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THE INFLUENCE OF STRENGTHENING SENSITIVITY ON EXTROVERTED RISK BEHAVIORS OF CHINESE COLLEGE STUDENTS

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ABSTRACT

The adverse consequences caused by the implementation of extroverted dangerous behaviors by Chinese college students have aroused widespread concern among college student administrators in China at present. In addition, this study focuses on strengthening the influence of sensitivity on extroverted dangerous behaviors. It is found that there is a significant correlation between punishment sensitivity and extroverted dangerous behavior through the establishment of structural equation model for reward sensitivity and extroverted risk behavior and based on the analysis of the relationship between punishment sensitivity and extroverted dangerous behavior. However, there is no significant correlation between reward sensitivity and extroverted dangerous behavior. On the basis of this, some suggestions are provided for regulating the extroverted dangerous behavior of college students.

Key words: enhanced sensitivity; extroverted risk behavior; Chinese college students; SEM

1. INTRODUCTION

The number of students in colleges and universities in China has also increased rapidly with the rapid expansion of higher education in China in the past three decades, which makes the extroverted dangerous behavior of college students highlighted in the last five years. Because the outlook on life, world outlook and values of young people of this age have not yet reached the standards of adults (Fu Wenyan, 2016) [1], they are often easily affected by the environment in the absence of effective guardianship, lack of resistance to various temptations in society and lack of the ability to distinguish things (AslamMubeen,2021)[2]. Under the influence of their energetic, impulsive, irritable and other physiological characteristics, it is easy to carry out dangerous acts and then bear all kinds of social risks and legal responsibilities, and even lead to the forced suspension of studies. (Cai Ye, 2004)[3]

The extroverted dangerous behavior carried out by individual college students will seriously affect the motivation of most other students to abide by school and social norms, seriously damage the normal teaching order of colleges and universities, and hinder the achievement of university education goals. In addition, it will also further lead to a series of uncontrollable social risks and adverse legal consequences. Besides, these results ultimately have a negative impact on the academic completion of college students. How to predict and effectively curb the implementation of dangerous behavior of college students is extremely important (Xiao Xinwei, 2017)[4].

This study focuses on the relationship between college students' reinforcement sensitivity and their extroverted risk behaviors, and specifically studies the following two issues based on the above discussion:

1. Reward sensitivity has a significant impact on violence, theft, disobedience, truancy in extroverted risk behaviors.

2. Punishment sensitivity has a significant impact on violence, theft, disobedience, truancy in extroverted dangerous behaviors.

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2. REVIEW

2.1. Concept and Relationship

The concept of dangerous behavior was first put forward by American social psychologist R.Jessor in 1991. In addition, it is also one of the concepts that have attracted the attention of managers in the field of higher education management in China in recent years. They are often called health hazard behaviors in academic circles because dangerous behaviors have adverse effects on the mental and physical health of the implementers. According to the characteristics of Chinese youth behavior, on the basis of absorbing foreign study results, dangerous behaviors are divided into four categories: extroverted dangerous behaviors (Cui Lixia, Lei Li 2005)[5], introverted dangerous behaviors, bad behaviors in academic adaptation, and bad habits in academic adaptation. It is generally believed that the concept of extroverted dangerous behavior is the social maladaptive behavior that points to and disturbs others, including violence, disobedience, theft and truancy.

Reinforcement sensitivity refers to the individual's responsiveness when presenting reinforcement stimuli. In other words, it means the change trend and degree of emotion, motivation and behavior caused by it. It is worth noting that Gray and Mcnaughton made the latest revision in 2000 according to human individual differences, and reintegrated and modified the original system (Smillie,Pickering,&Jackson,2006)[6]. Reinforcement sensitivity includes reward sensitivity and punishment sensitivity according to the theory.

In recent years, researchers have paid more attention to college students' extroverted risk behavior, and made a variety of false studies on the relationship between reinforcement sensitivity and extroverted risk behavior in strengthening the relationship between sensitivity and extroverted risk behavior. At the same time, it also caused some thinking.For example, Liu Zhen (2014)[7]found that reward sensitivity can independently and positively predict individual impulsive behavior through the study of college students' risk behavior. Knyazev et al. (2004)[8]'sstudy on Russian adolescents shows that adolescents' reward sensitivity and punishment sensitivity can predict dangerous behaviors such as violence and impulse to some extent. The study of Mitchell et al. (2007)[9] shows that individuals with high reward sensitivity and low punishment sensitivity tend to violate discipline and social norms compared with other individuals after individuals receive reward-related signals continuously. After individuals receive punishment-related signals continuously, individuals with low reward sensitivity and high punishment sensitivity are compared with other individuals. They are more inclined to behave in accordance with discipline and social norms. In addition, Park et al. (2013)[10] also found that reward sensitivity and punishment sensitivity can predict individual violations of discipline, violence and other behaviors.

It can be seen that enhanced sensitivity can predict many risk behaviors in extroverted risk behaviors by combing the current study. However, there is no systematic study on the impact of enhanced sensitivity on extroverted risk behaviors. This study systematically explores the relationship between reinforcement sensitivity and extroverted risk behaviors of college students.

2.2. Study Hypothesis

This study puts forward the following hypotheses based on the current study status of strengthening nominality for extroverted dangerous behavior, and according to the study of domestic and foreign scholars and related theories, as shown in figure 1:

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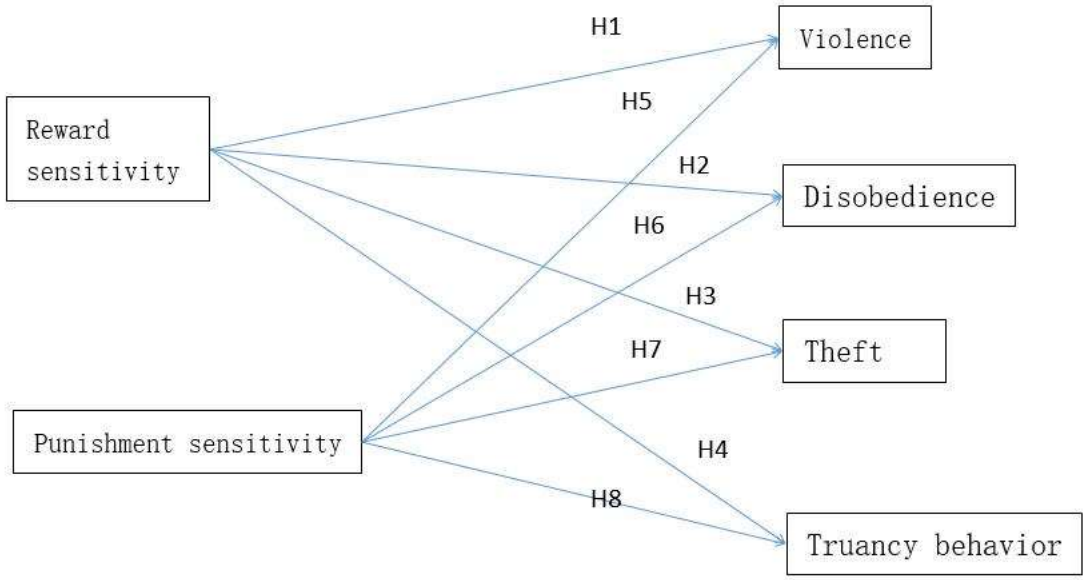

Figure 1 hypothetical path map

H1 reward sensitivity has a significant effect on violence. Besides, there is a correlation between them.

H2 reward sensitivity has a significant effect on disobedience behavior. Besides, there is a correlation between them.

H3 reward sensitivity has a significant effect on theft. Besides, here is a correlation between them.

H4 reward sensitivity has a significant effect on truancy behavior. Besides, there is a correlation between them.

H5 punishment sensitivity has a significant effect on violence. Besides, there is a correlation between them.

H6 punishment sensitivity has a significant effect on disobedience behavior. Besides, there is a correlation between them.

H7 punishment sensitivity has a significant effect on theft. Besides, there is a correlation between them.

H8 punishment sensitivity has a significant effect on truancy behavior. Besides, there is a correlation between them.

3. STUDY OBJECTS AND METHODS

This study takes the current Chinese full-time undergraduate colleges and universities as the study object. Some scholars such as Zhang Weihao "Dancing with structural equation" (2020)[11] think that the number of samples is more than 200 and less than 500 is a reasonable number of samples. As a consequence, this study distributed 500 questionnaires to college students in full-time colleges and universities on the basis of considering the stability of the sample and invalid questionnaires. The way to distribute the questionnaire is divided into field distribution, network distribution and academic conference site and so on. The data obtained were statistically analyzed by SPSS22.0 and AMOS.0.

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4. STUDY RESULTS

4.1. Reliability and validity test

The (SPSRQ) reinforcement sensitivity questionnaire developed by Torrubia et al (2001)[12] was adopted in the reinforcement sensitivity scale. On this basis, Guo Yongxiang (2011)[13] revised the reinforcement sensitivity questionnaire for Chinese college students. The questionnaire has a total of 16 items in two dimensions: reward sensitivity and punishment sensitivity. JLMGX indicates reward sensitivity and CFMGX indicates punishment sensitivity.

The questionnaire was compiled by Auerbach and Abela in 2006 in the extroverted risk behavior scale. Bai Jie (2007)[14] developed the extroverted risk behavior scale with 4 dimensions and 16 items with 5 points. BLXW means violence; BFGJ means disobedience; TQ means theft; and TKTX means truancy.

4.1.1 Reliability Test

The reliability is high if the Cronbach value is higher than 0.8; If the value is between 0.7 and 0.8, the reliability is great; If the value is between 0.6 and 0.7, the reliability is acceptable; If the value is less than 0.6, it means the reliability is not great; If the CICT value is less than 0.3, the author can consider deleting the item. If the value of "deleted α coefficient" is significantly higher than that of α coefficient, the author can consider deleting the item and reanalyzing it at this time. The subjective correlation value of the item is 0.3 as the definition value, and if the TKTX5 value is less than 0.3, it will be deleted directly. It is necessary to delete the Cronbach value, but the deleted Cronbach value is still 0.622. The six dimensions in the questionnaire are measured through the operation of the software, and the results are shown in Table 1.

Table 1 Reliability test

Name	Correction item total correlation(CITC)	α coefficient of deleted item	First order Cronbach α coefficient	Second order Cronbach α coefficient	Global Cronbach α coefficient
JLMGX1	0.316	0.795	0.792	0.809	0.882
JLMGX2	0.515	0.766			
JLMGX3	0.564	0.758			
JLMGX4	0.595	0.754			
JLMGX5	0.549	0.761			
JLMGX6	0.513	0.767			
JLMGX7	0.424	0.781			
JLMGX8	0.511	0.767			
CFMGX1	0.468	0.831	0.838		
CFMGX2	0.487	0.829			
CFMGX3	0.615	0.813			
CFMGX4	0.609	0.813			
CFMGX5	0.506	0.827			
CFMGX6	0.611	0.813			
CFMGX7	0.580	0.817			
CFMGX8	0.662	0.806			
BLXW1	0.548	0.824	0.836		
BLXW2	0.521	0.826			
BLXW3	0.714	0.787			
BLXW4	0.561	0.819			
BLXW5	0.718	0.793			
BLXW6	0.635	0.804			
BFGJ1	0.648	0.794	0.832		
BFGJ2	0.521	0.840			
BFGJ3	0.688	0.789			
BFGJ4	0.680	0.787			

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BFGJ5	0.677	0.785		0.901	
TQ1	0.671	0.828	0.855		
TQ2	0.694	0.820			
TQ3	0.666	0.830			
TQ4	0.667	0.828			
TQ5	0.686	0.821			
TKTX1	0.419	0.545	0.622		
TKTX2	0.358	0.579			
TKTX3	0.394	0.558			
TKTX4	0.465	0.529			
TKTX5	0.255	0.622			

4.1.2 Validity test

The validity study is used to analyze whether the study item is reasonable and meaningful. The validity analysis uses the data analysis method of factor analysis, and carries on the comprehensive analysis through the KMO value, the variance explanation rate value, the factor load factor value and so on. The KMO value is used to judge the validity, and the factor load coefficient is used to measure the corresponding relationship between the factor (dimension) and the item in order to verify the validity level of the data, in which the KMO value is analyzed; If this value is higher than 0.8, the validity is high; If this value is between 0.7 and 0.8, the validity is great; If this value is between 0.6 and 0.7, the validity is acceptable; If the value is less than 0.6, the validity is not great .The overall KMO value of the questionnaire is 0.900, and the KMO values of each variable are all greater than 0.5. As a consequence, the overall explanatory degree of the questionnaire is high and the validity is very great. Bartlett spherical test of the whole questionnaire (sig.) is less than 0.01. The scale has great validity (Table 2) and is suitable for factor analysis. The significant level of each variable is less than 0.01 (very significant) and rejects the hypothesis that the variables are independent of each other.

Table 2 validity test

Variable	KMO test	Bartlett test
	KMO	Significance level
Overall validity	.900	0.000
JLMGX	.847	0.000
CFMGX	.868	0.000
BLXW	.863	0.000
BFGJ	.813	0.000
TQ	.805	0.000
TKTX	.690	

The principal component analysis method is used to make an exploratory factor analysis of the sample data. In addition, the factor load matrix can be obtained, including the factor composition type, eigenvalue and variance contribution rate of the measured items, and then extract the factors whose eigenvalues are greater than 1. The maximum variance method can be used to rotate the measurement items with multiple common factors in order to make the meaning of each factor clearer. The scale has great validity only when the factor load of each measurement item is greater than 0.5 and less than 0.95.

Table 3 Explanation table of total variance

Composition	Initial eigenvalue			Extracting the sum of squares of load			Sum of squares of rotating load		
	Total	Percentage of variance	Cumulative %	Total	Percentage of variance	Cumulative %	Total	Percentage of variance	Cumulative %
1	8.405	24.013	24.013	8.405	24.013	24.013	4.552	13.006	13.006
2	3.994	11.411	35.425	3.994	11.411	35.425	4.066	11.616	24.621
3	3.030	8.658	44.083	3.030	8.658	44.083	3.783	10.808	35.429
4	1.691	4.832	48.915	1.691	4.832	48.915	3.281	9.376	44.805
5	1.461	4.174	53.089	1.461	4.174	53.089	2.244	6.410	51.215
6	1.171	3.346	56.435	1.171	3.346	56.435	1.827	5.220	56.435

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7	.958	2.739	59.174							

As can be seen in Table 3 of the total variance explanation, a total of 6 factors are extracted. Besides, the cumulative variance contribution rate is 56.435%. The interpretation level is great. Table 4 shows the composition matrix of removing factor loads less than 0.5 after rotation.

Table 4 Factor load composition table

Name	JLMGX	CFMGX	BLXW	BFGJ	TQ	TKTX
JLMGX2	0.653					
JLMGX3	0.708					
JLMGX4	0.729					
JLMGX5	0.690					
JLMGX6	0.656					
JLMGX7	0.562					
JLMGX8	0.652					
CFMGX4		0.590				
CFMGX5		0.780				
CFMGX6		0.667				
CFMGX7		0.790				
CFMGX8		0.691				
BLXW1			0.683			
BLXW2			0.661			
BLXW3			0.827			
BLXW4			0.699			
BLXW5			0.832			
BLXW6			0.770			
BFGJ1				0.779		
BFGJ2				0.665		
BFGJ3				0.830		
BFGJ4				0.830		
BFGJ5				0.810		
TQ1					0.807	
TQ2					0.808	
TQ3					0.802	
TQ4					0.788	
TQ5					0.800	
TKTX1						.750
TKTX2						.687
TKTX3						.702
TKTX4						.603

Component reliability is an index to measure the consistency of items in the dimension. Generally speaking, it is recommended that the ideal value is greater than 0.5, and the acceptable threshold is from 0.36 to 0.5. The convergence validity is used to consider whether the item can reflect the dimension or structure. Besides, when the AVE is greater than 0.5, it shows a great convergence validity (FornellandLarcker,1981). Confirmatory factor analysis (CFA) analysis was conducted for a total of 6 factors. It can be seen from Table 5 that the CR and AVE, values of the six factors are all greater than 0.5, which means that the data aggregation (convergence) validity of this analysis is great.

Table 5 Results of model AVE and CR indicators

Factor	Average variance extraction Ave value	Combination reliability CR value
JLMGX	0.660	0.796
CFMGX	0.561	0.809
BLXW	0.659	0.834
BFGJ	0.686	0.825
TQ	0.521	0.844
TKTX	0.670	0.712

The discriminant validity is calculated by the open root sign. In addition, the AVE which needs to be calculated by the open root number is calculated by selecting SORT under AVE , in which the root value of each AVE is greater than the correlation of other related structures.

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The square root of AVE for TKTX was 0.819, the square root of AVE for TQ was 0.722, the square root of AVE for BFGJ was 0.828, the square root of AVE for BLXW was 0.812, the square root of AVE for CFMGX was 0.749, and the square root of AVE for JLMGX was 0.812, which is greater than the maximum absolute value of correlation coefficient between factors. It means that it has great discriminant validity.

	TKTX	TQ	BFGJ	BLXW	CFMGX	JLMGX
TKTX	.819					
TQ	.575	.722				
BFGJ	.646	.702	.828			
BLXW	.535	.644	.785	.812		
CFMGX	.414	.157	.258	.329	.749	
JLMGX	.009	.021	.026	-.002	.079	.812

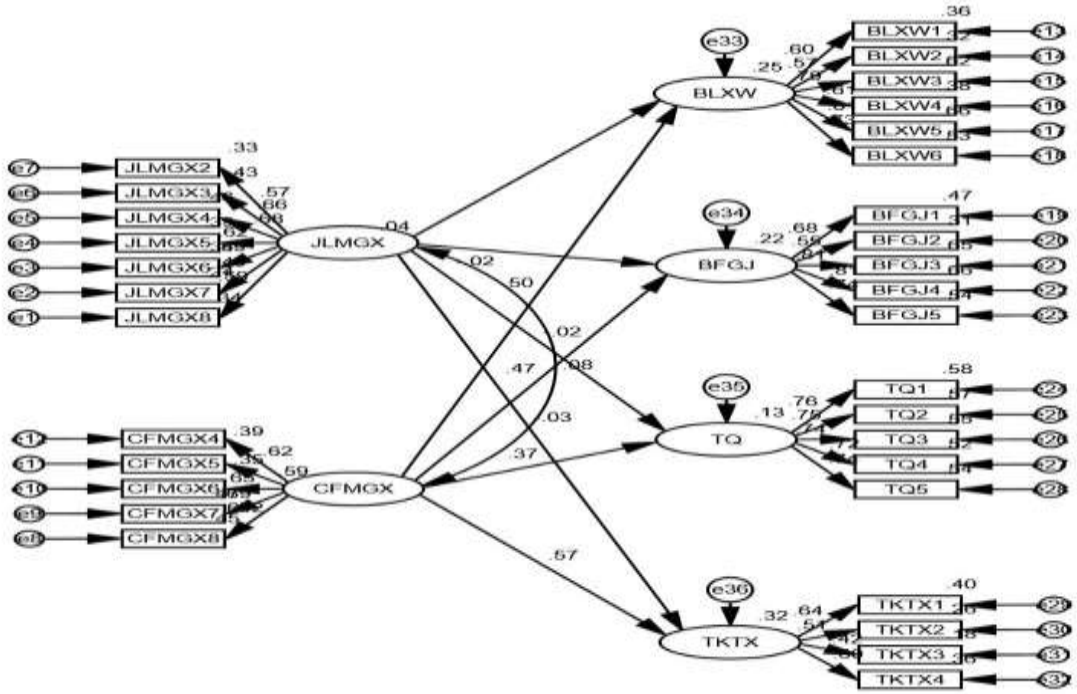

Figure 1 Sensitivity model diagram of various variables of extroverted risk behavior

Generally speaking, the questionnaire used in this study has great internal consistency and credibility. As a consequence, the next step of analysis can be carried out.

4.2. Study hypothesis verification

The model variables include reward sensitivity, punishment sensitivity, violence, disobedience, theft, truancy, and construct the variable relationship according to the study hypothesis according to the initial model of each variable of reward and punishment sensitivity (figure 1). On this basis, the relationship between variables is verified.

The model diagram of each variable of sensitivity to reward and punishment is constructed. Besides, the chi-square value is 1354.334 and the degree of freedom is 456. The fitting degree CMIN/df=2.970, which meets the model satisfies the discriminant index of CMIN/df < 3, indicating that the fitting index of the model reaches an acceptable range and degree. In addition, the root mean square of approximate error RMSEA=0.069, meets the standard of upper limit RMSEA < 0.08.It shows that the fitting degree of the model is great. The GFI=0.906,NFI=0.888,IFI=0.947,CFI=0.947,TLI=0.939 meets the index of more than 0.80. As a consequence, it further shows that the model fits well and the model passes the test.

The standardized and non-standardized regression coefficients of independent variable reward sensitivity and punishment sensitivity to dependent variable violence, disobedience,

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theft, truancy and truancy are shown in Table 6 through the analysis of path regression coefficient:

Table 6 Each variable of sensitivity to reward and punishment affects the regression coefficient of extroverted risk behavior.

			Std	Unstd	S.E.	C.R.	P
BLXW	<---	JLMGX	-.126	-.166	.107	-1.555	.120
BFGJ	<---	JLMGX	-.046	-.052	.093	-.560	.576
TQ	<---	JLMGX	-.047	-.047	.082	-.566	.571
TKTX	<---	JLMGX	-.044	-.051	.104	-.493	.622
TKTX	<---	CFMGX	.608	.548	.107	5.114	***
TQ	<---	CFMGX	.342	.257	.071	3.634	***
BFGJ	<---	CFMGX	.474	.416	.088	4.704	***
BLXW	<---	CFMGX	.535	.541	.102	5.311	***

The corresponding P values of reward sensitivity on violence, disobedience, theft and truancy were all more than 0.05 significant level through the analysis of path regression coefficient. This study holds that reward sensitivity is not related to violence, disobedience, theft, truancy respectively, and the hypothesis is not valid. The corresponding P values of punishment sensitivity on violence, disobedience, theft and truancy were all less than 0.05 significant level. This study holds that punishment sensitivity is related to violence, disobedience, theft and truancy respectively. As a consequence, the hypothesis holds.

Generally speaking, it was found that punishment sensitivity has a significant correlation with violence, disobedience, theft and truancy, respectively, and there is a positive correlation between them, which is consistent with the results of Mitchell et al. (2007)[15]. Reward sensitivity is not related to violence, disobedience, theft, truancy, which is contrary to the results of Liu Zhen (2014)[16].

5. CONCLUSION AND SUGGESTION

The more punishment-sensitive students are, the more aware of the harmfulness of violence, disobedience, theft, truancy, and this kind of students can clearly recognize the harmfulness of extroverted dangerous behavior and the adverse consequences of this kind of behavior according to the above study results. As a consequence, college students with high punishment sensitivity tend to avoid the punitive consequences of extroverted dangerous behavior. As a consequence, it is not easy to be involved in dangerous behavior. Based on this study, the following suggestions are put forward:

1. it was found that the higher the students' sensitivity to punishment was, the higher their cognition of extroverted dangerous behavior was. As a consequence, college student work administrators can focus on punishing college students with low sensitivity and improve their awareness of extroverted dangerous behavior so as to help students stay away from the adverse consequences of extroverted dangerous behaviors.

2. It was found that there is no correlation between reward sensitivity and extroverted dangerous behavior, which shows that the reward incentives such as scholarship, financial aid, honor and position provided to students by colleges and universities have no effect on students' implementation of extroverted dangerous behavior. In practice, student administrators should focus on the strict implementation of school rules and regulations and improve students' cognition of extroverted dangerous behaviors by providing students with punitive stimulus signals.

Generally speaking, only by strictly implementing the rules and regulations of the university, strengthening the regulation and punishment of extroverted dangerous behavior, and using reward as an auxiliary means of student work, can college students realize the harmfulness of extroverted dangerous behavior and reduce the incidence of this behavior.

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