

Taking a cognitive information processing approach to environmental perception, this study obtained three major findings. First, familiarity (e.g., knowing) turned out to be the function of how long people have stayed in an area. Consequently, the longer the respondents stay in Andong, the more likely they are familiar with its environmental aspects in depth. This finding supports Mandler's (1982) familiarity theory of environmental perception. Increased familiarity may strengthen schema congruity. In this regard, group differences in environmental perception can be better understood in terms of the notion of schema congruity.

Second, expected spatial proximity of AMMC relative to existing cultural landmarks can be explained by a person's familiarity with those landmarks. Consequently, Dosan Seowon and Hahoe folk village, which are most highly ranked by all the respondents, 17% and 65%, respectively, are identified as a major anchoring point for AMMC. Additionally, long-term residents tend to expect AMMC to be located around landmarks (e.g., Andong station and Chohung bank) in their action space. This is largely due to their inherent familiarity with the two landmarks. People might involve in cognitive works as a basis for the ordering of knowledge, and thus like what they know and are familiar (Mandler, 1982).

Third, group differences in drawing an imaginary map for Andong municipal museum complex are found. Though the relative ranking of design properties is more or less consistent, both length of stay and professionalism as independent measures are quite useful in explaining the differences. Design-related professionals are more likely to concern architectural properties such as AMMC's spatial linkage to theme parks and functions, while use of public transportation is a primary concern to the general public. It might be that design professionals tend to treat potential problems in a more architecturally driven manner.

Zeisel (1981) interpreted architectural design as a loose, sequential ordering of imaging, presenting, and testing. This study is largely concerned with the first part of design, so-called architectural image or concept development. Although this study is not complete yet, the design potential of its findings should be continually opened up and tested on an empirical level. Overall, though, efforts of this sort would be an important step gradually to construct a more complex and comprehensive picture on the topic.

7. DESIGN IMPLICATIONS

Several design implications toward AMMC can be made. First, an ideal location of AMMC would be near Hahoe folk village or Dosan Seowon, or somewhere between the two cultural landmarks, which is accessible easily by public transportation, and which can be spatially linked to theme parks. Second, it needs to be designed to reflect locally-based cultural traits such as Hahoe mask or noblemen's hats. Third, it needs to be designed to play a role as an information center for both citizens and tourists. Finally, both indoor and outdoor displace needs to be considered at an initial stage of space program development.

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