CHINESE GEOGRAPHICAL SCIENCE
Volume 14, Number 3, pp. 283–288, 2004
Science Press, Beijing, China

RESEARCH ON IMAGO SPACE OF VALLEY CITY
—A Case Study of Lanzhou City

MENG Cai-hong, YANG Yong-chun, ZHANG Cong-guo
(*College of Resources and Environment, Lanzhou University, Lanzhou 730000, P. R. China*)

ABSTRACT: Currently domestic researches on urban imago space concentrate in a few cities that lie in the advanced region, such as Beijing, Guangzhou, Wuhan, etc., but in so far as those cities that lie in the northwest inland region, the research of this aspect is still few. In order to supplement a special example to the urban imago space theory and to validate former theory, this article studied the Lanzhou urban imago space. During the course of researching, authors adopted some investigating methods, such as visiting on the spot, photograph identification method and sketch map identification method etc. Using investigated data, this paper made an elementary research on urban imago space of Lanzhou, which is a typical valley city in the western China. The result of study indicated that the urban imago space of Lanzhou takes Xiguan Cross as its center (Lanzhou involves four districts of Chengguan, Qilihe, Anning and Xigu). In the process of recognition of urban imago space, the Huanghe (Yellow) River and mountains beside the city are the dominant factors and the main nodes of cognition. So the urban imago space of Lanzhou is quite different from that of plain cities. Interviewee did well in the spatial structure map, which was made up of mountainous land, river and main trunk roads, the group structure took profound impression on people.
KEY WORDS: Lanzhou; urban imago space; valley city; node

CLC number: F119.9 Document code: A Article ID: 1002-0063(2004)03-0283-06

1 INTRODUCTION

So-called urban imago space means the direct or indirect experience cognition space of the dwellers due to the affection of neighbor environment, i.e. the "subjective environment" space of dwellers. Actual urban form and people′s imago recognition are different and the coincidence degree of them is an important emblem whether urban environment is clear. LYNCH (1960) considered that although people in different cities have different reaction to city, nearly each city has a common imago that is overlapped by many separate imagoes. Road, boundaries, block (or district), node and landmark take the pivotal effect in urban imaginability (GU and SONG, 2001a). The relation of these five factors is listed as follows: roads reveal and create district, at the same time roads connect various nodes; nodes connect and demarcate various roads; boundaries enclose region; landmarks denote the core of region. It is the integrated combination and entwining of these imago units to lead to forming abundant and vivid imago, and extending in the city (LYNCH, 1960). Valley city is a sort of special city, whose main part formed and developed in the valley. The development of its main parts is pretty ardently and directly limited by valley terrain and river trend. In China, the spatial structure and social structure of valley city have experienced great change (YANG, 1999). The studies on valley city′s imago of spatial structure will benefit the planning and construction of such kind of cities (XU, 1983; LI and XU,1993; GU and SONG, 2001b; WANG, 2000). Lanzhou is one of the typical valley-cities in the western China. It includes five districts (Chengguan, Qilihe, Anning, Xigu and Honggu) and three counties (Yongdeng, Yuzhong and Gaolan). The urban district in this paper includes the former four districts mentioned above.

2 METHODS

2.1 Photo Identification

We selected scenery and buildings that can represent

Received date: 2003-03-31
Foundation item: Under the auspices of the National Natural Science Foundation of China (No. 40201016) and the National Social Science Foundation of China (No.02BJL033)
Biography: MENG Cai-hong (1977–), female, a native of Liaocheng City of Shandong Province, Master candidate, specialized in urban and regional planning. E-mail: mch7793@126.com

the character of Lanzhou to photograph. The sum of photos is 110. Firstly, we took a small sample survey. Fifteen people, familiar with Lanzhou, joined in this survey. According to the survey, 22 photos were chosen from 110 photos, which were recognized in higher ratio, and numbered preparing for large quantities of survey. Then these photos were sent to interviewees. If they could tell the name or place of the scenery and buildings, we considered they knew. At last, in the survey forms, we marked their identification about the photos.

All the photos selected in the survey can be divided as follows: 1) political landmark buildings (two): Provincial Government Building and Zhongshan Bridge; 2) landmark buildings or nodes (seven): Lanzhou Hotel, Jinlun Mansion, Liangyou Hotel, Kaixuan Great Hotel, Northwest Minorities University, Northwest Normal University and Flat Glass Factory; 3) flourishing commercial centers (three): Ya′ou Commercial Mansion, Su′ning Dianqi Square and Kaisheng Saite Shopping Center; 4) scenery buildings (three): Lanzhou Museum, Muslim Great Temple and Yueya (Crescent) Bridge; 5) population distributing center (one): Lanzhou Railway Station; 6) culture and recreation centers (six): Dongfanghong Square, Yellow River Mother, Pingsha Luoyan Scenery, Peili Square, Shanzishi Church and Green Hope Square.

2.2 Sketch Map Identification

We ask interviewees to draw a sketch map of the whole Lanzhou. They made certain of the scope by themselves without any suggestion. They drew as detailedly as they could. The sketch maps need not to be quite precise. We obtained 33 sketch maps. According to the scope and structure of those sketch maps, we made a summary of all sketch maps and got three types of representative (Fig. 1).

In some condition, there is little connection between personal sketch and conversation, but when we concentrate all the visitors′ conversation, we find that there is fine connection between them (CHEN, 1986). But on the other hand, we must admit that the factor appeared in the lowest frequency will not appear in the sketch at all due to this way beyond interviewees′ ability on some extend.

3 RESULTS ANALYSIS

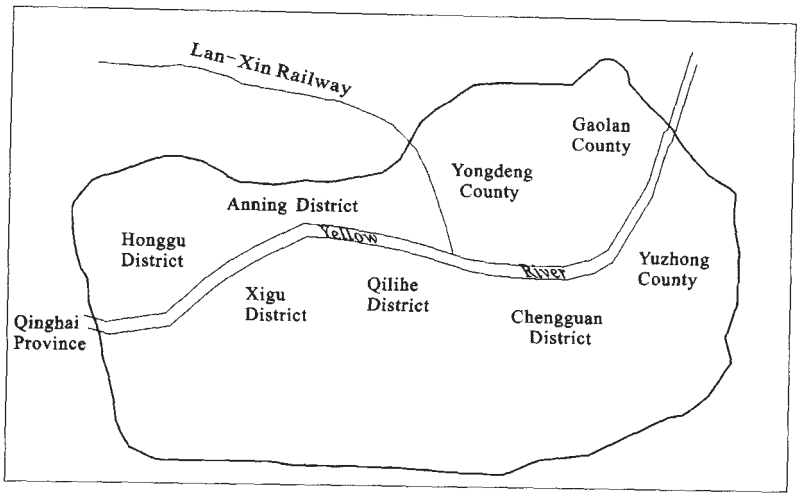
3.1 Analysis on Photo Recognition

In the survey, the amount of interviewee we visited is about 150, and then we took back 111 valid papers. By statistic coordination, the result is listed in Table 1.

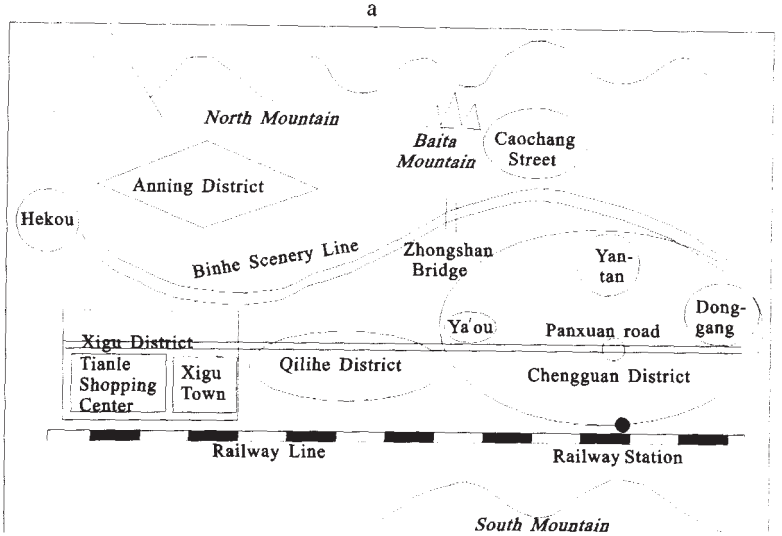
From Table 1, we can clearly find that there are some characters about the ratio of photo recognition as follows: 1) the recognition ratio of population distributing center is the highest(100%); 2) the recognition ratio of commercial flourishing centers is on the second place; 3) the recognition ratio of landmark buildings or nodes takes the third place; 4) the recognition places with low ratio include new-built church, hotel, factory which is not near, and out-of-the-way colleges or universities; 5) the ratio of photo recognition is positive correlation to the ages of buildings and interviewees, of which people at the ages of 19 to 35 have higher recognition ratio than people at the ages of 35 to 70 about important scenery, square and commercial mansion.

From the location of scenery and buildings in the photos, the recognition ratio of photos taken in Chengguan District except Shanzishi Church is higher than that of photos taken in other districts, because people go to Chengguan District is more often than other districts. Xigu is the furthest industrial estate of Lanzhou. Atmosphere pollution is severe there. In the survey, the inhabitants of Lanzhou frequently mentioned smog pollution. It made the whole city blur and the hue of the city was considered as gray. So the recognition of photos there is lower. The recognition of photos taken in Anning and Qilihe is between Chengguan and Xigu. The recognition of Northwest Normal University is higher than that of Yueya Bridge, which illuminates that people are more familiar with universities.

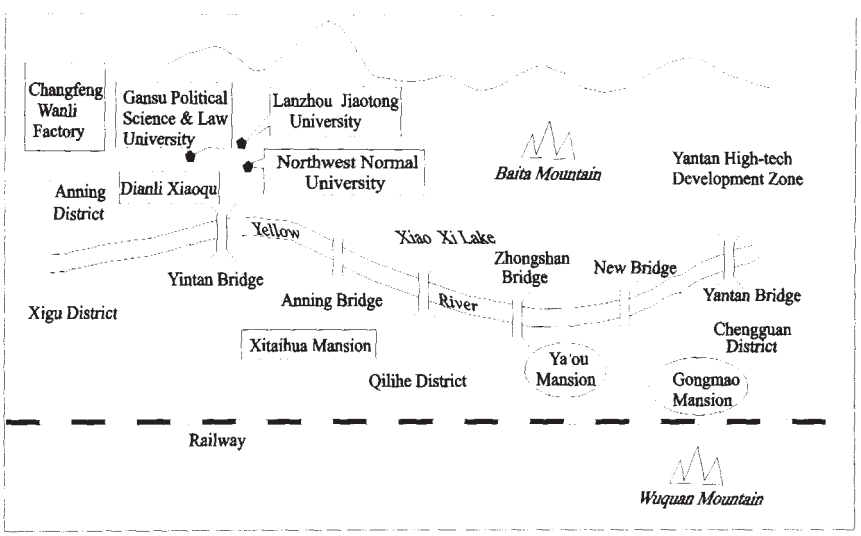
Limited by landform, Lanzhou City exhibited long from east to west and narrow from south to north and spatial distance can affect the intercourse frequency and density of groups. Hence, there is difference of the photo recognition ratio in different groups (Table 2). Firstly, the cognition ratio of Lanzhou Railway Station is 100%. According to GU and SONG′s research result (2001a) of Beijing′s imago space in distributing centers the highest recognition ratio is the Western Railway Station of Beijing and it is just 82.41%. The two distributing centers in Lanzhou and Beijing have different recognition ratios mainly because the Lanzhou Railway Station is the only outlet for people going in and out by train. Whereas there are three outlets in Beijing, population flow is distracted relatively. Therefore, the recognition ratio of railway station for the inhabitants in Beijing is lower than that in Lanzhou. Secondly, the cognition ratio of dwellers′ main regular activity centers (e.g. Dongfanghong Square) is quite adjacent to 100%. Thirdly, the recognition to dwellers′ own district is higher than that of other districts.



a



b



c

Fig. 1 Three types of recognition sketch map of interviewees to Lanzhou City

3.2 Analysis on Recognition Sketch Maps

We assorted the sketch maps drawn by interviewees and divided them into three groups: 1) imago sketch maps containing all the districts of the city, which reflected the recognition degree of interviewees to the whole city (only two); 2) imago sketch maps reflecting the

Table 1 Result of photo identification in Lanzhou

Urban function classification	Place	No. of photo	Location of photo	Year of building	Amount of recognition	Ratio of recognition (%)		
						19–35 years old	35–70 years old	19–70 years old
Political landmark buildings	Provincial Government Building	1	Chengguan	Ming Dynasty	103	89.83	96.15	92.79
	Zhongshan Bridge	4	Chengguan	End of Qing Dynasty	105	96.61	92.31	94.59
Land symbol buildings or nodes	Lanzhou Hotel	2	Chengguan	1956	109	96.61	100.00	98.20
	Jinlun Mansion	3	Chengguan	1990s	103	88.14	98.08	92.79
	Liangyou Hotel	5	Chengguan	1990	93	83.05	84.62	83.78
	Kaixuan Great Hotel	20	Xigu	1990s	12	10.17	11.54	10.81
	Flat Glass Factory	21	Xigu	1958	32	18.64	40.38	28.83
Commercial flourishing centers	Ya′ou Commercial Mansion	6	Chengguan	1995	109	100.00	96.15	98.20
	Su'ning Dianqi Century Square	7	Chengguan	2001	87	77.97	78.85	78.38
	Kaisheng Saite Shopping Center	8	Chengguan	2001	80	69.49	75.00	72.07
Scenery buildings	Lanzhou Museum	9	Chengguan	1983	86	76.27	78.85	77.48
	Muslim Great Temple	10	Chengguan	2002	82	72.88	75.00	73.87
	Yueya Bridge	19	Xigu	1950s	21	15.25	23.08	18.92
Population distributing center	Lanzhou Railway Station	11	Chengguan	1953	111	100.00	100.00	100.00
Culture and recreation centers	Dongfanghong Square	12	Chengguan	1990s	110	100.00	98.08	99.10
	Huanghe Mother	13	Qilihe	1990s	104	96.61	90.38	93.69
	Pingsha Luoyan Scenery	17	Chengguan	1990s	73	66.10	65.38	65.77
	Peili Square	14	Anning	1980s	73	69.49	61.54	65.77
	Shanzishi Church	18	Chengguan	1990s	25	15.25	34.62	22.52
	Green Hope Square	15	Qilihe	1990s	88	81.36	76.92	79.28
	Northwest Minorities University	22	Chengguan	1950	31	18.64	44.23	27.93
	Northwest Normal University	16	Anning	1950s	48	28.81	59.62	43.24

Table 2 Recognition of interviewee in each district

Urban function classification	Place	Location of photo	Year of building	Anning		Chengguan		Qilihe		Xigu	
				19–35 years old	35–70 years old	19–35 years old	35–70 years old	19–35 years old	35–70 years old	19–35 years old	35–70 years old
Political land symbol buildings	Provincial Government	Chengguan	Ming Dynasty	98.6	99.2	87.80	94.29	94.6	100.0	95.40	96.70
	Zhongshan Bridge	Chengguan	End of Qing Dynasty	99.6	60.0	95.12	97.14	99.1	100.0	98.90	85.71
Land symbol buildings or nodes	Lanzhou Hotel	Chengguan	1956	97.2	99.4	100.00	100.00	95.4	100.0	90.91	100.00
	Jinlun Mansion	Chengguan	1990s	33.3	100.0	92.68	100.00	100.0	98.1	81.82	85.71
	Liangyou Hotel	Chengguan	1990	33.3	80.0	82.93	88.57	86.2	80.0	90.91	71.43
	Kaixuan Great Hotel	Xigu	1990s	23.3	3.5	52.00	2.86	3.7	20.0	45.45	57.14
	Flat Glass Factory	Xigu	1958	33.3	60.0	4.88	22.86	7.8	60.0	72.73	100.00
Flourishing commercial centers	Ya′ou Commercial Mansion	Chengguan	1995	100.0	80.0	100.00	97.14	100.0	100.0	100.00	100.00
	Su'ning Dianqi Century Square	Chengguan	2001	66.7	40.0	80.49	88.57	75.0	80.0	72.73	57.14
	Kaisheng Saite Shopping Center	Chengguan	2001	33.3	20.0	70.73	85.71	50.0	80.0	81.82	57.14
Scenery buildings	Lanzhou Museum	Chengguan	1983	33.3	40.0	82.93	85.71	75.0	80.0	63.64	71.43
	Muslim Great Temple	Chengguan	2002	98.8	80.0	65.85	80.00	99.3	60.0	81.82	57.14
	Yueya Bridge	Xigu	1950s	33.3	40.0	2.44	11.43	2.3	20.0	63.64	71.43
Population distributing center	Lanzhou Railway Station	Chengguan	1953	100.0	100.0	100.00	100.0	100.0	100.0	100.00	100.00
Culture and recreation grounds	Dongfanghong Square	Chengguan	1990s	100.0	100.0	100.00	100.00	100.0	100.0	100.00	85.71
	Huanghe Mother	Qilihe	1990s	66.7	60.0	100.00	91.43	100.0	100.0	90.91	86.24
	Pingsha Luoyan	Chengguan	1990s	66.7	40.0	68.29	80.00	50.0	40.0	63.64	28.57
	Peili Square	Anning	1980s	66.7	100.0	63.41	57.14	75.0	80.0	90.91	42.86
	Shanzishi Church	Chengguan	1990s	33.3	20.0	14.63	45.71	25.0	20.0	9.09	0.00
	Green Hope Square	Qilihe	1990s	66.7	60.0	87.80	77.14	75.0	100.0	63.64	71.43
	Northwest Minorities University	Chengguan	1950	66.7	60.0	17.07	48.57	25.0	40.0	9.09	14.29
	Northwest Normal University	Anning	1950s	100.0	100.0	24.39	68.57	50.0	40.0	18.18	0.00

recognition of Lanzhou special landform and group structure (20); 3) imago sketch maps that interpose between the first sort and the second, which reflected the recognition of nodes and rivers (11).

The Lanzhou′s characteristic as one of the valley cities is notable. The Huanghe River runs through the valley. There are 11 bridges built from east to west, at the same time, railway runs through the valley from east to west. Therefore, mountain, river, bridge and railway become the notable optical character of such kind of cities. By and large, in the survey the sketch maps drawn by interviewees all include these nodes and linear factors. Furthermore, according LYNCH′s viewpoint and the research results of urban imago space in Beijing, Guangzhou and other cities, roads are the basic element factors of urban imago space (LYNCH, 1960; LI and XU, 1993; GU and SONG, 2001a; LIN, 1999). It can also be reflected in interviewees drawing sketch. The city of Beijing is not limited by terrain, rivers and other natural topographic sorts. Its urban road pattern is grid. Furthermore, people′s imago structure to Beijing′s roads is grid, too. As far as boundary, another imago space factor, is concerned, its effect in Beijing urban imago space is very feeble. This is mainly because its hypsography is flat; the water quantity of its rivers is quite little; to most rivers there are traffic lines paralleling to them, that is to say, rivers were not marked in Beijing′s imago recognition sketch because of roads′ shielding effect to them. The most obvious difference between them is that inhabitants in Lanzhou have intensive imago on the following two spatial factors: road and boundary. Whether it is in the process of conversation survey, or in the process of drawing sketch, all the interviewees have intensive imago on the two factors. Limited by terrain, urban roads in Lanzhou do not like those in plain cities that are normative and in order. Roads in Lanzhou have to go along mountains and rivers, and are built according to hypsography condition. Therefore, interviewees are all quite familiar with a main east and west trunk. From east to west, the trunk includes: Donggang East Road, Donggang West Road, Qingyang Road, Xijin East Road, Xijin West Road, Xigu East Road, Xigu Middle Road and Xigu West Road. They connect the following three districts together: Chengguan District, Qilihe District and Xigu District. Interviewees have very strong image of that trunk. As far as the factor, boundary, is concerned, the effect of the Huanghe River is quite obvious. From Fig.1c, we can find that no matter how much for interviewees to be familiar with Lanzhou, most of them drew the sketch with the beginning of the Huanghe River, and then filled in other imago factors referring to the Huanghe River. This accounts for that the Huanghe River is the most characteristic imago factor in Lanzhou inhabitants′ image. Obviously, this is different from other plain cities, the constructive jumping-off point of plain cities′ recognition maps can be divided into three sorts: 1) the place visited serves as the jumping-off point (the proportion is the least); 2) the house, working place or the road between them serves as the jumping-off point (the proportion is the most); 3) the urban center or main trunk road in the mental view of interviewees serves as the jumping-off point.

Based on the survey, people outside of the urban zone do not think they are Lanzhou residents in their subconsciousness. They usually described "going to the Chengguan District" as "going to Lanzhou City" (except officials). At the same time, dwellers in the Chengguan District almost think that only they are Lanzhou citizen. This is correlated with the large differences of economy and culture between city and country, and quite little intercommunication between city and country. Hence, in the survey there are only two sketch maps labeling district and counties outside among all the maps drawn by interviewees (Fig.1a). This demonstrates that the recognition for interviewees to the whole city of Lanzhou is very low. The city of Lanzhou is limited by the terrain and obstructed by the Huanghe River, railway and mountains in two sides. It is hard for them to have an integrated mastery and imago recognition.

Nearly, all the interviewees drew the group structure in the sketch maps. This shows that this kind of function structure takes profound impression on people in Lanzhou. As showed in Fig.1b, comparing with in other cities, inhabitants in Lanzhou have more profound imago to district. District is a relatively large urban scope, which the viewers can imagine to go in, and it has some common characteristics (LYNCH, 1960). Some conversations in Lanzhou show that district is the basic element of urban imago. For example, when interviewees in Xigu is about to buy something in Xiguan Cross of Chengguan District, he would quickly take his way as from Xigu District to Chengguan District and then mention how long the journey would be and that the transportation is inconvenient and so on. This also reflects that there are all sorts of boundaries between districts, some of them are rigid, apparent and specific, which belong to tangible obstruct, such as the Huanghe River, railway and natural mountain; while others might be vague and belong to intangible obstruct, such as Xigu Industrial District and boundaries

of other administration districts, commercial districts, etc. (GU and SONG, 2001b). According to LYNCH′s depiction (1960), as far as the inhabitants are concerned, they will not have any feeling about this intangible obstruct unless they are quite familiar with the city.

In some conditions, nodes and landmarks are quite difficult for people to distinguish. According to the recognition of interviewees and data, Xiao Xi Lake, Railway Station, Dongfanghong Square and Xiguan Cross are important nodes in Lanzhou, while Baitashan Park and Zhongshan Bridge are regarded as relatively obvious landmarks (Fig.1c). LYNCH (1960) considered that nodes are the strategic focuses for the viewers to go in, while landmarks are the reference points for the viewer watching outside and landmarks might be simple material elements that are variable in scale. In conversation, we can find that to people the more familiar with the city, the more dependent on landmarks to guide (YANG and ZENG, 2002; TENG and YANG, 2002; YANG, 2000; LIU and GU, 1999).

4 CONCLUSIONS

(1) The recognition ratio of population distributing center is the highest, and the land symbol buildings or nodes takes second place in Lanzhou City. Furthermore, the cognition ratio of photos is positive correlation to the age of buildings and interviewee. Young people have higher cognition ratio than old people about important scenery, square and commercial mansion. The cognition of Chengguan District is higher than other three districts.

(2) The imago sketch map of valley-cities uses the mountainous land as the borderline. The scope of maps almost was the scope of valley-basin and the mountains on the two sides. Interviewees did well in the spatial structure map, which was made up of mountainous land, river and main trunk roads. Landmarks and nodes take great effect on urban imago.

(3) Lanzhou has different imago space from other plain cities because of its particularity of landform condition. The imago space of Lanzhou City is grasped more clearly by interviewees, and the group structure took profound impression on people.

REFERENCES

CHEN Chuan-kang, 1986. Behavior geography: its object, concept and significance [A]. In: LI Xu-dan(ed.). *Human Geography Forum* [C]. Beijing: Science Press. 230–242. (in Chinese)

GU Chao-lin, SONG Guo-chen, 2001a. Urban imago space and main factors in Beijing [J]. *Acta Geographica Sinica*, 56(1): 64–74. (in Chinese)

GU Chao-lin, SONG Guo-chen, 2001b. Beijing urban imago space survey and analysis [J]. *Planners*, 17(2): 25–29. (in Chinese)

LI Xun, XU Xue-qiang, 1993. Analysis of urban imago space in Guangzhou [J]. *Human Geography*, 8(3): 27–35.(in Chinese)

LIN Yu-lian, 1999. Study on the public image of Wuhan [J]. *New Structure*, 17(1): 41–43. (in Chinese)

LIU Hai-yong, GU Chao-lin, 1999. The floating population concentration areas in Beijing: patterns, structure and function [J]. *Scientia Geographica Sinica*, 19(6): 497–503. (in Chinese)

LYNCH Kevin, 1960. *The Image of the City* [M]. Mass.: MIT Press.

TENG Li, YANG Yong-chun, 2002. The study on the traffic problems of valley city—case study of Lanzhou City [J]. *Economic Geography*, 22(1): 72–76. (in Chinese)

WANG Xi, 2000. Urban characteristic and urban imago form [J]. *Planners*, 16(6): 112-114. (in Chinese)

XU Fang, 1983. A case study on behavior geography: Ganzhou survey and analysis [J]. *Scientia Geographica Sinica*, 3(2): 167–174. (in Chinese)

YANG Yong-chun, 1999. Research on the Valley city of China. [J]. *Regional Research and Exploitation* 19(3): 61–65. (in Chinese)

YANG Yong-chun, 2000. The research on the developing model of Lanzhou—a typical valley basin city in the northwest China [J]. *Human Geography*, 15(1): 10–19. (in Chinese)

YANG Yong-chun, ZENG Zun-gu, 2002 .The research on the structure of urban area of Lanzhou [J]. *Scientia Geographica Sinica*, 22(4): 468–475. (in Chinese)