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An Empirical Study of the Understandings of Chinese Martial Arts Symbols among German University Students

Abstract

Background & Study Objective: Semiotics is one of the prominent approaches in the 21st Century social sciences. Chinese martial arts are recognized as an “unique” Chinese cultural symbol. This article aims to provide knowledge of the awareness and familiarity of Chinese martial arts of Germany university students.

Material & Methods: By using the survey methodology on 1258 university students in 15 German universities. The survey data was quantitatively analyzed by SPSS22.0, and the chi-square test and factor analysis were performed. If the p-value was less than 0.05, the null hypothesis was rejected, and the significant difference does exist.

Results: 1. German university students are not familiar with Chinese martial arts symbols; 2. German male university students tend to focus on the martial level of boxing types and Chinese traditional weapons, while German female university students prefer the Chinese martial clothing and culture; 3. The cognition level and familiarity of German students of liberal arts on Chinese martial arts, are general higher than the German science students; 4. The general cognition levels and familiarity of the Chinese martial arts official communication agencies, and their propagation means among German university students are not high.

Conclusion: The awareness and familiarity of Chinese martial arts symbols of Germany university students are not high. The symbols of Chinese boxing types, martial arts landscapes and communication agencies suffer from problem of inadequate leverage, compared with the symbols of Chinese martial arts movies and television programs.

Key words

Chinese martial arts; cultural semiotics; University student; recognition; familiarity

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INTRODUCTION

The use of symbols is an important feature that distinguishes humans from animals. It is precisely because of the use of cultural symbols in human history that the history of civilization of human exception has been made. As Sebeok (2001) mentions, “The phenomenon that distinguishes life forms from inanimate objects is semiosis.” Chandler (Chandler, 2002) states that “We seem as a species to be driven by a desire to make meanings: above all, we are surely *Homo significans* – meaning-makers (Chandler, 2002). Distinctively, we make meanings through our creation and interpretation of ‘signs’.” German philosopher Ernst Cassirer (Cassirer, 1962) insisted that “hence, instead of defining man as an animal rationale, we should define him as animal symbolicum.” In sum, it can be seen that the symbol has been raised to the height of human nature. The human beings, meaning and symbol are inseparable. It is reasonable to argue that symbol and symbolic activities are a fundamental form of existence and status for humans. From the Bagua symbol in China’s Yijing to modern scientific theories, the human abilities of symbol creation and symbolic thinking flow through human history. Simply speaking, we always use limited symbolic changes to simulate the rich world and its changing laws. Chinese semiotics scholar Zhao indicates that “The 21st century is the century of semiotics (2012, p. 22-23). The process of cultural transformation is accelerating; the symbolic activities of society are unprecedentedly active. Moreover, our life is ‘overflowing with symbols’, in other words, we live in a symbol-saturated society.” Today’s well-developed symbolic system provides sufficient resources and means for cultural exchange and dissemination. Scholars throughout the world from various academic fields are growingly concerned over the semiotics approach as symbolic communication has increasingly become an important part of our cultural exchanges (Zhao, 2012). On the face of this situation, however, researchers have neglected the research field of cultural symbols of Chinese martial arts. Therefore, this research project sheds light on the interplay between emerging, marginal, interdisciplinary and generic semiotics research and Chinese traditional culture of martial arts. The article aims to understand the theoretical framework behind the German university students’ thoughts and behaviors, through explanatory research methods.

Research Methods

The Selection of Martial Arts Cultural Symbols

After three stages of primary selection, screening test and final determination, 50 Chinese martial arts cultural symbols were finalized according to research needs, pre-survey results and expert argumentation.

1. Primary selection stage

In the primary selection stage, we invited seventy (70) national traditional sports major graduate students to collect three categories (material symbols, institutional symbols and spiritual symbols) of martial arts cultural symbols respectively in the form of a questionnaire. After the research team compiled and summarized the collected questionnaires, we evaluated the representativeness of the Chinese martial arts cultural symbols in the primary selection, and finally obtained the 100 Chinese martial arts cultural symbols after the first round of screening (Table 1).

Table 1. Chinese Martial Arts Cultural Symbols after the First Round of Screening

Martial Arts Cultural Symbols				
Shaolin Temple	Drunken fist	Thang	Crouching Tiger Hidden Dragon	Wu Jianquan
Wudang Mountain	Plum blossom	Shuo	The Grand Master	Chen Fake
Mount Emei		Guai	Hero	Huo Yuanjia
Qingcheng Mountain		Meteor hammer	Ambush	Wong Fei-hung
Kongtong Mountain		Nunchaku	Tai Chi clothing	Ip Man
Chenjiagou		Nine-section whip	Chang Quan clothing	Jin Yong
Handan Yongnian Guangfu		Wooden Dummy	Nanquan clothing	Tsui Hark
Check boxing	Knife	Stone lock	Monk Robes	Ang Lee
Choy Li Fut	Spear	Kung Fu Panda	Sanda clothing	Zhang Yimou
Nan Quan	Sword	Mulan	Bruce Lee	Cai Longyun
Tai Chi	Stick	The Big Boss	Jackie Chan	Zhang Wenguang
Shaolin Quan	Halberd	Raptors crossing the river	Jet Li	Zheng Huaixian
Chang Quan	Axe	Dragon fight	Donnie Yen	Yang Zhenduo
Hong Quan	Broadaxe	Fist of Fury	Hung Kam-bo	Wen Jingming
Wing Chun	Hook	Game of Death	Wu Jing	Zheng Peipei
Mantis Boxing	Fork	Serpentine	Michelle Yeoh	Wu Bin
Xingyi Quan	Whip	Drunk fist movie	Zhang Ziyi	Morality
Eight Diagrams Palm	Mace	Police story	Yang Luchan	Yin and Yang theory
Baji Quan	Hammer	Shaolin Temple Movie	Wu Yuxiang	Five elements theory
Tongbeiquan	Scratch	Fang Shiyu	Sun Lutang	Zhou Yi

2. Testing Phase




Forty German university students were selected to conduct a cognition survey on 100 Chinese cultural symbols. At this stage of the survey, students only had two options of “I know” and “I don’t know” towards each symbol. In addition, the questionnaire also established an extra open question: “In addition to these 100 symbols, what symbols do you think can represent Chinese martial arts?”

At least one person knew each item of Chinese martial arts culture number, that is, 5% interviewees knew it before entering the final Chinese martial arts culture symbol cognition questionnaire.

3. Definition Phase

By combining the predictions and actual statistical results, fifty martial arts cultural symbols were finalized (Table 2).

Table 2. Chinese Martial Arts Cultural Symbols after the Second Round of Screening

Martial Arts Cultural Symbols				
Shaolin Temple	Mantis Boxing		Mulan	Michelle Yeoh
Wudang Mountain	Xingyi Quan	Knife	Martial arts clothing	Ang Lee
Mount Emei	Eight Diagrams Palm	Spear	Monk Robes	Ip Man
Qingcheng Mountain	Drunken fist	sword	Bruce Lee	Shi Yongxin
Chenjiagou	Nan Quan	stick	Jackie Chan	Zhang Ziyi
Tai Chi		Nunchaku	Jet Li	Martial arts exchange group
Shaolin Quan	Sanda cloth	Nine-section whip	Donnie Yen	Sanda
Chang Quan		Wooden Dummy	Hung Kam-bo	Baji Quan
Hong Quan		Stone lock	Wu Jing	Martial arts film
Wing Chun		Kung Fu Panda	Zhang Yimou	Martial Arts World Championship

Survey Method

Absolute survey method: We let the respondents score the familiarity of each Chinese martial arts cultural symbol by using a Likert scale. The specific question was: Score the following Chinese martial arts cultural symbols, according to your familiarity with the symbol. (0 – do not know; 1 – very unfamiliar; 2 – means less familiar; 3 – more familiar; 4 – very familiar).

Relative survey method: We let university students select 10 symbols that best represent Chinese martial arts culture among 50 symbols. The survey question was “In the list of Chinese martial arts culture symbols, if you choose ten Chinese martial arts cultural symbols that you think are the most representative, which 10 items would you choose?”

Survey Respondent

The research selected the University of Munich, the Humboldt University of Berlin, the University of Heidelberg, the Free University of Berlin, the University of Bonn, the University of Freiburg, the University of Göttingen, the University of Tübingen, the University of Münster, the University of Hamburg, the University of Frankfurt, the University of Cologne, Leipzig University, the University of Mainz and the University of Würzburg, and other fifteen universities in different regions of Germany as the survey units. Each university issued 100 questionnaires. A total of 1,500 questionnaires were distributed in this study, and 1,306 were collected, of which 1258 were valid questionnaires, the recovery ratio was 87.07%, and the effectiveness ratio was 83.87%.

Statistical Method

In this study, the data of the questionnaire was input into SPSS by double check, and the database was established. The survey data was quantitatively analyzed by SPSS22.0, and the chi-square test and factor analysis were performed. If the p-value was less than 0.05, we rejected the null hypothesis and the significant difference does exist.

Semi-structured interview

Based on the analysis of the survey results, semi-structured interviews were conducted on causes and incomprehensions of the investigation.


Table 4. The Interviewee Information

Name	Title	Affiliated unit
Wu Min	Head coach	Deutsche Wushu Federation e.V.
Sixt Wetzler	Deputy Director	Deutsches Klingensmuseum
Swen Körner	Professor	German Sport University Cologne
Tobias Lechner	PhD student	Free University of Berlin
Martin Schneid	Master's student	University of Bremen
Marc Rosca	Undergraduate	Humboldt University of Berlin
Anne Löwe	PhD student	University of Cologne
Giselle Mendes	Undergraduate	Ruprecht Karl University of Heidelberg
Necla Özbek	Undergraduate	University of Munich

Research Results and Discussions

The Awareness of Chinese Martial Arts Culture Symbols

1. Awareness Analysis of German University Students on Chinese Martial Arts Culture Symbols

Awareness surveys show that Tai Chi and martial arts movies are the most recognized in the options (100% recognition). The third to tenth order are: Jackie Chan, Bruce Lee, Shaolin Temple, Knife, Jet Li, Kung Fu Panda,  and sword. There are fifteen martial arts cultural symbols' awareness ratio reach 60%: most of them are symbols of martial arts celebrities, such as Bruce Lee, Jackie Chan, Jet Li, Zhang Ziyi, etc.; next, the symbols of martial arts and televisions, martial arts movies, Kung Fu Panda, Mulan, etc.; then there are martial arts implement symbols, such as knives, swords, and sticks; the last are the conception symbols:

 and .

It is obvious to conclude that Chinese martial arts films and televisions play an important role in the transmission of Chinese martial arts culture to the world. Such as the films of Kung Fu Panda and Mulan, which successfully promoted Chinese martial arts culture to the world.








However, the main official overseas propagation organization of martial arts and the official international martial arts events have very low awareness among German university students. For example, the awareness ratio of the World Martial Arts Championship is 14.63%; the awareness ratios of  and  are only 9.14% and 8.9%.

Table 5. The Awareness of Chinese Martial Arts Cultural Symbols of German University Students






MACS	AQ	AR	MACS	AQ	AR
Tai Chi	1258	100	Wudang Mountain	459	36.49
Martial arts film	1258	100	Michelle Yeoh	436	34.66
Jackie Chan	1178	93.64	Wooden Dummy	423	33.62
Bruce Lee	1164	92.53	Donnie Yen	423	33.62
Jet Li	1158	92.05	Hung Kam-bo	421	33.47
Kung Fu Panda	1143	90.86	Nan Quan	415	32.99
Shaolin Temple	1106	87.92	Wu Jing	374	29.73
Knife	1104	87.76	Drunken fist	287	22.81
 1078	1078	85.69	Hong Quan	287	22.81
Sword	1047	83.23	Xingyi Quan	249	19.79
 967	967	76.87	Sanda	244	19.40
Shaolin Quan	967	76.84	Mantis Boxing	247	19.63
Zhang Ziyi	838	66.61	Monk Robes	236	18.76
Mulan	812	64.55	Chenjiagou	222	17.65
Stick	778	61.84	Ip Man	206	16.38
Martial arts clothing	667	53.02	World Martial Arts Championship	184	14.63
Zhang Yimou	667	53.02	Stone lock	172	13.67
Wing Chun	651	51.75	Baji Quan	168	13.35
Eight Diagrams Palm	563	44.75	Chang quan	165	13.12
 549	549	43.64	Qingcheng Mountain	126	10.02
Spear	529	42.05	Nine-section whip	124	9.86
Nunchaku	527	41.89	Mount Emei	117	9.30
Ang Lee	524	41.65	Shi Yongxin	117	9.30
Martial arts clothing	518	41.18		115	9.14
Martial arts exchange group	515	40.94		112	8.90

**PS: MACS: Martial Arts Cultural Symbols; AQ: Awareness Quantity; AR: Awareness Ratio

2. Familiarity Analysis of German University Students on Chinese Martial Arts Culture Symbols

The top ten rankings of familiarity are: Jackie Chan, Martial Arts Film, Bruce Lee, Kung Fu Panda, Jet Li, Mulan, Zhang Ziyi, Knife, Nunchaku and Tai Chi. Judging from the awareness and familiarity of German university students on martial arts cultural symbols, they have higher awareness and familiarity with the martial arts cultural symbols of films and television, celebrities and Shaolin Temple. For the boxing types of Chinese martial arts, except for Tai Chi and Wing Chun, both awareness and familiarity are relatively low among German university students.

Table 6. The Familiarity of Chinese Martial Arts Cultural Symbols among University Students

MACS	FR	SD	MACS	FR	SD
Jackie Chan	3.51	0.835	Stick	2.71	0.988
Martial arts film	3.31	0.457		2.71	0.987
Bruce Lee	3.30	0.854	Hong Quan	2.71	0.983
Kung Fu Panda	3.29	0.642	Martial arts clothing	2.68	0.998
Jet Li	3.29	0.598	World Wushu Championship	2.67	0.894
Mulan	3.26	0.723	Spear	2.66	0.945
Zhang Ziyi	3.25	0.845	Martial arts exchange group	2.64	0.913
Knife	3.21	0.798	Ip Man	2.64	0.982
Nunchaku	3.20	0.987		2.64	0.876
Tai Chi	3.11	0.656	Wu Jing	2.63	1.100**
Wooden Dummy	3.10	1.210**	Nine-section whip	2.63	0.894
Ang Lee	3.09	0.912	Monk Robes	2.62	0.998
Wing Chun	3.06	0.872	Shi Yongxin	2.62	0.983
Shaolin Temple	3.05	0.892	Zhang Yimou	2.62	0.919
	3.00	1.088**	Stone lock	2.61	0.985
Wudang Mountain	2.95	0.876	Hung Kam-bo	2.61	0.804
sword	2.92	0.913	Eight Diagrams Palm	2.61	0.975
Shaolin Quan	2.89	0.983	Xingyi Quan	2.60	1.087**
Donnie Yen	2.84	0.982	Chang Quan	2.58	1.098**
Martial arts clothing	2.84	0.923	Drunken fist	2.51	0.802
	2.83	1.023**	Baji Quan	2.50	0.879
Michelle Yeoh	2.83	0.876	Qingcheng Mountain	2.46	1.082**
	2.83	0.934	Mantis Boxing	2.46	0.788
Chenjiagou	2.80	0.992	Sanda	2.45	1.093**
Nan Quan	2.73	0.987	Mount Emei	2.40	1.109**

PS: 1. MACS: Martial Arts Cultural Symbols; FR: Familiarity Ratio; SD: Standard Deviation.

**The martial arts cultural symbol of wooden dummy has high degree of dispersion.

Familiarity Analysis of Different Groups of University Students on Chinese Martial Arts Cultural Symbols

1. Familiarity Analysis of Chinese Martial Arts Cultural Symbols Between German University Student of Different Genders

Table 7. The Variance Tests of Chinese Martial Arts Culture Familiarity Grading of Different Genders


MACS	Male	Female	F	Sig.
Nunchaku	3.447	3.157	32.342	0000**
Wu Jing	2.783	2.563	26.323	0000**

Wooden Dummy	3.345	3.098	25.132	0000**
Wing Chun	3.348	2.887	25.132	0000**
Martial arts clothing	2.765	3.049	20.128	0000**
Martial arts exchange group	2.763	2.599	19.231	0000**
Monk Robes	2.601	2.865	17.615	0000**
 Yin-Yang	2.905	3.222	15.761	0000**
Ip Man	2.734	2.601	15.265	0000**
Xingyi Quan	2.823	2.587	12.965	0000**
Mount Emei	2.578	2.398	12.312	0000**
Sanda	2.587	2.448	9.874	0.001*
Zhang Ziyi	3.378	3.209	9.005	0.003*
Mantis Boxing	2.589	2.352	9.005	0.003*
Jet Li	3.401	3.189	4.568	0.032*
Stone lock	2.620	2.609	3.766	0.053
Zhang Yimou	2.629	2.618	3.672	0.065
Bruce Lee	3.323	3.248	3.654	0.068
 Gloves	2.823	2.847	3.637	0.069
Baji Quan	2.439	2.519	3.566	0.070
 Seal	2.732	2.687	3.467	0.078
Wudang Mountain	2.988	2.923	3.234	0.087
Tai Chi	3.125	3.105	3.065	0.097
Chenjiagou	2.812	2.798	3.024	0.101
Sword	2.942	2.899	3.004	0.106
Michelle Yeoh	2.839	2.819	2.918	0.109
Hong Quan	2.708	2.719	2.901	0.123
Qingcheng Mountain	2.458	2.473	2.900	0.126
Shi Yongxin	2.619	2.623	2.819	0.134
 Taijitu	2.820	2.843	2.764	0.136
Knife	3.276	3.208	2.453	0.231
Shaolin Temple	3.032	3.054	2.354	0.289
World Martial Arts Championship	2.677	2.669	1.800	0.298
Sanda clothing	2.620	2.619	1.450	0.303
Hung Kam-bo	2.611	2.609	1.200	0.246
Ang Lee	3.101	3.079	1.123	0.386
Spear	2.662	2.659	1.112	0.301
 Seal	2.646	2.635	1.089	0.302
Eight Diagrams Palm	2.607	2.617	0.909	0.323
Drunken fist	2.516	2.5	0.787	0.399
Stick	2.713	2.709	0.784	0.321

Chang Quan	2.600	2.572	0.440	0.513
Shaolin Quan	2.910	2.876	0.438	0.509
Kung Fu Panda	3.301	3.287	0.189	0.687
Donnie Yen	2.838	2.849	0.145	0.713
Mulan	3.268	3.267	0.090	0.386
Nan Quan	2.730	2.731	0.032	0.987
Nine-section whip	2.631	2.63	0.005	0.812
Martial arts film	3.319	3.305	0.004	0.965
Jackie Chan	3.516	3.519	0.002	0.971


PS: 1. MACS: Martial Arts Cultural Symbols. 2. ** $p < 0.01$ Very Significant Difference, * $p < 0.05$ Significant Difference.


The variance test results of the familiarity score of Chinese martial arts cultural symbols are as follow (Table 7):

1. There are fifteen Chinese martial arts cultural symbols with $p < 0.05$, accounting for 30% of the 50 symbols. Among them, there are eleven Chinese martial arts cultural symbol with $p < 0.01$, accounting for 22% of the fifty symbols. The results show that university students of different genders have significant differences in their familiarity with Chinese martial arts cultural symbols. Among them, males are more familiar with the Chinese martial arts cultural symbols than females, which indicates that males in German universities are more aware of the Chinese martial arts culture.
2. The results indicate that university students of different genders have significant differences in their familiarity with the boxing type and implement of Chinese martial arts cultural symbols. Among the fifteen Chinese martial arts cultural symbols with $p < 0.05$, six of them are Chinese martial arts cultural symbols of boxing type and implements: nunchakus, wooden piles, Wing Chun, Xingyi Quan, Mantis Boxing and Sanda. It indicates that German male university students are more inclined to understand the material layer symbols of Chinese martial arts of boxing type and implement than female university students.
3. The gender differences of two martial arts symbols of martial arts: Monk Robes and martial arts clothing are very significant. Females pay more attention to the symbols of martial arts clothing than males. Moreover, females are more familiar to the  is higher than males.
4. Males are more familiar to the martial arts cultural symbols of celebrities such as Wu Jing, Ip Man, Zhang Ziyi and Jet Li than females.




2. Familiarity Analysis of Chinese Martial Arts Cultural Symbols Between German University Student of Different Majors (Table 8)

Table 8. The Variance Tests of Chinese Martial Arts Culture Familiarity Grading of Different Majors

MACS	Science Student	Humanities and Social Sciences Student	F	Sig.
Nunchaku	3.247	3.198	2.307	0.129
Wu Jing	2.653	2.513	2.753	0.099
Wooden Dummy	3.323	3.098	2.309	0.128
Wing Chun	3.108	2.997	3.823	0.056
Martial arts clothing	2.899	2.839	2.895	0.091
Martial arts exchange group	2.496	2.699	23.795	0000**
Monk Robes	2.899	2.839	2.895	0.091
	2.823	3.175	26.723	0000**
Ip Man	2.644	2.631	0.197	0.658
Xingyi Quan	2.612	2.587	0.342	0.583
Mount Emei	2.355	2.538	11.922	0000**
Sanda	2.478	2.421	2.512	0.119
Zhang Ziyi	3.298	3.242	1.386	0.239
Mantis Boxing	2.489	2.452	0.321	0.571
Jet Li	3.301	3.282	0.197	0.659
Stone lock	2.618	2.606	3.654	0.060
Zhang Yimou	2.618	2.785	11.301	0.001*
Bruce Lee	3.313	3.283	0.187	0.068
	2.847	3.023	10.980	0.001*
Baji Quan	2.479	2.510	0.049	0.901
	2.722	2.687	0.287	0.587
Wudang Mountain	2.883	3.012	7.994	0.005*
Tai Chi	2.982	3.214	30.329	0000**
Chenjiagou	2.805	2.799	0.005	0.952
Sword	2.927	2.906	0.041	0.842
Michelle Yeoh	2.854	2.821	0.200	0.703
Hong Quan	2.701	2.804	7.325	0.008*
Qingcheng Mountain	2.405	2.548	9.765	0.002*
Shi Yongxin	2.605	2.622	1.401	0.252
	2.817	3.003	27.965	0000**
Knife	3.248	3.200	0.605	0.428
Shaolin Temple	3.032	3.044	0.154	0.759
World Martial Arts Championship	2.677	2.659	0.173	0.854
Sanda clothing	2.626	2.618	1.450	0.303
Hung Kam-bo	2.603	2.621	1.287	0.265
Ang Lee	3.073	3.229	11.032	0.001*

Spear	2.672	2.647	1.112	0.301
	2.666	2.589	1.954	0.171
Eight Diagrams Palm	2.583	2.617	0.742	0.389
Drunken fist	2.518	2.502	0.786	0.397
Stick	2.821	2.709	2.948	0.085
Chang Quan	2.614	2.569	2.366	0.108
Shaolin Quan	2.964	2.880	3.012	0.071
Kung Fu Panda	3.287	3.291	0.046	0.796
Donnie Yen	2.833	2.847	0.043	0.805
Mulan	3.198	3.385	14.656	0000**
Nan Quan	2.729	2.731	0.016	0.901
Nine-section whip	2.631	2.630	0.005	0.812
Martial arts film	3.205	3.357	10.398	0.001*
Jackie Chan	3.508	3.514	0.028	0.894

PS: 1. MACS: Martial Arts Cultural Symbols. 2. ** p<0.01 Very Significant Difference, *p<0.05 Significant Difference.

1. University students of different academic majors have different familiarities with Chinese martial arts cultural symbols. There are thirteen Chinese martial arts cultural symbols with p<0.05, accounting for 26% of the 50 symbols. Among them, there are six Chinese martial arts cultural symbol with p<0.01, accounting for 12% of the 50 symbols. This result indicate that the humanities and social sciences university students are more familiar to the martial arts cultural symbols than science university students.
2. The results indicate that university students of different majors have significant differences in their familiarity with the conceptual symbols among those thirteen Chinese martial arts cultural symbols (conception and Chinese traditional philosophy symbols, such as Tai Chi, ,  and ). Moreover, the martial art exchange group play an important role in the overseas propagation of Chinese martial arts.
3. The familiarity of university students majoring in humanities and social sciences with Chinese martial arts cultural symbols is generally higher than that of natural sciences and engineering technologies.

Factorial Analysis of the Familiarity of Chinese Martial Arts Cultural Symbols

According to the familiarity survey results of the Chinese martial arts cultural symbol, the correlation matrix of fifty Chinese martial arts cultural symbol familiarity scores was calculated by SPSS software. Most of the related systems were larger than 0.3, which satisfied the conditions of factorial analysis (Field, 2009). At the same time, the KMO (Kaiser-Meyer-Olkin) fitness test was carried out, KMO=0.932, and as its value was greater than 0.9, this indicates that it is very suitable for factorial analysis (Table 9). The Bartlett test is to see if the data comes from a multivariate normal distribution population (Field, 2009). The Sig.

value in this study is 0.000, which is much smaller than the significance level of 0.05, indicating that the data comes from the normal distribution population and is suitable for factorial analysis.

Table 9. Examination of KMO and Bartlett

	KMO	0.932
	Approximate chi square	876.641
Bartlett's sphericity test	Df	42
	Sig.	.000

1. Factorial Analysis Result of the Chinese Martial Arts Cultural Symbols

The Chinese martial arts cultural symbols are used as relevant variables to verify the model, using principal component analysis and oblique cross rotation (Hari, 2011). Without limiting the number of factors, a common factor with an eigen value greater than 1 is extracted, and a total of six factors are obtained. The degree of interpretation of the rotated factor is shown in Table 10.

Table 10. Variance Interpretation Table for Factor Analysis of Chinese martial arts Cultural Symbols






Component	Eigen Value			Rotate sum of squares load
	Total	% of Variance	Cumulative of Variance %	Total
1	16.642	35.765	35.765	14.967
2	2.932	8.589	44.354	11.532
3	2.465	7.987	52.341	9.152
4	1.712	4.914	57.255	7.231
5	1.234	3.612	60.867	5.328
6	1.063	2.342	63.209	4.318

The variance explanation table shows that the first six public initial eigen values are greater than 1, which explains the total variance of 63.21%, indicating that the six common factor variables contain enough information of that 50 Chinese martial arts cultural symbols can express. Therefore, it is reasonable to extract six common factors. The variance of the first factor is 35.77%, which exceeded the sum of the other five factors. The second and third factors has a variance of more than 7%, and the fourth to sixth factors are all below 5%. The factor load matrix after rotation is shown in Table 10.

Table 11. Factor Load Table for Factor Analysis of 50 Items of Martial Arts

Martial Arts Cultural Symbols	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
V45 Martial arts film	0.875					
V19 Bruce Lee	0.848					
V49 Zhang YiMou	0.831					

V10 Ang Lee	0.805
V48 Kung Fu Panda	0.783
V39 Hung Kam-bo	0.759
V44 Wu Jing	0.731
V24 Jackie Chan	0.721
V05 Michelle Yeoh	0.702
V29 Jet Li	0.697
V15 Ip Man	0.689
V20 Shi Yongxin	0.590
V25 Zhang Ziyi	0.585
V34 Donnie Yen	0.502
V04 Mulan	0.498
V26 Tai Chi	0.783
V31 Shaolin Quan	0.761
V36 Chang Quan	0.744
V41 Hong Quan	0.740
V46 Wing Chun	0.729
V02 Mantis Boxing	0.681
V07 Xingyi Quan	0.673
V12 Eight Diagrams Palm	0.663
V17 Drunken fist	0.658
V22 Nan Quan	0.641
V35 Baji Quan	0.620
V40 Sanda	0.502
V08 Knife	0.820
V13 Spear	0.812
V18 Sword	0.765
V23 Stick	0.742
V28 Nunchaku	0.724
V38 Wooden Dummy	0.713
V43 Stone Lock	0.684
V09 Martial arts Clothing	0.664
V14 Monk Robes	0.643
V32 Sanda Clothing	0.605
V33 Nine-section whip	0.526
V01 Shaolin Temple	0.814
V06 Wudang Mountain	0.745
V11 Mount Emei	0.721
V16 Qingcheng Mountain	0.698

V21 Chenjiagou	0.554
V47 	0.673
V03 	0.596
V50 Martial Arts World Championship	0.591
V30 Martial Arts Exchange Group	0.578
V27 	0.867
V37 	0.859
V42 	0.801

2. Factorial Analysis

Table 11 shows that the 15 indicators V45, V19, V49, V10, V48, V39, V44, V24, V05, V29, V15, V20, V25, V34, V04 belong to the first common factor and are the ones with the largest variance of 35.765%. These 15 Chinese martial arts cultural symbols are basically based on the films, television programs and celebrities of martial arts. For example, the V4 martial arts film, V19 Bruce Lee, V49 Zhang Yimou, and V10 Li An, etc., these factors all have large load values. Whether it is a movie, an actor or a director, the Chinese martial arts cultures are spread through martial arts and television. Therefore, the first public factor is named “martial arts film and television communication symbol.” The common factor has the highest degree of variance interpretation. It can be considered that these indicators are more important indicators than others.

That is to say, Chinese martial arts films and televisions play a significant role among the German university students in the distribution of the Chinese martial arts cultural symbols. The second common factor includes 12 indicators of V26, V31, V36, V41, V46, V02, V07, V12, V17, V22, V35, and V40. The variance of the common factor is 8.589%. Among the 12 indicators involved, most of them are different boxing types of Chinese martial arts. Therefore, according to the attributes of these main load value indicators, the second common factor is named “Chinese martial arts boxing type symbol”.

The third common factor includes eleven indicators of V08, V13, V18, V23, V28, V38, V43, V09, V14, V32 and V33. The variance of the common factor is 7.987%. Among the eleven indicators involved, there are six martial arts implement symbols, three clothing symbols and two exercises equipment symbols. Therefore, the third common factor is named “Chinese martial arts objects/weapons symbol”.

The fourth common factor includes five indicators of V01, V06, V11, V16 and V21. The variance of the common factor is 4.914%. Among the five indicators involved, all of them are the birthplaces (or current tourist attractions) of different types of Chinese martial arts. The fourth common factor is named “Chinese martial arts landscape symbol”.

The fifth common factor includes four indicators of V47, V03, V50 and V30. The variance of the common factor is 3.612%. Among the four indicators involved, all of them are the martial arts promotion organizations or approaches of Chinese martial arts. The fifth common factor is named “Chinese martial arts promotion organization symbol”.






The sixth common factor includes three indicators of V27, V37 and V42. The variance of the common factor is 2.342%. Among the three indicators involved, all of them are traditional

philosophies, conceptions symbols of Chinese martial arts. Therefore, the sixth common factor is named “Chinese martial arts conceptual symbols”.


Factorial Analysis of the Familiarity of Chinese Martial Arts Cultural Symbols

According to the survey results, in the eyes of German university students, the ranking of ten martial arts symbol voting results that best represent Chinese martial arts are as below (See Table 12).

Table 12. Ranking of ten martial arts symbol voting results that best represent Chinese martial arts

Martial Arts Symbols	Votes	Percentage	Martial Arts Symbols	Votes	Percentage
Jackie Chan	1081	8.59%	Ang Lee	56	0.45%
Martial arts film	1034	8.22%	Mantis Boxing	56	0.45%
Shaolin Quan	986	7.84%	Qingcheng Mountain	56	0.45%
Jet Li	956	7.60%	Eight Diagrams Palm	54	0.43%
Tai Chi	943	7.50%	Xingyi Quan	51	0.41%
Sword	893	7.10%	Kung Fu Panda	48	0.38%
Shaolin Temple	876	6.96%	Baji Quan	46	0.37%
Stick	730	5.80%	Hung Kam Po	45	0.36%
Wing Chun	650	5.17%	Mulan	45	0.36%
	567	4.51%	Wu Jing	45	0.36%
	498	3.96%	Nine-section whip	45	0.36%
Wudang Mountain	421	3.35%	Bruce Lee	36	0.29%
Spear	436	3.47%	Sanda	35	0.28%
Wooden Dummy	423	3.36%	Chang Quan	34	0.27%
Knife	356	2.83%	Nunchaku	27	0.21%
	321	2.55%	Monk Robes	25	0.20%
Zhang Ziyi	98	0.78%	Martial arts exchange group	0	0.00%
Drunken fist	95	0.76%	Chenjiagou	0	0.00%
Donnie Yen	89	0.71%	World Martial Arts Championship	0	0.00%
Ip Man	89	0.71%	Sanda clothing	0	0.00%
Zhang Yimou	79	0.63%	Stone lock	0	0.00%
Martial arts clothing	76	0.60%	Shi Yongxin	0	0.00%
Nan Quan	65	0.52%	Hong Quan	0	0.00%
Michelle Yeoh	58	0.46%		0	0.00%
Mount Emei	56	0.45%		0	0.00%
				12580	100%

According to the statistical results, the ten Chinese martial arts cultural symbols that best represent Chinese martial arts in the eyes of German university students are: Jackie Chan,

martial arts film, Shaolin Quan, Jet Li, Tai Chi, sword, Shaolin Temple, stick, Wing Chun and . Overall, German university students' cognition of the martial arts cultural symbols that best represent Chinese martial arts mainly includes the following characteristics.

1. Among all martial arts cultural symbols, martial arts actors and films can best represent Chinese martial arts culture.

Among the top ten symbols that best represent Chinese martial arts culture, Jackie Chan, martial arts films, and Jet Li's percentages are 8.59%, 8.22%, and 7.60%, respectively, accounting for 24.42% of the total votes. However, for the symbols with high awareness and familiarity (Bruce Lee, Kung Fu Panda and Mulan), their percentage of voting are only 0.29%, 0.38% and 0.36% respectively. What is the reason for this phenomenon? The first author interviewed several college students.

Martin Schneid from The University of Bremen believes that Bruce Lee is unable to represent Chinese martial arts for two reasons: the first reason is that Bruce Lee is a Chinese-American, and he is inseparable from American culture; Second, Bruce Lee's unique Kung Fu (Jeet Kune Do) is not Chinese martial arts, but a combination of many excellent fighting skills in the world. However, Martin Schneid believes that Kung Fu Panda and Mulan can represent Chinese martial arts culture. Although these films were made by Americans, the content and ideologies of the film are highly related to Chinese martial arts culture.

Marc Rosca from Humboldt University thinks that Bruce Lee's films are the cultural connotation of Hong Kong's social background at that time. The essence of active confrontation through Chinese martial arts is the main source of thought of Bruce Lee's films. Marc Rosca believes that Bruce Lee's films are a dazzling Chinese martial arts cultural symbol. "But in reality, Bruce Lee may not be able to represent Chinese martial arts. Because Bruce Lee arrived in the United States, he created the Jeet Kune Do after integrating various fighting in the world. Jeet Kune Do has elements of Chinese martial arts, as well as fighting techniques in other countries such as Japan and South Korea." So, Marc Rosca thinks that Bruce Lee's movies can definitely represent Chinese martial arts. But Bruce Lee himself cannot say that he is the representative symbol of Chinese martial arts. "Kung Fu Panda and Mulan are American products, but they use the materials of Chinese martial arts to make a Hollywood audiovisual feast for the world's public. It cannot be simply a symbol of Chinese martial arts."








Anne Löwe from University of Cologne states that Bruce Lee is famous all over the world for his two unique identities: martial artist and martial arts film and television actor. "If Bruce Lee was just a martial artist or a martial arts star, his influence would not shock the whole world. The philosophy Bruce Lee learned from his martial arts made everyone realize that he was different and eventually he became a philosophical martial arts film and television actor." In Anne Löwe's opinion, Chinese culture, martial arts fighting thoughts, Chinese traditional yin and yang theory, and traditional Chinese philosophy have deeply influenced Bruce Lee, therefore she believes that Bruce Lee is not only an outstanding representative of Chinese martial arts, but also an important figure in the internationalization of Chinese martial arts. As for the films of Kung Fu Panda and Mulan, Anne Löwe thinks that Panda belongs to China, Mulan belongs to China, the cultural meaning and philosophical thinking and storyline embodied in these cartoons are based on Chinese traditional culture, so there is no doubt that they are Chinese martial arts cultural symbols.


2. Shaolin Kung Fu has a high representativeness

Shaolin Quan and Shaolin Temple account for a high proportion of martial arts cultural symbols in the voting results, respectively 7.84% and 6.96%, indicating that Shaolin Kung Fu is the most representative symbols of Chinese martial arts culture. Among the top ten symbols that best represent Chinese martial arts culture, boxing type symbol are in low proportion. In addition to Tai Chi and Wing Chun, the percentages of Drunken Boxing, Nanquan, Mantis boxing, Eight Diagrams Palm, Baji Quan, Sanda, Changquan and Hongquan are very low. Nanquan, Changquan and Sanda are the competition programs of the International Martial Arts Championships, but their proportions of voting are only 0.52%, 0.27% and 0.28%. This shows that the awareness of Chinese competitive martial arts among German university students is very lower. Why are the awareness and familiarity of Nanquan and Changquan in German college students lower than Wing Chun?




Professor Swen Körner has studied Wing Chun for many years. He pointed out the reasons why Wing Chun is popular in Germany (Körner, Staller & Judkins, 2018). First, the health concept and practical effectiveness of Wing Chun itself, which is the root cause of attracting practitioners; Second, there is a good organization and operation. According to relevant research, in the 1970s, the spread of Wing Chun outside Hong Kong and mainland China may have originated in Germany. In 1975, Leung Ting came to Kiel in northern Germany and used the street to sell his skills to spread Chinese martial arts overseas, defeating many German challengers. In 1976, Leung Ting established the European Wing Chun Organization (EWTO) with the help of Keith Kernspecht. Since then, the EWTO has become an important organization to promote Hunchun in Germany and is still playing an important role. The third reason is the translation of localized textbooks. In 1976, the first German version of Wing Tsun Kuen was published in West Germany (Ting, 1989). In 1981 and 1982, Kernspecht re-translated Wang Ting's Wing Tsun Kuen with his own Wing Chun practice. In 1983, Kernspecht joined the practice of wooden piles in Wing Tsun Kuen. So far, this book has been reprinted seventeen times and translated into four languages. So now in Germany, especially in western Germany, many people like Wing Chun - even more than karate, judo and taekwondo. Cross-cultural communication requires "localization" thinking. We must understand the process of cultural communication and learn more specific knowledge about cultural participants themselves. Why can Japanese and South Korean martial arts do better than Chinese martial arts? In addition to the standardization process of their karate, judo and taekwondo, many local people participate in their cultural communication process (Hall, 1973). Chinese martial arts need to be integrated with local culture and invite more local people to join into the dissemination process of Chinese martial arts.

3. Intangible cultural symbols and traditional martial arts philosophical thinking symbols are also highly representative.

The voting percentages of ,  and  are 4.51%, 3.99% and 2.55% respectively, accounting for 11.02% of the total votes. It shows that Chinese traditional culture has a certain level of awareness among German university students. Tobias Lechner, a Ph.D. student at the Free University of Berlin, believes that ,  and  cannot simply be called Chinese martial arts symbols.  is more representative of Eastern culture, and the national

flags of South Korea and Mongolia have this symbol. “Maybe “” is the best representative of Chinese martial arts. If you are interested in Chinese culture, these three should not be very strange for you, but I do not know these three symbols.”

Necla Özbek of the University of Munich has studied in China for a year, before that, she only watched the films of Bruce Lee, Jackie Chan and Jet Li. During her study in China, Necla Özbek learned Tai Chi, which is very different from the Chinese martial arts she imagined.

“Through the Tai Chi course, I have learned the basic meaning of ,  and  these three symbols.”

Cassirer believes that symbols are conceptual or meaningful existences in this world, and that they can help people to create and explain the world actively. Simply speaking, the spread of culture is the process by which people use symbols to form culture. Therefore, in the process of cross-cultural communication, we must choose a common agreement, a unified symbol or sign to express meaning (Cassirer, 1962). Unified symbolic thinking and symbolic behavior are the most representative features of human life, and cross-cultural communication also relies on these symbols. Therefore, in the process of cross-cultural communication of martial arts, unification and standardization of symbols contribute to its dissemination.

CONCLUSION

This paper conducted conceptual analysis, connotation interpretation and classification of martial arts cultural symbols, and conducted empirical research on the extraterritorial communication effect of martial arts cultural symbols. This research aimed to attract more scholars to focus on the studies of special Chinese cultural symbols - “Chinese Martial Arts” - from the perspective of symbol communication.

1. German university students’ awareness and familiarity with Chinese martial arts cultural symbols are generally not high. Among the 50 Chinese martial arts cultural symbols, only 15 are recognized above 60%, eight of which are highly related to martial arts films and televisions; German university students are only familiar with 15 symbols (familiarity of more than three points), nine of which are highly correlated with martial arts films and televisions. German university students mainly learn and know Chinese martial arts through Hollywood films and television programs.
2. There are significant differences in the familiarity of Chinese martial arts cultural symbols among different groups of students in Germany. Males are more inclined towards the material layer symbols such as boxing types and martial arts implements, while females are more inclined towards martial arts clothing and martial arts culture conceptions. In different majors, students in the humanities and social sciences are generally more familiar with the Chinese martial arts cultural symbols than the science and engineering students.
3. In the factorial analysis, the variance of the common factor of the first “martial arts film and television communication symbol” is 35.765%, which is higher than the sum of the other five common factors - Chinese martial arts boxing type symbol, objects/weapons symbol, landscape symbol, promotion organization symbol, and

conceptual symbols. Compared with the martial arts cultural symbols of “martial arts films and televisions”, the influence of Chinese martial arts boxing type symbols, martial arts landscape symbols and martial arts organization symbols needs to be increased.

4. As the official promotion communication agency of Chinese martial arts, the “martial arts promotion organization” factor has a low level of awareness and familiarity among German university students.
5. In the eyes of German university students, among the top ten cultural symbols that represent the most important Chinese martial arts, five are closely related to martial arts films and televisions. The voting numbers of boxing type symbols that best represent Chinese martial arts is relatively low. Except for Tai Chi and Wing Chun, the rankings of other boxing types are very low. In particular, as the competition programs of the international martial arts championships, Nanquan, Changquan and Sanda have very low awareness level among the German university students.
6. Martial arts film and television symbols have already had good awareness and familiarity among German university students, forming a representative core symbol of Chinese martial arts culture.

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