

Psychological Maps of Nara: an empirical study

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INTRODUCTION

This report is a contribution to a larger research project concerning the city of Nara, designed by the faculty of Social Research of Nara University. It does not deal with Nara as a geographic reality, but rather with the way this city is mirrored in the minds of its inhabitants. At the base of this study, there is the general and common sense premise which consists in thinking that people have some ideas or images about the city they live in. This is clearly manifested when a stranger asks a resident to guide him/her in an unknown place. As written by Milgram (1984), what makes the newcomer ask the resident is his/her assumption that the person he addresses possesses a "mental map" or an "image of the city."

One of the earliest contributions to the understanding of "subjective knowledge" — as opposed to the "real" — or "image of the city" are the work of Kevin Lynch (1960) and his associate, Gyorgy Kepes (1960). As remarked by Canter (1977), Kepes's principal interest was in the perception of cityscape or, more precisely, the symbolic qualities of the physical environment (streets, buildings, entrance of subway, etc.). He pointed to the fact that psychological implications of the physical environment derive from a general conceptual system. This paved the way for Lynch's exploration of "the conceptual systems which may be associated with particular cities" (Canter, *Idem.*). The most important aspect of Lynch's contribution is the emphasis that, as noticed by Boulding (1956) before, the image is not a reflection or a representation of the "real" physical world, but an abstract conceptual system, "what a person believes to be true". Lynch devoted his research to the investigation of the aspects of the city (location of streets, size and shape of parks, for example.) which were most readily represented. Moreover, he asked whether some cities were more easily represented, or more "imageable" than others. A large number of empirical studies have been conducted, based on Lynch's conceptions of the image of the city (Appleyard, 1969; Franciscato and Mebane, 1973; etc.). However, as noticed by Canter (*Idem.*) these studies deal, mainly, with what Boulding (*Idem.*) called the "spatial image" and

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the "relational image", and neglect the "value" and "emotional" component of the image. Consequently, Lynch's ideas found echo much more among geographers than other social scientists, especially psychologists who, in the contrary, have been emphasizing rather the "emotional" content of the image (see Cander, 1972 and 1974; Lee, 1973; Milgram, 1984, for example.)

The image one has of a place, be it a city or a simple tiny room (Canter, 1977), is not always a fidel reflexion of the reality. It may reflect the subject's demographical factors (age, sex, status, etc.), or/and mirror his/her attitudes, beliefs, and actual socio-psychological preoccupations. This constitutes the general hypothesis of the present study. To test this hypothesis, the first problem we were confronted with was, thus, how to "externalize" the subject's image of Nara City and objectively observe and measure it.

METHODOLOGICAL ASPECTS

An image of a city is a "social fact" (Milgram, 1976), and a cognitive fact as well. To put it differently, it is a "social representation" (Moscovici, 1976). Thus, the study of the image the residents have of their city needs to cover both the collective and the individual aspects.

1. Method

As described in Canter (idem.)'s well-documented book, there are numerous methods available to explore the images or representations people have of their physical environment. However, the most used method—by psychologists, social psychologists, geographers, planners, and even laymen—is to ask a person to draw a map of a place from memory, or as he/she has it in his/her head. Thus, the subjects were asked to draw, in a place provided for that, a map of Nara city in which they were to report all of the elements of the city that came to their mind. The subjects were told that 1) they can illustrate their maps with monuments, streets, or whatever elements spontaneously occurred to them, and that 2) their map should not resemble a real tourist map of Nara city.

The selection of this method here has been motivated by the following reasons, or advantages inherent to it. First, it is very adequate, because, as pointed out by Milgram (idem.) "many of the concepts people have about cities are non-verbal (attitudes, clichés, stereotypes, etc.), spatial ideas (which) ...can not be translated into words, particularly on the part of subjects of limited education." Second, being non-structured, the "drawing of a map" method, unlike the questionnaire method, does not limit the subject's response. In this sense, it may serve as a projective surface for the subject's attitudes and beliefs about a given place. As this method is, like a projective test, not structured, it, consequently, allows more freedom for the subject (Anzieu, 1961). However, the main disadvantage of this method is that the data collected by means of this method are statistically very difficult to analyse.

In addition to the "drawing of a map method", the subjects were asked a number of complementary questions about the city and some individual questions. These questions were asked to see whether the image one has is linked with his/her preferences, attitudes and beliefs about the city.

2. subjects

A number of 115 subjects (69 males and 46 females) who have been living in different districts (see Table 1 and Figure 1 for the subject's distribution by district

District	Number of Subjects
<u>Center Nara</u>	
Ômorichô	5
Kasuganochô	5
Kawakubochô	3
Kiderachô	4
Sanjôchô	7
Zôshichô	3
Tsunofurichô	6
Nabeyachô	4
Nôboriojichô	7
Hôrenchô	9
<u>Suburban Nara</u>	
Aoyama	7
Asahichô	6
Ukyô	7
Gakuendaiwa	6
Akodachô	8
Daianjichô	4
Tanakachô	3
Torimichô	5
Nakatomigaoka	5
Shichijônishichô	5
Hiramatsuchô	1
Furuichichô	1
Minaminagaichô	4

Table 1. The Subjects Distribution by District

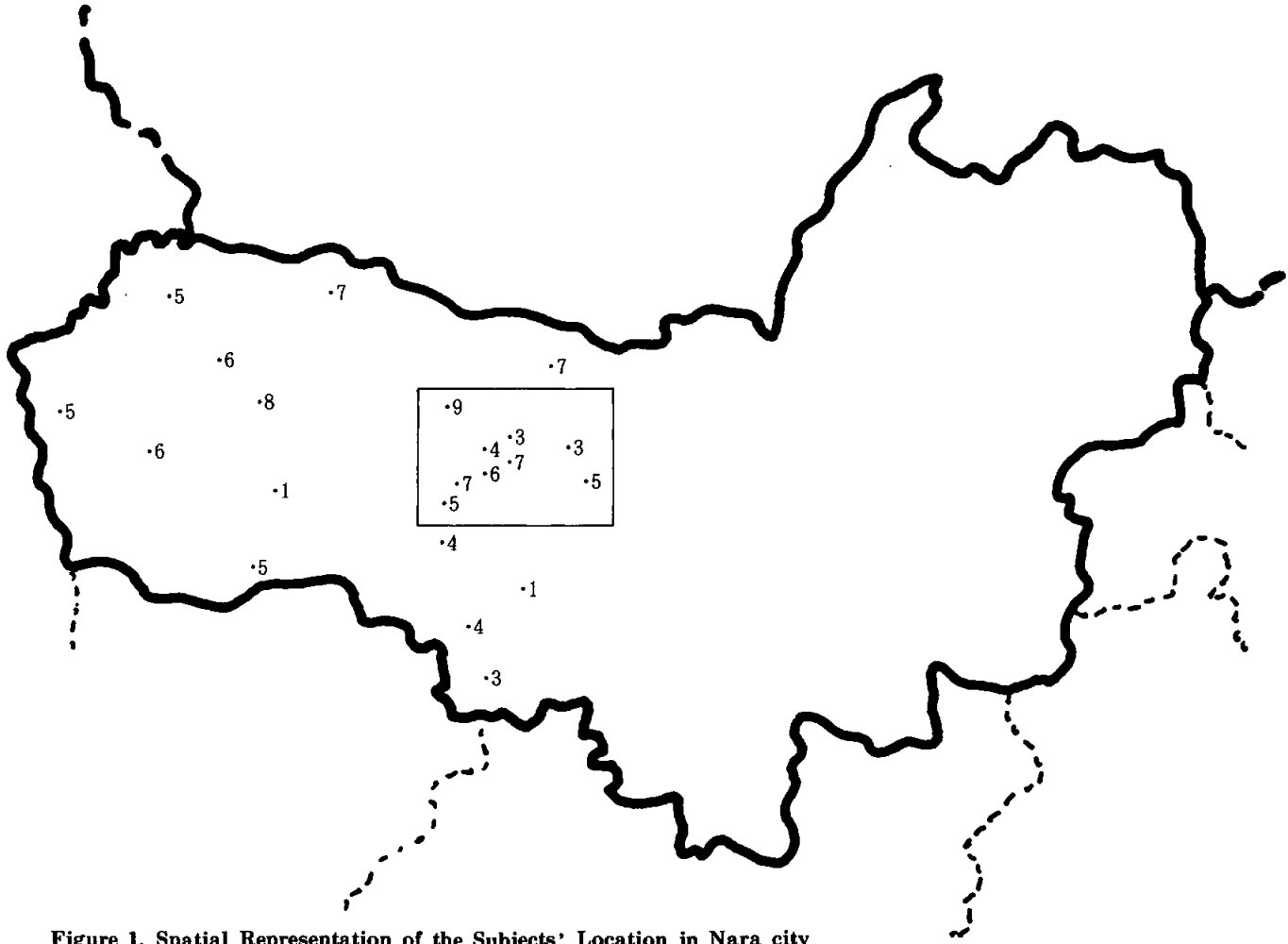


Figure 1. Spatial Representation of the Subjects' Location in Nara city

or *Cho*) of Nara city for 10 to 69 years were randomly interviewed. Their age varied from 19 to 69 years old. As indicated below in Table 2, the sample was divided into three age categories.

Age-category	Percentage
19–35 years	22.6%
36–50	42.6
51–69	34.8

Table 2. The Subjects' Distribution by Age Category

Regarding their actual occupation, the subjects interviewed here constitute, as represented in Table 3, a very heterogeneous sample. Consequently, the subjects' occupations were grouped into 7 professional categories.

Professional Category	Percentage
Student	7.0
Self-employed	21.7
Housewife	13.0
Retired	8.7
Unemployed	3.5
Employee	36.5
Teacher	9.6

Table 3. The Subjects' Distribution by Professional Category

Educational level	Percentage
Elementary&Middle High Sch.	26.1
High&Professional Sch.	46.1
College	17.4
University&Higher Education	10.4

Table 4. The Subjects' Distribution by Educational Level

Concerning the educational level also, the sample constitutes, as can be read in Table 4, a heterogeneous sample, with a large number of subjects having a level of High School or its equivalent professional level (46.1%).

RESULTS AND DISCUSSIONS

1. The coloured and monochrome Nara

One of the first most attracting aspect of a drawn map is the presence or ab-

sence of colours. As mentioned above, the subjects were free with regard to the use of colours. The results revealed that most of the subjects (74.8%) produced a monochrome map. Among those subjects (N=29) who used colours in their maps, a great majority (N=25) is constituted by subjects belonging to the youngest age-category.

This age difference concerning the use of colour may become more understandable if we consider that the "colour" element is usually interpreted, in projective tests (the Rorschach test particularly), as representing egocentric affectivity, affective narcissism, capricious temper, and also juvenile spontaneity (Rorschach, 1947).

2. The city boundary

The content analysis of the handdrawn maps of Nara revealed that 25.2 percent of the subjects began their maps by drawing the limits of the city. However, the limits do not, in most cases, correspond to the reality. In most maps, the shape of the city is perceived as a rough circle, or square. This finding confirms the results of Milgram et al. (1976)'s study. That is, most of Parisian subjects began also their maps of Paris by drawing roughly the boundary of Paris. Moreover, as indicated in Table 5, a cross analysis revealed that the subjects who draw the boundary of the city are found mostly among the categories who have been living in Nara for more than 40 years. In other words, the longer the subject is living in Nara, the most likely he/she is to perceive its boundary.

Residence-category	Number of subjects
10-20 years	0
21-30	3
31-40	2
41-50	8
51-60	7
61-69	9

Table 5. The subjects' Distribution by the Number of Year of Residence

The boundary here may be interpreted as a kind of geographical carapace, reflecting a feeling of isolation from the rest of the country. The following statement of a 43 years old respondents illustrates this feeling.

"...Many of my colleagues envy me for living in Nara... a place calm,... the nature is conserved... but, they don't think about Nara after 8 o'clock... it is as calm as a cemetery or a gost town... I have to go to Osaka or Kyoto to do shopping... I have thought, many times, about moving

to Osaka...because of this, many people from Nara feel isolated...

Psychologically speaking, the boundary may be interpreted as an indicator of a latent introverted basic personality of Nara inhabitants. Which may explain why, as usually believed, the inhabitants of Nara are "closed" and "cold" toward the external world. This introverted character hides a feeling of cultural superiority and pride that was obvious during the "Silk Road Exposition", held in Nara in 1988. Drawing boundaries is a way to say "*We are not only different, but also superior to others*". The following statement of a retired 65 years old respondent is very representative of this mentality.

"...Nara once the Capital of Japan... it is now the cultural heart of Japan... We, inhabitants of Nara are proud of the unique past and the present of our city...Nara is protected by God ... that is why unlike other cities it was not damaged by the war... Nara inhabitants are, at the first glance, may be cold, but they are the most hospitable people in Japan if you come to know them deeply..."

3. The emerging elements

Considering the map as a projective surface here, we share Wilgram (1976)'s idea that "the sequence that spontaneously emerges as subjects sketch their maps... may tell us what is uppermost in their minds when they think of (their) ... city." In other words, the most salient element for the subject is probably reported first in his/her map. Based on this general premise, we asked the subject to number each element as he/she drew it.

The subjects altogether reported in total 926 elements in their maps, with a mean of 8.1 elements. Table 6 indicates the 10 most entered elements and the percentage of subjects who entered them in their maps. As can be read in this table, the five most salient elements are successively 1) Tōdaiji, 2) Nara Kōen, 3) Nara Kintetsu Eki, 4) J R Nara Eki, and 5) Kasugataisha. Given the importance attached to these places when describing or introducing Nara city, and their roles in Nara economy, this is a result one can easily expect.

Moreover, as indicated in Table 7, the results of a cross analysis of the five emerging elements by the number of year of residence showed a striking difference between the categories. That is, the lower the category, the stronger the tendency to report these elements among the first five elements. To put it differently, the longer the inhabitant lives in the city, the more his/her perception or image of the city is found to be *decentralized*. That is, while the subjects belonging to the first, second and third categories are more likely to be *centralized* and report these stereotypical elements among the five most salient elements; the last three

Element	Percentage
Tōdaiji	76.5
Nara Kōen	67.8
Narakintetsu eki	54.8
JR Nara eki	47.8
Kasugataisha	39.1
Gakuenmae	31.3
Yakushiji	26.1
Wakakusayama	23.5
Kōfukuji	19.1
Hōryūji	15.7

Table 6. The 10 most Entered Elements of Nara City

Element	Number of Year of Residence					
	10 / 20	21 / 30	31 / 40	41 / 50	51 / 60	61 / 69
Tōdaiji	25.2	21.7	16.5	13.0	13.9	9.7
Nara koen	20.0	18.3	17.4	16.5	14.8	13.0
Narakintetsu eki	27.8	25.2	15.7	13.9	9.7	7.8
JR Nara eki	29.6	25.2	14.8	13.0	8.7	8.7
Kasugataisha	20.8	22.6	20.0	13.9	13.0	9.7

Table 7. The 5 most Entered Elements by the Number of Years of Residence

categories tend to perceive these elements as less important. These categories tend rather to report less known elements, or elements that are not located in the center of the city. This may be explained by the fact that the subjects belonging to the latter categories tend to show off that they have a good and "deep" knowledge of the city, and then distinguish themselves from the *arrivists*, those who are not native of Nara city. As indicated by the following statement, being a native with a good knowledge of the city, seems to be highly valued:

"... Nara is not Tōdaiji, Nara Kōen only... the real face of Nara is found outside the center... the charm of Nara is found outside... But, only a native of Nara can know and appreciate that part of the City... Nowadays, natives of Nara are few... Unlike us, the non-native inhabitants do not know anything of the real Nara..."

This statement hides a strong feeling of pride to have a deeper access to the beauty and natural and cultural treasures of Nara.

4. The major elements of the maps

As mentioned above, altogether the respondents entered a total number of 926

elements in their maps. Given the great variety of these elements, it is difficult to deal statistically with the data obtained. Consequently, we classified these elements into 8 different categories: 1) Business, 2) Leisure, 3) Religion, 4) Road, 5) Health, 6) Education, 7) Landscape, and 8) Station. Based on the general hypothesis that the items which appear in the drawn map are function of the subject's age, sex and number of years in the city, we performed a cross analysis whose results are indicated in Table 8a and Table 8b.

Element Categories	Professional Categories					
	Student	S. Employed	Housewife	Retired	Employee	Teacher
Business	4.8%	12.4%	4.8%	6.1%	15.3%	9.7%
Leisure	17.6	11.6	15.6	10.6	15.3	14.6
Religion	23.5	25.0	26.8	30.7	20.4	19.2
Education	11.6	9.4	13.3	4.7	10.8	14.6
Health	3.4	2.6	7.7	16.5	0.0	0.0
Landscape	20.2	19.2	18.6	24.9	17.7	17.3
Station	7.1	9.4	3.7	00.0	8.3	8.4
Road	11.6	10.4	9.5	6.5	12.2	16.2

Table 8a. Element Categories by Professional Categories

Element Categories	Age Categories			Sex	
	19-35	36-50	51-69	F	M
Business	6.0%	10.3%	5.6%	2.3%	7.6%
Leisure	17.0	12.5	10.3	16.9	12.9
Religion	19.7	25.6	28.0	20.6	24.4
Education	14.6	7.2	5.6	14.3	7.6
Health	3.8	7.2	11.3	11.0	7.6
Landscape	17.5	20.4	22.4	19.5	21.1
Station	9.7	6.5	4.9	6.8	7.6
Road	11.7	10.3	11.3	8.8	11.2

Table 8b. Element Categories by Age Categories and Sex

a) **Business:** This category includes such elements as company names, petrol stations and all the elements which are associated with the activity of working. As hypothesized, it was found that the business related items or elements are, significantly, more (10.3%) listed by the middle-aged category (36-50), a category which is the most active in Japan, and also the one which is influenced by the Japanese traditional work ethics (see Bellah, 1957, and MOW, 1987). A significant sex and professional category difference was also found. That is, as indicated in Table 8a, subjects belonging to the "employee" category reported the highest percentage and those of "student" and "housewife" categories the lowest percentage of business related elements. Moreover, male subjects were, as indicated

in Table 8b, more likely to enter these kind of items than do their female counterparts. This difference is due, maybe, to the fact that most of the female respondents in this study are unemployed housewives.

b) Leisure: It includes all the elements which are usually associated with leisure, such as attraction parks, sport clubs, pachinko, bars, etc. The difference, regardless of the subject's sex, found between the different age categories with regard to leisure is striking. That is, the younger the subject the more he/she tends to enter, in his/her map, leisure related items, with a non-significant difference between the oldest and middle-aged categories. In other words, young subjects are more likely to have a leisure-centered image of their city than older subjects. These results may confirm the findings of other studies which show that the Japanese young generation is less work-oriented and more leisure-oriented than the old generation. Moreover, it supports also our hypothesis which links the subject's individual factors with his/her image of the city as projected in the drawn map.

c) Religion: all the elements (buildings, statues, etc.) of a religious character are included in this category. We can find, for example, temples, shrines, churches, religious organizations, etc. Here again, a significant difference is found between the different age categories. That is, as shown in Table 8a, the older the age-category, the stronger the tendency to have a religious mental representation of Nara city. To put it differently, Nara city is, regardless of the subject's sex, perceived as a religious center more by older than younger subjects. This result reflects the opinion widely spread among young Japanese people which consists in thinking that "religion is the matter of old persons". This is obvious, when we consider that most of the temples and shrines daily visitors (whether in Nara or elsewhere) are older persons. Thus, while confirming the general finding that young persons have a lower religious centrality than their older persons, this result supports also our working hypothesis.

d) Road: This category includes not only roads and streets, but also all the elements usually associated with road traffic, such as traffic lights, intersections, parking places, etc. As can be read in Table 8b, no significant sex or age difference was found with regard to this items. As argued by Stea (1969a, 1969b), people think of the different areas constituting their geographical environment in term of points, and in terms of paths connecting the different points. Roads fulfill then the function of paths connecting the different elements which appear in the subject's mental map.

e) Health: We gathered under this category all the health related elements, such as clinics, hospitals, cemeteries, etc. The results revealed again a striking difference between the different age categories. That is, the older the category, the higher the number of elements associated with health. This may be explained by the fact that older people are usually more concerned about their health, and, consequently, tend to attend health care places more frequently than do youn-

ger people. For, as argued by Griffin (1948), the relative value ascribed to different places or areas in the subject's representation of the environment reflects the importance he/she assigns to them. It is noteworthy that five subjects belonging to the oldest age-category entered cemeteries in their maps, but no subject of other categories did.

f) Education: this category is constituted by all education related elements, such as schools, universities, training centers, and prison, considered here as a place where a certain social education is supposed to be provided. When compared, the three age-categories were found to differ in the importance assigned to the domain of education. That is the younger the subject, the more he/she displays concern about education. As indicated by their relatively high score, the younger category entered the largest number of education associated elements in their maps, with a significant difference between male and female subjects. Moreover, a difference between different professional categories was found, with the students and housewives categories having respectively the highest score. This result can easily be predicted, because both categories are directly (the students) or indirectly — the case of housewives who are responsible of their children's education — most involved with education.

g) Landscape: It includes all natural elements, such as rivers, mountains, etc. Most of the subjects (89%) entered in their maps at least two natural elements, with the oldest age category having, as indicated in Table 8b, the highest percentage score. Thus, the image the subjects belonging to this category have reflects more the general belief that Nara is a city where nature is preserved.

h) Station: This category includes train stations, and bus stops. A comparison of the different professional categories reveals a significant difference between them. It was found that employees and students were respectively more likely to include in their drawn maps train stations and bus stops than do the other categories. This is probably due to the fact these two professional categories use more often public transportation means (train and bus) than do the other categories. Thus, stations and stops constitute for them (more than for the others) daily salient elements.

To conclude this section, in spite of the differences found with regard to the various element categories, it is clear from Tables 8a and 8b that, whether viewed from their age, sex, or occupation, the subjects as a whole share the same general attitude. That is, Nara city is perceived respectively as a cultural and "religious" city where natural landscape predominates, which reflects the general image or reputation this city has in Japan and abroad.

5. The *centrifugal* and *centripetal* phenomena

According to many English dictionaries, the adjective *centrifugal* means moving or tending to move away from the centre or axis, whereas *centripetal* is, on the contrary, moving towards the center or axis. The content analysis of the drawn

Element	Group	
	Suburban	Urban
Suburban	31.3%	60.6%
Urban	68.7	39.4

Table 9. Comparison of Suburban and Urban Groups with Regard to the kind of Elements Entered in the Maps.

maps revealed the same kind of phenomena.

Based on the subject's living place, the subjects were divided into two groups, an "urban group" (N=46) and a "suburban" group (N=69). (This division is based on a real tourist map). In the same way, the different elements entered in the maps were also divided into "urban element", or elements located in the centre of Nara city, and "suburban element", or elements located in the suburban area of the city (see Table 9). The purpose of this analysis was to try to found out whether there are differences between these two groups of subjects with regard to the kind of elements reported in the maps and, consequently, in their mental representation of the city.

As indicated in Table 9, the results revealed a striking difference between the two groups. That is, while the urban group was found to report more suburban than urban elements, the suburban group, on the contrary, tended to enter more urban than suburban elements. Schematically speaking, the image subjects living in the centre of the city have tends to be characterized by a *centrifugal* movement (from the centre towards the outside), whereas the image of the subjects living in the suburban area is, on the contrary, characterized by a *centripetal* movement (from outside towards the centre).

Psychologically speaking, this finding may suggest that there would be a certain basic desire to go beyond one's own environment. It is this desire — in combination with other socio-economical factors — that may motive such social phenomena as rural depopulation, and (its opposit) the "return to the countryside". Discussing this hypothesis would be interesting, however, this is not the purpose of the present report.

6. The liked and disliked Nara

Beside drawing a map, the subjects were also asked to report the place they like best and the one they dislike. The results revealed that the five most liked places were as follows: 1) Nara Kōen (30.4%), 2) Tōdaiji (21.7), 3) Gakuen-mae (17.4), 4) Nara Dorimurando, 5) Wakakusayama (10.4). As it can be guessed, the preference order was found to be linked to the subject's age. That is,

while the most preferred place for the oldest age-category was Tōdaiji, the place most preferred by the youngest category was Nara Dorimurando, an amusement park. This results provides a supplementary support for the hypothesis that states that old subjects are relatively more religion-oriented and young people more leisure-minded.

The disliked places were much more varied than the liked one. However, the most disliked place was Nara Kintetsu Eki (24.3%); no difference was found between the different age categories. Among the most cited reasons for this are dirtiness, lack of order, overpopulation, noise, etc.

7. Distortions and simplifications

As the subjects were instructed that their maps should not resemble a tourist-map, it is normal to find distortions and simplifications. The findings of De Jonge (1962), Pocock (1973) and Goodchild (1974) constitute excellent illustrations of the difference between real geographic maps and sketches or drawn maps.

In the present study, the distortions found in the subjects maps, were of two kinds : proportion distortions (32.8%) and location distortions (67.2%). In the first case, the subject tends to exaggerate the proportion of an element in comparison with others. One of the common distortion of this kind is to draw, for example, the Big Buddha statute (located inside Tōdaiji) in the middle of the map to represent the temple of Tōdaiji, or a big building to indicate Nara Station. The second kind of distortions concerns the location where a given element is drawn. For example, in many maps, Nara Kintetsu Eki (Station) is represented in the middle of the map, which does not correspond to its real location. Given the fact that all the subjects have been living in Nara city for at least 10 years, one may hypothesize that these distortions are not due to a lack of knowledge, but rather represent the subject's attitude, belief, and expectancy, in a word, it is the product of the subject's cognitive process (Cander, 1977).

CONCLUSION

In conclusion, one can argue in general that the results of this study reveal that the image of Nara city held by its inhabitant does not consistently differ from the one commonly emphasized by the mass-media in Japan and elsewhere. That is, for most of the subjects, Nara is unavoidably, and before everything, a religious, cultural and natural centre. As indicated by the answers concerning the most and less preferred places, this image held does not correspond only to how Nara really is, but also to how its inhabitants wish it to be. For, the most preferred places are Tōdaiji, the religious center of Nara, and Nara Kōen, the green part of the city. However, if we consider the differences found between the different age categories, in terms of preferences, one can not help asking whether the city of Nara will continue to confine itself to be merely a "cultural

treasure" of Japan, or whether it will change to meet the needs (of leisure, jobs, modern housing, etc.) of its young generation. The planning of new towns (in Takanohara, Heijô, for example) proves that the need for change is becoming gradually pressing.

付 記

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