

EVALUATION OF CROSS - CULTURAL COGNITION
OF AN URBAN SPACE

by

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CHAPTER 1
INTRODUCTION

PREFACE

I held the misconception that urban design was nothing but blocks of concrete buildings when I was at the beginning of my graduate studies. In spite of the fact that I was born and raised in Bombay India's most distinguished and modern urban area, I did not realize the significance of the city's infra-structure.

I was fortunate enough to have lived and experienced the city of Chandigarh, India, designed by Le Corbusier. The city received wide attention in the world, but in India itself it became a subject of controversies and criticism when it began to reflect the neglect of cultural specifics in its design. Since then I started getting interested in such urban problems, but I wasn't mature enough to understand these problem in the real sense.

I came to the United States for my graduate studies in the field of urban design at the Kansas State University. I enrolled in the urban design seminar class, a required course for the Master's degree program, and there I studied and discussed the book Human Aspect of Urban Form (Rapoport, 1977). In the following semester I was introduced to Kevin Lynch's study in his book titled Image of the City. Subsequently, as I became involved in these subjects, I learned that the urban environment was formerly viewed as something solely measured in terms of physical growth; however, in the past few years researchers such as Rapoport, Alexander, Newman and Thompson have emphasized the social, economical as well as cultural environment of the city.

In spite of my experience with different cultures, I had never before considered or understood the role played by the cultural factors in urban design. After successfully completing these urban design seminar courses, I decided to investigate further how urban design is affected by such cultural factors.

Cross-cultural studies are a broad and lengthy process. Considering the time limitations I had, I decided to limit my studies only to cross-cultural cognition

of urban spaces, which was approved by my advisors as a timely problem..

Kansas State University encourages international students to acquire higher education in various distinguished fields. There are about 800 international students currently enrolled in the University. I realized that this University campus is an ideal place to gather information regarding how various cultural factors tend to affect the way individuals relate to their surroundings. Finally, I selected the topic of exploring how different cultures affect and give meaning to urban environment.

Coincidentally, I became an officer for K.S.U.International club, which enabled me to get closer to the international community and to better understand many of their problems, like adjusting to new environments. I critically and with utmost care studied such problems, more from a viewpoint of an urban designer with an aim to present a meaningful study.

Initially, I knew nothing about this problem. I could hardly realize the intensity of the labor before me when I first began. Considering the vastness of this problem, it was beyond my limits to offer fool-proof solution. After a great deal of research, I was able to put before the readers some generalized observations and to stress my point that "culture" should be considered as one of the most important variables in urban design.

In the course of this project, I feel I have learned a great deal about this subject, and I urge readers not to dismiss the importance of culture-bound cognition before giving a careful reading to this report.

Statement of the Problem

This research is conducted with a focus on cross-cultural cognition of urban spaces. This study is an exploratory investigation done with an intention to determine the impressions, reactions, and modes of adaptation of people belonging to various cultural backgrounds when they participate as observers/inhabitants in a new environment.

A cross section of various cultural groups was selected to learn how people perceive a physical setting that is new to them.

This study is a reflection of the researcher's interest in the manner in which people perceive a new environment in terms of cultural habits of perception formed in their homeland.

Conclusion of the project should help the researcher to decide if culture is an important variable in determining modes of environmental perception.

Lastly, this study simply is an exercise as a part of the researcher's academic experience.

Purpose of the Study

The purpose of this small scale research is-basically twofold. Firstly, The purpose of this report is to study, how a selected number of people from different cultures (including Americans) perceive the physical structure of Manhattan,Kansas.

The term Physical structure used in this study is defined as and limited to the characteristics of urban housing, shopping, and street patterns in Manhattan, Ks. The second purpose is to study the way a small number of people from different cultures orientate to and identify such physical structures in Manhattan, Ks. Though these were the main issues dealt with, several other related sub-issues were also raised in the course of this experiment.

The idea of this research project is to identify a variety of cues used by individuals operating and perceiving within the town. It is said by a few experts that the majority of these cues arefundamentally the same in all areas, regardless of their physical structure; what is more important for this researcher is to determine the choice preference for these cues, as reported by individuals of different cultural background.

Introduction of any physical structure is subject to the individuals response . We have ample literature on environmental interaction. What is different about this study is that the individual is not considered as "independent" of his culture but as a part of it. Theoretically speaking, this researcher tried to understand in particular the relative roles of perception,action,language and the role of experience in the process of understanding functional environment.

The researcher hopes to trace the way people perceive the town and how one mentally structure it. The researcher intends to deal with questions like: what sort of different impacts physical setting have on people's minds, what role "images" play, and how a new-comer moves from pre-conceived notions to a new orientation when entering a new environment.

The existence of a complex relationship between human behavior and physical surrounding is by no means overlooked. In a general sense this report will try to expand the understanding of this relationship.

In the words of Rapoport (1977), the researcher's goal is to identify a few culture specific aspects by which people try to match their expectations, rules, values, characteristics, behavior and so on to the physical environment.

The researcher has hereby made a deliberate attempt to identify a few variables (spatial as well as visual elements) that help an observer to shape the environment.

At this stage the researcher would like to point out that this report will consist of summarizing the literature in the subject of meaning of urban environment and its application to small communities. The theories of Rapoport and Lynch will be used as a supplementary criteria for the evaluation of cross-cultural perspectives on cognition of urban spaces. In essence of this study is to obtain anecdotes or to cite perspectives which do not show up in the literature.

Significance of the Project

Man's surrounding and his culture are intimately related. Culture therefore is one of the design variables, and environments are considered culturally specific. As Rapoport (1977) puts it: "The environment respond to variable definitions of needs and priorities as expressed in varying schemata. In being so they are congruent with a specific life style. For one thing, both designs and life styles can be seen as resulting from sets of choices among many alternatives which even the most severe constraints make possible."

Cross-cultural studies as this one, therefore, are important, because no culture is rich enough to contain all environmental conditions. A prominently cited advantage of cross-cultural studies, eg., Whiting(1968), is that, the range of independant variable can be increased beyond that found in any one culture. Many times such studies force an examination of situational variables and hence the generation of hypothesis to interrelate these variables, since such variables obviously differ from culture to culture.-(Richard Brislin).

This project is valuable because it deals with the significant role that cultural factors play in urban design. In addition, this study brings out an important point to remember, i.e., the "cognition quality of urban spaces as interpreted by people from different cultural value backgrounds."

Simultaneously, the report is significant because it suggests to the reader the importance of 'organization of meaning' in urban or environmental design. The design of spatial surroundings, whether in town or in the city, will be seen as a process of molding information that users can decode without much effort. If the 'code' or the 'language' is not meaningful, not shared by the users, then the physical design will not be communicative, thereby resulting in a 'failure'.

The researcher, by undertaking this study, hopes to identify the conceptions as well as misconceptions about the physical environment held by individuals from different cultures.

The findings reported in this research are based on the interview responses of 25 students from 5 cultural groups. Out of 25, 20 were foreign students. Foreign students were chosen to form the major part of the subjects because most of them bring diversity with them. The choice of the subjects was obviously an important component of this study.

Information gathered through subjects' responses, the researcher feels, would serve as an additional criteria to assist designers in their effort to design acceptable environments and to meet the need of interaction between the physical setting and the inhabitants.

As a result of this project, the researcher hopes to organize some culture-specific notions regarding people's relationship with their surrounding. The researcher's effort may not develop a 'guideline' for designers but would mean a presentation of a set of clearly defined issues to be studied in future.

The conclusion of this project may contribute towards recognizing the 'wants' of people with various cultural values and characteristics. In the future, this study may help to define several aspects of urban design and culture, which may be varying or constant. Also, the rate and the direction with which the same aspects change may be suggested. Hopefully, this report will serve as a catalyst for future researchs and will make designers aware of several variables that can make an environment practically functional yet humanly satisfying.

Last but not the least, the researcher does not wish to claim this as a finished product; in fact, it just begins to create awareness about different variables that designers should evaluate in their approach.

Finally, this topic for research reflects a 'key' trend in urban design, which is currently receiving much attention from other researchers. As a result, designers may change their approach to various design problems. By choosing this topic for a report at the Master's degree level, this researcher feels that it may make a modest contribution to the issue of cognition problem in urban design.

Theoretical Background

This study deals with cultural cognition. Meaning two theoretical terms, i) cognition, and ii) culture are involved. It is therefore imperative to first discuss these terms purely in a theoretical sense.

Perception is the initial stage in the process of cognition. Defining "perception" at this stage therefore would be ideal

Perception:

The term "perception" in literature is used in broader sense. In psychology it seems to be used in the sense of how things are "seen". It is used to describe how social change is seen (Lee,1968), or in the sense of the perception of possibilities (Burtons,Kates 1972). It is used to describe the evaluation of environment (Rapoport,1977).

Perception is an all-encompassing term for the sum total of perceptions, memories, attitudes, preferences, and other psychological factors which contribute to the formation of what might better be called environmental cognition.(Downs & Stea,1973) According to Stephen Kaplan: "where one is" can be considered as the outcome of perceptual process.

Finally, what this researcher means by "perception" is the messages that are filtered through a changeable system.

Cognition:

Cognition is derieved from the latin word for "getting to know", refers both to the process of knowing and understanding. Cognition is a taxonomic process. Cognition is then a search for order and a process of imposing an order -the type of order varying with the "cognitive style" of particular groups. The basic cognitive act is the placing of the individual in his physical and

social milieu. (Rapoport, 1977).

Cognition is an intellectual process. It helps an individual to judge an object in its absence. It is a process that lies behind the response characteristics of individuals from variety of background. Cognition may not be connected with immediate behavior but can be linked to the past or to the happenings in future.

Importance of cognition can be judged by the fact that distortions in cognition will have consequences, to the extent that results in human frustration.

According to Sorenson & White; Perception, cognition and adjustment are by definitions elements of 'culture' and are therefore culturally variable. On the other hand they may drastically differ among persons in a single culture. For e.g., a farmer of the sahel may view drought as punishment for some wrong deeds, while a kansas wheat-belt farmer perceives it as a cyclical function of climate.

The terms "cognition" and "perception", being employed in a confusing variety of context by scientists, distinction between both is sometimes difficult. The researcher has thus made a "convenient distinction" wherever felt necessary.

Culture:

"Culture" is defined by several researchers in several different ways. Some define it as a way of life typical of a group. Some call it a system of symbols, meaning and cognitive schemata transmitted through symbolic codes. Commonly accepted definition of "culture" is: a group of people who have a set of beliefs and values, which embody ideals, and are transmitted to members of the group through enculturation.

Anthropologists use the term "culture" to refer to groups of people who presumably possess a distinctive life-style.

Kroeber & Kluckhohn (1952)'s definition is ; Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments

in artifacts.

Culture is the total equipment of ideas and conventionalized activities of people.

The designer's or planner's goal should be to create a setting, which would be mentally constructed by the people, which in reality will closely match to their values, images, desire and life-styles. Environments that are reflective of the above factors and which suit the life-style would be termed as "ideal" by its inhabitants.

CHAPTER 2
LITERATURE REVIEW

Review of Literature

In recent years, planners, architects, and environmental designers are becoming aware of the relationship between the physical environment and different human processes of understanding that environment. Several researchers like Lynch, Rapoport, Alexander, Newman, Ittelson, Altman and others have tried to give a new dimension to urban design. Their writings, especially those of Lynch's concept of 'imageability' and Rapoport's theory on 'culture' as an important design variable, received wide attention. Parts of such recognized literature are presented/cited here in this review.

There aren't hard and fast rules about methodical report writing; but it is commonly believed that a research report becomes more graceful when it is supplemented by review of literature relevant to the issues discussed in the same research project. Since this study is on cross-cultural cognition, by introducing the review of literature, the researcher achieves two goals: i) to construct a framework for the sources from which information relevant to the issues in this study are drawn, and ii) to give a refined touch to the overall presentation of the report.

Selection of literature was a tough process, because many available reports have touched peripherically on cognitive studies. There is ample literature available which talks about the mechanism of interaction between the physical environment and human beings. Unfortunately, there isn't substantial material linking the same process to culture. However, after doing an extensive research by scanning several journals, papers, and books, the researcher has made an attempt to extract the best possible and most relevant literature. Therefore this review of literature is nothing but documentation of scattered bits of information on culture-specific cognition studies. The researcher also would like to point out that there was very little literature that specifically talked about the cultural groups that were selected for this project.

Linguistically, this could be a biased study. The literature extracted is from that of western or english speaking authors. This researcher believes there exists much relevant literature in other languages, even in those to which this researcher can have an access. However, limitation of time restricted a wider survey. The major goal of introducing the review of literature in the report is to integrate theoretical knowledge with a practical approach, whereby perceptions could be proposed, which may or may not show up in current literature on the subject.

The review of literature is presented here in two parts. Part I tells us specifically about the theory of interaction between people and the physical setting, and also deals with psychological process ranging from perception and cognition to final evaluation of the environment. Part II links the above theory or process to "culture", meaning material that cites the differences among the cultures as far as this theory or process goes.

Part I:

Several authors have definite remarks about the process of perception and image formation. Selected ones are presented here.

Lynch (1960) reports: The creation of the environmental image is a two way process between observer and observed. What he sees is based on exterior form, but how he interpretes and organizes this, and how he directs his attention in its turn affects what he sees. The human organism is highly adaptable and flexible, and different groups may have widely different images of the same outer reality.

Lynch (1960) also argues that 'image' is used to interpret information, to guide action, to serve as a broad frame of reference within which a person can organize activity, belief and knowledge to serve as a basis for individual growth and to give a sense of emotional security.

Piaget (1963b) suggested that knowledge of our environment includes two aspects: one figurative, related to percepts, or images and a second which is essentially operative, related to the operations. Visual perceptions is only one form based on the operative mode.

Freeman (1916) claims that an individual visiting a new city constructs a system of orientation by unconsciously applying the cardinal direction to various features; only if he makes a mistake does the person become conscious of the process.

English & English (1958) mention: that the discovery of knowledge of where one is and where one is going either literally in space, time, or figuratively in relation to a confusing situation or a puzzling problem. The orientation is 'cognition' when it consists chiefly in knowing the situation.

The above examples discuss the concept in theoretical sense. However, this report is not only a theoretical study but deals with their application to several cultures. Therefore the second part of the review includes examples from literature that link the cognitive theory to a few cultures.

Part II:

Robinson(1973) reports: In Asia choices reflecting values and cultural patterns are pre-eminent, so that different people evaluate environments very differently and use similar environments very differently.

Tuan (1969) says: In china itself there were major differences in the character of the areas of cities at different periods depending on cultural attitudes.

Rapoport (1977) reports: In Africa generally cities 'belong' to different ethnic groups and thereis a long tradition of identifying territories with ethnic groups.

Donaldson (1938) mentions, In Meshed (Iran) extreme sacredness attaches to every object near central shrine. The high point on the approach to the city,

from which the traveller first sees this mosque, is in itself important and within the city it is proper to bow when crossing every street that leads to the shrine.

Although this is cited as in Iran, this is true in most places wherever moslem culture exists.

In Assam (India), there is a famous hill which is the legendary site of Buddha's death. It is described as bold and picturesque by Waddell (1895), rising directly from a plain to which it is in sharp contrast. He notes that it has become holy for Brahmans and Mohammedans.

Literature on 'types of reference systems':

Jaccard (1932) reveals, for an Eskimo or an inhabitant of the Sahara, constant directions may be recognized, not by heavenly objects, but by prevailing winds, or by sand or snow formations which are the product of such winds. Jaccard (1932) also speaks of a Arab guide in Sahara, who followed painstakingly the continuous twists of the scarcely masked way, even while his destination was clearly visible to him across the open desert. This reliance was habitual, since storms and mirages often made distant landmarks unreliable.

Winfield (1948) tells that the chief use of "south pointing needle" a Chinese invention, was not for navigation but for the orientation of the buildings. Country people on this flat land (i.e., North China) give directions by compass point and not by right or left.

Jaccard (1932) remarks that in impenetrable African forest, the tangle is intersected by elephant paths, which natives learn and traverse as we might learn and traverse city streets.

Peterson (1916) notes that the organization of his image of Minneapolis, USA typically breaks down each time the street gridiron changes its orientation. The overview documents the meaning of "cognition" and supports the fact that the way people perceive and orientate to a physical setting varies according to culture.

CHAPTER 3

METHODS & PROCEDURE

METHODOLOGY

The purpose of this study was to investigate way people of different cultural backgrounds perceive, understand and give meaning to the physical surrounding they confront. The basic aim was to develop, through the collection of interview responses and some clarifying anecdotes, a few generalized conclusions describing basic differences in environment perception by members of the cultures studied.

Method of Procedure

Interview responses of the subjects and their mental map drawings depicting the city form the backbone of this report. Interview responses are discussed in the first part of this report and the mental map survey in second part. The interview technique was used to determine the responses of the subjects who came from different cultural backgrounds. Interviews were carried out with the help of a questionnaire designed for this purpose. The idea was to draw general conclusions regarding the subject's understanding and perception of a physical setting. This was just a general investigation which may perhaps pave the way for future research studies.

Sampling of Subjects

The subjects chosen for this study were students studying at Kansas State University, belonging to various academic disciplines. The subjects included American students as well as foreign students.

There were two main reasons for selecting University students as interview subjects: First, they are easily accessible on campus. Second, the researcher believes educated people are trained to adjust and respond to a new environment.

Also, this being a report on cross cultural cognition systems, the researcher

strongly felt that the foreign students would serve as an ideal sample, as many foreign students bring their cultural diversity to an American University with them. The researcher, himself being a foreign student, felt that foreign students are capable of intellectually adjusting to other environments, since all of them are highly educated. While in strictly scientific terms the sample chosen may not be seen as truly representative of their cultures, the researcher, based on his judgements and experience, believes that for all practical purposes the selected students do typify their native cultures.

In all, 25 subjects were chosen for the purpose of this study and were interviewed with the use of a questionnaire.(Appendix). The low number of subjects and the kind of questionnaire used were selected as appropriate for this study due to its prototypical nature. This study is intended only to model on a small scale the kind of large scale research necessary to achieve scientifically reliable results. The foreign student subjects were chosen from the directory of international students at Kansas State University whereas the American subjects were chosen through the researcher's personal contacts.

Five cultural groups were chosen for identifying culture-specific differences. These groups were: 1) Americans, 2) Arabians, 3) Chinese, 4) Indians, and 5) North Africans. The distribution of subjects is as follows:

Total samples	American	Arabian	Indian	Chinese	N.African
25	5	5	5	5	5

For the sake of workability, the number of subjects from each group was restricted to 5 in this study. Because interpretation of survey responses was largely based on the researcher's subjective impressions, the number 5 was selected as large enough for the researcher to identify general trends in responses without being unduly biased by a particular, single response. Such a decision is in line with recommendations made by experts in quantitative research.

The decision to select the cultures named above was based on several factors: First, each cultural group represented a different major religion. It was believed that religious affiliation might be seen to have an identifiable effect on cognitive processes. Second, all of the foreign groups are represented in significant numbers on this campus, as can be seen from the following data supplied by the international student center:

Average number of students enrolled in 1981/82	Arabian	Indian	Chinese	N.African
	90	78	24 mainland 84 Taiwan	100

Among the 5 Americans chosen as subjects, 3 were Kansas residents and 2 were from other states. The non-American subjects represented several countries. The following table shows names of those countries as well as the number of subjects from each.

Group	Country	Number of subjects
Arabian	Iraq	2
	Jordan	2
	Sudan	1
Chinese	Mainland	2
	Taiwan	3
N.Africans	Nigeria	4
	Senegal	1

A close examination of samples shows that almost 70% of the subjects were seeking graduate degrees, while the remaining 30% were pursuing undergraduate degrees. Finally, 85% of the foreign subjects had travelled overseas for the first time in coming to the U.S. and had rarely been exposed to other environments. None of the American subjects had travelled overseas but 2 of them had been to several other states within the U.S. The above subjects were orally interviewed by the researcher with the help of the questionnaire. Most of the subjects were interviewed in the coffee-room of K-State Union.

Physical Setting:

The town of Manhattan (limited to its legal boundaries), in the state of Kansas was selected as the vehicle for this project. Manhattan is predominantly a University town.(Kansas State University).

The overall structure of Manhattan is as follows:

Physical Structure: Most of Manhattan is designed on a gridiron pattern, except for the southwest part of town. The housing mostly consists of apartment houses and single family dwellings. Mixed-use housing is rare. The south,west and north-west parts of town mainly consist of single family dwellings, whereas the housing around the campus is mainly occupied by the students. On the average, the apartment houses are 2-3 stories high, whereas the single family residences are mostly 1-2 stories high. The overall density of housing is fairly low.

Social Structure: It is difficult to define the town in a real social sense. The minorities are, to a certain extent, concentrated in the far southeast part of town. Kansas State University has about 20,000 students, out of which about 800 students are foreign students representing 75 different countries.

Climatic structure: The climate of town is typical of the Midwestern- extremely hot in summer and severely cold in winter, with substantial snow and high winds at times.

Other aspects: Ahearn field house, the recreation center and the football stadium are the major sports facilities owned by the University, whereas Cico Park and the City Park, occupying an area of almost 5 square blocks are the major recreational areas for the community. Shopping areas are dispersed all over the town. The main shopping areas are Westloop, Aggieville, Bluehills, Old Town Mall and Walmart/K-mart. Industrial areas are mostly on the far east side of town. Hospitals and churches are dispersed throught the community. Apart from Kansas State University, the

Manhattan Vocational Technical Institute and the University For Man are other educational institutions. The town is surrounded primarily by flat lands, with a few hills here and there.

Such a town was considered to be ideal by the researcher as well as the experts assisting him for use as a vehicle for this project, especially since the study was limited to a small number of subjects.

Instrument:

A questionnaire was designed to determine the responses of the subjects. While designing the questionnaire, several factors were taken into consideration, such as: the type of expected replies, data being collected or measured and time taken to answer the questions. The questions were primarily designed to determine subjects' cognition of the Manhattan community. Apart from this questions elicited information about subject's past experience.(i.e, how they have learned to interpret the environment around them). The questions included were worded carefully to avoid communicating any bias on the part of the researcher.

Pre-testing of the questionnaire was carried out on 3 subjects-1 American and 2 foreign- all of whom were students at K.S.U. Pre-testing was done to identify the deficiencies of the questionnaire and to delete any biased questions. Changes were made wherever the researcher and the experts felt necessary. Only then was the final form of the questionnaire drafted. The refined version of the questionnaire is included in the appendix of this report.

The questionnaire used for the interview consisted of 5 parts and 28 questions in all. The first part of the questionnaire, consisting of 5 questions, asked for the following items of personal information: country of origin of the subject, age, academic discipline and where and with whom they lived.

The second part of the questionnaire was designed to elicit each subject's initial and overall impression of Manhattan. It consisted of 8 questions, 2 or 3 of which were open ended and the rest specific. The questions mainly dealt with the impressions subjects held of Manhattan and sought to determine whether these impressions were the result of pre-conceived notions or were newly formed. These questions largely concerned the physical and visual appearance of Manhattan.

The third part of the questionnaire included questions that one way or another dealt with perception- the way subjects perceived the physical structure of Manhattan. The idea was to determine how subjects compiled images about housing,

shopping, recreation and entertainment areas in Manhattan. This part included certain questions relating to their 'image' of Manhattan; spontaneous reply of the subjects to these questions was considered valuable by experts for drawing preliminary conclusions, regarding the manner in which people perceive their physical surrounding, based on their cultural background.

This study was to be reinforced with some conclusions regarding the way people habitually orientate themselves within a given environment. Therefore, the fourth part of the questionnaire contained descriptions of a few locations in and around Manhattan; the subjects were asked to imagine themselves in these places and to describe how they would identify that place, giving the researcher a clear idea about the types of cues they used to identify community locations.

The fifth and the last part of the questionnaire consisted of 4 questions which asked respondents to trace the changes of their impression. The researcher hypothesized that respondents would perceive their surroundings more objectively, with less cultural bias, as the range of their travels and their time away from home increased.

The imperfection of language structure in the questionnaire is inevitable since the task is highly experimental. While there was some variation in the way subjects interpreted and answered specific questions, on the whole interview responses revealed the kinds of data the researcher was seeking.

Interview Procedure:

The interviews were carried out with the help of the questionnaire mentioned above. Each interview lasted about 35 to 45 minutes. All 25 of the subjects chosen for this study were interviewed.

Throught the interview, the questionnaire remained with the researcher In other words, the questions were asked verbally. The researcher recorded notes while subjects were responding. After every interview, the researcher developed from the notes a detailed write-up of the responses.

Analysis Procedure:

The responses of the subjects presented in this report are compartmentalized according to five sections of the questionnaire. Responses that are mathematically or graphically important are presented in a tabular form or with a figure, wherever necessary. Interpretation and discussion of results is offered for every part of the questionnaire and for each cultural group. The final presentation of general conclusions was arranged as follows:

First, differences between cultural groups were presented,

Second, differences between non-Americans and Americans were presented. These two presentations of the data revealed that the key cognitive differences were between non-Americans as a group and Americans. Individual differences among the four non-American cultures were examined, and are presented here, but the importance of such differences was deemed secondary.

It is important to mention that several of the respondents turned out to be students of architecture. Because they know the 'language' of this discipline and can perhaps too accurately infer the purposes of this study, their responses were felt to be (possibly) biased, and these were not taken into account when interpretation of data was made.

Justification of Methodology:

Several researchers have used the method of showing slides and then asking the subjects to identify certain locations. However, since the focus of this study was respondent's subjective perceptions of places, it was concluded that verbal references to specific locations in Manhattan would mean more than photographs, leaving such subjective impressions intact.

Another manner in which this study differs from other research in this area is the open-endedness of questions. While other studies have presented subjects with a fixed listing of responses and asked subjects to choose among them, questions designed for this study asked respondents themselves to identify cues in the

environment important to their perception. Even so, it can hardly be presumed that this study is free of procedural flaws. In the words of John Gulick, (AIP jour. # 29/1963, pp 179): The subject of such investigation is so complex that no relatively simple method of approaching it would possibly resolve all its problems.

Responses to the interviews and the researcher's own interpretations based on these responses are presented in the following chapter.

CHAPTER 4
FINDINGS

RESPONSES AND INTERPRETATIONS:

PART I: Personal Background

This part of the questionnaire dealt with each subject's personal background. The following cultural groups participated in the project:

1) Arabian 2) Chinese 3) Indian 4) N. Africans and 5) American.

Several countries were represented of by groups. (see Table 1).

Question # 1:

What is your country of origin.

Table 1

Variable: Country of origin

Cultural group	Name of the country	Number of subjects
Arabian	Iraq	2
	Jordan	2
	Sudan	1
Chinese	Mainland	2
	Taiwan	3
Indian	India	5
N. African	Nigeria	4
	Seora leone	1
	Sacra Leone	
American	United States(mainland)	5

Question # 2: How old are you.

The subjects were mostly in their mid-twenties. Table 2 tells more about their ages.

Table 2

Variable: Age

Age group	Number of subjects	Percentage of the total
21-25 years	8	32
26-30 years and above	17	68

The lowest age among the subjects was 21 and the highest was 29.

Table 3

Variable: Sex and Marital status

Number of subjects	Male	Female	Married
25	22	3	2(M)

Question # 3: What years are you in school

Table 4

Variable: Academic background

Cultural group	Academic background Undergraduate/Graduate		Average age
American	4	1	26
Arabian	3	2	26.5
Chinese	1	4	26
Indian	-	5	25
N. African	2	3	26

Question # 4: Do you live in a house/apartment/dorm, and where is it located.

Table 5

Variable: Residence preference

Number of subjects	Apartment	Dorm	Houses
25	18	6	1

The five tables included in this part and the subject-matter discussed following should offer a clear idea about the overall personal background of the subjects.

PART II: Impressions

This part dealt with the subjects' general impressions of Manhattan. Several issues-like the period of time the subjects were in Manhattan, their exposure to other places in USA, and their mode of transportation-were discussed. in this part. Comparison was also made to their home town to determine their impression of Manhattan.

Question # 6: What year did you first come to Manhattan.

The researcher observed that almost 75% of the subjects who were seeking a degree at the graduate level had lived in Manhattan for a period of not more than 2 yrs. The smallest period of time a graduate subject lived in Manhattan was found to be 4 months and the longest was 28 months. Of the undergraduate students, almost all had been in Manhattan for a period of more than 3 yrs. This applies uniformly to all cultural groups. However, the majority of the subjects in both groups had had minimal exposure to other environments in the USA. Seventy percent of the foreign student subjects had been in NewYork . Chicago, Los Angles or Houston, but not for a period exceeding 2 days. Of the 5 American subjects, 2 were non-Kansans. These 2 subjects and 2 local subjects had had substantial exposure to other environments (larger than Manhattan in physical size and population_) in the U.S.

Question # 8: How do you get around in Manhattan. Car/walk/bicycle.

Mode of transportation is believed to play an important role in one's perception. A person with access to an automobile will have a different way of looking at a physical setting than one without a car. In this question, an attempt was made to learn how subjects travelled in Manhattan and how this affected their perception. (See Table 6.)

Table 6

Group	Number of subjects	Car	Bicycle	Walk
American	5	4	1	1
Arabian	5	4	-	1
Chinese	5	3	3	2
Indian	5	1	-	4
N. African	5	3	-	2

The subjects prefer walking to bicycle riding due to weather conditions (e.g., snow). Americans and Arabian subjects had greater access to cars than did Indians. Considerable significance was attached to these findings while making interpretations.

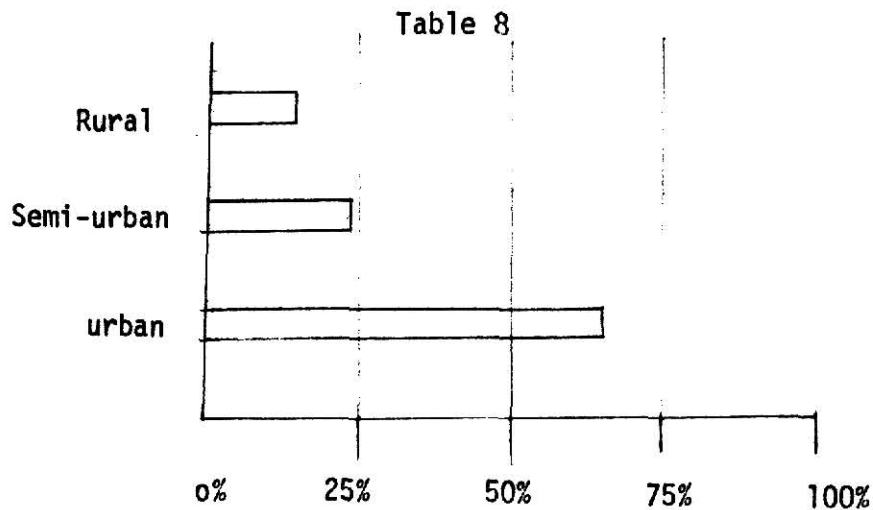
Question # 9: What is the approximate population of your home town. Also, name it.

The town of Manhattan is relatively small, with an approximate population of 30,000. Several researchers point out that the individual's impression depends on the type of environment in which the individual was raised. In other words, the researcher hypothesized that an individual coming from a low populated area will perceive Manhattan differently than one coming from a metropolitan area. There Q # 9 was included in the questionnaire to know more about each subject's hometown. The following graph and the table deals with responses.

Table 7

Variable : Subject's hometown population

Group	Rural (0 - 25K)	Semi-Urban (25K - 100K)	Urban (100K & above)
American	2	1	2
Arabs	-	2	3
Chinese	-	1	4
Indian	-	-	5
N. African	1	2	2



This classification scheme was designed by the researcher and is not based on any demographic report's recommendations.

Thus, the above tables show that the majority of the subjects were from large urban areas; the researcher assumed this influenced considerably the way subjects perceived the town of Manhattan in its physical sense.

Question # 10: Do you find Manhattan crowded. Does it bother you.

10, which followed immediately, asked subjects to report the degree to which they felt crowded in Manhattan. It is interesting to note that almost all the subjects mentioned that they did not find Manhattan crowded. This question was included to find out how people coming from different places with varying population use the word "crowding" with respect to the population of Manhattan. As has been pointed out, the population density in Honkong is so high that the term "crowding" cannot be applied in the way it can be applied to an Australian town. As Rapoport (1976) mentions: "Density and crowding will depend on the cultural definition of domain and standards, so that before comparing densities, their emic definitions must be understood. Further, the subjects were asked whether the population structure in Manhattan affected/bothered them in any sense.

Almost 95% of the foreign student subjects mentioned that, to them, Manhattan appears as a dull town. The possible reason was pointed out mainly by the Indians and the Chinese. Four out of 5 Indians and 4 out of 5 Chinese said that the

amount of outdoor activity in the town is on such a low scale that the town appears "lifeless". Infact, during non-school days it appears "dead". One can see from the above responses that the lack of outdoor activity projects a negative image to the subjects. Two of the American subjects found Manhattan to be a lively and exciting place; these subjects, however, were from rural Kansas towns with a population of less than 3,000.

Question # 11: What was your overall impression about Manhattan when you first came. (overall impression related to weather, shopping, people, school etc.)

In the United States there is a saying that "the first impression is the necessarily best impression". But this is not true to urban designers, for there are many instances of people changing their initial impressions about a city or a town after having lived there for some time. The researcher thus tried to find out whether this could be true in Manhattan, as far as these subjects are concerned, an attempt was made to judge their initial overall impressions about Manhattan. This overall impression related to weather (with respect to degree of tolerance), shopping (interms of convenience), people (their attitude and life-style) and school. The results are presented here, by cultural group.

Arabian response :

Four out of 5 subjects came to Manhattan in the fall semester when weather is not a disturbing factor. Consequently, their first impressions focused on the people and their attitude. Further, these subjects felt that there wasn't much social interaction in the town compared to any similar town in their countries. This they expressed even about the shopping system (i.e., "everything under one roof"), they felt shopping is like a mechanical process and not a social one, which actually is the case in many Arabian countries. Lastly, the school did not impress them much initially.

American response :

The American response was expected to relate more to the physical environment rather than something like a cultural-shock. But since most subjects had experienced similar environments, their response to the overall impression of Manhattan was primarily: "unexciting". Even they weren't greatly concerned about weather, as they accepted it as typical of the Midwest.

Chinese response:

In the case of Chinese, it was the absence of mass transportation that they pointed out as of great concern. This was indicated by all 5 subjects. These subjects mentioned that in most Chinese cities/towns, a larger percentage of the population depends on mass transportation. Because of this lack of mass transportation in Manhattan, the Chinese initially felt "house-bound" and were unable to observe many locations in the community. The Chinese also commented on shopping areas in Manhattan. Four out of 5 Chinese subjects told this researcher that in a typical Chinese town shopping areas stand out due to the quality and amount of "signage" used. This "signage" consists of large title board, or electric light signs or other such advertising appliances. They strongly felt the absence of same in Manhattan. They seemed to be less concerned about the people of Manhattan and their attitudes, or even to some extent the weather. The above responses tell us how even an issue like shopping can be perceived differently by people of different cultural background

Indian response:

Lack of social life was the first concern of the Indian subjects. These subjects pointed out that in India in a similar town like Manhattan, people in town socially interact all the time. In fact, 3 out of 5 subjects were of the opinion that in Manhattan, in spite of being a University town it has a very low degree of social interaction. The second concern of the Indian subjects was the climate. Two out of 5 subjects came to Manhattan during spring, obviously meaning their



Picture showing "signage" quality
in the Chinese environment.

initial positive impression was based on weather. Two subjects pointed out that during periods of heavy snowfall identification of different location initially turned out to be a tough task for them.

Another factor on which their impression was based was shopping. In the Indian culture this is such a crucial factor that even the designers of Chandigarh were criticized for neglecting the important role of mobile shops (Prakash,1972). The researcher himself, being an Indian, feels that such a type of shopping attracts citizens from all section of the society; people are exposed to different life styles, thus creating varied social interaction. The Indians felt the shopping system in Manhattan was too one-dimensional and uninteresting.

N. Africans:

The North African's response was pretty close to the Arabian's. Four out of 5 subjects were mainly concerned about the weather. Because the rest of the responses were so similar to those of the Arabian subjects, the researcher has not included them in order to avoid repetition.

Common findings:

One might be curious to know what was common among all cultures, apart from what was mentioned earlier. The researcher, during the interviews, came across a distinctively common point, which was a pre-conceived notion among most foreign subjects. These subjects indicated that before coming to Manhattan, they had picturised Manhattan as a typical American city. By typical they thought it to be full of high-rise structures and heavy traffic. The researcher feels this is due to impressions projected by the media in foreign countries about American cities. But at the very first sight of Manhattan, such expectations were erased. Perhaps due to this initial disenchantment, most of the foreign subjects perceived Manhattan as a dull town. Another common point of view among the non-American subjects: almost 90% of the subjects identified the pace of life in Manhattan as very slow,

which according to them was in contrast to other similar American environments that they had seen or read about.

One clearly sees from the responses to Q # 11 how creation of an impression of a town can be a result of several different factors such as i) pre-conceived notions, ii) cultural background, and iii) physical, social as well as climatic conditions prevailing in the town.

As an indication of the organic and logically sequential design of the questionnaire, it should be noted that subjects, when giving answers to question # 11, often continued voluntarily to answer question # 12, which asked them to rank their attitudes towards the seasons and time of day in Manhattan. This is a factor left unstudied in Lynch's similar research (1960). The researcher included this question in order to know more about the way subjects perceived the town during different seasons and different times. The following table indicates the reactions of the subjects from all cultures.

Table 9

Season: Summer

Group	Number of subjects	Very attractive	Neutral	No Opinion
American	5	2	1	2
Arabian	5	-	1	4
Chinese	5	-	2	3
Indian	5	1	3	1
N. African	5	1	1	3

Season: Winter

Group	Number of subjects	Very attractive	Neutral	No opinion
American	5	1	4	-
Arabian	5	4	1	-
Chinese	5	3	2	-
Indian	5	4	1	-
N. African	5	3	1	1

Time: Night

Group	Number of subjects	Very attractive	Neutral	No opinion
American	5	-	1	4
Arabian	5	-	1	4
Chinese	5	-	-	5
Indian	5	-	1	4
N. African	5	-	2	3

One can see from the above responses that most of the subjects were unable to express their opinion about Manhattan in summer, primarily because all of the subjects were students and the majority of them do not live in Manhattan during the summer. Contrary to that, the responses to the question related to "winter" was overwhelming. Ninety-nine % of the subjects responded positively. However, the researcher's observation was that there was a great contrast between the responses of the American subjects and that of foreign subjects. Only 1 out of 5 Americans felt Manhattan to be attractive during the winter, whereas 14 out of 20 foreign subjects were impressed by the aesthetic appearance of Manhattan in winter. Nine weren't much excited, and only one subject responded negatively.

The responses and the discussion regarding Manhattan at night weren't significant enough to draw any concrete conclusions. Only the Chinese specifically pointed out that their negative image was the result of the lack of signage. Other respondents had no specific reasons. A response common to all subjects was the observation that Manhattan is the scene of activity only on weekend nights (and then only in certain areas of town); most respondents found this unattractive.

In accord with this findings, the researcher feels that there is a need to redesign several areas in Manhattan, and that this should be done by giving ample consideration to the visual appearance apart from the functional. Night time urban fixtures such as brighter street lights, decorative lamp shades, and colorful commercial signs should be used in order to give a better look to several parts of town.

These responses give a clear idea as how an image of a town varies according to time of day and climatic season.

Part III:

Responses related to 'perception':

Whenever the subjects came to Manhattan for the first time at the beginning of the school year, the first thing they got involved in was to look for a place to live. This was true for both Americans as well as foreign subjects. The only difference was most of the American subjects had access to an automobile whereas the foreign subjects were forced to walk. Furthermore, Manhattan was absolutely a different type of environment for the foreign subjects. The researcher observed that these factors helped the foreign subjects to perceive the town in more detail than the Americans. They noticed in detail several urban elements as they moved block by block during their search for their residence. Contrary to that, the American perception depended totally on the road, thus neglecting micro-urban elements.

Housing was perhaps the first basic physical structure that the subjects were exposed to in detail. It is said that housing plays an important role in one's perception of a city/town. As Downs & Stea reveal, many elements of housing are recalled as images. Houses are mostly described by their physical size, shape, material, color and other such elements.

In order to explore this phenomenon, the researcher, in dealing with subject's perception discussed how they perceived housing in Manhattan. This question was purposely designed as open ended to get a variety of responses. As a result, there was a wide range of responses, varying from one culture to other. The responses are presented here and discussed separately for each cultural group.

American:

Three out of 5 American subjects were from Kansas, for them housing in Manhattan wasn't a novelty; they indicated that housing in Manhattan was similar to housing in other towns in the Midwest. Neither the color nor the texture of houses was of any concern to them. The other American subjects were from other

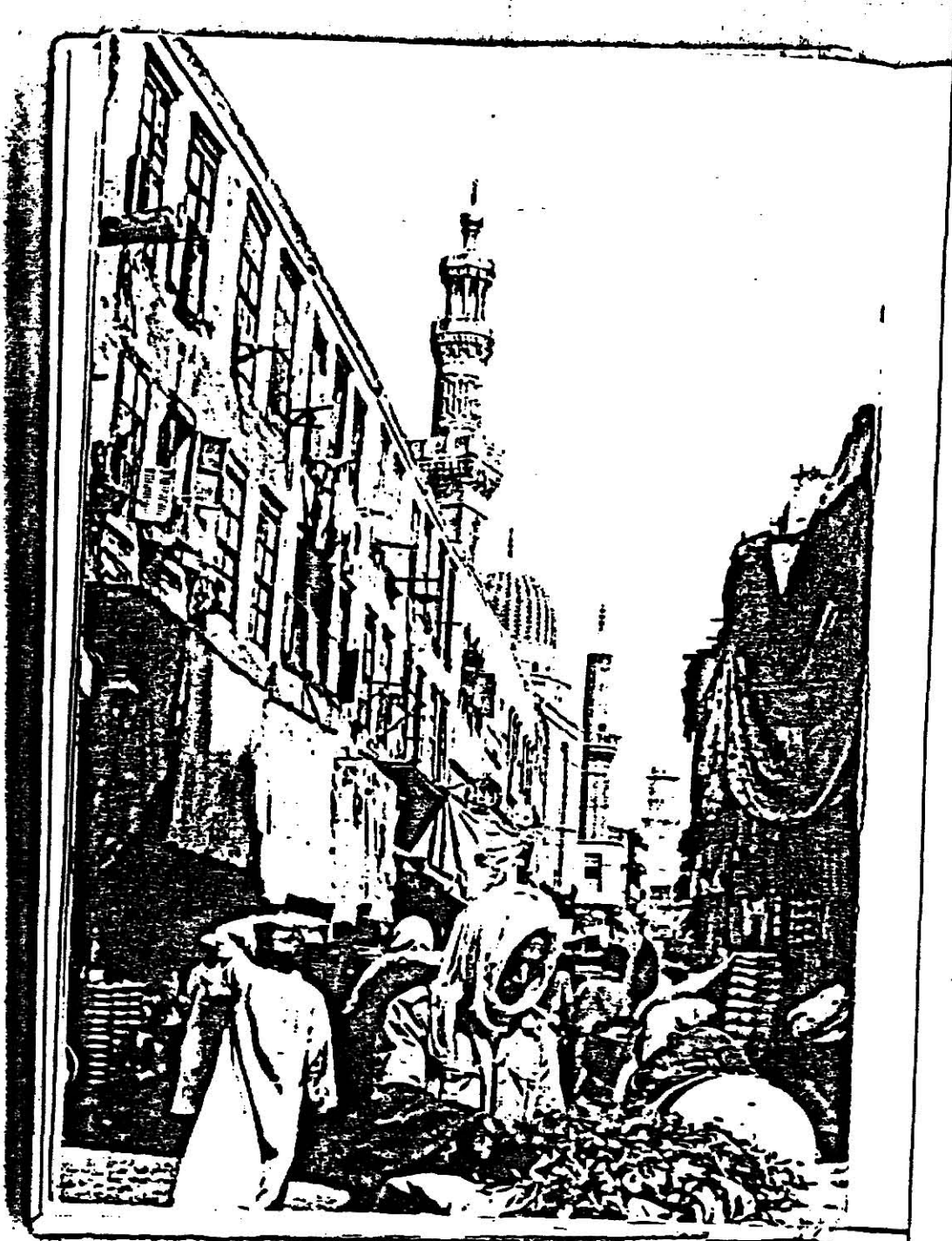
states. Though the housing in their hometown wasn't similar, they had been exposed to similar types of housing in their states. The researcher's observation was that the perception of the Americans did not depend on housing, nor did they perceive housing in detail.

Arabian:

The first thing that distorted Arab student's perception was the appearance of housing. All the 5 subjects indicated that the houses in Manhattan looked similar to them in appearance and in elevation. But it is also true that they were unable to point out any block in particular.

In the course of conversation the Arabian subjects also discussed the way they looked at certain architectural features in housing. The subjects pointed out that in many similar towns in the Arabian countries the residential and the shopping activity is combined. For example, frequently the first floor of a building is occupied by shops whereas the rest of the floors are used for residential purposes. Thus, a house can often be identified not necessarily by its number but by the names of the shops it bears. This, the researcher feels, might have made it difficult for them to identify certain locations during their early weeks in Manhattan. John Gulick, in his article titled "Images of Arab city", (AIP Jour.# 28/1963 pp175) reveals that in older Lebanese cities houses have shops on their ground floor, usually not connected with the living quarters above. The shops are often clustered together by speciality, in the "oriental style".

Another feature they described was the balcony. In Arabian construction the balcony is a common and popular architectural feature in housing. Very few houses in Manhattan, according to these subjects, have this feature,. Thus, the overall appearance of houses also helps to classify the neighborhood socially or economically. Further possible distinction about housing were not reported, as these students perceived the housing as similar in outlook.



Picture showing a neighborhood and a mosque

Typical example of moslem environment

Also, shops on the first floor & residential units above

The size of houses observed did not appear very different from those in their own countries.

Four out of 5 Arabian subjects did not especially notice the color schemes used in housing in Manhattan nor the texture. Texture and color appeared similar to them as the majority of the houses were of timber construction. In short, the Arabians perceived the housing differently than the other groups.

Chinese:

What bothered the Chinese most was defining the house entrance and not the elevational appearance, as in the case of the Arabs. This was expressed by 4 out of 5 subjects. Among these 4 subjects, 2 were from mainland China and the other 2 were from Taiwan.

The Chinese subjects indicated that in the Chinese style, multi-storied apartments are many times approached by external stairways instead of by one common entrance. Thus, stairways become an elevational feature. The absence of such features in the housing in Manhattan sometimes confused their perceptions. In the initial stages, several times they were unable to identify the main entrance to the house. The second factor on which their perception depended was the density. The occupancy ratio for the houses in Manhattan, according to them, was very low compared to that in similar Chinese towns. This was because of excessive population in their countries. In short, the Chinese also perceived U.S. housing in terms of occupancy ratio.

The Chinese appeared to be less concerned about texture than color. Three out of 5 subjects mentioned that the colors used in housing in Manhattan are cool and mild, whereas those used in Chinese cultures are warm and dark. Every architectural element is colored differently in Chinese houses, which was not the case in Manhattan.

The researcher feels that this could be one of the reasons why many foreign students criticize the housing in Manhattan for being monotonous.

More interesting was the way the Chinese used the word "boundary". According to them it is the driveway that acts as a boundary for the houses in Manhattan whereas in China (both) low walls are built on the property line giving each resident a feeling of private space..

In summary, the Chinese perception of housing depended on i) house-entrance, ii) occupancy ratio, iii) color, and iv) the property boundary.

Indian:

"Neither the house nor its elements serve as a base for social interaction'. This was how all 5 of the Indian subjects initially reacted to the question on housing. Simultaneously, 4 out of 5 subjects pointed out that most of the time the houses in Manhattan appeared similar to them. In fact, 2 of the subjects were specific in pointing out that houses on Bluemont, N. Manhattan Ave., and south Anderson look essentially identical to each other. Indian subjects indicated that in Indian housing certain physical elements (e.g., an outdoor porch) act as a communicating media between the internal space and the external. In fact, this is peculiar to the towns in India which are similar to Manhattan in size. Contrary to that, according to these subjects, elements like outdoor porches are so rarely used that they almost appear like dead spaces, even in tolerable weather conditions. Indian subjects thus concluded that visual contact between the inhabitants of the house and a passerby is almost cut off. Further, 4 of the subjects felt that the open spaces around the houses are rarely used for social interaction. The size of the house did not really matter to them. Their perception was not based on the size.

What concerned 4 of the subjects was the monotony in color and texture in housing in Manhattan. The subjects pointed out that several houses have a similar color pattern, which at times is baffling. More than that, as most houses are built in timber without any elevational treatment, it appeared so monotonous that even

differentiating from one house to another was initially difficult for these subjects. In short, the way the Indian subjects perceived housing depended on i) social importance of housing, ii) elevational appearance, and iii) relation of physical elements with different environmental spaces.

N. African:

The researcher got the impression from the responses of the N.African subjects that their perception was affected more by the organization of the housing than its appearance. In the first place, the researcher would like to point out that 4 out of 5 subjects tried to compare housing in Manhattan to that in a similar town in their countries. The Nigerians in particular indicated that the neighborhood gets shaped as per the "clustering" of the houses. Thus their perception was in terms of organization. In all, 3 subjects indicated that the gridiron pattern of housing arrangement did not match their pre-conceived notions. Apart from this, the other responses were either similar to those of the other subjects or at times weren't significant enough to discuss.

Finally, the researcher would like to draw the attention of the reader to the fact that this question (#14) relating to subjects' impressions about housing received a variety of responses. The housing as a physical setting was the same for all the subjects; but the way they looked at it or perceived it differed from one group to another. This, the researcher feels is nothing but the result of enculturated values. What could be derived as important from all these responses is that the perception of a town by an individual is greatly based upon housing, as well as upon cultural background.

As John Gulick (AIA Jour. #29/1963, pp179) said "The urban image is a product of both visual cues and of socio-cultural associations".

Several interpretations can be made from the above responses. The researcher would like to mention the important ones: Any individual coming from an urban

background would perceive a physical setting differently from one coming from a rural background. 2) The way individuals perceive a physical setting mostly depends on preconceived notions which are the product of the cultural habits or lifestyle.

Adaptability to a certain extent depends upon the perception, and perception depends upon one's habitual orientation to a "home" environment. If new environments are radically different than those one has grown used to, the subjective result is one either of comfort or confusion, depending on the way one perceives the new design.

The researcher attempted to investigate this phenomenon in this study. So the subjects were asked to point out several areas in Manhattan such as shopping, residential or entertainment, where they felt comfortable or confused.

Question # 15: Can you name the place/s in Manhattan say for shopping or entertainment or may be streets where you feel comfortable or confused for some reason.

Table 10

Group	Comfortable areas	No. of subjects	Confusing areas	No. of subject
American	i) Aggieville	5	i) road network near	
	ii) Westloop	4	junction of Bluemont	4
	iii) Campus	2	& 3rd street.	
Arabian	i) Campus	3	ii) nothing specific	1
	ii) Westloop	3	i) road junction	
			mentioned above	4
Chinese	i) Campus	1	ii) no reply	1
	ii) City Park	3	i) Aggieville on weekend	
	iii) no reply	1	night	4
Indian	i) Campus	4	ii) east of the campus	3
	ii) Westloop	2	i) same road junction	3
	iii) Tuttle Creek	2	ii) east of the campus (night)	4
N. African	i) Campus	3	i) area around rec. center	2
	ii) nothing particular	2	ii) Aggieville at night	3
			iii) nothing specific	1

If one tries to analyze the above responses, one sees that there is a little agreement from group to group about which areas are comfortable. Americans perceived the Aggieville area as comfortable, the Chinese felt the same about the City park, whereas the Indians and N. Africans felt comfortable at Westloop or campus and at a few other areas. On the other hand, a clear majority (56%) of the subjects from all cultures agreed about an area that seemed confusing to them. Fourteen out of 25 subjects spontaneously pointed out the chaos caused by the traffic light arrangement near the intersection of Bluemont and 3rd streets. In fact this was the first thing that American subjects, who are more auto oriented, pointed out. The researcher feels this should serve as a hint to the city planners to avoid such intersections in future planning,. If such chaos proves tough to the inhabitants of the town, one can imagine how a foreigner might feel in such a situation. The researcher feels that towns should be designed not only for the permanent inhabitants but also for those who remain only temporarily.

The Chinese and the N. Africans were the ones who seemed most confused about Aggieville at night. These subjects pointed out that the activities that take place in Aggieville on weekend nights are not common in their culture. Therefore, they perceived this area as socially unsafe. The researcher's conclusion is that the perception also depends on social factors, as seen in this case. These responses gave a clear idea as to how areas are perceived differently by people as a result of their cultural background.

Question # 16: New York is famous for tall buildings, Bombay is famous for overcrowding. Similarly do you think Manhattan symbolizes something to you.

Certain towns or cities have their own identity and character, resulting from i) the activity that goes on in the town, ii) historically important structures, iii) natural beauty which is of tourist interest, and iv) business or educational activity in the town. Often ^{the}very name of a town communicates something about its identity, even to a layman.

The researcher tried to find out by introducing question 16, whether the word Manhattan, Kansas communicated any definite meaning or if it stood for something. One thing to be noted here was the experts had hinted that only the spontaneous reply should be taken into consideration. According to the experts, that would be the real perception of the word. In this question, the examples of New York city and Bombay were given. The researcher was careful to communicate this question simply and clearly without revealing its underlying purpose.

Because Manhattan is a University town, the anticipated reply was, "an educational town". In reality, what actually came out as a prompt reaction was not the word "educational town" but words like "lifeless town", "dull town", etc. Out of 25 subjects, 20 subjects, including 4 Americans, responded in this manner.

This clearly indicates that the presence of the University has by no means influenced the individuals to create an image of Manhattan as an educational town. It is obvious from the responses that most subjects perceived it as an inactive town. Thus for these subjects Manhattan does not symbolize anything.

Question # 17: Do you know of any building/landscape or any other thing in Manhattan that symbolizes heritage or the history of Manhattan.

Many towns have either an historical past which gives the town an historical character, or they have certain elements (like old buildings, sculptures or landscapes) which contribute to character. About landscapes Lynch (1960) says: "There are visual qualities in some landscape features which make them the inevitable subjects of attention, despite the selective power of the eye". After studying the town of Manhattan, the researcher realized that there do exist historically important structures as well as landscape features. But what was more important was whether the subjects identified the same.

Thus the subjects were asked to identify buildings, landscape features or any other things that symbolized, for them, the heritage or history of Manhattan. Unfortunately, the researcher did not receive many responses. In fact, only 6

out of 25 were able to respond positively. The following table shows the number of subjects that responded from each cultural group and the elements they pointed out as historically significant.

Table 11

Group	No. of respondents	elements
American	2	Courthouse on Poyntz Ave,
Arabian	1	Nichol's Gym., Old Town Mall
Indian	2	Courthouse, Nichol's Gym.
Chinese	1	Anderson hall

Apart from this, the researcher actually had expected that the subjects would point out things like the horse-cart that is displayed in the City Park or Goodnow memorial house or the Riley county historical museum. Surprisingly, none of the subjects ever mentioned about these elements. This researcher feels that the location of such historically significant elements is rather an important factor on which one's perception could be based. The researcher's opinion is that such elements, whether it be a piece of sculpture or a building, must be in an eye-catching location.

This part of the questionnaire discussed in detail the aspect of "perception". The researcher has already pointed out how perception is dependant on several variables. It also matters a lot who perceives it and in what way he perceives it. Thus any physical element or an activity or a pattern would be perceived differently by people belonging to different cultures. The importance of "perception" can be judged by its consequences, which are nothing but design solutions. As Rapoport puts it: "Perception is important because it introduces variability (cultural and personal) and modifies the notion of a single environment with invariant properties".

The researcher would like to conclude this part by stressing the fact that "perception" is an important part of the process of cognition and "culture" is an

equally important design variable, and both are related to each other.

Part IV: Orientation/Identification

Orientation is a cognitive process. The individual tries to grasp the contents of a new physical setting to which he gets exposed. During the process he evaluates, sets his own rules and gives meaning to the new setting, thereby achieves understanding and sense of order, and "Identification is an enormously difficult problem which only seems simple because of the power of the mechanism we have available for coping with it" -- Downs & Stea (1973).

An attempt was made by the researcher in this project to study the way people from different cultures identify a place and then orientate to it,. Several questions were to be dealt in this part such as i) what sort of cues people make use of while orientating, and ii) what are the cultural factors that tend to affect the process of orientation/identification.

Question # 18: Are you familiar with ---- area. Can you describe, how you will identify that area if you are taken blindfolded there.

In this question an area with which the subjects were familiar was chosen. The subjects were asked to visualize the same area. They were then supposed to describe the way they would identify that area if they were taken there blindfolded. In this question the researcher was only interested in identifying the cues that the subjects made use of. This received various types of responses. What was important and relevant to this study is presented by cultural group in the following table.

Table 12

Group	Areas chosen	Cues used
American	Aggiville Westloop downtown	Street parking, parking meters, signs shape of the complex, parking arrangement street and two sided parking
Arabian	downtown Aggieville	courthouse, food places, and signs shop signs, road names, and shop names

Group	Areas chosen	cues used
Chinese	Aggieville (during day and week) Aggieville (during weekend night) downtown	nothing specific people smell and noise church, bank buildings
Indian	Westloop Aggieville	time & temp. clock of the bank, theatres name of the road and name of shop
N. African	downtown Aggieville	bank buildings, shops road appearance, people and shop fronts

It should be noted that most of the areas chosen above are somewhat commercial because the subjects had difficulty responding to this question if any residential area was chosen for identification.

In most of the responses, the cues used by the foreign subjects to identify these locations are more or less the same. The majority of the foreign subjects relied on signs, shop fronts, names of the roads and other physical elements. Yet, there was a basic difference between the way American and non-American subjects identified these locations. The American process of identification was totally auto oriented. Responses tell us that while identifying these places, whether it was Aggieville or downtown or Westloop, they mostly made use of either parking lots or parking meters as identification cues. Other cues were of secondary nature to them.

Rapoport (1977) has reported that several cultures depend on olfactory senses such as noise and smell, while identifying. The fact that the majority of the subjects did not talk about these senses was somewhat disturbing, especially in the case of the Arabian and the Indian subjects, because in these two cultures several areas are identified with such senses (e.g., quick food restaurants are identified with the help of smell). The researcher felt that such sensate cues do not prominently exist in Manhattan.

Question # 19: Imagine you are in the parking lot situated----. You meet a visitor who wants to go to----. What clues would you ask him to consider in order to direct him to that place.

In the previous question we have tried to identify the cues used by the subjects to identify certain locations. It is believed that many times such cues are used by individuals to orientate themselves to a particular place or while giving directions to another person. The researcher's intentions were to understand the process of "orientation" and "direction-giving" among different cultures. Thus, it was attempted by introducing this question.

Two locations, say location A and location B, were randomly picked by the researcher. Location A was on the campus, usually a parking lot. A campus location was chosen because subjects were pretty familiar with the campus. Location B was somewhere within the city limits. These locations included downtown, Westloop, the City Park, the industrial area on the east side of town and so on. Further, the subjects were asked to pretend they were directing a stranger from location A to location B.

The researcher observed a fundamental contrast between the way foreign subjects gave directions and the way Americans did it. Citing all the 25 responses would be a lengthy process, involving excessive repetition. Thus, the researcher has included a summary of the major differences.

Following is a representative excerpt from the responses of American and foreign subjects:

In this case the locations randomly chosen were i) a parking lot on the south side of the K-State Union, and ii) the downtown area. Directions were to be given by the subjects from K-State Union to downtown.

Here is how American subjects gave directions:

"Hit Anderson-then take it east-drive a couple of blocks-you will run into Juliet Ave,-there go south for about 3 to 4 blocks and you will hit Poyntz take it east and after about 4 blocks you will be in the middle of downtown"

whereas

this is how the foreign subjects gave directions:

"reach Anderson-take left-drive for about 2 min.-leave the first 2 traffic lights-keep driving straight-after the third traffic light the road turns to Bluemont-shops on right-drive straight till you reach a brick road-i.e.,Juliet-take right after 3 to 4 cross roads you will be on Poyntz-when you see Manhattan library or First National Bank take left-moment there are shops on both the sides then that is downtown."

Analyzing these responses we find ' that the Americans mostly relied on compass-point directions in addition to numerical figures. Contrary to that, the foreign subjects relied on names of the roads, appearance of the roads, traffic lights, shops banks and so on. In other words they used each and every possible cue on the route.

Summarising this, the researcher would like to conclude that the basic difference between the American culture and the other cultures, regarding orientation, is that the Americans tend to be more abstract and numerical- in a word, more rational-but less nostalgic.

What was concluded relates more to external orientation, but the same is also applicable to the internal orientation or the orientation within a built-up space. To support this statement with an example, here is what a Nigerian subject narrated:

"The first time I went to the grocery store I asked the girl working there where I could find the frozen foed. She replied by saying 'It is in the northwest corner of the store'. Orientation within the store was so difficult that I had to go out of the store, look for the sun to find out which side was east and which was west".

Question # 21: In 'moslem' culture if the moslems are asked to identify a certain location, they first look for the 'mosque' closer to that place. The way they identify the mosque is simply by listening to the peculiar sound of prayers. Similarly in American cities/towns what other similar things that come to your mindwhen you begin to locate a place.

The researcher earlier indicated his curiousness to find out i) whether the subjects routinely used the senses of smell and hearing in Manhattan, and what could such senses identify of an American environment, and ii) whether the preferences of these senses were culture-specific or religion-specific. (As stated earlier inthe report, these different cultural groups also represented various religions.)

In order to explore this concept, an example of how people in moslem culture identify a mosque (simply by listening to the peculiar sound of prayers) was given to the subjects. The idea was to give them some direction of thinking.

Unfortunately, the majority of the subjects did not give any valuable response from which concrete interpretations could be made. In fact, Arabian and Indian subjects, who are generally conscious of such things, indicated that they did not utilize their senses for orientation in Manhattan.

In the beginning of this part of the questionnaire, discussion centered upon orientation within Manhattan. But towns also have external or topographical orientations. As Lynch (1960) reveals: "Topography is an important element in reinforcing the strength of urban elements."

Question # 22: Imagine being on highway I-70, say while coming from Topeka, if there isn't any sign that says-'way to KSU..take exit..' and so on, then, how would you find out that you are nearing Manhattan.

Question # 23: Do you think Manhattan blends into landscape. How.

The location of Manhattan is quite ideal as far as topographical orientation is concerned. It is surrounded by wheat fields and small hills all around. So a question was designed in which the subjects were asked to describe how they would react in a situation in which they were approaching Manhattan from any major highway, imagining there were no directional sign boards. It was expected that the subjects would make use of the landscape around Manhattan to identify their whereabouts.

Out of 25 subjects only 8 responded authoritatively. Among these 8 subjects, 5 subjects (3 Americans and 2 others) indicated that the water tank atop the hill on the north-east side of the town was the nearest reference point. Otherwise, they felt there wasn't much of a 'landscape' on any side of Manhattan that would help someone to orientate to the city.

Commonalities were found among the non-Americans regarding their perception of the landscape around Manhattan. Twelve out of 20 non-American subjects felt that landscape feature do not help as an orientating tool.

The following table shows the opinion of the subjects regarding whether Manhattan blends into the landscape and how.

Table 13

Group	no. of subjects	No	Yes	How (nearest clue)
American	5	1	4	water tank atop hill, grain towers, fields
Arabian	5	4	1	water tank
Chinese	5	5	-	-
Indian	5	3	2	grain towers, Tuttle Creek
N. African	5	4	1	water tank

Question # 24: What other towns/cities within USA or abroad, that you have visited have good orientation and why.

The subjects participating in this research project were from different countries. Many of them had a little bit of exposure to other cities or towns, either overseas or in their countries. Assuming that they had experienced orientation in different places, the researcher in this question decided to ask the subjects to list those places which in their view provide "good orientation." This was to serve a dual purpose: i) to learn the reasons these places appear to have "good orientation", and if possible ii) to compare them to Manhattan to find the deficiencies in Manhattan. With the help of the replies, the researcher was able to list the names of these places but realized that comparison to Manhattan was impossible, as these places were different than Manhattan in all respects. Even so, the list provided below should be of some help for future researchers.

Table 14

Group	Places	Reasons
American # 1	Chicago	traffic flow, Sears Tower, loop, areas with certain character
# 2	Boston	classified neighborhoods, traffic, road network, harbor and parks

Group		Places	Reasons
American	#3	St.Louis	-
Arabian	# 1	Amman(Jordan)	mosques, neighborhoods, shopping areas
	# 2	Phoenix	roads, commercial signs
Chinese	# 1	Hang-cho	commercial signs, landscape features,shops, color scheme in housing and amount and type of traffic (i.e.,bicycle, etc.)
Indian	# 1	Bombay	differnt character of physical structures, street network, mass transportation, amount and traffic direction
	# 2	New Delhi	landmarks, greenery,street network,historical places

In part IV of the questionnaire, the researcher has thoroughly discussed the phenomenon of "orientation". Based on some literature and the responses given by the subjects to the questions in this part, the researcher has made his own assesment. What is discussed below is again the researchers' personal interpretation.

The researcher feels that "orientation" depends on the "language" with which you communicate. We have seen that there is a marked contrast between the way Americans directed someone to a place and the way foreign subjects gave directions to the same place. Thus if the language of communication is not understandable, orientation could prove to be difficult.

Orientation depends a lot on the physical structure-its appearance, shape size color and so on. This includes streets, houses, landscape features and landmarks. Derk de Jonge has indicated that, difficulties may arise: where the structure is quite clear but individual elements are too uniform to be distinguished from each other. Present day planning must avoid monotony, even in housing developments, and create a pattern that makes orientation easy. Orientation/identification is also culture-specific. It is made easier by recognition through senses such as hearing and smell.

Landscapes sometimes help in identifying locations, provided the landscape features are perceived easily. Elements like hills, rivers, harbor, parks and lakes

are some of the more common ones.

Finally, even if all such factors are present or available, the preference for the same depends on the individuals. The individuals organize the cues from the environment to orientate based on pre-conceived notions built up from their cultural background.

Part V: Feedback

By the end of the interview the subjects had a pretty good idea that the issues discussed related to "cognitive systems." Most subjects, one way or the other, had visually experienced the town of Manhattan. The main question remaining to be answered was: Had their impressions changed about Manhattan from what they had perceived since the time they first came to Manhattan.

It is commonly believed that images keep changing as time changes. Assuming this, the researcher asked the subjects to discuss briefly whether their impressions about Manhattan had changed.

Question # 25: What is your impression about Manhattan now. Do you think it has changed since you came here. Can you describe briefly.

The following table expresses their opinions and is followed by discussion:

Table 15

Group	No. of subjects	changed	unchanged
American	5	4	1
Arabian	5	2	3
Chinese	5	1	4
Indian	5	1	4
N. African	5	1	4

The above table shows that 4 out of 5 American subjects did change their impression whereas 15 out of 20 foreign subjects indicated that their impression about Manhattan has remained the same since the time they first came.

The researcher felt that these impressions might be the result of likes and dislikes for certain things subjects had developed during their stay in Manhattan. This, however, was only the researcher's assumption. To investigate this assumption, the researcher asked the subjects to list all of those things and places they liked or disliked about Manhattan. Based on this, the researcher was able to verify his assumption.

Question # 26: What you like/dislike about Manhattan and why.(say shopping, people, housing etc).

Their opinions are presented here in the following table.

Table 16

variable: liking

Opinion (causes)	American	Arabian	Chinese	Indian	N. African
i) housing	3	3	2	2	2
ii) people-attitude	5	1	2	1	2
iii) feeling of security	5	1	4	3	3
iv) density	3	2	4	3	3
v) town conducive to educational	5	4	4	5	4
vi) landscape	4	2	1	1	2
vii) weather	5	-	2	-	1
viii) shopping	3	4	3	3	3

variable: disliking

Opinion (causes)	American	Arabian	Chinese	Indian	N. African
i) absence of social life	2	4	3	5	3
ii) people-attitude	-	4	2	4	3
iii) shopping	2	1	2	2	2
iv) feeling of security	-	4	1	2	2
v) weather	-	5	3	5	4

The above table presents the opinions of the subjects regarding their likes and dislikes about Manhattan. The first part of the table shows several variables on which their opinions were based. The majority of the subjects like the housing size in Manhattan as well as a town conducive to educational study. Most of the subjects like the kind of shopping in Manhattan even though earlier in this report foreign subjects had indicated their disappointment that shopping areas were not places for social interaction.

A difference of opinion was observed between the Americans and the foreign subjects when it came to i) the attitude of the people, and ii) the weather conditions. Almost 17 out of 20 foreign subjects did not appreciate the weather of Manhattan. Earlier in this report the researcher stressed that the "perception" or "image" of a place may be based on climatic conditions. These responses clearly

support the researcher's assumption.

What was more alarming was the fact that several foreign subjects were disturbed at the attitude of the people towards them, which was one of the reason that led to their notion of dislike. Contrary to that, 2 American subjects who were non-Kansans felt the people in Manhattan to be friendly. This supports the researcher's basic assumption, mentioned earlier in this report, that "images" are also the result of social conditions.

The responses to the question about dislikes were also similar (except for the issue of absence of social interaction/life). The researcher, while discussing responses to questions in Part III, revealed that the Indians and the Arabians are the groups that based their perception on social life. The above responses also strongly indicate their dislike for the absence of social interaction within the community which led them to their negative image. This reinforces the researcher's earlier interpretation about the same.

The researcher's conclusion is that designers have to consider the social and physical requirements of individuals and to meet them wherever needed. Designers, through their design, can change the physical and social conditions in an environment, even though they may not be able to change things like climatic conditions.

Question # 27: Do you find any 'noticeable differences' such as i) density, ii) color & material used in housing, iii) people-their lifestyle, iv) noise, and v) smell either in Manhattan or other towns/cities within USA.

"Uniqueness of design meaning the 'noticeable differences' helps imageability." In other words, uniqueness makes things noticeable..(Rapoport,1970). The researcher attempted to find out what were noticeable differences in this question. This again was an open ended question, where subjects were asked to indicate the 'noticeable differences' they came across as described in the question. As a matter of fact most of this is discussed in earlier parts of this report.

The subjects had responded about the differences in density, color & material in housing in Q # 14 in Part III. None of the subjects, whether American or foreign thought of differences in noise and smell, basically because these two clues were unrealized until they were pointed out.

The only significant response the researcher got was regarding noticeable differences among the people as far as their behavior and appearance goes. The motivation for repetition of several items in this question was to be more specific on the issues that were discussed in the earlier part of the interview. (The experts had advised the researcher to get some kind of feedback on those issues).

Question # 28: What do you think I am trying to do.

Finally, determining whether the researcher had succeeded in communicating to the subjects what he was looking for was the purpose of the last question in the interview. The subjects were asked to comment on their impression about the idea behind this interview.

Needless to say, the subjects recognized the researcher's aim to study cross-cultural cognition systems, which suggested that the questionnaire had achieved its intended purpose.

The material presented in this report is a synthesized form of interview responses. Responses are followed by the researcher's interpretation, which may not be a reality but purely a personal impression of the researcher based on the facts gathered during the interviews. What is being presented may not be a scientific reality, but surely provides an opportunity for discussion on how several elements in the environment can act upon an individual or groups to form some kind of an impression.

The researcher would like to reveal that the degree of familiarity of the subjects with Manhattan may change in course of time. Constant modification may also take place as the town of Manhattan grow larger.

Finally, the researcher would like to encourage readers to draw their own interpretations and conclusions from the data presented in this study.

CONCLUSIONS

The purpose of this report has been to review the evidence on ^a few aspects of man-environment relation as applied to urban design.

The process of cognition has been discussed in this report with the help of responses given by the subjects. Attempt is made to show the interrelation between culture and cognition. Several related issues like perception, image and orientation/identification are examined. The conclusions based on all such factors may not be scientifically valid; which also was not the aim. What is concluded here is purely the researcher's personal opinion based on understanding of the issues discussed in this report. The basic observation was, the major differences occurred between the American culture and the non American cultures, which are discussed here.

- i) Time factor is one of the most basic one which helps an individual to structure his physical environment. The longer you live in an environment, the less concerned one becomes about its infra-structure. Appelyard (1976), in his study of Ciudad, Guayana concluded that newcomers make less errors in structuring the environment than the old habitants. In this case foreign subjects were newcomers whereas the Americans though none were from Manhattan, they were otherwise habitants of a similar environment.
- 2) Distinction between the perception power of educated vs less-educated was no doubt impossible because all the subjects were academically qualified students, in spite of this the researcher feels that Age and Academic background does not really matter in understanding of an environment.
- 3) The way one understands his environment depends on the media through which one obtains information as well as his personal environment. It was seen in this study that 2 foreign student subjects who lived with Americans, many a times responded like the other American subjects rather than their own countrymen.

Meaning, one's personal associations can influence the process of decision-making.

4) How and how much one perceives his physical surrounding may also depend upon the mode of transportation. People with access to automobile structure the physical setting with respect to traffic and road pattern; and their perception is limited. Contrary to that people 'on foot' have greater capability of perceiving many micro-level elements in the same physical setting. It is seen in this study that the foreign student subjects, who initially had no cars extracted structure in a greater detail than the Americans.

5) Perception also depends on exposure to other surroundings. Literature reveals that Deregowski's (1979), hypothesis is that experience with different physical environments leads to predictable differences in people's basic perceptual process. According to Rapoport (1977), perception is affected not only by culture but by previous experience. In this study it was distinctively observed that subjects who had widely travelled responded confidently and with more accuracy than others.

6) This follows to a similar conclusion where it was observed that people with urban background have a greater understanding of the environment than the one's with somewhat rural background.

7) Lynch (1960), reveals that people extract structure and identity out of the material at hand. Simultaneously speaking, what is prominent was used to base the impression or built the image. In this study most subjects used housing to base their perception and subsequently, the image. Basically because apart from the University, housing is the next major activity in the town. Unlike other major cities, commercial areas are almost non existing compared to the volume of housing in Manhattan.

8) Rapoport (1977) mentions that people can get disoriented in strange kind of cities where the structure is difficult to grasp and space is organized according

to different rules. Therefore the environmental evaluation is based on preferences. This is seen in the way subjects responded the question on housing. For Americans house-identification in Manhattan was easier but for the non American subjects it was a matter of concern. For them most of the houses appeared similar because the spatial organization of housing in Manhattan is not according to the rules that match their culture. Indians perceived it in social context, Chinese perceived it in terms of its architectural elements whereas the Arabians perceived in terms of aesthetics. Downs and Stea argue that these cultural differences may extent not only to the features receiving attention but also to the way in which they are organized.

9) People avoid areas which may be physically|socially or even historically less important to them. This was observed when subjects responded unexcitingly to the question of identifying historically important elements in town. Researcher feels Manhattan appears to have been built specially for the University rather than having grown on its own through the ages. It also lacks historical character.

10) Identification and orientation are important aspects of process of cognition and 'language' plays a major role in identification and orientation. Though the environment may be the same, method of describing it will differ from one culture to another. Researcher concludes, based on the responses that the American method of orientation is more numerical and abstract whereas that of other cultures is more nostalgic.

11) Orientation depends on cues. Cues may be common for all but their choice-preference will differ as per the culture. This is true even in case of perception. Rapoport (1977) mentions that the specific nature of the choices made tend to be lawful, to reflect sets of rules, so that one way of looking at culture is in terms of the most common choices made.

12) Rapoport has also discussed the concept of 'the multisensory nature of

perception. This researcher's conclusion is that this theory can be accepted only partially. As seen in this report the subject's perception or even orientation was not necessarily based on such senses. Result is, the individual will identify such senses only if they occur prominently but will not go specifically for it. Lastly as Swinburne (1967) puts it; what we see depends to an extent on our values and attitudes.

The approach in this study may not be practical at this stage but would help the designers to understand the human role in different environments whereby towns or cities will be better organized. There is a need to consider the variability of concepts. Degree of congruence should also be examined.

A concluding comment is that; culture is an important design variable and equally important is the process of cognition and that their interrelationship should not be overlooked.

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PART II
MENTAL MAP STUDIES

Mental Maps Study

Significance:

This researcher believes that while questionnaire responses reveal the categorical- which is basically qualitative characteristics of an environment, it is the mental maps study which may give a quantitative tone to the spatial and extensional sense to clarify one's overall impression, since quantitative judgement is supposed to be more scientifically expressive.

Introductory discussion:

Generally, a map is a graphic representation of several scheme rendered more accurate by the techniques of surveying, whereas mental map, is nothing more and nothing less than the spatial expression of the decision of men.

Mental maps could be abstract, complex, distorted, augment, incomplete and generalised representation in several forms. Mental maps may include all sorts of memories of objects, once perceived as one moves about, visual memories of appearance of buildings, landscape, street and even auditory clues...(Downs & Stea).

Mapping is thus defined as a process of acquiring, amalgamating and storing spatial information. Information processing capabilities, speed and strategies among the people defer depending upon the cultural background...(Downs & Stea,1973) It is an accepted fact that there are cross-cultural differences in the way spatial information is coded.

The researcher in this study attempted to investigate further and to find out if there are any particular implication inherent in the mental map.

Aim:

The basic idea was to find out i) how people learn about their surrounding, and ii) how much do they know. Since this study was of cross cultural cognition, the ultimate aim was to find out how people from different cultures structure

their physical environment.

Physical setting:

The town of Manhattan, Ks (limited to its legal boundaries) was used as a physical setting for the mental maps study. (Physical setting is already defined in the chapter on Methods and Procedure).

Subjects:

The same subjects who were interviewed were the subjects for mental maps study.

Method:

One thing to be noted here is, the subjects were asked to draw the mental maps first before they were interviewed. Because the questionnaire might have given them some preconceptions, had they been interviewed first, thereby making the approach somewhat unbiased.

The subjects were given a set of instructions (Appendix) to draw the map. It consisted of 6 instructions, through which they were asked to classify and label the streets, include areas for shopping, entertainment etc., to mark the reference points for orientation and landmarks, all in Manhattan. They were then given a sheet of paper with unlabeled street lay-out of Manhattan (limited to its legal boundaries) drawn on it. (see Appendix). After that they proceeded to draw. The researcher recorded notes while subjects were drawing.

Significance:

In similar type of researches done in the past, the subjects were given a blank sheet of paper on which they were asked to draw the map of the physical setting chosen for that study. The researcher felt that such methods are more like testing subjects ability to draw a sketch. Therefore an unlabeled street lay-out of Manhattan was given to the subjects. Researcher realized this certainly eased the task of drawing, for the subjects.

A pre-test was carried on 3 subjects. It was noted that apart from unlabeled street layout, there was no other reference on the drawing, which made it bit difficult for the subjects to draw. After consulting the experts only the north sign and the University campus were marked on the drawing sheet provided to the subjects. Result was map-orientation proved much easier for the subjects.

Observations:

Subjects were given a choice to start drawing the map with any one of the 6 instructions provided and not necessarily in the sequential order. Researcher was to observe, what is the first thing they chose to draw or in other words the way they proceed. Idea was to identify their choice preference while structuring the town.

Strikingly noticeable was, 4 out of 5 Americans proceeded drawing the map from the highway location, in other words all the highways around Manhattan were their reference point while drawing the map. Whereas 17 out of 20 foreign subjects drew their map starting either from the campus or from their residential block.

The researcher feels this was because the Americans are more auto oriented. Contrary to that the foreign subjects, felt secured orientationwise, either near the campus or where they lived, being in a new environment.

The first instruction asked the subjects to classify and label the streets that were drawn on the sheet provided. Aim was to investigate how this classification varied from one culture to other.

Foreign subjects indicated that their classification of streets depended on the physical size, traffic load and the pedestrian movement. But for them all these activities were uniform throughout whereby though they could label many of the streets, classification was impossible. Interesting to note that for Americans, Poyntz Ave., Anderson Ave., Bluemont Ave., and Manhattan Ave., were

the major streets and the remaining as minor streets.

The second instruction asked the subjects to include several areas as per their activities as mentioned in the set of instruction.

The following Table shows the areas marked by the subjects.

Areas Identified

Area: shopping

Group	Aggie.	K-mart/Walmart	downtown	Westloop	Old Town Mall	Bluehill
American	4	5	4	5	1	1
Arabian	1	5	4	4	-	-
Chinese	1	4	2	4	1	-
Indian	1	5	4	4	1	-
N.African	-	4	3	4	-	-

Responses tell us that shopping areas at Old Town Mall and Bluehill are almost neglected. Researcher feels there is nothing in these areas that would attract the student population nor they are too close.

Area: Educational

Group	K.S.U.	U.F.M.	Manh. Vo-Tech.	Other schools
American	5	1	-	3
Arabian	5	2	-	2
Chinese	5	-	3	2
Indian	5	1	1	3
N.African	5	-	1	2

Area: Entertainment

Remarkable observation was made regarding this area. Few theatres either in downtown or at Westloop were marked by the subjects. But what was more interesting was that 17 out of 20 foreign subjects marked "Aggieville" as an

entertainment area. As a matter of fact Aggiville area is often visited by students for clubs or bars rather than for regular shopping, which ultimately built a different image. The fact that foreign subjects perceived it differently clearly reflects the role played by cultural factors or values.

Area: Recreation

Group	City Park	Cico Park	Tuttle Creek	Field House	Golf & Skating
American	4	3	2	4	2
Arabian	4	1	-	2	-
Chinese	5	-	1	1	-
Indian	5	2	1	2	1
N.African	5	1	2	2	-

Areas: Industrial, public offices and medical facilities

Very few subjects could mark these areas on the map. Only 3 Americans, 1 Indian and 1 Arab indicated public offices in downtown. In reality other public offices are in Westloop and even in Old Town Mall, but they went unnoticed. Also, only 4 out of 25 subjects included east side of the town as industrial area. Lafene health center was the only medical facilities area that practically all subjects pointed out. Five out of 25 subjects included St.Mary's hospital, which included 2 Americans, 2 Indians and 1 Arab.

Area: Place of worship

Most subjects identified several churches though they could not mark their exact locations. The researcher thereby may suggest, no matter to which religion one belongs, one is conscious of religiously important areas.

Instruction # 3 asked the subjects to include on the map those areas where they thought single students, married students, professionals etc. lived. Presentation of responses in a table form is impossible, so the facts are simply discussed. Areas where single students and married students lived (especially Jardine terrace) were easily pointed out. It appears from the drawing that the

subjects feel there aren't any areas which are exclusively for professionals or faculty. However certain areas were classified as rich areas or less rich areas by few subjects. Areas classified as rich are somewhat part of south-west and north-east side of the town.

Areas: American minorities & Blue collared workers

Attempt was made to find out how people perceived certain areas in social sense by asking them to point out the areas where they felt the American minorities and Blue collared workers lived. 1 American, 3 Arabs, 2 Indians and 1 N.African were the only ones who marked south-east part of the downtown for the same which was pretty close to reality.

Instruction # 4 asked the subjects to mark an area on the map that serves best as a reference point for orientation within Manhattan. Interesting to note that "chimney" of power plant on campus was the best reference point, according to almost 50% of the subjects. Twelve subjects marked it, out of which 3 were Americans, Arabs and Indians, each and 2 Chinese. Other areas indicated were grain tower or water tank atop the hill on north-east part of the town.

Researcher feels this is true of Lynch's theory that any physical element can serve as a reference point for orientation provided it is perceived in the right sense.

Instruction # 5 asked the subjects to include 'landmarks' in Manhattan. Responses were similar to the ones found during interviews. Courthouse, Anderson hall and Nichol's Gym. were some of the landmarks mentioned by only a few subjects.

Lastly, the subjects were asked to mark any area on the map that symbolized Manhattan. Here the responses were much different from those in the interviews. Fourteen out of 25 subjects marked KSU campus as a symbol, including 3 each from American, N.African and Chinese group and 2 from Arabian group and 3 from I

Indian group.

Researcher believes that the fact that the campus area appears so prominently on the map, might have influenced their response. Because in the interviews majority of the subjects indicated that Manhattan symbolizes for nothing.

Above responses and observations are discussed in the order in which the instructions were sequenced. What is more important for the researcher and for the purpose of this study is citing the similarities or dissimilarities among these cultures, regarding the way they structured the town.

Conclusions:

From the map drawings, the researcher would like to suggest that people coming from urban background are more accurate than those coming from somewhat rural background, irrespective of the culture. Though only 1/5 of the subjects were from rural areas, trend can be judged, after studying their approach.

There appear to be more dissimilarities among the cultures than the similarities. In fact major differences were observed between Americans and the non-Americans.

Dissimilarities:

The first impression the researcher got was that the American approach of structuring the town was more auto oriented than the foreign subjects. Their classification of streets was based on amount of traffic than any other facts.

Majority of the American subjects drew the maps as well as certain areas with respect to geographical direction, instead of utilising any other clues. As concluded in the first part of the report, the American orientation is more abstract and less nostalgic as found in case of several foreign subjects.

Majority of the foreign subjects marked "Aggieville" area for entertainment rather than for shopping. Researcher hereby feels that people will structure the area, depending on the activity that goes on within, but their meaning will depend on rules set by their culture.

Newcomers perceive the town in great detail than the inhabitants. Exposure to different environments increases one's ability to structure the physical setting in a refined manner. Maps drawn by foreign subjects were more accurate than that of American subjects.

Classifying areas economically proved harder to foreign subjects than the Americans. Facilities available in Manhattan, according to researcher, may not be available in similar towns in other countries. Thus whatever was 'unseen' in their culture was perceived as rich by some of the foreign subjects. e.g., front and back green spaces, single family houses were few of the things that were perceived as 'luxury' by the foreign subjects.

Classifying anything as landmark would depend on one's cultural background. The Arabians hinted that they would prefer a mosque to a statue or water fountain as a landmark, Indians indicated that they would prefer historically significant structure as landmark.

§ Similarities and beyond - a conclusive remark

Areas of common interest and constant contact are identified in detail whereas other areas are practically neglected, irrespective of culture. This argument is reinforced by the map # 1 supplemented in Appendix.

Manhattan being a University town, social and economical aspect of the town was neglected by most subjects. Industrial as well as public office areas were almost unnoticed, by majority of the subjects. Perhaps being elements of

modernism isolated from cultural tradition, these are the areas which should be dealt with purely from a technical viewpoint. Cultural or purely technical, further study along the line of thinking of this report certainly would make such a subject matter more relevant to the changing reality of urban phenomenon, if not to bring about more reliable mental pattern of differentiation among people of different background. Eventually, when an enriched world culture is firmly established, all the elements of cultural differentiation, should they coexist in any environment by any chance, would become a broadest spectrum of visual variety the world ever have known.

Questionnaire

The following questions will help me in knowing little bit about your background.

Part I: Personal Background

Sex: M/F

- 1) What is your country of origin.
- 2) How old are you.
- 3) What year are you in school.
- 4) Do you live in a house/ Apartment/ Dorm, and where is it located.
- 5) Do you live alone or with roommates, Are they Americans/ own countrymen/others

The following questions are regarding the impressions you carry about Manhattan in several ways.

Part II: Impressions

- 6) What year did you first come to Manhattan, 19-- Spring/ Fall
- 7) What other places in US you have been before coming to Manhattan.
- 8) How do you get around in Manhattan. Car/ walk/ Bicycle.
- 9) What is the approximate population of your home town. Also, name it.
- 10) Do you find Manhattan crowded. Does it bother you.
- 11) What was your overall impression about Manhattan when you first came.
(overall impression related to weather, shopping, people, school, etc.)
- 12) How attractive/ aesthetic do you think Manhattan is in Summer/Winter/at Night.
- 13) In what way is it different from your hometown during these seasons/time.

The following questions are designed to learn how much you perceive the physical structure in Manhattan such as housing, shopping, and streets.

Part III: Perception

- 14) Give your impression about housing in Manhattan. Does it look similar to your hometown. How is it similar or different from your hometown.

- 15) Can you name place/s in Manhattan say for shopping or entertainment or may be streets where you feel comfortable or confused for some reason.
- 16) New York is famous for tall buildings, Bombay is famous for overcrowding, Similarly do you think Manhattan symbolizes something to you.
- 17) Do you know of any building/ landscape or any other thing in Manhattan that symbolizes for heritage or history of Manhattan.

With the help of the following questions I want to find out, how you will identify a specific location or in other words how you orientate to it.

Part IV: Orientation/ Identification

- 18) Are you familiar with-- area. Can you describe, how you will identify that area if you are taken blindfolded there,.
- 19) Imagine you are in the parking lot situated---. You meet a visitor who wants to go to--. What clues would you ask him to consider in order to direct him to that place.
- 20) Do you find any difference between the way you direct someone and the way Americans give directions to someone. Describe.
- 21) In 'moslem' cultures if the moslems are asked to identify a certain location, they first look for a mosque closer to it. The way they identify the mosque is simply by listening to peculiar sound of prayers. Similarly in American cities or towns, what other similar things that come to your mind when you begin to locate a place.
- 22) Earlier we talked about orientation within Manhattan. Now, Imagine, being on highway I-70, say while coming from Topeka, if there isn't any sign that says "way to KSU..take exit.." and so on, then how you would find out that you are nearing Manhattan.
- 23) Do you think Manhattan blends into landscape. How.
- 24) What other towns/ cities within US or abroad, that you have visited have good orientation.

Part V: Feedback

- 25) What is your impression about Manhattan now. Do you think it has changed since you came here. Can you describe briefly.
- 26) What you like/ dislike about Manhattan and why.(say shopping,people,housing)
- 27) Do you find any noticeable differences such as i) density, ii) color & material used in housing, iii) people-their lifestyle, iv) noise v) smell either in Manhattan or other towns/ cities within USA.
- 28) What do you think I am trying to do.

Set of Instructions

I would like you to draw mental map of Manhattan on the sheet of paper provided to you. The following set of instructions is to help you to draw this map.

Please note that I am interested only in the physical picture of the things.

Before you begin with the mapping please consider the following suggestions:

- i) Visualize the town of Manhattan, only to its somewhat legal boundary on all four geographical sides.
- ii) Whatever you draw may be a simple sketch.

Procedure:

Please include the following things in your map. You may start with any one of the following. i.e., from 1) to 6) whichever is convenient for you to visualize and draw.

- 1) Label major and minor streets in Manhattan, on the map provided.
- 2) Include as many areas as possible which will have the following activities:
 - a) shopping (indoor & outdoor), b) educational places (informal & formal)
 - c) entertainment (indoor & outdoor) d) recreation (indoor & outdoor)
 - e) industrial (large scale) f) public offices
 - g) places of worship and h) medical facilities
- 3) Indicate on the map, where you think the following people might be living.
 - a) single students b) married students c) faculty
 - d) professionals e) blue collard workers f) American minorities
- 4) Mark any area on the map that you think would serve best as a reference point for orientation within Manhattan.
- 5) Include 'landmarks' in Manhattan that you can think of:
(point out their exact location)
- 6) Please mark an aesterik to indicate the area you think will be a symbol for Manhattan.

After you are done with 1) to 6), add any other important feature in Manhattan that comes to your mind.

K-MART
WALMART
OTHERS

FLORIAN & QUINCY

DOWNTOWN

K.S. CL.
CAMPUS

WESTLAW

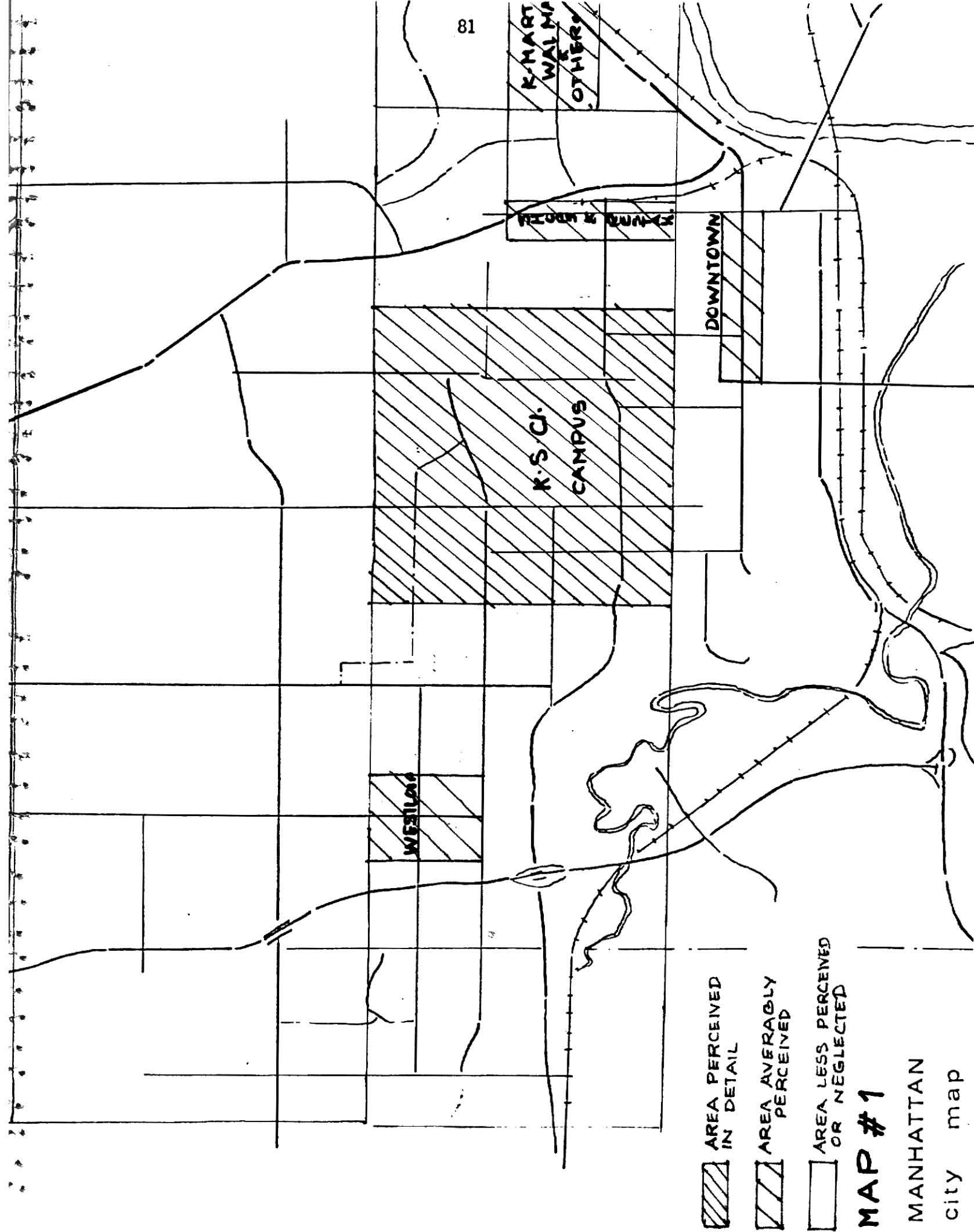
AREA PERCEIVED
IN DETAIL

AREA AVERAGELY
PERCEIVED

AREA LESS PERCEIVED
OR NEGLECTED

MAP #1

MANHATTAN
city map

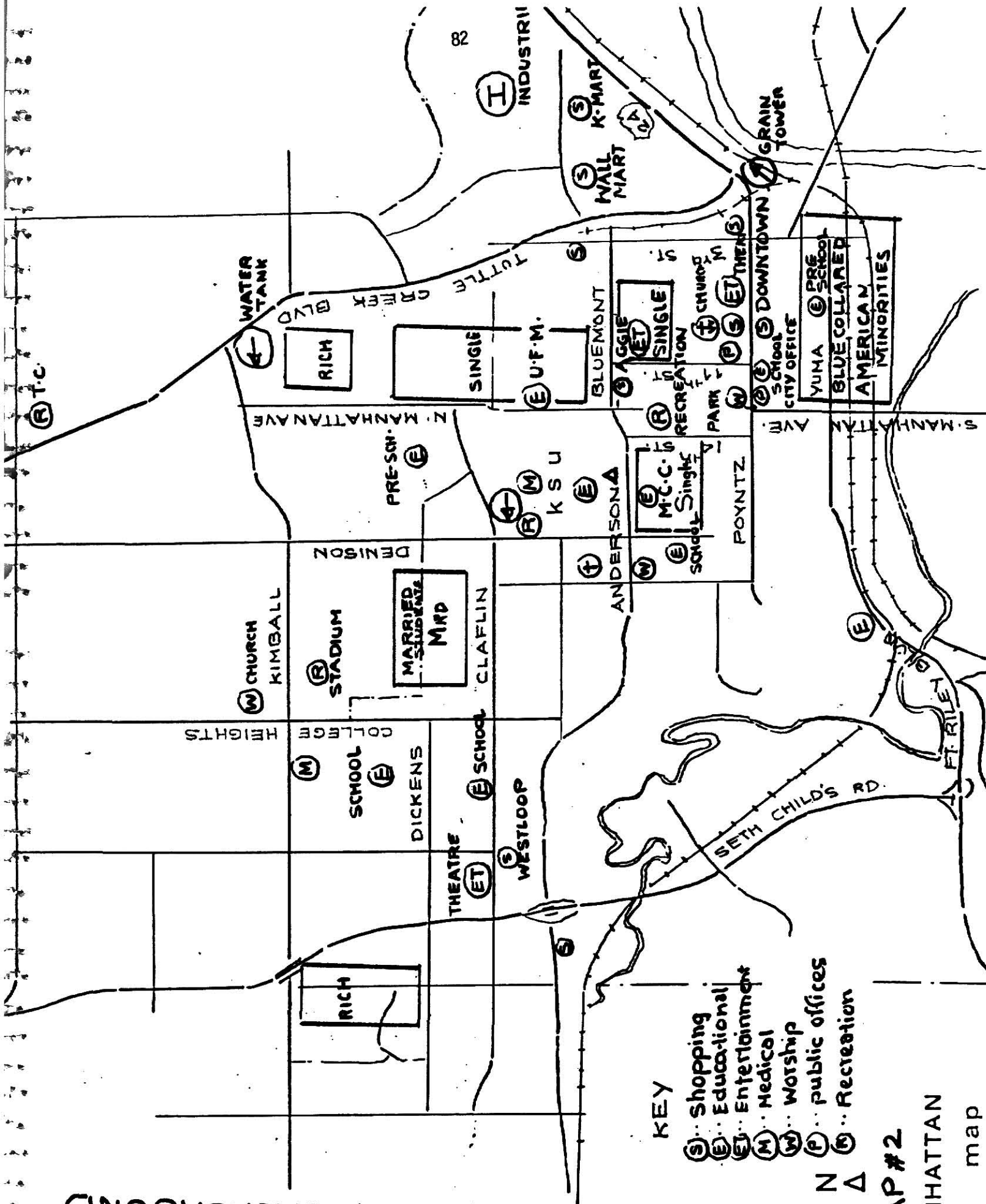


REPRODUCTION OF MAPS OF SUBJECTS WITH URBAN BACKGROUND

- KEY**
- (S) Shopping
 - (E) Educational
 - (ET) Entertainment
 - (M) Medical
 - (W) Worship
 - (P) Public offices
 - (R) Recreation
- N
Δ

MAP #2

MANHATTAN
city map



REPRODUCTION OF MAPS OF SUBJECTS
WITH RURAL BACKGROUND

MAP #3

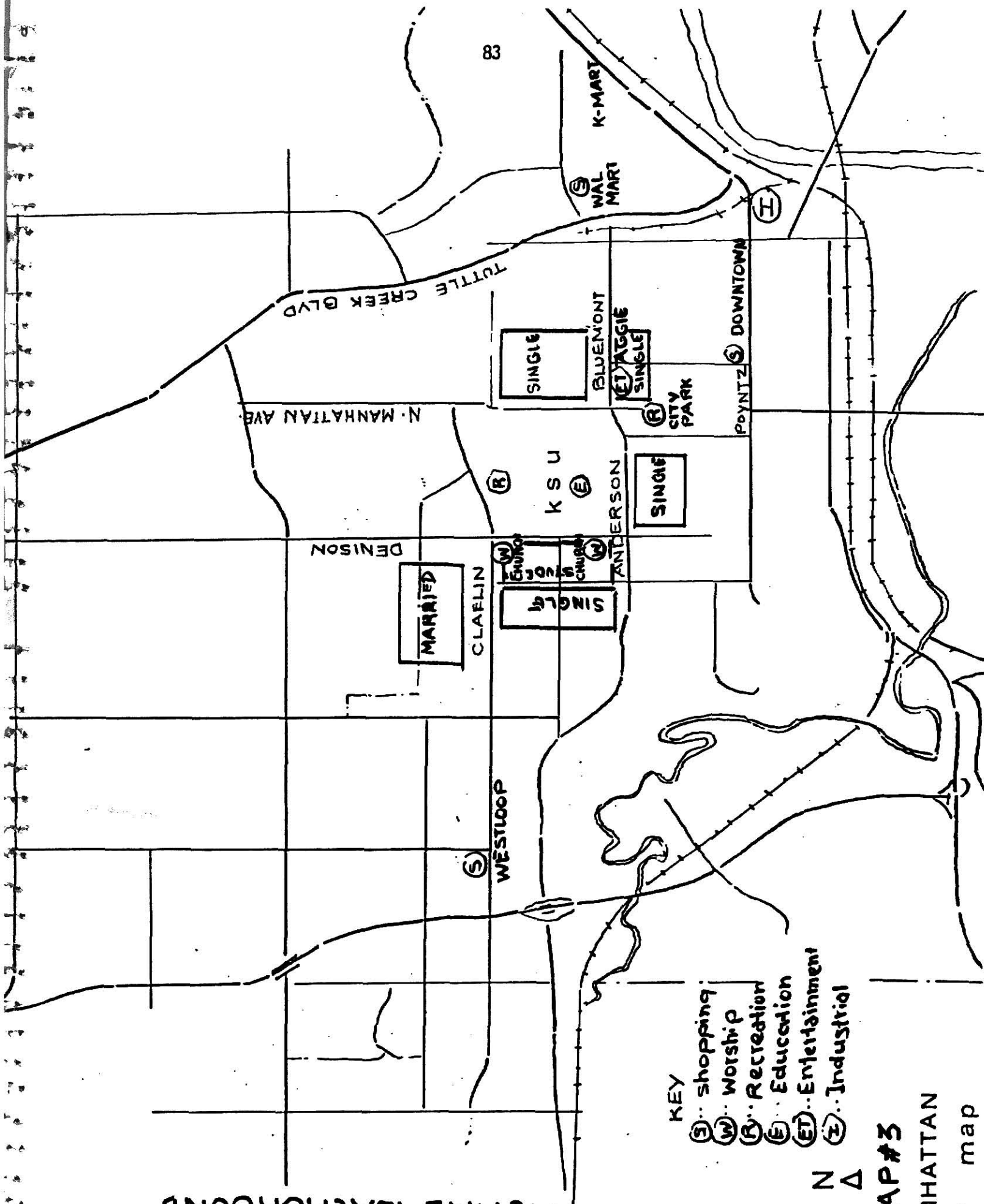
MANHATTAN

city map

 $z \triangleq$

۷۳۸

③ shopping
④ worship
⑤ Recreation
⑥ Education
⑦ Entertainment
⑧ Industrial



AMERICAN VERSION

CHOICE
PREFERENCE

# 1	○
# 2	○
# 3	○
# 4	○

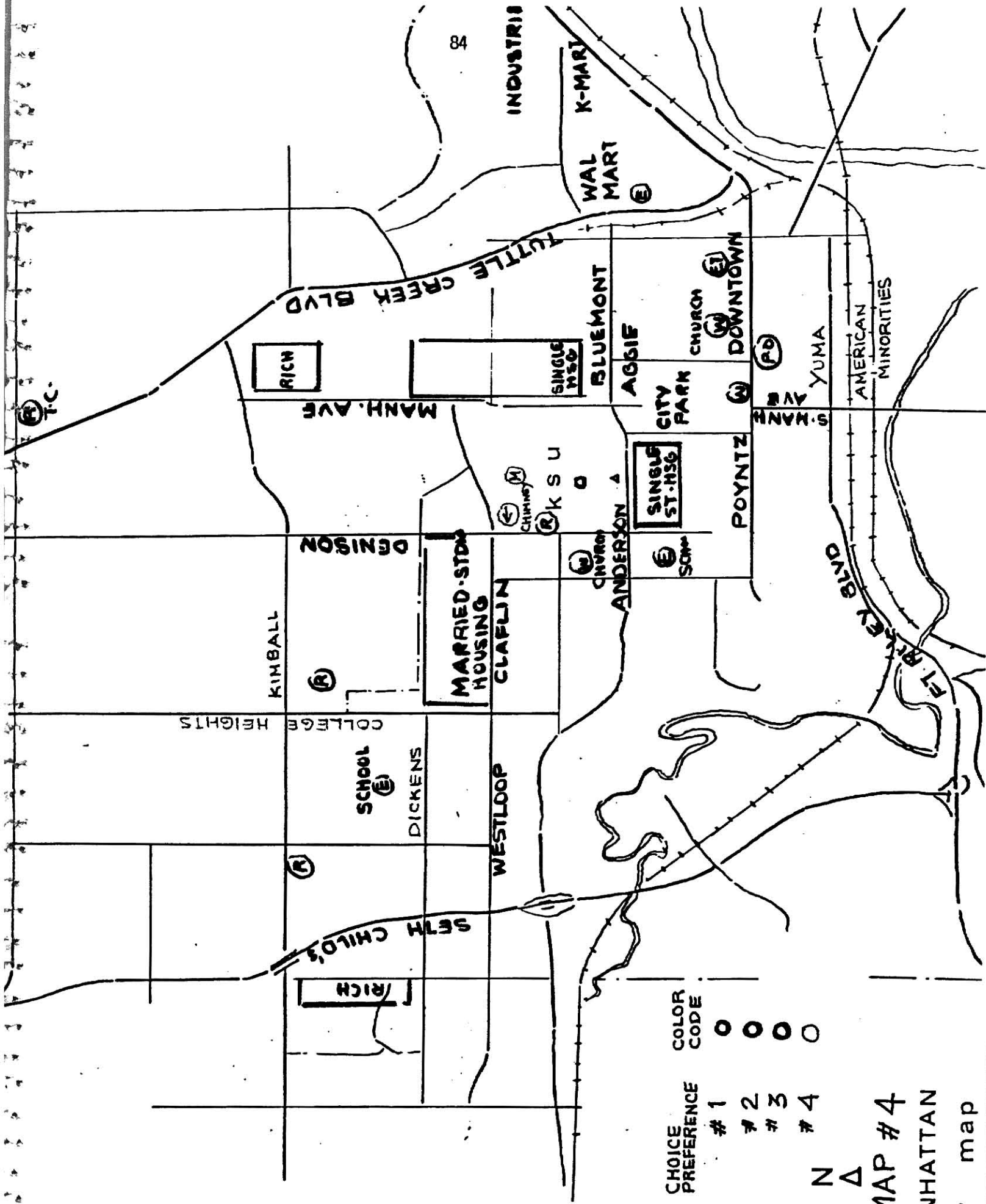
COLOR
CODE

N
Δ

MAP #4

MANHATTAN

city map

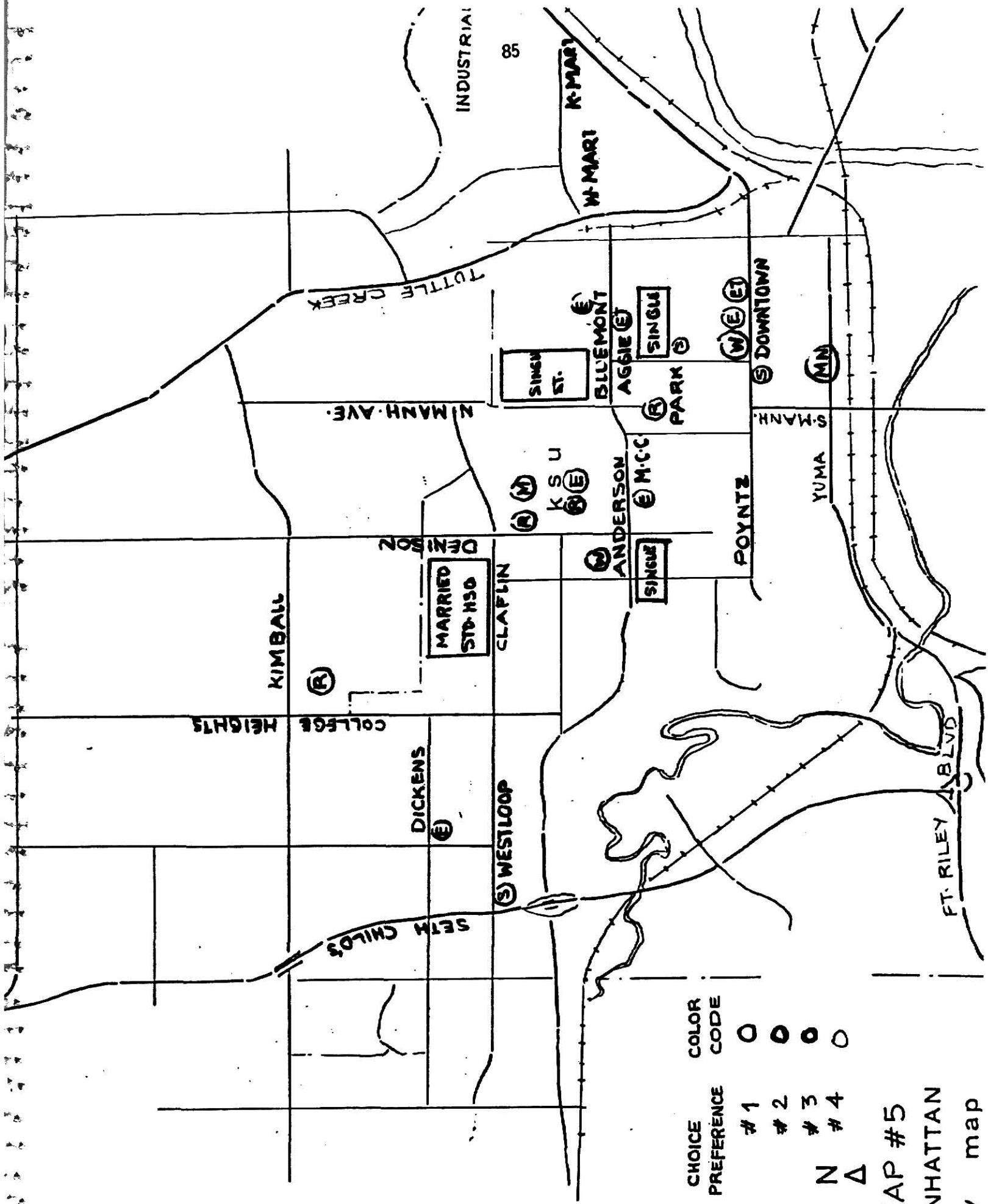


ARABIAN VERSION

CHOICE PREFERENCE	COLOR CODE
# 1	○
# 2	○
# 3	○
# 4	○

N
Δ

MAP #5
MANHATTAN
city map

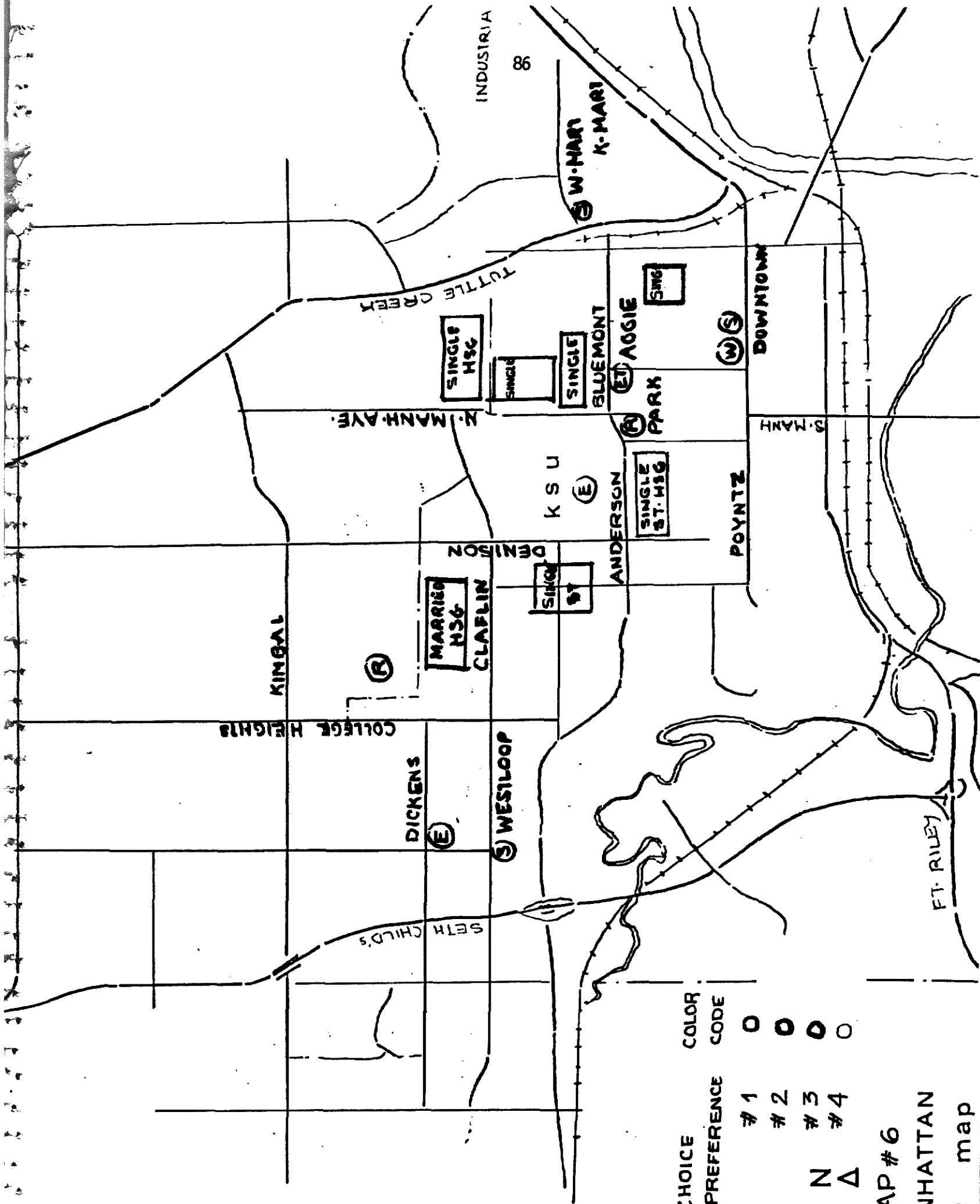


CHINESE VERSION

CHOICE	PREFERENCE	COLOR
# 1	0	
# 2	0	
# 3	0	
# 4	0	

Z **Δ**

MAP #6
MANHATTAN
city map

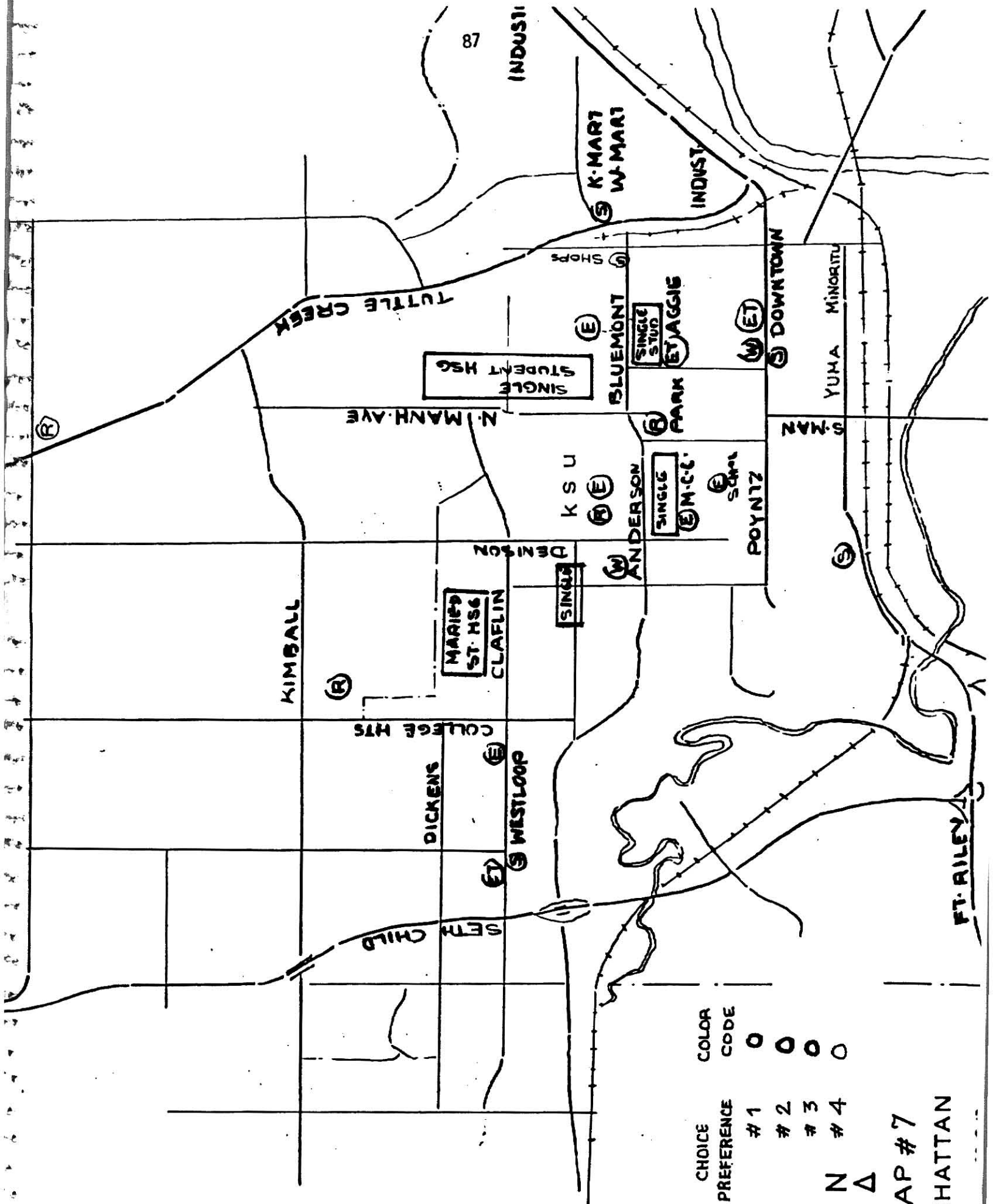


INDIAN VERSION

CHOICE PREFERENCE	COLOR CODE
# 1	0
# 2	0
# 3	0
# 4	0

N
Δ

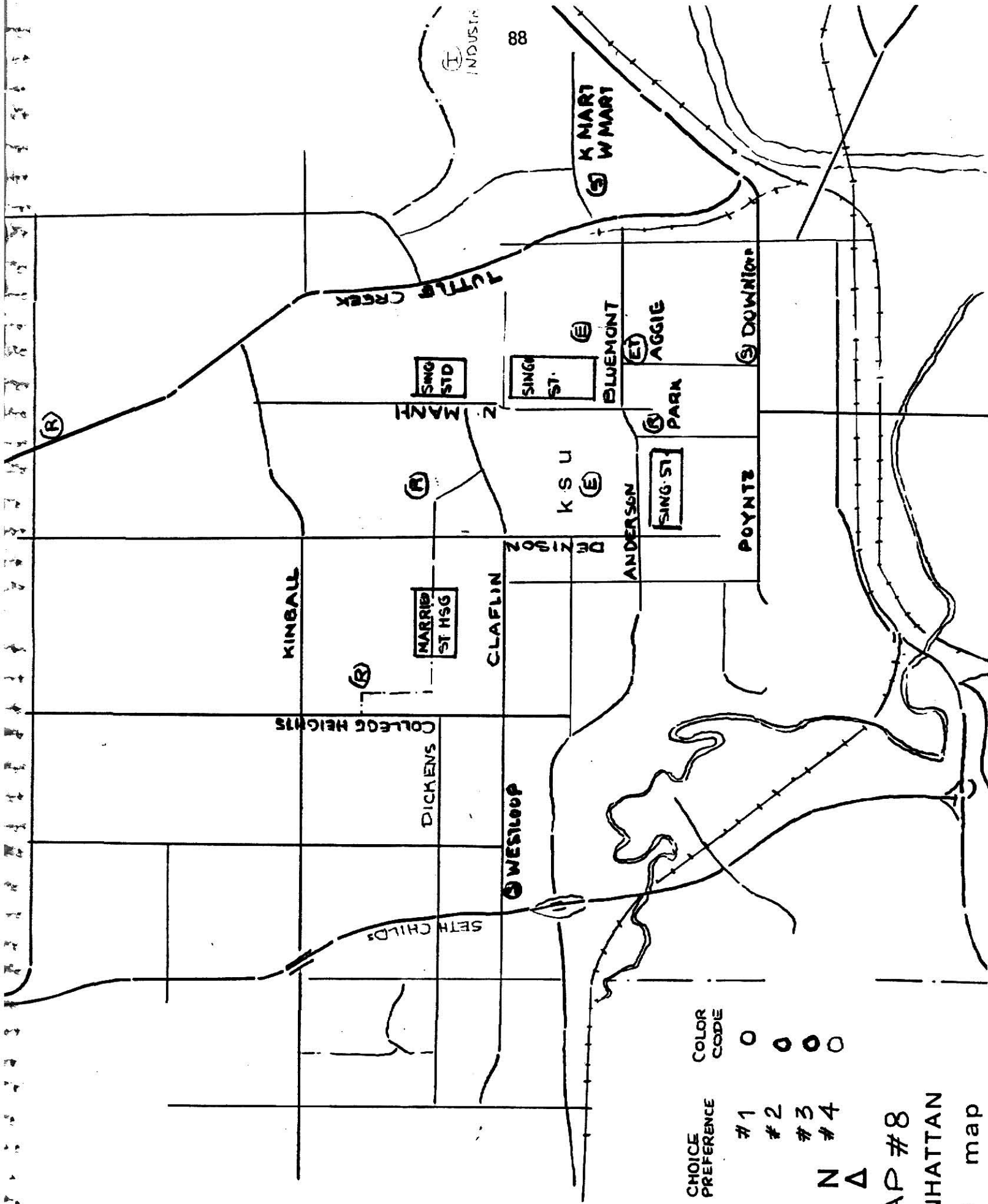
MAP # 7
MANHATTAN



N. AFRICAN VERSION

MAP #8
MANHATTAN
city map

CHOICE PREFERENCE	COLOR CODE
#1	0
#2	0
#3	0
#4	0
N	



EVALUATION OF CROSS - CULTURAL COGNITION
OF AN URBAN SPACE

by

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G.D.Arch., Board of Technical Education,
Government of Maharashtra, Bombay, INDIA, 1980.

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARCHITECTURE

Department of Architecture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1983

Urban design used to be measured in terms of its pure physical growth in the past. But recently several scholars in this field have emphasized the social, economical as well as cultural environment of urban areas. The key trend of exploring the cultural aspect of urban form has especially stressed the need for research that will clearly define the manner in which people coming from different cultural backgrounds evaluate urban spaces.

This study is an investigation concerning the way people of different cultural value background perceive, understand and give meaning to their physical surroundings. The researcher thereby made his own interpretations and attempted to cite perceptions which so far do or do not show up in the literature.

Interviews of the subjects chosen and mental map drawings depicting the city form the backbone of this study. Interview technique was used so that approach was informal and personal, which resulted in variety of responses. Mental map survey technique was used because studies have shown in the past that people form mental map of the physical surrounding based on their pre-conceived notions, background and experience.

A questionnaire was designed which consisted of 5 parts and 28 questions in all. 5 cultural groups namely Americans, Arabian, Chinese, Indian, and North African were chosen for this study and 5 subjects from each cultural group, who were students at Kansas State University were selected. In other words 25 subjects were interviewed in this project.

The questions included in the questionnaire dealt with how subjects perceived the physical surrounding in Manhattan and what were the impressions they formed about Manhattan. It also examined the way these students identified certain locations in the town and orientated to it, whereby cues identified by the subjects were noted. Responses were analysed based on their cultural background. Since this study was not intended to be scientifically rigorous, only the personal impressions of the researcher were used to draw the conclusions.

It was found that there exists lot of differences among various cultures such as the way these people perceived physical environment, method in which they identified locations and then orientated to it and the impressions they formed about the same setting. However, the major differences were noted between the American culture and other non-American cultures.

It was observed that it depends on how much exposure one has to different physical environments, what sort of physical background an individual comes from, and finally their culture-specific notions, which ultimately plays a major role in ones process of cognition.

All the 25 subjects were also asked to draw mental map of Manhattan with the help of set of instructions provided to them. Mental map surveys shows that the areas which are of common concern are known better than other areas. Socio-cultural values also affect the structuring of the town. It occurred that the subjects who came from urban background structured the town in a greater context than those who came from a somewhat rural background.

Lastly, this study does not suggest any 'guidelines' for future researches. It is hoped that it will act as a catalyst for similar studies that may be carried out by others in the future.