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ORIGINAL PAPER

Comprehending the Cultural Causes of English Writing Plagiarism in Chinese Students at a Western-Style University

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Abstract The purpose of this quantitative study of 401 students is to identify common motivations for Chinese students to plagiarize on written English assignments and ultimately to demystify and understand the mindset of Chinese students who do plagiarize. According to a regression analysis of these data, the most significant factor relating to likelihood to self-report plagiarism for Chinese students is the belief in a "standard answer," which represents the correct answer to a given question. The regression results also suggest that students who believe that imitation of experts is important to learning are more likely to self-report plagiarism, and that business students are more likely to self-report than non-business students. The other factors examined in our model, such as English writing ability; ability to express one's self in English writing; embarrassment about English writing ability; concern for accuracy of English writing; and concerns about grade point average, were not significant predictors of self-reported plagiarism. These results give a key insight into the English writing plagiarism behaviors of Chinese students studying in Western higher education.

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Introduction

The intent of this paper is to investigate the motivations for university students, specifically Chinese university students, to plagiarize written English assignments. Plagiarism has become a popular topic in the news and academic writing. Experts have weighed in on why they believe plagiarism is an increasing problem and how culture relates to cases of plagiarism. Indeed, there has been a history of learning practices in Chinese scholarship that conflict with Western standards. Such practices are encouraged in Chinese learning environments rather than condemned (Mooney 2006). This paper adds to the discussion by applying regression analysis of motivational factors leading to English writing plagiarism in Chinese university students. It is important to learn about Chinese students because of the rapid increase of Chinese students in the USA. This knowledge may help to inform and educate Western educators' views on plagiarism. Knowledge of the cultural causes and background that lead to plagiarism by Chinese students may help the educator prevent it through student training, increasing students' success in universities throughout the English-speaking world.

About 4% of all US university students were international in 2014 (Haynie 2014). The number of international students has grown 72% since 2000, up to over 886,000 students in the 2013–2014 school year (Haynie 2014). The number of international students studying in US colleges and universities in the 2014–2015 academic year was 974,926 (Witherell 2015). Chinese students comprised 31% of international students, at 304,040 (Haynie 2014).

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These numbers make it imperative that US universities learn as much as possible about motivations of Chinese students to plagiarize.

Definitions

Academic Dishonesty is also known as academic misconduct; academic dishonesty is defined as any form of cheating that occurs within a formal academic exercise that can include plagiarism, fabrication, deception, cheating, bribery, sabotage, professorial misconduct, or impersonation (Software n.d.). This definition of cheating includes obtaining answers or information dishonestly (such as on a test) (Software n.d.).

Plagiarism itself is defined as using or closely imitating the language and thoughts of another author without proper authorization, the representation of that author's work as one's own, such as not crediting the original author (Dictionary.com n.d.). Plagiarism by students can be categorized in four forms: stealing material from another source and trying to claim it as their own; submitting material written by another and claiming it as their own; copying sections from sources without quotation marks; and paraphrasing material without citation or documentation (Park 2003). Some cases of plagiarism may be unintentional. However, proving intention is nearly impossible, so most definitions of plagiarism do not include intent to deceive.

In China, Standard Answer is the idea that there is a single correct answer to any given question. It is often given to the students by an instructor and represents the correct answer the instructor expects to receive on a test. This is the one specific answer that students believe they must give in order to receive credit. The concept of the standard answer does not accommodate creative or open responses. Thus, this cultural practice serves as an important factor in Chinese student's motivation to plagiarize and informs this paper's hypothesis development.

Related to but distinct from the standard answer is the idea of academic learning through imitation of experts. In the context of this research, imitation of experts, or imitation, refers to students believing that they can learn subject matter by imitating an example. The common example of this method is learning by repeating the work of experts in a field or copying an example.

Literature Review

Although this paper discusses the more specific topic of plagiarism, our literature review and following sections discuss academic misconduct and cheating as well as plagiarism. The reason for this is that most literature

specifically regarding plagiarism is anecdotal. In order to connect this discussion to empirical research, we need to rely on the broader constructs of academic misconduct and cheating for rigorous studies performed thus far. As we covered in "Definitions" section, cheating is a subset of academic misconduct, which includes plagiarism in some studies. Plagiarism is also a subset of academic misconduct, and in some studies, plagiarism is a subset of cheating.

Cheating, and plagiarism specifically, seems to be rampant in US colleges. In a study by McCabe, almost 50,000 undergraduates were surveyed on more than 60 US campuses. In that survey, 70% of students admitted to some cheating (defined in that study as serious test cheating or serious cheating on written assignments) (2005). One study taking place in two universities (one private and one public) showed that a startling 95.9% of private university students and 96.7% of public university students had admitted participation in at least one dishonest practice (Brown and Choong 2005).

As with cheating overall, plagiarism is perceived by many to be widespread and increasing (Flint et al. 2006). A study by McCabe and Trevino (1997) of almost 1,800 US university students in 1997 resulted in 51% of respondents self-reporting plagiarism-related behaviors. Another study of 112 students found a 66% rate of paraphrasing without acknowledgment, 54% of fabricating references, and 54% of plagiarism from a text (Franklyn-Stokes and Newstead 1995). A study of 1,200 UK students found that almost 62% reported engaging in some form of offline plagiarism just in the past 12 months, with a nearly identical amount reporting online plagiarism behaviors in the same time period (Selwyn 2008). Since these numbers originate from students who are self-reporting plagiarism-related behaviors, the actual number is likely much higher due to social desirability bias, which is a tendency in some survey respondents to answer questions in a way that is socially appropriate. In these studies, this bias would cause students to underreport plagiarism behaviors because those behaviors are known to be academic misconduct.

The perceived increase in plagiarism could be caused by actual increases in plagiarism, plagiarism detection rates, or simply increased numbers of students (Flint et al. 2006). One possible reason for this increase is that the Internet has made plagiarism much easier for anyone with Internet access. Plagiarism is now as easy as "select, copy, and paste" (Bugeja 2004, p. 37). The New York Times surveyed undergraduate students and found that 38% self-reported plagiarizing from the Internet without citing the source (Bugeja 2004). That same study found that half of the students that admitted to plagiarism considered such behavior trivial or even completely acceptable. One paper found that English as a second-language students (ESL) in

Australia believed that the Internet is a free zone because the information is common knowledge and, therefore, does not need to be cited appropriately (Sutherland-Smith 2005). Sadly, a plagiarism detection tool (TurnItIn) found that students are copying from online sources, and the two most popular sources of plagiarism are Wikipedia and Yahoo Answers (Ukpebor and Ogbebor 2013).

One study found that international students were five times more likely to be accused of academic dishonesty than domestic students, although convictions of such offenses were no different between international and domestic students (Heuchert 2004). One professor suggested that the reason for this is that if a student has trouble writing in English and includes a paragraph that is written with perfect structure, this change in writing ability within the paper raises suspicion (Heuchert 2004). Thus, it is likely easier to detect plagiarism by ESL students.

As mentioned earlier, there has been a history of accepted learning styles in Chinese scholarship that by Western standards of academic honesty are considered cheating or plagiarism. In 1964, Chairman Mao Zedong actually endorsed such practices during a speech, stating that if one student whispers an answer to another student, if the answer is good for the first, it should be considered good for the second (Mooney 2006). Previous studies have also examined reasons why Chinese students may cheat. One study found that perceptions of corruption in a country, according to a Corruption Perception Index (CPI), might be related to cheating. Students studying in corrupt countries, including China, were more likely to cheat than students studying in less corrupt countries (Crittenden et al. 2009).

One approach to understanding plagiarism by the Chinese is the framework of Chinese culture. Chan (1999) argues that the Confucian heritage culture is a likely contributor to the tendency for Chinese students to plagiarize. Confucian tradition in Chinese learning has taught students to show effort and be respectful of knowledge and authoritative sources (Holmes 2004). The collectivist orientation of Chinese culture may well encourage the view that written material belongs to a common pool of knowledge rather than to an individual writer (Pecorari 2015). Chinese schools traditionally did not discourage plagiarism (Mooney 2006). In imperial China, authors often used material from other books, sometimes entire chapters, without crediting the original author. If the source material was a famous classic, paraphrasing or changing the source text would have been considered inaccurate while extensive uncited quotations were acceptable (Stone 2008).

Hu and Lei (2012) found that Chinese students tend to hold less condemnatory attitudes toward plagiarism and have a tendency to commit plagiarism in their own work.

Other studies have found that Asian students' understanding of what constitutes plagiarism differs from the predominant Western view (Chandrasegaran 2000; Getty 2011; Pecorari 2015; Stone 2008). This study seeks empirically to find some possible reasons for these divergent understandings. In China and other Asian countries, students learn from textbooks and are not comfortable being critical of authors or stating their own opinions (Hayes and Introna 2005). Chinese students see using another author's words as a form of respect (Pennycook 1996). Text is viewed by the Chinese as a repository of knowledge or a means of conveying knowledge rather than a construction of knowledge (Hu and Lei 2012). Another given explanation is that a teacher in Chinese culture has total authority and is an expert that will recognize any source, and citation would suggest that the writer does not acknowledge the teacher's expertise (Pecorari 2015). In imperial China, men were expected to memorize the Confucian classics verbatim and use them in their own written work, rarely citing them since all educated readers were expected to know the source (Stone 2008).

One study found that even when students were able to identify extensive copying in writing, some did not view this practice as dishonest (Chandrasegaran 2000). A classical Chinese historian might view copying from unidentified sources to be precision rather than plagiarism (Stone 2008). Researchers have found that Asian students tend to state, "it is said" or "the first idea is…," rather than cite specific authors (Shi 2006). One paper discusses a group of Chinese students that understand that they need to avoid plagiarism to avoid getting into trouble but do not understand why it is ethically important (Getty 2011). A researcher that taught in China found that students were previously taught to participate in learning strategies that from a Western perspective were outright plagiarism (Pecorari and Petrić 2014). In another study, a student stated that in China, once a student has paraphrased an idea, it is taken for granted that the idea now belongs to the student (Tian and Low 2012).

In modern China, however, the common view on plagiarism is now shifting toward it being an unethical practice that should be avoided. Chinese government officials and university administrators are beginning to acknowledge the problem and are more willing to address it (Mooney 2006). However, Chinese students who have studied for years in an environment of memorizing and copying from respected authors are often confused by the Western mindset with respect to cheating and plagiarism. After reviewing ethnographic studies on Chinese plagiarism, our study attempts to allow instructors to accomplish this goal using our more empirical approach toward understanding the construct.

Development of Research Question and Hypotheses

Studies have examined the relationship between student majors and plagiarism, and the findings are mixed. McCabe's (1996) study found that business and engineering students reported more cheating than language and humanities students. Others found that business students self-reported the highest levels of cheating, followed by engineering and humanities students (Meade 1992; Park 2003). However, another study found that non-business students are more likely to cheat than business students (Iyer and Eastman 2006). All of these studies used self-reports, so they are likely measuring rates of plagiarism along with willingness to self-report cheating. Yet, measuring cases of discovered cheating introduces the issue of missed discoveries, which also distorts data. Most psychology and mainstream studies of plagiarism do use self-reporting practices and intentions (Pecorari and Petrić 2014). As research findings are mixed as to whether business students are more or less likely to self-report cheating than non-business students in general (Brown and Choong 2005; Iyer and Eastman 2006; McCabe 1996; Meade 1992; Park 2003), our study wanted to test this for business students in a Western-style English university in China.

> Research Question 1: Do business students self-report plagiarism more frequently than non-business students?

We then looked at some possible reasons for plagiarism by Chinese students, both previously suggested and new. The first large issue was the ability of Chinese students to write in English when that was not their first language. Second-language writing has some special challenges. ESL students writing in English are more likely to be suspected of plagiarism (Heuchert 2004). This indicates even more reason for international students to worry about their writing in English, raising their already elevated stress levels even higher. One ESL student stated that lack of self-confidence almost inevitably results in plagiarism (Thompson and Williams 1995). A Chinese student explained to a researcher that she felt rewriting material in her own words would be less effective than using the author's own words; she knew her rewriting would include more errors and would, perhaps, be less powerful (Pennycook 1996). Difficulty to paraphrase material has been found to relate to plagiarism by Asian students at an Australian university (Phakiti and Li 2011). Also, it was found that a lack of adequate proficiency of scientific writing in English has caused many beginning scholars to adopt the strategy of modeling, which can result in plagiarism (Flowerdew and Li 2007). We wanted to test, in a

larger pool of students, for this belief that since the original author is a better user of English than the ESL student is, plagiarism is the best practice.

Hypothesis 1 Self-reported confidence in English ability will be negatively associated with self-reported plagiarism.

Hypothesis 2 Self-reported difficulty expressing oneself in English will be positively associated with self-reported plagiarism.

Chinese educational practices value the verbatim reproductions of authoritative, text-based knowledge for examinations (Hu and Lei 2012). Chinese education is largely based on rote learning, repetition, and memorization (Hammond and Gao 2002). The ability to reproduce an expert's work can show that a student has exerted effort and internalized the essential knowledge required in class (Stone 2008). Students are taught to repeat great scholarly works in order to indicate respect and acknowledgment of the masters (Chan 1999). One Chinese student in a recent study said that imitation is encouraged in his/her country (Pecorari and Petrić 2014).

Our study sought to examine the relationship of students' perception of the importance of imitation in learning to their self-reported plagiarism.

Hypothesis 3 Self-reported belief that imitation is important in learning will be positively associated with self-reported plagiarism.

The standard answer is a vital concept in Chinese education. As expressed earlier, the standard answer is the answer that teachers expect to receive from students on a test or what students think they must give to answer a question correctly. This standard answer must be memorized, and even if the students' responses are similar to the standard answer, any expression of their own opinion is discouraged (Richter and Xiaofeng 2014). Most examinations in China require that students memorize the standard answer (Xiang 2015). Teachers specifically give lectures containing the answers students need to know (Ming 2012). In Chinese education, as opposed to Western education, students are discouraged from challenging or questioning what they are told; the students simply need to memorize the correct answers (Ming 2012). In Chinese education, all questions, even so-called open questions have a standard answer (Richter and Xiaofeng 2014). The belief in a standard answer is so strongly interwoven into the Chinese educational system that teachers risk losing their jobs if they stray from teaching the standard answer unconditionally (Ming 2012).

To our knowledge, the belief in a standard answer as a possible antecedent to plagiarism has not been studied, but most Chinese students have indeed internalized the process

of seeking the standard answer (Huang 2015; Tian and Low 2012). Our study, therefore, seeks to test the relationship between the standard answer and plagiarism.

Hypothesis 4 Self-reported belief in a standard answer will be positively associated with self-reported plagiarism.

As stated previously, students who did not learn English as their first language struggle to write in English. This study wanted to go further and test whether the level of students' embarrassment of their own English writing ability and their desire to be accurate may affect their self-reported plagiarism.

Hypothesis 5 Self-reported embarrassment over English writing ability will be positively associated with self-reported plagiarism.

Hypothesis 6 Self-reported desire to be accurate in English writing will be positively associated with self-reported plagiarism.

Previous studies have had mixed results in establishing a relationship between GPA and cheating (Brown and Choong 2003). Many researchers found that students with lower GPAs are more likely to cheat (Crown and Spiller 1998); it is possible that this occurs because they have less to lose and more to gain than their cohorts with higher GPAs.

A few previous studies found that lower GPA was related to a higher self-reported tendency to engage in academic dishonesty (Brown and Choong 2003; Eastman et al. 2006). Yet another found that lower GPA was related to a higher self-reported plagiarism (Eastman et al. 2006). Therefore, this study wanted to examine the relationship of Chinese students' self-reported plagiarism tendency and the importance they placed on GPA.

Hypothesis 7 Self-reported importance placed on GPA will be positively associated with self-reported plagiarism.

Method of Survey

Questionnaire Construction

A total of 41 question items were generated that reflect plagiarism and the seven plagiarism constructs that we used as independent variables in this paper. These Likert scale questions consisted of five statements about expression, six statements about accuracy, five about imitation, five about GPA, six about ability, five about embarrassment, and four about standard answers, and the dependent variable was measured using five questions about the self-reported plagiarism on English language writing assignments. The survey was pretested and found to hold face validity as well as reliability. At the top of the survey instrument was a statement asking the students to respond to the following questions based on their experiences of writing English language assignments for school.

Data Collection

The instrument was given to 435 students during the fall of 2014 at a Western-style English language college in mainland China. The university where the sample was taken is the mainland China campus of one of the top 325 ranked universities in the world. The curriculum is based on a Western model of higher education. Students complete general education as well as major-specific coursework in English language classrooms. This model includes requirements for English courses comparable to courses required by Western universities, including composition and literature analysis. Students must also complete a project in their final year, relevant to their major, that is typically a 30- to 50-page research paper written entirely in English. A number of graduates from the university go on to advanced degree programs in the USA, the UK, and other English-speaking countries. In addition, the majority of the faculty at the college are graduates of Western universities, so instruction style and instructors' expectations of students are comparable to those of universities in the West. Therefore, we feel confident that the sample we have obtained for the study is representative of the type of students that universities in the USA or in other Western countries would encounter. We believe that the conclusions we draw from this research are valid because our sample of students is similar to Chinese students who would attend US or other Western universities.

A total of 401 usable responses came from 195 students majoring in business and 206 students majoring in social sciences and mass media. The survey was originally created in English, then translated into Chinese, and back-translated to English. Then, the survey was checked for translation errors. The students were then given both the English and Chinese translations to facilitate question understanding by the students. See Table 1 for the demographic profile of the respondents. The gender ratio of the sample is highly skewed toward female. This can be partially explained by the 60:40 female-to-male gender ratio at the college where the data were collected. In order to account for possible gender effects, we used gender as a control variable in order to remove its possible effect on the regression equation.

Control Variables

Several antecedents to the prevalence to cheat have been studied in past research:

Table 1 Demographics of respondents

Gender	N	Percentage
Male	107	27
Female	294	73
Total	401	100

Division	N	Percentage
Humanities	206	51
Business	195	49
Total	401	100

Gender—Investigation reveals that overall, males have been found to engage in academic dishonesty more than females (Brown and Choong 2005; Crittenden et al. 2009). Gender was measured here as a binary variable with 1 indicating male and 2 indicating female.

Age—In previous studies of cheating, age has produced mixed results (Daniel et al. 1991; Haines et al. 1986; Michaels and Miethe 1989). Age in this study was the self-reported age of the respondents.

Student Majors—In various cheating studies, students' majors have produced mixed results as well (Eastman et al. 2006; Iyer and Eastman 2006; Park 2003). Major was the self-reported major of the respondents. The data were collected from the Division of Business Management (business majors) and the Division of Humanities and Social Sciences (majoring in creative industries such as film, journalism, and advertising). Business majors were coded as 0, and Humanities and Social Science majors were coded as 1.

Dependent Variable

Self-reported plagiarism—Tendency to plagiarize was measured using five questions adapted from Hayes and Introna (2005). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "For my school assignments in English, I sometimes replicate/copy material." The average of the questions was used, and higher values indicate greater intentions for plagiarizing. We were concerned about the wording of the dependent variable as using the term plagiarism could trigger a social desirability bias in the students and result in measurement error. We discussed the issue with our English–Chinese translator and solicited feedback from students on how to word the dependent variable to convey the idea of taking someone else's work and using it as your own without using the word plagiarism. Based on suggestions by our translator and the feedback solicited from the students, we worded the dependent variable questions with the phrase "replicate/copy material" which conveys the intended meaning.

Independent Variables

Ability—Ability was measured using six questions adapted from Pappamihiel (1999). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "I am confident in my English writing ability." The average of the values was used, and higher values indicate greater sense of ability in English.

Expression—Difficulty expressing oneself was measured using five questions adapted from Pappamihiel (1999). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "Expressing my ideas in English writing is difficult." The average of the values was used, and higher values indicate greater difficulty expressing ideas in English.

Imitation—The belief that imitation is important to learning was measured using five questions adapted from Hu and Lei (2012). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "I learn best through imitation of the material." The average of the values was used, and higher values indicate greater belief that imitation is important to learning.

Standard answer—Belief in a standard answer was measured using four questions adapted from the International Personality Item Pool (Goldberg et al. 2006). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "There is a standard answer in all school assignments." The average of the values was used, and higher values indicate greater belief in a standard answer.

Embarrassment—Embarrassment was measured using a five-item scale adapted from Pappamihiel (1999). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "I want to avoid embarrassing English writing mistakes." The average of the values was used, and higher values indicate greater aversion to embarrassment.

Accuracy—Accuracy was measured using a six-item scale adapted from Phakiti and Li (2011). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "I need to be more accurate when writing in English." The average of the values was used, and higher values indicate greater desire to be accurate.

Grade point average (GPA)—GPA importance was measured using a five-item scale adapted from Hayes and Introna (2005). A 7-point Likert scale was used, with 1 being "Strongly Disagree" to 7 being "Strongly Agree." A survey item example is "To be successful I need a high GPA." The average of the values was used, and higher values indicate greater importance placed on GPA.

Results of Survey

Using SPSS, a factor analysis was performed on the plagiarism and motivation questions. The extraction method was principal components analysis and the rotation method was VARIMAX. Using a cutoff of 1 for the eigenvalues, seven components emerged from the factor analysis. An examination of the factor loadings indicated problems with the scales including poor scale development, cross loadings, and low factor loadings. Five questions were deleted from the motivation measures (independent variables) leaving a total of 31 questions to measure the independent variables and five questions to measure the dependent variable. Table 2 shows the factor loading for the plagiarism motivations data. Table 3 shows the list of questions used to measure the dependent variable.

Using SPSS, a regression model was created. The model examined self-reported plagiarism as the dependent variable. Table 4 shows the means, standard deviations, correlations, and the Cronbach's alphas (shown on the diagonal) for the data. A summary of the regression results is given in Table 5. The individual hypotheses and results are discussed below.

Research Question 1 asked whether there are differences in attitudes toward plagiarism based on major. In our survey, there was a statistically significant relationship between students' major and self-reported plagiarism. Non-business students (Humanities and Social Science students majoring in creative industries such as film, journalism, and advertising) were much less likely to self-report plagiarism ($\beta = -.24$, $\rho = .04$) than business students.

Hypothesis 1 predicted that self-reported confidence in English writing ability would be negatively associated with self-reported plagiarism. Hypothesis 1 was not supported. English writing ability ($\beta = -.10$, $\rho = .14$) was not a significant predictor of self-reported plagiarism.

Hypothesis 2 predicted that self-reported difficulty expressing oneself would be positively associated with self-reported plagiarism. Hypothesis 2 was not supported. Expression ($\beta = .11$, $\rho = .12$) was not a significant predictor of self-reported plagiarism.

Hypothesis 3 predicted that the self-reported belief that imitation is important to learning would be positively associated with self-reported plagiarism. Hypothesis 3 was fully supported. Belief that imitation is important to learning ($\beta = .17$, $\rho = .02$) was a significant predictor of self-reported plagiarism.

Hypothesis 4 predicted that self-reported belief in a standard answer would be positively associated with self-reported plagiarism. Hypothesis 4 was fully supported. Standard answer ($\beta = .28$, $\rho = .00$) was a significant predictor of self-reported plagiarism.

Hypothesis 5 predicted that self-reported embarrassment would be positively associated with self-reported plagiarism. Hypothesis 5 was not supported. Embarrassment ($\beta = .07$, $\rho = .24$) was not a significant predictor of self-reported plagiarism.

Hypothesis 6 predicted that a self-reported desire to be accurate in English writing would be positively associated with self-reported plagiarism. Hypothesis 6 was not supported. Accuracy ($\beta = .05$, $\rho = .48$) was not a significant predictor of self-reported plagiarism.

Hypothesis 7 predicted that self-reported importance placed on GPA would be positively associated with self-reported plagiarism. Hypothesis 7 was not supported. GPA ($\beta = -.01$, $\rho = .81$) was not a significant predictor of self-reported plagiarism.

Discussion

In our survey, non-business students were statistically less likely to self-report plagiarism than business students. Business students could be more focused on end results, and plagiarizing is seen as a clear means to completing college written English assignments. Humanities coursework often centers on content creation, which is a possible reason that students from these majors are less likely to plagiarize. The lower rate of plagiarism may also be the result of greater emphasis on training and education about plagiarism in humanities classes. Our research adds important empirical weight to the findings that business students are more likely to plagiarize. However, the causal mechanisms that lead to these results are speculative, and our results clearly show the need for additional research in this area to more fully understand this phenomenon.

The results of our study are interesting because they help clarify our understanding of the motivational factors that may lead Chinese students to plagiarize on written English assignments. Notable in these results are the factors significant as well as the factors that are not significantly associated with plagiarism. In our model, only the standard answer and imitation were statistically significant predictors of self-reported plagiarism. An examination of the correlation table shows that these two factors have a .22 correlation, and the factor analysis clearly shows that the standard answer and imitation are two distinct factors. However, they do seem to have a common thread—a deference to or possibly mimicking authority. The Chinese educational system often rewards restating of authoritative sources and deference to the authority of the teacher. Scientists, from economists to sociologists, have found that people respond to perceived reward systems (Mehta et al. 2000; Shields et al. 2009). Presumably, somewhat rational

Table 2 Factor analysis of plagiarism motivations

Motivation	Factor loadings						
	1	2	3	4	5	6	7
Ability							
My English writing ability is good	.91						
My English writing ability is strong	.90						
My English writing ability is better than my peers	.90						
I am confident in my English writing ability	.84						
I can easily complete my English writing assignments	.57						
Expression							
Expressing my ideas in English writing is difficult		.76					
Writing school assignments for English is difficult		.76					
It is difficult for my English teachers to understand my English writing		.74					
It is difficult for students to communicate in English writing		.67					
I cannot express my thoughts in English		.63					
Imitation							
I learn best through imitation of the material			.79				
Restating experts helps me learn the lesson assignment			.76				
When learning a new skill, it is important to imitate an example			.76				
Using the words of other people helps me learn material			.72				
Restating the material shows that I have learned it			.52				
Standard answer							
There is a standard answer in all school assignments				.81			
Teachers correct students' assignments based on the standard answer				.78			
Standard answers are the best				.73			
In school assignments, I need to know the standard answer				.60			
Embarrassment							
When writing in English, I make humiliating mistakes					.81		
When writing in English, I make embarrassing mistakes					.78		
I am sometimes ashamed of my English writing					.77		
I want to avoid embarrassing English writing mistakes					.57		
Accuracy							
I need to be more accurate when writing in English						.76	
I need to be more accurate in my English writing						.72	
I find it difficult to avoid mistakes in English writing						.68	
I find it difficult to avoid English grammar errors						.66	
GPA							
To be successful I need a high GPA							.82
To get a good job I need a high GPA							.79
Good grades are the main purpose of university							.72
My parents put more pressure on me to get good grades than my peers							.50
Cronbach's alphas	.91	.84	.78	.77	.80	.76	.74

students across all cultures enact behaviors that are rewarded and avoid behaviors that are punished. The Chinese students in our sample who self-reported plagiarism were possibly acting on the perceived rewards of the Chinese educational system that they experienced before attending a Western-style college. Therefore, we speculate that some of the self-reported plagiarism we document may be the result of cultural programming. It is possible that students may not be aware of or have not internalized that a Western college education requires the enactment of

Table 3 List of questions for the dependent variable

Self-reported plagiarism

For my school assignments in English, I sometimes replicate/copy material

I have replicated/copied material for English writing assignments

I replicate/copy material to complete English writing assignments

I replicate/copy material because everyone else does

I feel that it is acceptable to replicate/copy material for English writing assignments

Cronbach's alpha .92

Table 4 Plagiarism means, std. dev., correlations, and Cronbach's alphas on the diagonal

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	Self-reported plagiarism	4.85	1.36	(.92)										
2	Gender	.73	.44	.05	NA									
3	Age	20.10	1.25	.00	−.06	NA								
4	Major	.51	.50	−.07	−.05	−.19**	NA							
5	Ability	3.85	1.10	−.15**	−.07	−.22**	.13**	(.91)						
6	Expression	4.64	1.14	.28**	.14**	.10	−.13**	−.45**	(.84)					
7	Imitation	3.53	.98	.22**	.16**	−.17**	.03	.02	.24**	(.78)				
8	Standard answer	4.47	1.30	.32**	.17**	−.04	.14**	.02	.27**	.22**	(.77)			
9	Embarrassment	3.60	1.21	.24**	.07	.02	−.07	−.29**	.43**	.21**	.24**	(.80)		
10	Accuracy	3.11	1.03	.22**	.12*	.01	−.07	−.30**	.49**	.33**	.14**	.43**	(.76)	
11	GPA	3.96	1.23	.13*	.06	.10	.01	.05	.13**	.27**	.34**	.16**	.10*	(.74)

$N = 401$

$* p < .05;$ $** p < .01$

Table 5 Standardized beta coefficients dependent variable: self-reported plagiarism

Control variables	
Gender	−.15
Age	−.02
Independent variables	
Major	−.24*
Ability	−.10
Expression	.11
Imitation	.17*
Standard answer	.28***
Embarrassment	.07
Accuracy	.05
GPA	−.01

$N = 401$

Adj. $R^2 = .16$ $F = 8.36$ (.000)

$* p < .05;$ $** p < .01;$ $*** p < .001$

valid, then some of the factors we measured that have been found to be significant in other studies or perceived to be significant in ethnographic studies were not statistically significant in our model. It may be that the standard answer and imitation of authority were the undocumented factors driving the results in other studies. The authors of this study shared the results with teachers at the college where the study was conducted. Many teachers were skeptical that the importance of GPA was found to be insignificant. The college is very competitive and has a strict grade distribution policy with a maximum of 10% A/A- grades being awarded in any class. To explain why other factors were not significant in our model, we cannot discount the possibility that the instrument we used is subject to error. However, face validity, the use of previously validated measures, and the internal consistency of the scales lead us to conclude that the scales did not suffer from significant measurement error. We, therefore, conclude that a student's major, the standard answer, and imitation of authority are the main drivers of the self-reported plagiarism in the students in our sample.

It is also interesting to note that the overall R-squared value for the regression was a modest .16, indicating that the independent factors explain 16% of the variance in the dependent variable. This shows that other unknown factors

different behaviors. In short, the rules of academic success in Chinese education and in Western education are different. Chinese students who do not understand the change in rules may be more likely to plagiarize when they shift to Western-style higher education.

The lack of significance for the other factors in our study is also noteworthy. If the survey instrument questions are

need to be explored to more fully understand the complex issue of plagiarism of written English assignments among Chinese students.

Implications

By approaching the problem empirically, we feel our paper makes significant contributions to the plagiarism literature and more specifically to literature on foreign students' plagiarism behaviors in Western higher education. This paper is one of the most statistically robust inquiries into understanding plagiarism by foreign students studying in Western academic settings. We are the first paper to document empirically the influence of the standard answer and a self-reported tendency to imitate experts in the plagiarism intentions of Chinese students within the context of a Western educational setting. Although these concepts have been referenced in observational or anecdotal literature, we are able to provide statistical evidence of the significant role these factors play in influencing Chinese students' behaviors.

We believe that this study could inform Western educators on motivations for plagiarism by Chinese students and other students with similar cultural values. Specific methods to reduce plagiarism among Chinese students include acknowledging the cultural beliefs that they may have from past education or discussions with teachers or others. Following that discussion, Western educators can discuss the Western view of plagiarism, including the history, the definition, and the importance of properly citing previous authors appropriately. Students need to understand the reasons for citations in academic writings in order to appreciate the importance of properly citing all sources (Chandrasegaran 2000). They can then walk the students through several examples of blatant plagiarism as well as less obvious plagiarism, showing them how to transform their writing to avoid breaking the rules of proper citation. Clear instructions using pre-written tracts as well as student samples with no judgment can show the students proper citation techniques. These interventions should be used in the US as well as at Western-style educational institutions in Asia.

The implications of this study, however, will also serve those in Western-style business environments that manage employees with cultural backgrounds identical or similar to Chinese students learning in a Western-style educational environment. Many issues Chinese students face adapting their learning practices to Western expectations could parallel those experiences of Chinese employees adapting to Western business culture. This is especially relevant in the US where Chinese firms invested $17 billion in business interests in the USA, and they are on track to double

that amount in 2016. This increased investment resulted in over 10,000 L-1 visas, for staff members of foreign companies with operations in the USA, granted to Chinese workers in 2015 (Yan 2016). On a larger scale, according to the US Census, 5.1% of US employees were Asian in the five-year period ending 2010 (Bureau n.d.). Indeed, the number of full-time, year-round Asian workers in the US has increased by over 50% since 2002 (2,511,000–3,796,000) according to the US Census. Although a number of these employees have weaker ties to their culture than those Chinese students living in mainland China, we believe these long-standing beliefs of a standard answer and imitation of experts may help managers better understand the background of Asian workers and implement appropriate training to help these workers adapt to Western business practices. For example, a Western-style training program that focuses on problem solving may not be appropriate for Chinese workers because of the desire for the Chinese workers to imitate an expert or to provide the trainer with the standard answer. An awareness and understanding of our research findings will provide valuable cross-cultural understanding for Western companies who are going to China to do business. Additionally, this research provides valuable insights to Western expatriate workers relocating to China. Understanding Chinese workers' desire to provide a standard answer and the desire to imitate experts gives Western managers the insight to alter training styles to meet the cultural expectations of their Chinese workers.

Finally, this paper can serve as a guide for future research. This study reinforces the need for additional research into the connection between culture and plagiarism behavior. We are highly optimistic about the future of research in this field.

References

Brown, B., & Choong, P. (2003). A comparison of academic dishonesty among business students in a public and private Catholic university. *Journal of Research on Christian Education, 12*(1), 27–48. doi:10.1080/10656210309484942.

Brown, B., & Choong, P. (2005). An investigation of academic dishonesty among business students at public and private United States universities. *International Journal of Management, 22*(2), 201–214.

Bugeja, M. (2004). Don't let students "overlook" Internet plagiarism. *Education Digest: Essential Readings Condensed for Quick Review, 70*(2), 37–43.

Bureau, U. S. C. (n.d.). Equal Employment Opportunity Tabulation, Table EEO-ALL01R. Retrieved from http://www.census.gov/people/eeotabulation/data/eeotables20062010.html

Chan, S. (1999). The Chinese learner—A question of style. *Education+ Training, 41,* 294–304.

Chandrasegaran, A. (2000). Cultures in contact in academic writing: Students' perceptions of plagiarism. *Asian Journal of English Language Teaching, 10,* 91–113.

Crittenden, V. L., Hanna, R. C., & Peterson, R. A. (2009). The cheating culture: A global societal phenomenon. *Business Horizons, 52*(4), 337–346. doi:10.1016/j.bushor.2009.02.004.

Crown, D. F., & Spiller, M. S. (1998). Learning from the literature on collegiate cheating: A review of empirical research. *Journal of Business Ethics, 17*(6), 683–700.

Daniel, L. G., Blount, K. D., & Ferrell, C. M. (1991). Academic misconduct among teacher education students: A descriptive-correlational study. *Research in Higher Education, 32,* 703–724.

Eastman, J. K., Iyer, R., & Eastman, K. L. (2006). Addressing academic dishonesty: The implications for business schools, professors, and students. *Journal for Advancement of Marketing Education, 9,* 1–8.

Flint, A., Clegg, S., & Macdonald, R. (2006). Exploring staff perceptions of student plagiarism. *Journal of Further and Higher Education, 30*(02), 145–156. doi:10.1080/03098770600617562.

Flowerdew, J., & Li, Y. (2007). Plagiarism and second language writing in an electronic age. *Annual Review of Applied Linguistics, 27,* 161–183. doi:10.1017/S0267190508070086.

Franklyn-Stokes, A., & Newstead, S. E. (1995). Undergraduate cheating: Who does what and why? *Studies in Higher Education, 20*(2), 159.

Getty, L. (2011). False assumptions: The challenges and politics of teaching in China. *Teaching in Higher Education, 16*(3), 347–352. doi:10.1080/13562517.2011.560058.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., et al. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40,* 84–96.

Haines, V. J., Diekhoff, G. M., LaBeff, E. E., & Clark, R. E. (1986). College cheating: Immaturity, lack of commitment, and the neutralizing attitude. *Research in Higher Education, 25,* 342–354.

Hammond, S., & Gao, H. (2002). Pan Gu's paradigm: Chinese education's return to holistic communication in learning. In X. Lu, W. Jia, & R. Heisey (Eds.), *Chinese communication studies: Contexts and comparisons* (pp. 227–244). Westport, CT: Ablex.

Hayes, N., & Introna, L. D. (2005). Cultural values, plagiarism, and fairness: When plagiarism gets in the way of learning. *Ethics and Behavior, 15*(3), 213–231. doi:10.1207/s15327019eb1503_2.

Haynie, D. (2014). Number of international college students continues to climb. *U.S. News & World Report*.

Heuchert, D. (2004). On my honor: Report spotlights cheating accusation. Retrieved from http://www.virginia.edu/topnews/11_15_2004/honor.html

Holmes, P. (2004). Negotiating differences in learning and intercultural communication: Ethnic Chinese students in a New Zealand university. *Business Communication Quarterly, 67*(3), 294–307. doi:10.1177/1080569904268141.

Hu, G., & Lei, J. (2012). Investigating Chinese university students' knowledge of and attitudes toward plagiarism from an integrated perspective. *Language Learning, 62*(3), 813–850. doi:10.1111/j.1467-9922.2011.00650.x.

Huang, C. (2015). Rote learning harms students' courage. *Global Times*. Retrieved from www.globaltimes.cn/content/939204.shtml

Iyer, R., & Eastman, J. (2006). Academic dishonesty: Are business students different from other college students? *Journal of Education for Business, 82*(2), 101–110.

McCabe, D. L. (1996). Classroom cheating among natural science and engineering majors. *Science and Engineering Ethics, 3*(4), 433–445.

McCabe, D. L. (2005). *Levels of cheating and plagiarism remain high. Honor codes and modified codes are shown to be effective in reducing academic misconduct.* Center for Academic Integrity. Duke University, Clemson, South Carolina.

McCabe, D. L., & Trevino, L. K. (1997). Individual and contextual influences on academic dishonesty: A multicampus investigation. *Research in Higher Education, 38*(3), 379–396.

Meade, J. (1992). Cheating: Is academic dishonesty par for the course? *Prism, 1*(7), 30–32.

Mehta, R., Anderson, R. E., & Dubinsky, A. J. (2000). The perceived importance of sales managers' rewards: A career stage perspective. *The Journal of Business & Industrial Marketing, 15*(7), 507–524.

Michaels, J. W., & Miethe, T. D. (1989). Applying theories of deviance to academic cheating. *Social Science Quarterly, 70,* 870–885.

Ming, Z. (2012). What's wrong with Chinese education. *Worldcrunch*. Retrieved from www.worldcrunch.com/culture-society/what-s-wrong-with-chinese-education/c3s5799/

Mooney, P. (2006). Plagued by plagiarism. *Chronicle of Higher Education, 52*(37), A45–A46.

Pappamihiel, N. E. (1999). *The development of an English language anxiety assessment instrument for Mexican middle school English language learners.* (Doctorate), University of Texas at Austin, Austin, TX.

Park, C. (2003). In other (people's) words: Plagiarism by university students–literature and lessons. *Assessment & Evaluation in Higher Education, 28*(5), 471–488. doi:10.1080/02602930301677.

Pecorari, D. (2015). Plagiarism in second language writing: Is it time to close the case? *Journal of Second Language Writing, 30,* 94–99.

Pecorari, D., & Petrić, B. (2014). Plagiarism in second-language writing. *Language Teaching, 47*(3), 269–302. doi:10.1017/S0261444814000056.

Pennycook, A. (1996). Borrowing others' words: Text, ownership, memory, and plagiarism. *TESOL Quarterly, 30*(2), 201–230.

Phakiti, A., & Li, L. (2011). General academic difficulties and reading and writing difficulties among Asian ESL postgraduate students in TESOL at an Australian university. *RELC Journal, 42*(3), 227–264. doi:10.1177/0033688211421417.

Richter, U. H., & Xiaofeng, S. (2014). China's educational challenge when going global. *Fair Observer*. Retrieved from www.fairobserver.com/region/asia_pacific/chinas-educational-challenge-when-going-global-01470

Selwyn, N. (2008). "Not necessarily a bad thing…": A study of online plagiarism amongst undergraduate students. *Assessment & Evaluation in Higher Education, 33*(5), 465–479. doi:10.1080/02602930701563104.

Shi, L. (2006). Cultural backgrounds and textual appropriation. *Language Awareness, 15*(4), 264–282. doi:10.2167/la406.0.

Shields, J., Scott, D., Sperling, R., & Higgins, T. (2009). Rewards communication in Australia and the United States: A survey of policies and programs. *Compensation & Benefits Review, 41,* 14–26. doi:10.1177/0886368709346610.1177/0886368709346686.

Stone, C. (2008). What plagiarism was not: Some preliminary observations on classical Chinese attitudes toward what the West calls intellectual property. *Marquette Law Review, 92,* 199–889.

Sutherland-Smith, W. (2005). The tangled web: Internet plagiarism and international students' academic writing. *Journal of Asian Pacific Communication, 15*(1), 15–29.

Thompson, L. C., & Williams, P. G. (1995). But I changed three words! Plagiarism in the ESL classroom. *Clearing House, 69,* 27–29.

Tian, J., & Low, G. D. (2012). To what extent are postgraduate students from China prepared for academic writing needed on UK master's courses? *Language, Culture and Curriculum, 25*(3), 299–319.

Ukpebor, C. O., & Ogbebor, A. (2013). Internet and plagiarism: Awareness, attitude and perception of students of secondary

schools. *International Research: Journal of Library & Information Science, 3*(2), 254–267.

Witherell, S. (2015). Open doors 2015: International students in the U.S. up ten percent to nearly one million; highest rate of growth in 35 years; increases reported in 44 states. Study abroad by American students picks up momentum [Press release]. Retrieved from http://www.iie.org/en/Who-We-Are/News-and-Events/Press-Center/Press-Releases/2015/2015-11-16-Open-Doors-Data

Xiang, Z. (2015). Education reform key to mass innovation. *China Daily*. Retrieved from www.chinadaily.com.cn/china/2015twosession/2015-03/11/content_19783458.htm

Dictionary.com. (n.d.). Dictionary.com Unabridged. Retrieved from http://www.dictionary.com

Software, B. T. (n.d.). Babylon 10 Online Dictionary. Retrieved from http://dictionary.babylon-software.com

Yan, S. (2016). Chinese flock to America to work for companies they've bought. Retrieved from http://money.cnn.com/2016/07/21/news/economy/china-u-s-expat-visas/