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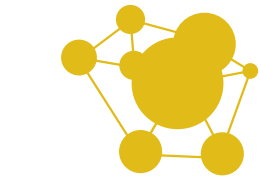

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The Experimental Study on Social Capital between Shanghai and Yinchuan

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Abstract

Social capital could facilitate the economic development by reducing transaction cost and enforcing incomplete contract. Trust and voluntary cooperation are basic characteristics of it. In China, the economy grows rapidly. However, this growth will be unbalanced if the accumulation of social capital cannot follow up. We conducted a package of public goods games, gambling game and trust game in Shanghai and Yinchuan to evaluate some key elements of social capital, such like trust, risk preference and voluntary cooperation. The subject groups are university undergraduate students and junior high school students. We compared the quantity and quality of social capital between different districts and age groups.

The results show that cooperation wills decline from beginning to the end in total. Subjects in total treat trust loss and gambling loss differently. The real return is significantly lower than expected in trust games both in Shanghai and Yinchuan. Subjects in Yinchuan prefer group cooperation than trusting single partner, but in Shanghai people prefer trusting single partner.

No matter at the beginning or the end of public goods game, subjects in Shanghai show better group cooperation attitude than Yinchuan. And subjects in Shanghai are more risk averse than in Yinchuan.

The regression of the amount transferred by the truster (role A) shows this transfer to have a significantly positive correlation with voluntary cooperation, expected returns from role B and SU. The significant and negative sign for the coefficient of SM shows subjects in Shanghai do not trust their partners as much as other subjects.

The regression of the amount transferred by the trustee (role B) shows this transfer to have a significantly positive correlation with GSS_trust.

This study shows that the measurements of trust and voluntary cooperation in different groups could be experimentally estimated. The results are more revealing when experiments are combined with general social survey. We will apply the indicators on other areas in different tiers and make a horizontal comparison.

Keywords: Trust，Risk Preference, Voluntary Cooperation, Social Capital,

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1. Introduction

Trust is the lubricant of society (Arrow, 1974) and the foundation of interpersonal communication. The degree of trust within a society is highly correlated with economic growth and the emergence and efficiency of large-scale organizations, including government (Knack and Keefer, 1997; Fukuyama, 1995; La Porta et al., 1997). When members of a society are believed to be trustworthy, trust emerges and becomes the lubricant for the operation of organizations within that society. Transaction costs are relatively lower, and large-scale production, credit, land and labor market transactions more frequent, in societies with a high level of trust. The members of such societies have strong incentives to innovate and to make physical and human capital investments, thereby contributing to socio-economic prosperity and overall welfare. It is clear that the trust relationship plays an important role in the formation of social capital.

Pierre Bourdieu formally proposed the concept of "social capital" in the 1980s, and it quickly became influential, with a large body of literature addressing its definition, determinants, impact and effectiveness. To date, however, no consensus has been reached on a definition. Bourdieu (1986) defined social capital as the advantages and opportunities available to and through certain members of the community; Coleman (1990) as the resources available to individuals from their social contacts; and Putnam (1993) as the trust, norms and social relations that exist through coordinated action to improve social efficiency. Woolcock (1998), Rauch and Evans (2000), Stiglitz (1999) and other economists conceptualized social capital as an economic analytical framework and categorized it as a third form of capital, following physical capital and human capital.

Definitions of social capital tend to address the individual level or the community level, and lead to different research approaches, although Jeffrey et al. (2004) identified links between the two. Scholars examining the individual level look for behavioral metrics for trust, trustworthiness and cooperation against a background of conflict between social welfare and personal well-being. Their measurements primarily include behavioral and attitudinal survey questionnaires. For example, one question on the widely used General Social Survey (GSS) (i.e., "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?") measures respondents' level of trust. Although research on social capital at the community level is also heavily dependent on questionnaires, the difference is that those adopted tend to be less hypothetical and to focus more on practical issues. A typical question might be: "How many volunteer organizations have you served in?"

The two main means of measuring and analyzing trust found in the literature are the aforementioned GSS and the design and implementation of laboratory and/or field experiments. Although the use of surveys such as the GSS to collect trust-related information is popular and cost-effective, it is believed to be less reliable than other methods. The controlled environment of experimental methods, in contrast, is considered to produce more reliable results, but such methods are costly. The relationship between trust attitudes measured in surveys and trust behavior measured in experiments is not clear. Some scholars have found them to be related (e.g., Fehr and Schmidt, 2002), whereas others have conjectured that they are not (e.g., Glaeser et al., 2000). The experimental models most commonly employed to measure trust-associated issues include the public goods game, which is used to measure a participant's degree of voluntary cooperation or willingness to cooperate multilaterally (e.g., Andreoni, 1995); the trust or

investment game, which is used to measure participants' trust and the trustworthiness of strangers (e.g., Glaeser et al., 2000); and the gambling game, which is used to test participants' risk preferences (e.g., Schechter, 2007).

All three types of experiments have been conducted in various countries, but they are usually carried out separately. Exceptions include experiments exploring trust and the impact of social capital on economic development, which have been conducted in Southeast Asian slums and in Russia, Japan and the United States, and cross-regional comparative studies that have adopted the investment game (Berg et al., 1995), a cooperation measure (Ashraf et al., 2006; Croson and Buchan, 1999; Carter and Castillo, 2002; Barr, 2003).

Wang and Yamagishi (2005) carried out a comparative study of levels of trust between the sexes in China. They found the stronger degree of mutual trust among Chinese male strangers to be based on higher expectations of reciprocity, and the weaker degree among females to be due to the fear of being taken advantage of. Other Chinese scholars have investigated social capital through surveys in conjunction with macro-economic data. Such studies include explorations of the links between social capital and economic development and social capital and financial decision-making. Zhang and Ke (2002), for example, showed trust to be an important factor in the economic development of various Chinese regions. An empirical study carried out by Zhang and Zeng (2005) also reported social capital to have significant positive effects on regional financial development. Zhang (2006) investigated the relationship between China's level of social capital and its financial development, and Chen and Lu (2007) drew on survey data to explore the existence of social capital in Chinese society, with such capital defined by behavior at the social communication network level. They examined newly established grass-roots self-governing communities, and found social capital to be quite abundant in Chinese cities and to have long-term implications for local democratic self-governance.

The study reported herein investigated trust and cooperation through lab and field experiments with the aim of shedding light on the key components of social capital. These experiments were carried out in four parts. The first part adopted the voluntary cooperation model and employed a public goods experiment to investigate the degree of cooperation among different cohorts of subjects. The second employed the gambling game to elicit subjects' risk preferences. The third part, which adopted the trust or investment game, explored the degree of trust and trustworthiness among the subjects. Finally, the fourth part again employed the public goods experiment, but this time to examine whether the level of voluntary cooperation had changed after the subjects had witnessed trustworthiness or betrayal. This study has several innovative features, including the following.

The study explores the characteristics of trust among different cohorts in cities of China in different tiers, which are Shanghai and Yinchuan.

I. Adopting a within-subjects design, the study combines the public goods game with the trust/investment game and gambling game.

II. The study employs both an experimental method and a general survey method.

III. Unlike those of most previous studies, the subjects of this study were junior high school and university students.

2. Lab and field experiments

In December 2008, six lab experiments were conducted at Shanghai Jiao Tong University

with 60 subjects; in May 2009, four lab-style experiments were conducted in the Chao Yang Secondary School and Jiao Da Secondary School with 80 second-year middle school students; and in May 2010, four field experiments were carried out in Ningxia university with total 80 subjects and four in Yinchuan 26th middle school with 80 subjects. The middle school and university experiments were conducted in regular classrooms.

Each experiment consisted of four parts. Each subject was randomly assigned an ID number and then placed into a group. In Shanghai, each university student group included 10 students, each middle school group 20 students, and in Yinchuan, each university student group included 20 students, each middle school group 20 students. The part-one experiment was a five-round public goods game. Subjects were provided with written instructions, recording and reporting sheets, and a payoff illustration. The university students used a payoff table to calculate their earnings, whereas the middle school students used a payoff function instead for the sake of simplicity. The instructions provided to the different groups were also modified according to their different levels of understanding.

Certain words that are associated with intentions or suggestions, such as "contribution," "community" and "assist," were avoided in the instructions. The subjects were first asked to read the instruction sheet while one of the experimenters read it aloud to make sure it was understood by all. They were then asked to make investment decisions in five rounds.

Each subject was given 10 tokens as an endowment and had to decide the amounts to invest and to save. A subject could either keep 10 tokens for himself or herself or chose q_i ($0 \leqslant q_i \leqslant 10$) tokens to invest and kept the remaining 10-q_i tokens. The payoff for each subject i in the group of n subjects is given by

(1) $\pi_i^1 = 10 - q_i + a \sum_{j=1}^{n} q_{i,} \quad 0<a<1<na$

in each round, where a is the marginal per subject return from one token of investment. In this study, a is taken as 0.7. The total payoff from the part-one experiment for each subject is the sum of the round-payoffs, as given in (1), over all five rounds. Note that (1) indicates that full free-riding or q_i=0 is a dominant strategy in the stage decision. This is because $\frac{\partial \pi_j^1}{\partial q_i}$=-1+a<0. However, the aggregate payoff $\sum_{i=1}^{n} \pi_i^1$is maximized if each subject in the group fully cooperates by investing all 10 tokens because $\frac{\partial \sum_{i=1}^{n} \pi_i^1}{\partial q_i} = -1 + na > 0$.

Subjects jotted down their decisions on the reporting sheets and recorded their investment and savings amounts on the recording sheets. The experimenters summed up the total investment amount and announced it to all of the subjects, who then calculated their individual earnings. Two rounds of the exercise were carried out before the real game to familiarize the subjects with the procedure.

The part-two experiment involved a gambling game. Each subject had 10 tokens as an endowment and decided the amount to invest. The experimenter then rolled the dice, and the number shown determined the return on that investment. The number 1, for example, meant that the investment amount would be multiplied by 0, the number 2 that it would be multiplied by 0.5, and the numbers 3, 4, 5 and 6 that it would be multiplied by 1, 1.5, 2 and 2.5, respectively.

The part-three experiment was a trust game. The subjects were assigned to role A or role B, with an equal probability of either assignment, and then paired up randomly. Each was given 10 tokens as an endowment. Those assigned role A had to decide on the amount to transfer to their

role B counterparts. That amount was then multiplied by 3 and transferred. Those assigned to role B were asked to write down in advance the amount they would give back to their role A counterparts based on the receipt of different possible amounts. The actual amount returned to the role A participants depended on the amount their B counterparts had written down in advance.

Finally, the part-four experiment involved a one-shot public goods game, which was the same as that in part one except that the number of rounds was reduced from five to one.

Communication was prohibited during the experiments, with subjects given to understand that the experiment would be terminated immediately if they communicated with one another. Each session of the experiments lasted approximately 90 minutes, and the average payment made to each subject was about 55 RMB (about US$7.86, based on US$1 = 7 RMB). The exchange ates between experiment token and real money varied a little bit to reflect the idiosyncratic earning powers of different subject pools. Following the experiments, all of the participants were asked to fill out a questionnaire with three sections covering behavioral trust, attitudinal trust and voluntary activities. They were also asked to provide information on their personal background and social factors deemed relevant to social capital.

3. Results of survey questionnaires

3.1 Subjects' distribution

3.1.1 Sexes distribution

Figure 1 followed shows the proportion of males and females in the different region. It can be seen the proportions are almost equal.

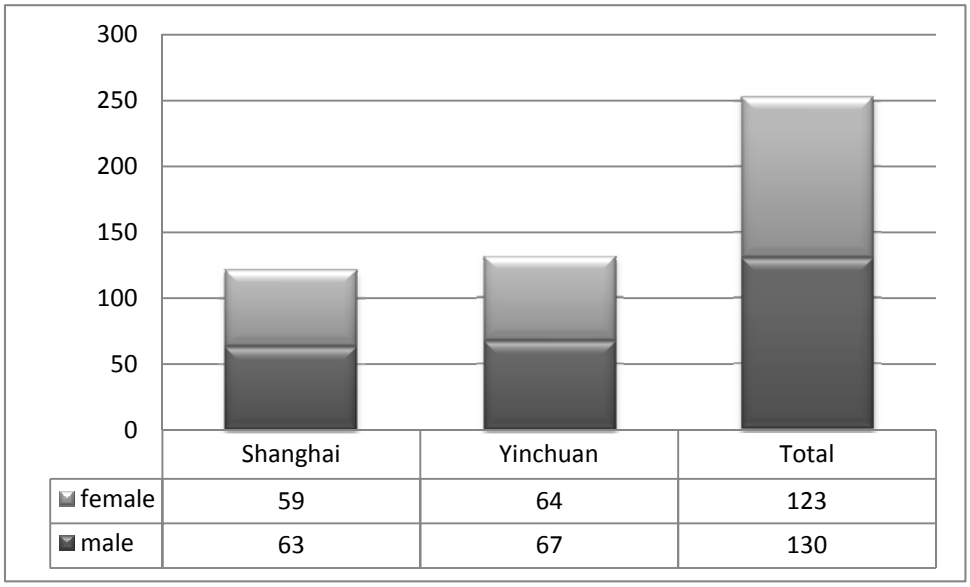


Figure 1. The Distribution of Gender（by district）

3.1.2 Age distribution

Table 1. The age the subjects in Universities

University	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1993	总计
Shanghai	1	2	8	6	15	7	5	6	3	1			54
Yinchuan						2	5	11	24	18	12	1	73
Total	**1**	**2**	**8**	**6**	**15**	**9**	**10**	**17**	**27**	**19**	**12**	**1**	**127**

Table 2. The age of subjects in junior middle schools

Middle school	1993	1994	1995	1996	1997	总计
Shanghai	4	24	39	1		68
Yinchuan		3	23	28	4	58
Total	**4**	**27**	**62**	**29**	**4**	**126**

In Shanghai, the majority of the university students were aged 18-27 when the experiment was executed in 2008. In Yinchuan, the majority of the university students were aged 17-24 when the experiment was executed in 2010.

Both in Shanghai and Yinchuan, the majority of the middle school students were aged 13-16.

3.1.3 Distribution of consumption levels

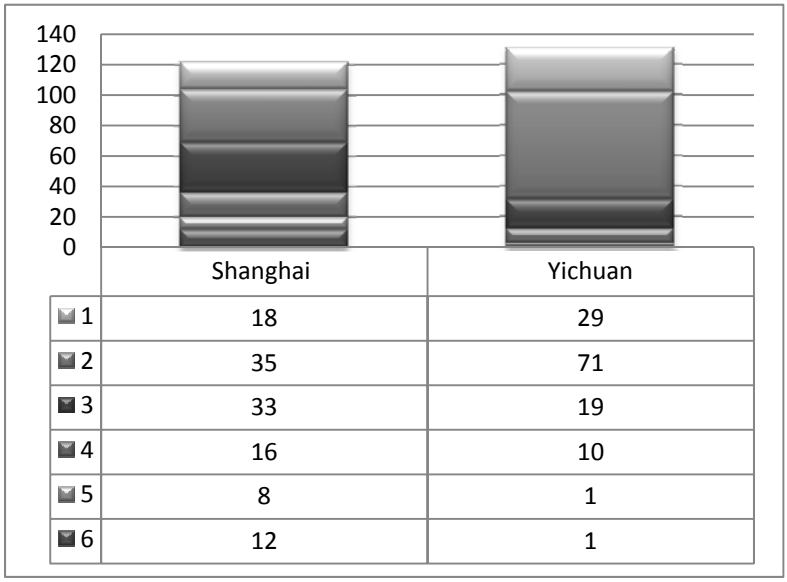


Figure 2. The distribution of daily expense (by district)

Considering students do not have income, their consumption levels can be partly reflected the economic status. We set 6 tiers of consumption level. Based on different expenditure level between Shanghai and Yinchuan, we make some adjustment.

Compared Shanghai to Yinchuan, the consumption level is relatively evenly distributed.

3.1.4 Grades distribution

For students, ranking in their lives is often a disguised manifestation of social status. So we designed a questionnaire about performance ranking of the problem. The issue will be designated as ranking among 4 levels decreased gradually from 1 to 4.

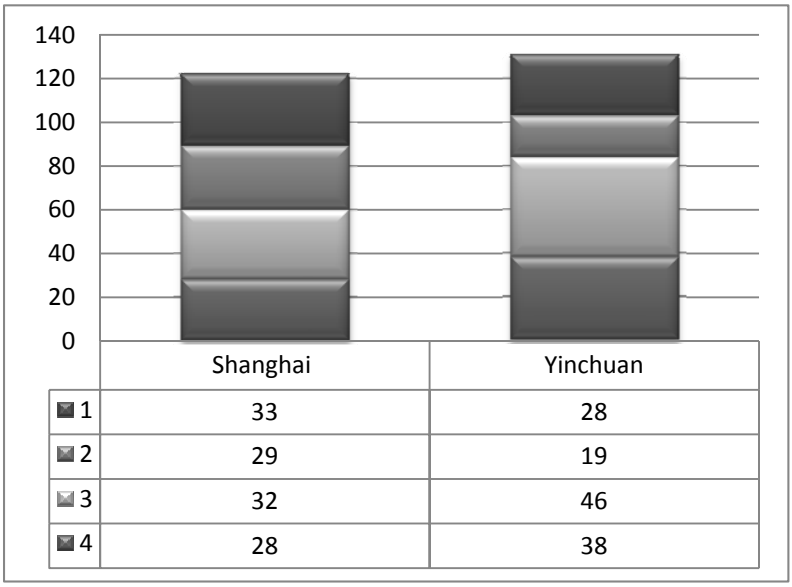


Figure 3. The distribution of academic ranking（by district）

3.2 Social networks and trust measurements

3.2.1 Group and social network

Abscissa on the chart is the number of close friends the vertical axis is the percentage of the choice. As can be seen in Figure followed, most of the subjects said they had more than one close friend, which is clear evidence of the social networks that are a necessary condition for the development of social capital. The choices of Shanghai Subjects are mainly located to 2-5 and more than 10, peaked at 3, which shows subjects prefer small friends circle. The choices of Yinchuan subjects are peaked at 5 and relatively dispersed.

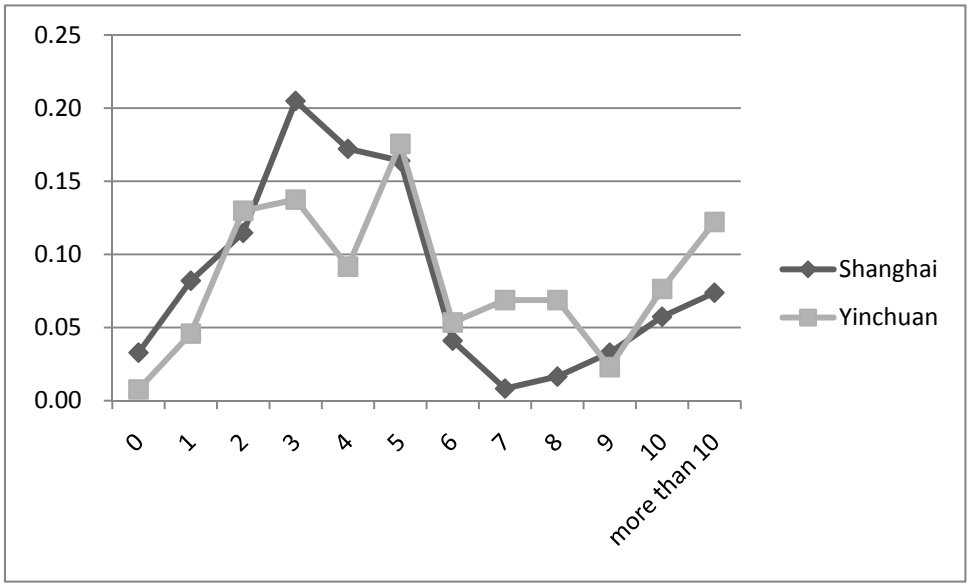


Figure 4. The distribution of persons who can be trusted by subjects in privacy（by district）

As can be seen in Figure 5 followed, most of the subjects said they had more than 5 close friends they can borrow money from.

The proposition of shanghai subjects choosing more than 5 is bigger than Yinchuan. This result may be due to that Shanghai's economy is relatively developed, more often

financial transactions between people; or cultural differences between north and south. The specific reasons are yet to be verified.

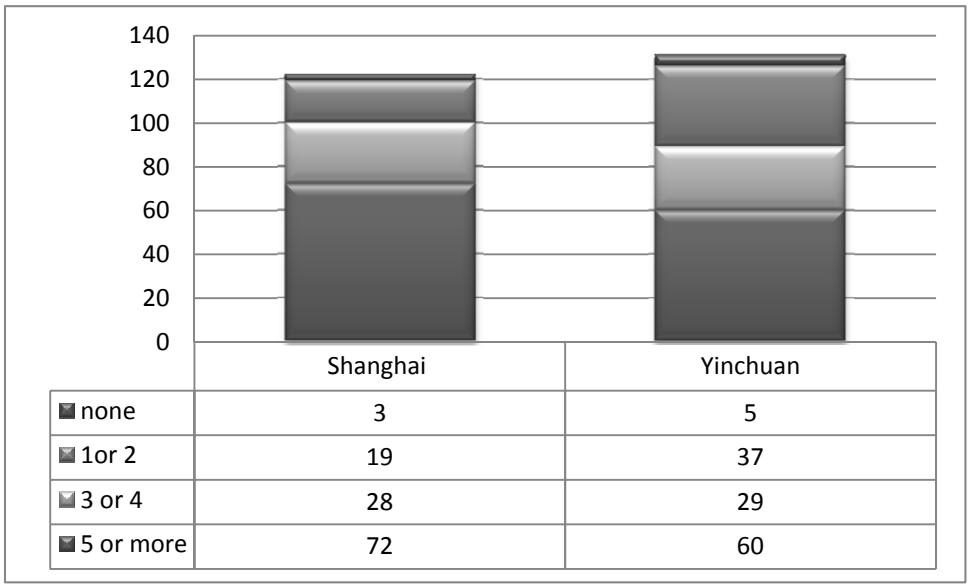


Figure 5. The number of persons who can be trusted by subjects on credit（by district）

3.2.2 Trust

As can be seen from Table 3, more than 60% of subjects consider other people trustworthy, fair and helpful.

The Shanghai subjects were particularly trusting of others, with 79.5% stating that others are trustworthy, compared with 77.1% of Yinchuan students.

The Yinchuan subjects particularly believe other fair (81.7%) and helpful (70.2%), compared with Yinchuan students (81.1% and 61.5%)

Table 3. General Trust experience（by district）

	You believe that others are		You believe that others treat you		You believe that others are	
	Trustworthy	Worthy of Caution	fairly	unfairly	helpful	selfish
Shanghai	79.5%	20.5%	81.1%	18.9%	61.5%	38.5%
Yinchuan	77.1%	22.9%	81.7%	18.3%	70.2%	29.8%

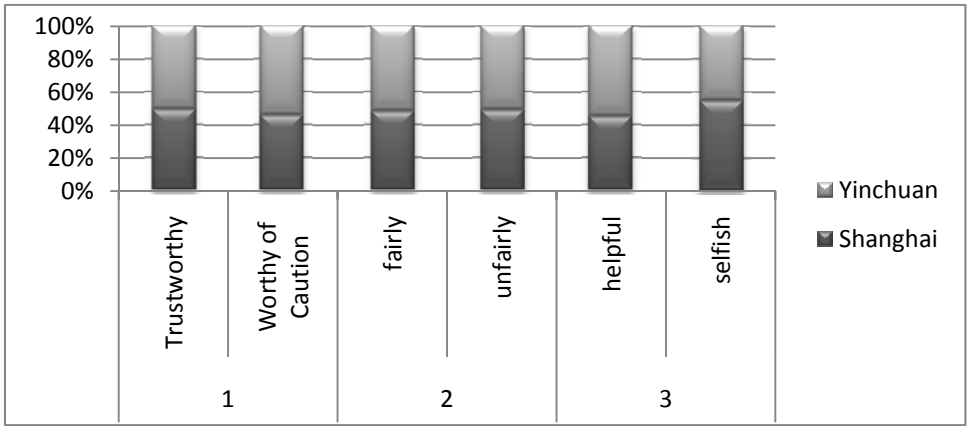


Figure 6. General Trust experience on the society (by district)

3.2.3 Collective action

Figure 7 followed shows more than 93% of subjects have done something helpful, especially in Yinchuan.

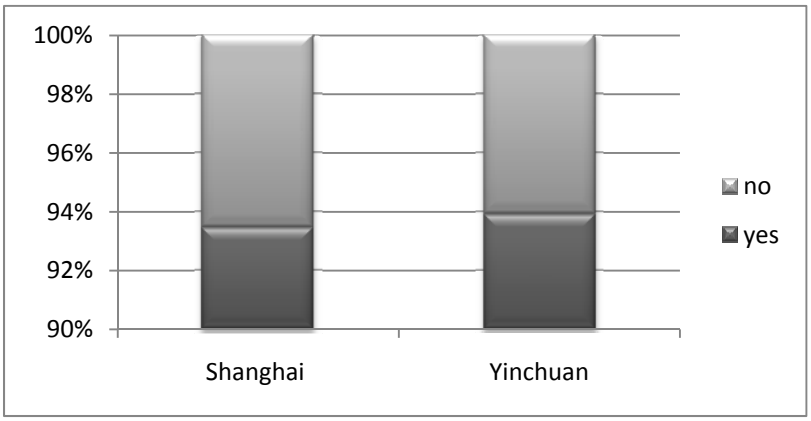


Figure 7. The proportion of helping behavior（by district）

Figure 8 followed shows more than 40% of subjects have trust damage, especially in Yinchuan (60).

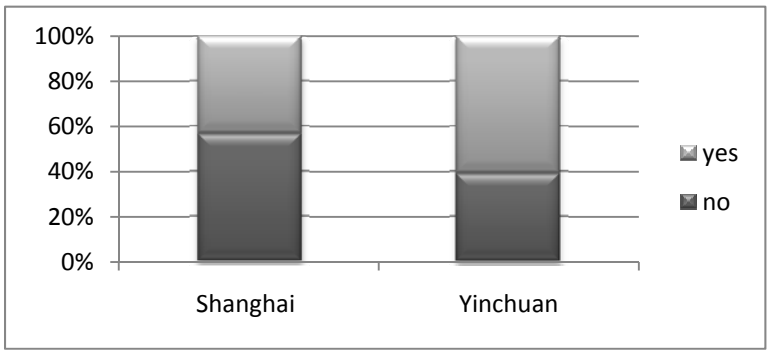


Figure 8. The proportion of trust damage（by district）

4. Experimental results

4.1 Statistic results

4.1.1 Basic results

Table 4. Basic Statistics for Experiments

	Treatment1	Treatment2	Treatment3		Treatment4
	Average investment amount	Investment amount	Transferred amount from A	Transferred amount from B	Investment amount
Mean	4.4	5.9	4.8	5.6	4.1
standard deviation	2.4	2.3	3.0	5.6	3.4
maximum	10.0	10.0	10.0	30.0	10.0
minimum	0.0	0.0	0.0	0.0	0.0
median	4.4	6.0	5.0	4.0	4.0

4.1.2 Experimental results of public goods games

There are two parts of public goods games, including treatment1and treatment 4. The amount subjects transferred to public account shows their voluntary cooperation will.

1) The change of voluntary cooperation in treatment 1

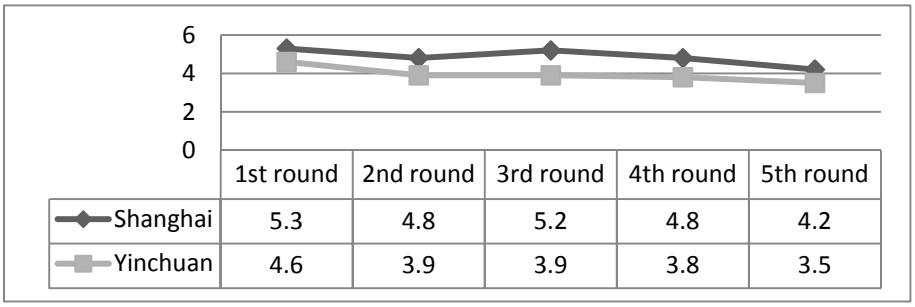


Figure 9. The average investments of five rounds in the first public goods game（by district）

In the initial phase of treatment 1, subjects in shanghai are more willing to cooperate voluntarily than subjects in Yinchuan. There is a downward trend of public investment both in Shanghai and Yinchuan, especially in the second round in Shanghai. Compared to Shanghai, the trend is relatively stable in Yinchuan.

2) The change of voluntary cooperation in treatment 4

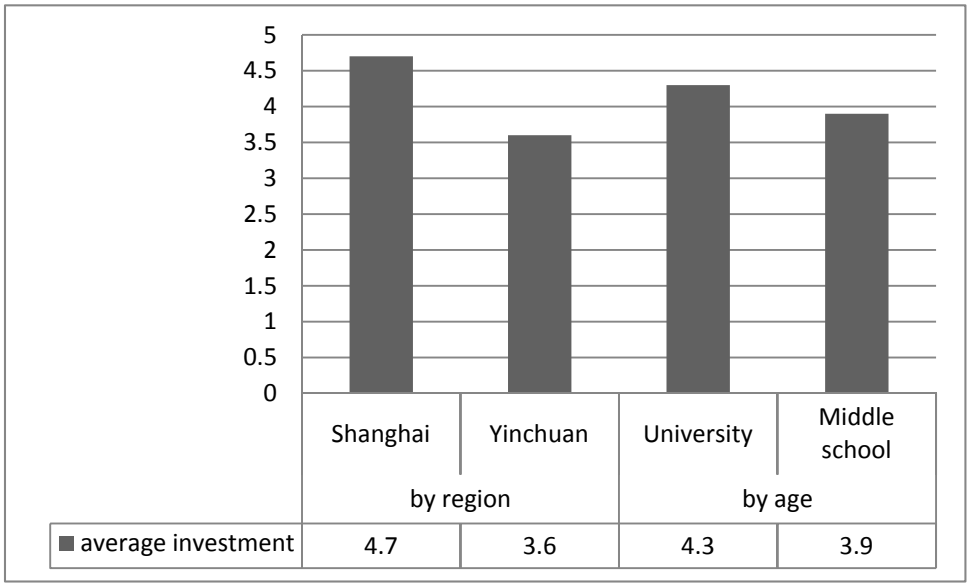


Figure 10. The average investments of the second public goods game

At the end of experiment, the average investment in Shanghai is greater than in Yinchuan. The average investment in universities is greater than in junior high schools. Those results mean subjects are more willing to cooperate in Shanghai than in Yinchuan and in universities than in junior high schools.

3) The change of voluntary cooperation

Compared average investment in treatment1 to treatment4, we can draw how the voluntary cooperation will changed both in Shanghai and Yinchuan.

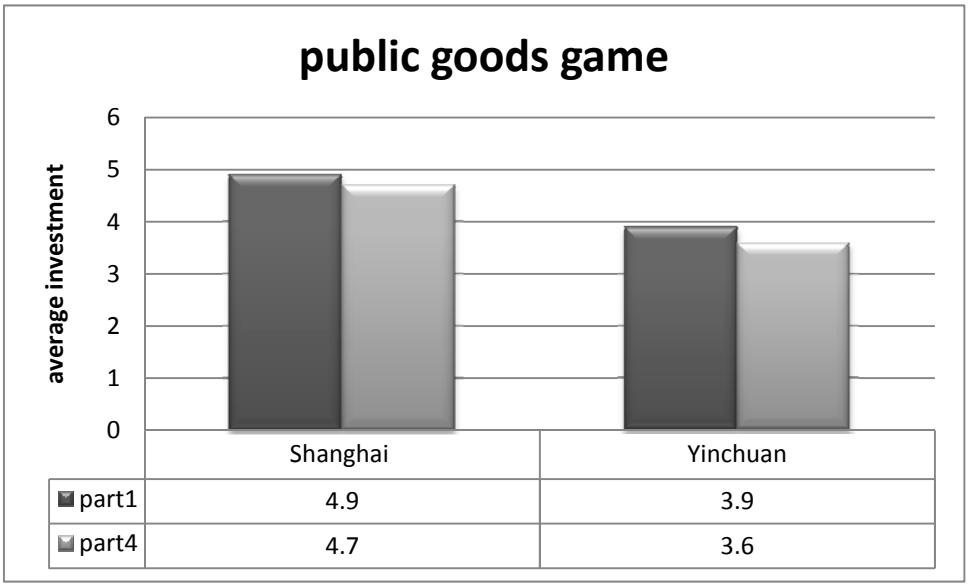


Figure 11. The comparison of the average investments between first and second public goods games（by district）

4.1.3 Experimental results of gambling game

It can be seen from the figure that subjects in Shanghai invest more money than ones in

Yinchuan, which means they are more risk-seeking. Meanwhile university group subjects invest more than middle school subjects.

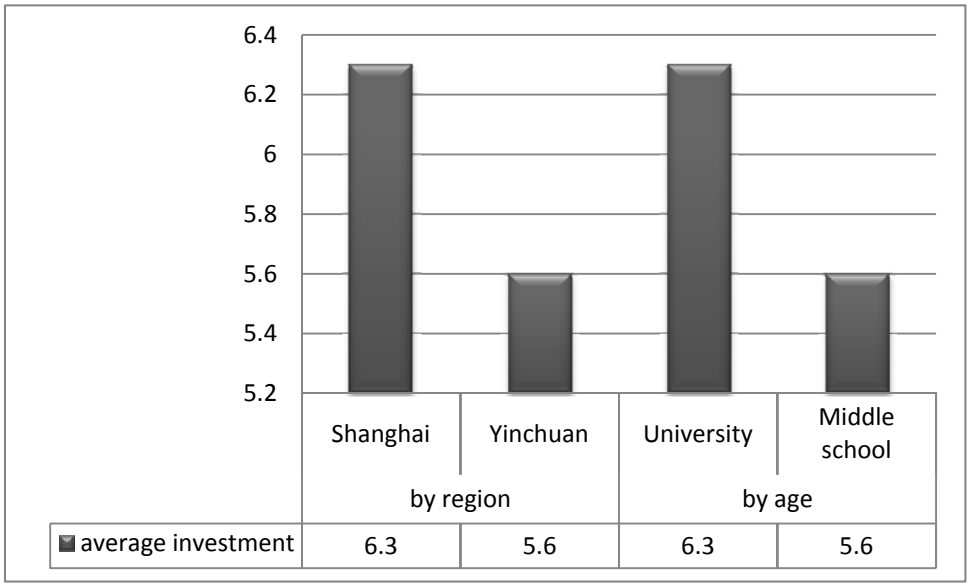


Figure 12. The comparison of average investment amount in part two

4.1.4. Experimental results of trust game

1）For role A (truster)

The average transferred amount of trust (by region, by age) is as follows:

The average amount of Shanghai is smaller than Yinchuan, which shows less preference in trusting single partner. Meanwhile, The average amount of middle school group is smaller than university group.

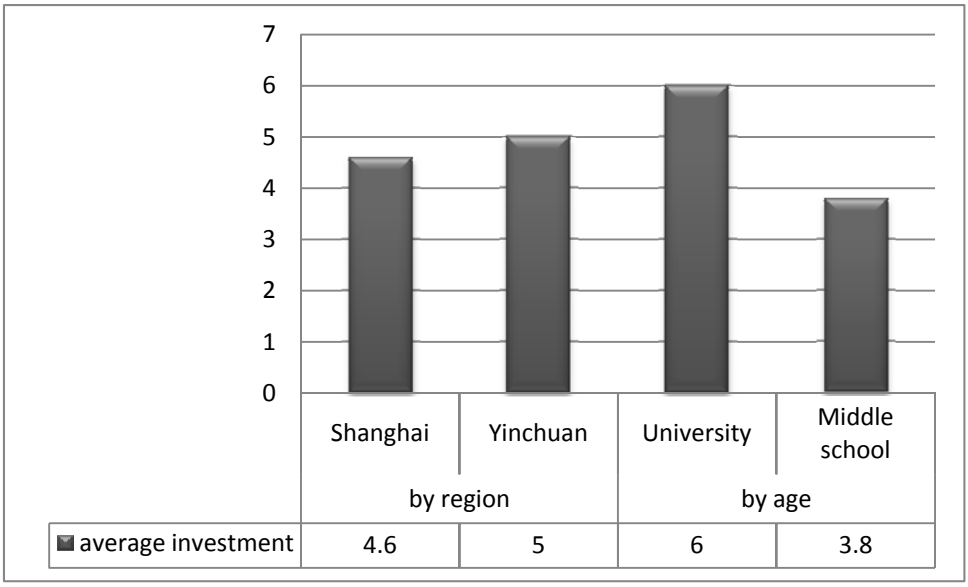
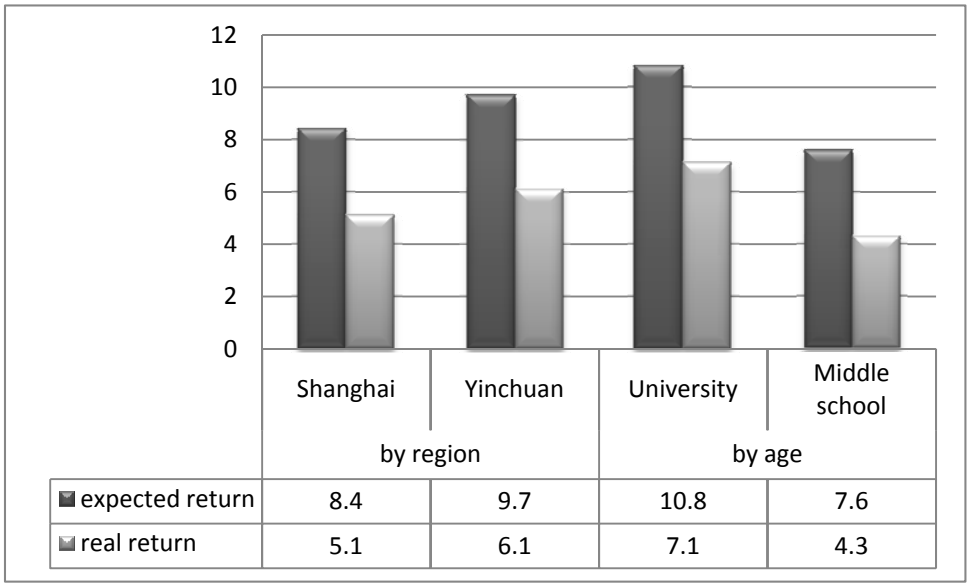


Figure 13. The comparison of average transferred amount in part three for role A

The expected return and real return of role A subjects (by region, by age) are as follows:

By region group, whether in Shanghai or Yinchuan, subjects expected more transfer than their real return. Subjects in Yinchuan have higher expectation than ones in Shanghai and they actually get more. However the gap of Yinchuan between expected return and real return is bigger.

By age group, whether for middle school group or university group, subjects expected more transfer than their real return. Subjects in university have higher expectation than ones in middle school and they actually get more. However the gap of university between expected return and real return is bigger.



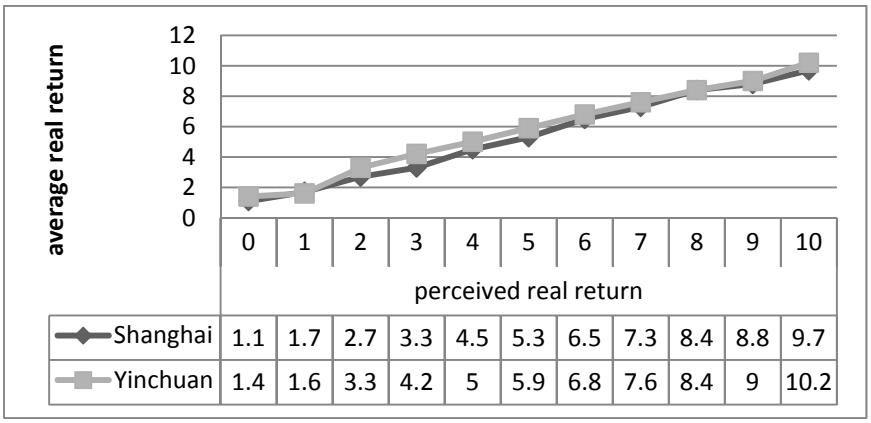
	Shanghai	Yinchuan	University	Middle school
expected return	8.4	9.7	10.8	7.6
real return	5.1	6.1	7.1	4.3

Figure 14. The comparison of expected return and real return

2) For role B (trustee)

In order to get more complete feature of trustees, our experiment requires role Bs to all of return assuming that they get transferred amounts from 0 to 10.

It can be seen from the figure, both subjects of Shanghai and the subjects of Yinchuan are willing to return more when they get more transfer.



	0	1	2	3	4	5	6	7	8	9	10
Shanghai	1.1	1.7	2.7	3.3	4.5	5.3	6.5	7.3	8.4	8.8	9.7
Yinchuan	1.4	1.6	3.3	4.2	5	5.9	6.8	7.6	8.4	9	10.2

Figure 15. The trend of real return（by district）

4.2 Nonparametric test

4.2.1 The comparison of voluntary cooperation and trust between Shanghai and Yinchuan

The following hypotheses were tested between Shanghai and Yinchuan.

a. H0: There is no difference in the level of cooperation of the public goods games between Shanghai and Yinchuan.
b. H0: There is no difference of the amount transferred by the truster (role A) in the trust game between Shanghai and Yinchuan.
c. H0: There is no difference of risk preference which means the transfer in the gambling game between Shanghai and Yinchuan.

Table 4 followed reports the non-parametric Mann-Whitney U test and Wilcoxon W test results for Hypotheses a, b and c.

Table 4. The result of non-parametric test（between group）

	Mann-Whitney U	Wilcoxon W	Z Value	Asymp. Sig. (2-tailed)	significance
Public investment in Treatment1	8696.5	21576.5	-3.341	0.001	significant
Public investment in Treatment4	9.45E+03	2.23E+04	-2.352	0.019	significant
the amount transferred by the truster (role A)	2.41E+03	4.90E+03	-1.468	0.142	insignificant
Risk preference	9.17E+03	2.21E+04	-2.741	0.006	significant

No matter at the beginning or the end of public goods game, subjects in Shanghai show better group cooperation attitude than Yinchuan. And subjects in Shanghai are more risk averse than in Yinchuan.

4.2.2 The comparison of voluntary cooperation and trust within group

The following hypotheses were tested for each subject group.

1 H0: There is no difference in the level of cooperation between two public goods games.

2 H0: There is no difference between the transfer in the gambling game and Role A's transfer in the trust game.

3 H0: There is no difference between Role A's expected return in the trust game and the actual return to Role A from Role B.

4 H0: There is no difference between the public investment in the first public goods game and Role A's transfer in the trust game.

5 H0: There is no difference between the public investment in the first public goods game and the transfer in the gambling game.

Table followed reports the non-parametric Wilcoxon Signed Ranks Test, which shows there is no difference in the level of cooperation between two public goods games in Shanghai. However, for the whole subjects and subjects in Yinchuan, it is significantly different, which means

cooperation wills decline from beginning to the end in total. Because after playing the gambling and trust games, some of the subjects may have felt disappointed or even shortchanged.

There is significant difference between the transfer in the gambling game and Role A's transfer in the trust game for the whole subjects and ones in Shanghai. It shows subjects in total treat trust loss and gambling loss differently.

The non-parametric test results for hypothesis 3 indicate statistical difference between the real and expected role A returns in the Shanghai group and Yinchuan group, in which the role A expected returns exceeded the real returns. The trustworthiness of the role B subjects was not up to expectations.

The non-parametric test results for hypothesis 4 indicate statistical difference between the public investment in the first public goods game and Role A's transfer in the trust game both in Shanghai and Yinchuan, but in opposite way. Subjects in Yinchuan prefer group cooperation than trusting single partner, but in Shanghai people prefer trusting single partner. For the whole subjects, there is no significant difference.

The non-parametric test results for hypothesis 5 indicate statistical difference between the public investment in the first public goods game and the transfer in the gambling game. Both in Shanghai and in Yinchuan, subjects invest more money in gambling game than in the public goods game.

Table 5. The result of non-parametric test（within group）

	Shanghai Subjects	Yinchuan Subjects	whole Subjects
Z statistics for hypothesis 1	-1.335	-2.467**	-2.679***
Z statistics for hypothesis 2	-4.229***	-0.524	-3.563***
Z statistics for hypothesis 3	-2.833***	-4.511***	-5.225***
Z statistics for hypothesis 4	-1.722*p	-3.338***	-0.840
Z statistics for hypothesis 5	-4.803***	-6.361***	-7.874***

Notes: *, **, and *** denote that the hypothesis is rejected at the 10%, 5% and 1% level, respectively.

4.3 regression results

Table 6 followed lists the main estimations in the Tobit models. Riskpre denotes the amount transferred in the gambling game, Inv_1st the average amount put into the public account in the part-one public goods game, ExpectedB the amount the role A subjects expected back from their role B counterparts in the trust game, TrustA the amount of the transfer from the role A subjects to their role B counterparts in the same game. The dummy variable *GSS_trust* = 1 if "most people can be trusted" was chosen as the answer to the survey question "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?"; otherwise, it is 0. The dummy variable *GSS_help* = 1 if "most of the time people try to be helpful" was chosen as the answer to the survey question "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"; otherwise, it is 0. Finally, the dummy variable *GSS_fair* = 1 if "most people would try to be fair" was chosen as the answer to the survey question "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?"; otherwise, it is 0. The dummy variable *SU* = 1 if subjects are from universities in Shanghai; otherwise, it is 0. The dummy variable *YU* = 1 if subjects are

from universities in Yinchuan; otherwise, it is 0. The dummy variable *SM* = 1 if subjects are from junior high schools in Shanghai; otherwise, it is 0.

Table 6. Tobit estimation results for TrustA and TrustB in trust game

	Dependent variables	
Independent variables	TrustA	TrustB
riskpre	0.028（0.092）	-0.089(0.250)
Inv_1st	0.331（0.081）***	0.270(0.273)
ExpectedB	0.254（0.027）***	
TrustA		0.027(0.209)
GSS_trust	0.389（0.460）	2.549(1.537)***
GSS_help	0.334（0.415）	-0.327(1.333)
GSS_fair	0.110(0.465)	1.027(1.741)
SU	0.980(0.600)	-0.871（1.716）
YU	0.977(0.533)*	0.796（1.645）
SM	-1.028(0.534)*	-2.444(1.601)
CONSTANT	0.008(0.853)	2.872（2.711）
LR chi2(9)	112.76***	7.5
Log likelihood	-297.421	-405.555
Pseudo R2	0.159	0.009
Observations	144	148

Notes: Standard errors are given in parentheses. *, **, and *** denote that the parameter is significantly different from zero at the 10%, 5% and 1% level, respectively.

The regression of the amount transferred by the truster (role A) on the riskpre, Inv_1st, ExpectedB, GSS_trust, *GSS_help, GSS_fair, SU, YU and SM* shows this transfer to have a significantly positive correlation with voluntary cooperation, expected returns from role B and SU. In other words, the more likely they are to opt for voluntary cooperation, the more trustworthy they believe their partners to be and if they are subjects from University in Yinchuan, the more willing they are to trust their partners. The significant and negative sign for the coefficient of SM shows subjects in Shanghai do not trust their partners as much as other subjects.

The regression of the amount transferred by the trustee (role B) on the riskpre, Inv_1st, TrustA, GSS_trust, *GSS_help, GSS_fair, SU, YU and SM* shows this transfer to have a significantly positive correlation with GSS_trust. The significant and positive sign for the coefficient of *GSS_trust* indicates that the more individuals are inclined to trust others, the greater the amount they will reward their partners.

5. Conclusions

The results show that cooperation wills decline from beginning to the end in total. Subjects in total treat trust loss and gambling loss differently. The real return is significantly lower than expected in trust games both in Shanghai and Yinchuan. Subjects in Yinchuan prefer group cooperation than trusting single partner, but in Shanghai people prefer trusting single partner.

No matter at the beginning or the end of public goods game, subjects in Shanghai show better

group cooperation attitude than Yinchuan. And subjects in Shanghai are more risk averse than in Yinchuan.

The regression of the amount transferred by the truster (role A) shows this transfer to have a significantly positive correlation with voluntary cooperation, expected returns from role B and SU. The significant and negative sign for the coefficient of SM shows subjects in Shanghai do not trust their partners as much as other subjects.

The regression of the amount transferred by the trustee (role B) shows this transfer to have a significantly positive correlation with GSS_trust.

This study shows that the measurements of trust and voluntary cooperation in different groups could be experimentally estimated. The results are more revealing when experiments are combined with general social survey. We will apply the indicators on other areas in different tiers and make a horizontal comparison.

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