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# Is China “Keeping its Powder Dry”? Developing a Cultural Transmission Model of Gun Behaviors and Attitudes

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## Abstract

*The objective of this study was to provide a cultural transmission model that partially explains attitudes towards gun ownership and related behaviors. We utilized cross-sectional data collected from Chinese university students in two separate provinces. This paper specifically examines a cultural transmission model of Chinese attitudes towards gun ownership, carrying, purchasing guns for self-defense, and beliefs regarding whether family and friends would own guns. Our model includes measures of attachment, commitment, belief, prior military service, feelings concerning safety in the presence of firearms, beliefs of the respondent regarding whether or not their close associates would own guns, age, gender, and residential location. Findings suggest that the cultural transmission model partially explains Chinese attitudes regarding gun ownership and related activities.*

Keywords: Firearms, Gun Ownership, Guns, China, Culture.

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## **Introduction**

Attitudes about any subject are influenced by experiences that span a lifetime (Eiser & van der Pligt, 2015). So, given that context, the function of the current study is multifaceted. However, the primary purpose of this investigation is to ascertain the roles that relationships and culture play in shaping perceptions of gun ownership. Since culture is defined as the transmission of behavior, patterns, norms, and values by individuals and groups over time (Hofstede, 1997), we propose a theory of cultural transmission that can explain why individuals would like to own firearms and engage in firearms related behavior. The foundation is strong for this examination given the decades of research examining firearms ownership and associated activity in the United States, along with some existing research in other countries (Ajdacic-Gross et al., 2006; Braman, Kahan, & Fingerhut & Kleinman, 1990; Grimmelmann, 2005; Hardt-Madsen & Simonsen, 1983; Kate & Mauser, 2006; Killias, 1993; Mauser & Margolis, 1992; Pickett et al., 2005; Reynolds, 1997).

The nature of gun ownership in the United States is unique, which makes the current investigation innovative and useful, since we examine these matters within the Chinese context. This contribution is also significant since as far as we know, no coherent theoretical perspective has been utilized to explain these behaviors, though we concede that many researchers have investigated many of the elements of culture and firearms that we utilize in building our cultural transmission paradigm (Bordua & Lizotte, 1979; Cao, Cullen, & Link, 1997; Cao, Zhang, & He, 2008; Dixon & Lizotte, 1987; Kleck, 1997; Legault, 2008; Lizotte & Bordua, 1980; Lizotte, Bordua, & White, 1981; Marrow, & Mueller, 1997; Myers, McGrady, Sheley, McGee, & Wright, 1992; Simon, Crosby, & Dahlberg, 1999; Smith & Uchida, 1988; Spano & Bolland, 2013; Steinman & Zimmerman, 2003; Tracy, Braga, & Papachristos, 2016; Wright, Rossi, & Daly, 1983; Yamane, 2017 ).

More specifically, while others have examined the correlations between gun ownership and individual and situational characteristics, none of these studies provides a comprehensive application of criminological theory to explain why people choose to own guns or participate in firearms related behaviors (Cao et al, 1997; Cao et al., 2008; Kleck, 1997; Legault, 2008; Myers et al. 1997; Sheley et al. 1992; Simon et al., 1999; Spano & Bolland, 2013; Steinman & Zimmerman, 2003; Tracy et al. 2016; Yamane, 2017 ). Given this gap in the literature, this research also serves as a call to begin addressing these questions in a way that more comprehensively explains firearms ownership and behavior. As a result, we believe that a criminological explanation of firearms ownership, defined broadly to include carrying and attitudes regarding firearms related activity, will provide a clearer understanding of such behaviors.

An additional contribution that this study affords is the fact that we address these important matters by utilizing data collected from university students in China. Consequentially, this study initiates a dialogue within a country where most private ownership of firearms is publically condemned in the state media and also illegal (Zhang, 2013). In addition, to the best of our understanding, no study of this kind regarding China has ever been published. As a result, any significant findings pertaining to firearms ownership and related behaviors are fascinating and worthy of discussion. Finally, given recent instances of gun violence and mass murder in Germany, England, France and other

places, we believe that a piece proposing a theory that explains attitudes towards gun ownership, is also timely.

Modern criminologists provide a glimpse into crime causation, prevention, and cessation by developing and testing perspectives almost too numerous to count (Akers, 2011; Gottfredson & Hirschi, 1990; Hirschi, 1969; Matsueda, 1988). What we sometimes fail to realize is that pursuing these important issues is really a desire to explain how behavior is culturally transmitted from within a given generation or passed on to the next. We acknowledge that any given criminological perspective seeks to explain crime by some form of cultural transmission. However, an investigation of “culture” generally speaking, is logically limited as it would be nearly impossible to measure every element of the cultural transmission of any behavior.

However, we believe that cultural transmission models, rooted in criminological theory, may also explain the passing on of firearms behaviors in numerous cultural contexts and expand on previous work in this area. Furthermore, explaining the passing of gun ownership and culture from one generation to another is a suitable arena for this type of theoretical development, particularly given research findings examining the cultural transmission of criminal and deviant behaviors (Champion & Durant, 2001). While the explanation of criminal behavior and policy continues, very few describe the main transfer of cultural norms and values that are transmitted between individuals or groups within and across generations. Theories are used to explain criminal justice related behavior but we refrain from using the language of cultural transmission.

More specifically, criminologists generally refer to explained variance and note that particular components of a theory are correlated with an amount of crime or justice system behavior. We argue that criminologists could be thinking about how their results explain behaviors via cultural transmission. Naturally, such a paradigmatic shift would easily accommodate the criminological explanation of normative behaviors, such as gun ownership and attitudes related to such ownership. We acknowledge that this notion is not without support from existing research examining the cultural antecedents to gun ownership (Cao et al., 2008; Felson & Pare, 2010a; Kleck, 1997; Legault, 2008; Spano & Bolland, 2013; Steinman & Zimmerman, 2003; Tracy et al., 2016). In fact, other theorists have viewed crime as something that can be transferred across generations and within groups (Chamratrithong et al., 2013; Taylor, McGue, & Iacono, 2000). However, we begin by providing a brief review of criminological inquiry by linking specific perspectives to the explanation of attitudes towards firearms and related behavior. This initial overview establishes the theoretical foundation for our analysis and synthesizes the existing firearms literature as we develop the model.

## Literature Review

### *Cultural Correlates of Gun Ownership*

Firearms behaviors have been the focus of a great deal of research over the past fifty years and the current study relies on this foundation to develop a theory of gun ownership. We then test that theory within a comparative context. A further contribution of this study is that it begins to address the fact that far less firearms ownership research is conducted outside of the United States (Ajdacic-Gross et al., 2006; Braman et al., 2005; Fingerhut & Kleinman, 1990; Killias, 1993; Pickett et al., 2005; Reynolds, 1997). In fact, to the best of our knowledge, no empirical study of firearms issues exists utilizing data collected in China, which may be due to the cultural resistance to firearms ownership that

exists there (Zhang, 2013). Since no literature exists on these matters in China, we begin our discussion with a review of what research has occurred within the American context on firearms ownership, carrying, and self-preservation.

Demographic characteristics used to describe owners have been relatively consistent for decades, providing some foundation for the notion that cultural transmission plays a role in gun ownership. In America, politically conservative, white males are more likely to indicate that they own guns. Gun owners are also more likely to be middle class, middle aged, and living in rural areas where hunting and sport shooting are popular. Other studies have examined the role of religion in gun ownership and some have found that those who indicate Protestant affiliation were more likely to indicate that they owned guns (Jiobue & Curry, 2001; Kleck & Kovandzic, 2009). Conversely, both participation in religious services and involvement in religious activities have been found to be negatively associated with gun ownership (Yamane, 2016). Interestingly, individuals that carry their guns have also been influenced by the carrying of firearms by other household members and peers (Felson & Pare, 2010a; Kleck, 1997; Legault, 2008; Spano & Bolland, 2013; Steinman & Zimmerman, 2003; Tracy et al., 2016).

Moreover, those studies that found that youth and adults who carry to defend themselves also reported that concerns or experiences regarding firearms were also shared by family and friends (Hemenway, Prothrow-Stith, Bergstein, Ander, & Kennedy, 1996; Lizotte, Krohn, Howell, Tobin, & Howard, 2000; Martin, Sadaowski, Cotton, & McCarragher, 1996; Tracy et al., 2016). Many firearm behaviors influenced by family and peer groups are also impacted by the areas that those same family and friends inhabit, such as region (Cunningham, Henggeler, Limber, Melton, & Nation, 2000; Miller, Azrael, & Hemenway 2002; Miller, Azrael, Hepburn, Hemenway, & Lippmann, 2006). These experiences can often result in the transmission of cultural values and belief systems regarding many behaviors. Therefore, it is certainly possible that such matters also impact gun ownership and related activity (Halsey & Deegan, 2017). One could logically assert that such demographic consistency across decades of research, is indicative of the transmission of gun behaviors. However, the cultural transmission of firearms ownership requires much more support than merely the consistency of demographic associations with it over time.

Researchers have delved deeply into the world of American gun owners and identified much about their characteristics. Americans who indicate gun ownership tend to own both long guns and handguns, though more recently, handguns are gaining in popularity (Cook & Ludwig, 1997; Miller et al., 2002; Miller, Warren, Hemenway, & Azrael, 2015). Research has found that the reasons behind firearms ownership are often numerous. Sport and target ownership is often identified alongside ownership geared toward self-preservation (Bordua & Lizotte, 1979; O'Connor & Lizotte, 1978). These owners also carry their firearms with them in cars and on their person, often for protection (Hemenway, Azrael, & Miller, 2001; Kleck & Gertz, 1998; Ludwig, 1998). Much of the research on gun carrying has focused on the adolescent manifestation of the behavior. Findings seem to indicate that adolescents who carry guns are also more likely to be involved with gangs, have increased perceptions of violence, have been exposed to violence, have other adolescent friends who carry guns, and have a greater involvement with the justice system (Cook & Ludwig, 2004; Hemenway et al., 1996; Lizotte et al.,

2000; McNabb et al., 1995). We now turn to the identification of the theoretical context from which we draw the constructs for our model.

*The Missing Link: The Criminological Explanation of Gun Ownership and Behavior*

Modern criminological theories that address the cultural transmission of behavior tend to focus on the life course environment in which humans operate (Van de Rakt, Ruiter, Dirk de Graaf, & Nieuwbeerta, 2010). Consequently, it is these perspectives that also serve as a good backdrop to the assertion that cultural transmission can explain firearms attitudes and ownership. The cultural transmission argument in explaining crime has received a great deal of attention, beginning with the “Chicago School”. These theories argue that criminal activity is a result of parents and institutions unable to provide basic needs and so adolescents become motivated to meet those needs via the instruction and guidance of others. Some of the more recognizable perspectives of the Chicago School include the Social Disorganization, Differential Association, and Social Learning perspectives.

In fact, Shaw and McKay’s (1942) seminal *Juvenile Delinquency and Urban Areas*, specifically states that cultural transmission of delinquent values occurs when the needs of adolescents are not adequately met, so adolescents make an attempt at acquiring the objects of their desire by learning how to do so from other non-conforming individuals and groups. Within a dual macro-micro level context, cultural transmission via social disorganization has also been used to explain crime in England (Veysey & Messner, 1999). It has also been argued that transmission of criminal behavior and poor temperament across generations occurs via a learning process from parents (Kerr, Capaldi, Pears, & Owen, 2009). However, cultural transmission can also occur as a result of delinquent associations and peers (Bouman et al., 2012). In addition, some have even begun to apply the principles of cultural transmission and differential association to corporate offending (Piquero, Tibbetts, & Blankenship, 2005). Similarly, well-regarded strain theories that emphasize the importance of delinquent peers include Merton’s (1938) anomie and Agnew’s (1992) General Strain Theory (GST). In essence, cultural transmission of crime with these perspectives occurs when criminals and delinquents are exposed to criminal learning patterns, labels, and needs deficits from other members of society when they are unable to participate in common economic activities (Moon, Hwang, & McCluskey, 2011).

In terms of cultural transmission variables from these theories for the current study, one could argue that ownership of firearms is potentially driven by the fact that many that own firearms are poor White males, living in rural areas, who express politically conservative views, and are distrustful of government (Caetano, 1979; DeFronzo, 1979; Kleck, 1997; O’Brien, Forrest, Lynott, & Daly, 2013; Pinholt, Mitchell, Butler, & Kumar, 2014; Sheley, Brody, White, & Williams, 1994; Smith & Son, 2015; Wiktor, Gallahar, Baron, Watson, & Sewell, 1994; Wright & Marston, 1975). A theorist that adheres to the Chicago School and the perspectives mentioned above might argue that these types of individuals own guns because their caregivers struggle with meeting their basic needs. Further their attitudes towards guns manifest themselves with others friends and relatives that share a similar plight.

While we do not purport that gun owners have unmet needs, the role of firearms within this broader sociological realm of explanation is clear. Firearms are utilitarian objects with intense meaning and significance. With the potential for use in self-defense,

violence, hunting, and sport, it is possible that cultural transmission regarding attitudes and behaviors might also be driven by human desire, both in normative and deviant ways. Moreover, in linking these perspectives as possible explanations of firearms attitudes and ownership, we believe that guns are both practical and symbolic..

In addition, guns also have historical, personal, and social significance. Children are taught to shoot by those close to them and fathers most often teach sons to hunt for food as part of the transition from adolescence to adulthood. While the gender lines have blurred, it is clear that since part of what is taught to children and adolescents by their parents regarding firearms is grounded in survival and protection, one cannot deny the utility of firearms ownership in both rural and urban areas in the United States. The research examining firearms has investigated the subculture of violence thesis but found little support for the idea that firearms represent an adherence to violent attitudes or that gun ownership denotes a cultural perspective that views violence positively (Copes, Dixon & Lizotte, 1987; Felson & Pare, 2010). Chicago School arguments notwithstanding, variants of control theory are very popular and continue to draw the most attention in terms of paradigmatic, theoretical testing of the causes of crime.

Durkheim is one of the intellectual founders of this broad set of perspectives and he wrote extensively about important activities and relationships that normal, healthy people have with conventional others and with social institutions. For example, in *Suicide* (1951), Durkheim highlighted the importance of parental and family relationships in constraining self-immolation. In *Moral Education* (1961), Durkheim emphasized the vital role that teachers, schoolmates, and peers have in passing along culturally important symbols to the younger generation. Moreover, in *The Elementary Forms of Religious Life* (1968), Durkheim asserted that religious activities and relationships were significant for transmitting symbolic meaning and culture to individuals and groups. Participation in positive activities with those who view firearms positively could increase the likelihood that individuals own firearms and participate in activities and behaviors that include guns, even in a society where firearms are illegal, like China.

Additionally, in 1961, Walter Reckless promulgated Containment Theory and highlighted the importance of the conscience and the informal controls of family members and society as a whole, in shaping future behavior. Sykes and Matza’s “Techniques of Neutralization – A Theory of Delinquency” was the first to speak directly of a “bind” to societal norms that later influenced behavior. While these earlier perspectives laid the groundwork for control theory, the most frequently tested control theories remain social bond (Hirschi, 1969) and self-control (Gottfredson & Hirschi, 1990). Social bond theory specifically argues that relationships with parents, school teachers, peers and other social actors pass along cultural values to adolescents, which insulate them from deviance. Interestingly, specific research from the firearms area has confirmed this contention. Specifically, individuals who indicate that their parents owned firearms or were taught to use guns at early ages, or participated in activities like hunting, are more likely to own firearms as adults (Cao et al., 1997; Kleck, 1997; Legault, 2008; Legault, 2013; Reed, 1986).

For self-control theory, Gottfredson and Hirschi (1990) added impulsivity, opportunity, parental monitoring, and discipline to the equation and argued that levels of self-control either propel an individual towards crime or insulate that same person from it. At its core, the theory asserts that by an early age, parents have inculcated their beliefs into their

offspring to such a degree that the child will carry their views and expectations throughout life. Again, the firearms literature provides support for these assertions, though the consolidation of control concepts in a cogent, theoretical framework has not yet been tested (Cao et al., 1997; Dixon & Lizotte, 1987; Kleck, 1997; Legault, 2008; Legault, 2013).

For our immediate purposes, there is support for the contention that the principles of cultural transmission work through control theory to explain crime as well (Piquero et al., 2005). More specifically, poor parental supervision and school attachment contribute to crime and delinquency (Hoffman, 2003). Interestingly, control theories remain popular with tests spanning a wide variety of behavior. For example, cultural transmission principles via inadequate parenting and self-control theory have been utilized to explain school bullying (Moon et al., 2011). In addition, social control theory has also been utilized to explain gender differences among male and female offenders (Fiftal-Alarid, Burton, & Cullen, 2000). In fact, Fiftal-Alarid et al. (2000) reported that parental attachment is a stronger predictor of female violence, while differential association variables governing peer relationships, are more important for males (p. 171). Taken together, control theorists argue that crime is transmitted to others via poor relationships with parents, families, peers, institutions, and groups.

In linking these perspectives to the explanation of firearms attitudes and ownership, a natural proposition would seem to be that owning guns and positive attitudes towards them would be transmitted from those individuals and groups that are closest to the individual owner. More specifically, a control theorist could use parental, school, peer, religious and other conventional ties and beliefs to assert that people that own firearms do so because those that they are closest to, feel the same way, and also own guns. The literature regarding firearms ownerships also bears this out. The support for cultural transmission of firearms ownership exists in the substantial body of firearms research findings that those with parents who owned guns are more likely to own firearms later in life as adults (Cao et al., 1997; Dixon & Lizotte, 1987; Kleck, 1997; Reed, 1986; Smith & Uchida, 1988). Hence, for the control theorist, firearms ownership is transmitted by both affectional and behavioral ties with those closest to the owner. These relationships reinforce the notion that owning firearms is a positive activity and so, ownership is more likely to occur in the future.

An examination of firearms behaviors using concepts gleaned from criminological theories can help us understand how such behaviors are formed, encouraged, and transmitted. Such an inquiry is important because it has significant implications regarding our understanding of the society in which we live. While explaining gun ownership is a challenge, doing so can contribute to our expanded application of criminological theory to human behavior. In sum, we believe that the previous review justifies the beginning of the study of firearms ownership, defined broadly, using variables from criminological theories that tout the cultural transmission of attitudes and behaviors to others. As a result, we present a model of gun ownership that sets the stage for future research, both in the United States and elsewhere. Using the framework outlined above, we rely upon concepts from social disorganization, learning, control, and differential association perspectives. We further argue that these concepts lend themselves to the assertion that gun ownership and related behaviors are partially explained through a process of cultural transmission from one generation to the next. As such, we adopt family, school, religiosity, peer, activity, and demographic constructs for our model, which follows below.

## **Methodology**

For various reasons, this study makes important contributions to the literature. First, we present a complete theory of why people own guns. Since private ownership of firearms is banned in China, the theory applies to whether or not individuals would own guns if they could. However, we also stand by the applicability of this theory to the explanation of gun ownership in places where it is lawful. More specifically, we employ a multifaceted theory of the cultural transmission of gun ownership and related behavior that draws from a number of criminological perspectives. In so doing, we utilize variables from social control, social disorganization, differential association and social learning. Secondly, we initiate this debate with data collected in China, which makes this research seminal. Finally, the current study is timely and relevant given the increased attention that firearms and weapons use have garnered across the world. Understanding the unlawful use of firearms begins with understanding and explaining why individuals own firearms in the first place.

### *Data Collection and Sample*

In April 2015, two of the authors began a dialogue that focused on a number of the correlates of various forms of deviant and normative behaviors. As the conversations become more specific, the Institutional Review Board (IRB) process was initiated. The author leading the project was instructed by the IRB concerning the collection of an international sample. Protocol requirements regarding such a data collection included formalization of the survey and various levels of administrative approval from the institutions involved.

In terms of the survey, one of the authors oversaw changes to the questionnaire as it was translated into Chinese and back into English, ensuring that the most reliable translated concepts were provided for the respondents. Once the instrument was finalized, 25–30 students at each of the Chinese universities were asked to take the survey and provide feedback. The commentary provided by the students was forwarded to the IRB author, who further revised the questionnaire from April – June 2015. Final approval was obtained both from the host university contacts and the U.S. institutional IRB, in June 2015. Following the IRB approval, we then collaborated further in an effort to ensure that the survey was posted to a university site that students could easily access via any type of electronic device. This particular methodology allowed for anonymous access to the survey and for the creation of an SPSS portable data file. This process resulted in the collection of roughly 700 cases, approximately 580 cases from University A and 120 from University B.

Each of the two universities is located in a large Chinese city in different parts of the country. In addition, each institution also houses a law school which offers Baccalaureate to Doctoral level law degrees. Both institutions also offer traditional majors, such as the hard, social, and medical sciences, engineering, education and the liberal arts. Finally, both institutions have approximately 20,000–30,000 students, with more than one campus to accommodate them. The academic calendar in China differs from that in the West. The major “break” for Chinese students is Chinese New Year, which falls somewhere between mid-January to mid-February, depending on the Lunar Calendar, and runs the equivalent of one month.

The demographic characteristics of the sample also do not reflect what one might expect to find in a Western university. For example, approximately 80% of the respondents indicated that they were enrolled as students at University A. In addition, roughly 67% of the sample is female. The overall age range of the respondents is approximately 17-28, with a few as high as 39. However, these outliers may be due to the fact that both institutions offer the Ph.D. Interestingly, about 50% of the sample hails from urban residential areas, with an additional 15% from the suburbs and the remainder referring to themselves as rural residents. In terms of income, approximately 25% of the respondents indicated that their families earned 20,000 yuan or less per year but about 50% of the sample reported that their families earned more than 95,000 yuan during the same time period.

Given the limited time frame to collect the data, the sample is essentially one of convenience, comprised of Chinese university students from two mainland Chinese institutions. Students were presented with an opportunity in their classes by their Chinese professors and by the visiting scholar from the U.S., to complete the survey. The students were made aware of the fact that they could complete the instrument at their leisure on whatever device they chose to utilize, in whatever environment they chose. Potential respondents were also told that participation was voluntary and that they could withdraw from participation at any time or refrain from participation. An informed consent form was also provided.

Since the research question was whether or not a cultural transmission model would explain attitudes towards firearms, we developed the questionnaire with a desire to construct measures of parental, peer and school attachments, as well as various forms of commitment and belief. As an additional variant, we employ peer variables indicative of the learning and association perspectives as well. The descriptive cultural transmission variables include gender, age, original residential location of the respondents, military service, whether the respondents believed their friends or family members would own firearms if they could, and whether respondents would feel safe if a gun were present in the home. The behavioral control dealt with whether or not a respondent had ever smoked cigarettes. The various measures and their coding follows below:

*Dependent Variables.* Several research questions are under study and they include whether or not respondents have positive attitudes towards owning firearms, whether they would carry a gun for protection, whether they would buy gun for protection, and whether they think friends and relatives would own firearms. The particular item used to measure positive attitudes towards owning firearms is, “Do you favor or oppose a law that would allow for private ownership of firearms?” The item was coded, “0” = Oppose, “1” = Unsure, “2” = Favor. The item asking about carrying a firearm is: “If you owned a gun, would you carry it for protection?” A third item asks: “If you could own a gun, would you buy it for protection?” The final item is: “Do you think friends or family would own a gun if they could?” Each of these dependent variables is coded, “0” = No, “1” = Unsure, “2” = Yes.

Preliminary analysis indicated a degree of skewness which required revision of the dependent variables. We based our decisions regarding the “unsure” responses on prior research that notes the sensitivity of the respondent to negative social reactions to gun ownership in American samples (Legault, 2013). Based on this literature, it may be that

Chinese respondents who indicate “unsure” are muted “favor” or “yes” responses but for some degree of wariness, fail to indicate such support in their answers. This possibility takes on a unique significance in a society where private gun ownership is illegal and viewed harshly. As a result, we recoded the “Unsure” category to be included in the “Favor” category for the ownership item. For the other three items, the “Unsure” responses were included in the “Yes” category. This process resulted in roughly 30 cases being shifted from one category of response to the other. To further address skewness, we also employed logistic regression.

### *Social Bond, Learning, and Differential Association Cultural Transmission Variables*

*Parental and School Attachment.* We draw parental, school, peer, and delinquent peer attachment variables from the social bond and differential association perspectives for this study. The parental and school attachment indicators reflect the feelings that the respondents have towards their parents and their university. The items utilized for the “parental attachment” ( $\alpha = .85$ ) index are: “Most of the time, your parents are warm and loving to you?”, “You are satisfied with the way your parents and you communicate with each other?” and “Overall, you are satisfied with your relationship with your parents?” These items are coded: “1” = strongly disagree, “2” = disagree, “3” = neither agree nor disagree, “4” = agree, “5” = strongly agree. “How much do you think your parents care about you?” and “How close do you feel to your parents?” are coded: “1” = not at all, “2” = very little, “3” = somewhat, “4” = quite a bit, “5” = very much. The “school attachment” ( $\alpha = .79$ ), items include: “I feel like I am part of this school?” , “You are happy at this school?” , “I feel close to people at school?” , “Teachers at your school treat students fairly?” and “How much do you feel that your teachers care about you?” These items are also coded: “1” = strongly disagree, “2” = disagree, “3” = neither agree nor disagree, “4” = agree, “5” = strongly agree.

*Peer Attachment.* Specifically, we include conventional peer attachment and the number of friends that a respondent has that smoke and drink (delinquent peer attachment). Conventional peer attachment is a traditional social bond variable with delinquent peers being thought of as a learning or differential association type item. Conventional “peer attachment” is simply a single item that asks, “How much do you feel that your friends care about you?” and it is coded: “1” = not at all, “2” = very little, “3” = somewhat, “4” = quite a bit, “5” = very much. As a learning variable, “delinquent peer attachment” ( $\alpha = .70$ ), is an index of two items that ask how many of the respondent’s three best friends smoke cigarettes or drink alcohol. Both items are coded: “0” = 0, “1” = 1, “2” = 2, “3” = 3.

*School and Religious Commitment.* We borrow from social bond theory by including school and religious commitment. School commitment ( $\alpha = .77$ ), is measured by summing the following three items into an index: “What grade did you most recently receive in a Math class?” , “What grade did you most recently receive in a Science class?” and “What grade did you most recently receive in a History class?” Each item is coded: “1” = Did not take

it, “2” = F [below 60], “3” = D [60–69], “4” = C [70 – 79], “5” = B [80–89], “6” = A [90 – 100].

For religious commitment, standard scores were calculated for eleven items and combined ( $\alpha = .87$ ). One item asked, “In the past year how often have you attended religious services”; and another asked, “How often do you attend a religious group to pray or discuss religious topics?” Both have responses ranging from “never” (coded 1) to once a week or more (coded 6). An additional four items, “How many of your friends are religious?”, “How many friends are similar to you in religious belief?”, “How many friends are in any religious group you belong to?”, and “How many of your friends do you talk with about religion?” have responses ranging from “no friends” (coded 1) to “five or more friends” (coded 6). Two additional items, “How often, if ever, do you pray by yourself?” and “How often, if ever, do you read from the holy teachings of your religion by yourself?” have responses ranging from “never” (coded 1) to “once a day or more” (coded 7). One additional item asked, “How distant or close do you feel to God most of the time?” with “not close at all” (coded 1) to “extremely close” (coded 4) as responses. An additional item, “How important or unimportant is religious faith in shaping how you live your daily life?” and its responses range from “not important at all” (coded 1) to “extremely important” (coded 4). The final item, “Do you attend an organized group for young people at church?” was a dichotomy, with “no” (coded 1) and “yes” (coded 2).

*Religious and General Belief.* Conventional and religious beliefs are included in this study as a reflection of social bond or differential association definition type measures. The questionnaire included one item for “general belief” that asked to what extent respondents agreed or disagreed with the question, “You feel that the rules you have to follow in life are fair.” Religious belief was a single item that stated, “Some Chinese students follow Confucius, Mohammed, Buddha, or Jesus. If you follow one of these teachers, do you believe that their teachings are holy?” Both belief items are coded: “1” = strongly disagree, “2” = disagree, “3” = neither agree not disagree, “4” = agree, “5” = strongly agree.

#### *Descriptive Cultural Transmission Variables*

We included “Age”, which was an item that asked, “How old are you?”, respondents were allowed to enter a number corresponding to their age. “Gender” was a single item that asked, “What is your gender?” and allowed for a response of “1” = male or “2” = female. Respondents were also asked, “What type of residential area are you originally from?” with the item coded: “1” = rural, “2” = suburban, “3” = urban. Another item asked if respondents had ever engaged in military service and the responses were “no” (coded 1) and “yes” (coded 2). Another item asked whether or not the respondent’s family or friends were likely to own firearms if they could and the responses were “no” (coded 1) and “yes” (coded 2). A final item asked respondents whether or not they would feel safe if a gun was located in the house with the responses being “no” (coded 1) and “yes” (coded 2).

#### *Behavioral control*

A behavioral control asked whether or not respondents had ever smoked cigarettes and it is dichotomously represented as “no” (coded 1) and “yes” (coded 2).

## Results

Table 1 presents the descriptive statistics for the cultural transmission model, while Table 2 indicates their impact in explaining Chinese attitudes towards firearms ownership and related behaviors. Due to the dichotomous nature of the outcome measures, we estimated four logistic regression models to predict the odds of supporting various forms of firearms related behavior.

Results provided in Table 1 indicate that significant amounts of desire to engage in firearms related behaviors exist in the sample. In addition, expectations regarding conventional attachments, commitments, and belief in societal rules also appear to be important to these respondents. Not unexpectedly, some respondents have delinquent friends. A small but important number of participants also appear to have military service. Further, respondents to some degree also believe that their family and friends would also own firearms. Respondents also indicated that they would feel safe having a firearms in their place of residence. Finally, a significant part of the sample was female, roughly 20 years old, and from primarily suburban and rural areas.

**Table 1. Cultural Transmission Model Descriptive Statistics**

Variables	Mean	SD	Min.	Max	N
<b>Dependent</b>					
Favor/Oppose Ownership Law (2=yes)	1.18	.387	1	2	684
Friends & Family Would Own (2=yes)	1.91	.284	1	2	690
Carry For Protection (2=yes)	1.88	.324	1	2	689
Would Buy For Protection (2=yes)	1.88	.322	1	2	693
<b>Cultural transmission</b>					
Parental Attachment	20.75	3.73	5	25	701
School Attachment	17.47	3.59	5	25	701
Peer Attachment	3.80	0.82	1	5	701
Delinquent Peer Attachment	1.47	1.80	0	6	701
Religious Commitment	--	--	--	--	701
School Commitment	8.69	4.85	3	18	701
Religious Belief	3.29	1.02	1	5	701
Belief	3.26	1.02	1	5	701
Military Service	0.03	0.17	0	1	694
Family/Friends Own	1.91	0.28	1	2	690
Own Gun Feel Safe	1.67	0.47	1	2	701
Gender (2=Female)	1.67	0.47	1	2	701
Age	20.16	2.30	17	39	701
Residential Area	2.10	0.91	1	3	701
<b>Behavioral Control</b>					
Smoke Cigarettes (2=Yes)	1.07	0.26	1	2	695

For the first model in Table 2, predicting attitudes towards a law that would allow for private gun ownership, the cultural transmission variables that were statistically significant at traditional reporting levels, were feelings of safety with a gun in the home (2.645), residential area (1.300), and gender (.321). Specifically, stronger feelings of safety in having a gun in the home and residential location were each associated with higher odds of supporting a law that would allow for private firearms ownership. In addition, males were also associated with greater odds of supporting a law that would allow for private gun ownership. Since this study breaks new ground in the area of gun ownership, we also would note that military service (2.916) was associated with greater odds of supporting the gun ownership law at the .10 level. General belief (.822) was also associated with lower odds of supporting a private ownership law at the .10 level. The smoking control (2.059), was significantly and positively associated with greater odds of supporting a private ownership law. Finally, the model explained 18% of the variance in support for a law would allow for private ownership of firearms.

**Table 2. Cultural Transmission Model Odds Ratios Predicting Firearms Related Attitudes and Behaviors**

Variables	Model 1: Private Own	Model 2: Fam./Friends Own	Model 3: Carry Protection	Model 4: Buy Protection
<b>Cultural Transmission</b>				
Parental Attachment	1.038	1.083*	1.104**	1.056
School Attachment	1.046	.999	.968	1.026
Peer Attachment	.938	.943	.993	.771
Delinquent Peer Attachment	1.026	.901	1.106	.977
Religious Commitment	1.018	1.006	.976	.981
School Commitment	.988	.960	.986	1.105
Religious Belief	.902	1.331 <sup>a</sup>	1.277 <sup>a</sup>	1.151
Belief	.822 <sup>a</sup>	.919	.897	.786 <sup>a</sup>
Military Service	2.916 <sup>a</sup>	.410	3.566	2.166
Family/Friends Own	1.393	--	7.488***	6.051***
Own Gun Feel Safe	2.645***	1.498	.664	.781
Gender (2=Female)	.321***	.431*	.881	.746
Age	1.038	1.107 <sup>a</sup>	.886*	.958
Residential Area	1.300*	1.359*	1.084	1.048
<b>Behavioral Control</b>				
Smoke Cigarettes (2=Yes)	2.059*	1.482	.510	1.162
N	671	683	677	681
Model Chi-Square	77.741	31.688	63.594	42.522
Nagelkerke R-Square	.180	.100	.174	.118

\* p < .05 \*\* p < .01 \*\*\* p < .001

<sup>a</sup> Significant at the .10 level.

In the second model, predicting whether or not family or friends of the respondent would likely own firearms if they could, three cultural transmission variables were statistically significant. Specifically, those respondents that were close to their parents (1.083) and from urban areas (1.359) were also more likely to believe that their friends and family would also own firearms if they could. In addition, males (.431) also were associated with greater odds of believing that their family and friends would own guns. Finally, older students (1.107) with strong religious beliefs (1.331) were associated with greater odds of feeling that their friends and family would own a gun if they could, at the .10 level. The model explained about 10% of the variance in the dependent variable.

In the third model, predicting whether or not the respondent would carry a firearm for protection, three of the cultural transmission variables were statistically significant. Specifically, those respondents that were close to their parents (1.104) would carry a firearm for protection. In addition, those that believed that their family or friends would own a firearm (7.448) were associated with higher odds of desiring to carry a firearm for protection if they could. Conversely, younger individuals (.886) were associated with lower odds of carrying guns for protection. Additionally, individuals with higher levels of religious belief (1.277) were associated with greater odds of carrying a firearm for protection, at the .10 level. The model explained about 17% of the variance in carrying firearms for protection.

In the final model, predicting whether or not respondents would buy a firearm for protection if they could, individuals who believed that their family or friends would own firearms (6.051) were associated with greater odds of buying firearms for protection. Conversely, individuals with higher levels of conventional belief (.786) were associated with lower odds of buying a firearm for protection, at the .10 level. The model explained about 12% of the variance in buying firearms for protection.

## **Discussion and Conclusion**

Overall, given the context within which this test has been conducted, these Chinese findings are remarkable. One must consider that private gun ownership is illegal and socially unacceptable in China. The notion that participation in this officially defined deviant act would be understood using criminological concepts contributes to our understanding of how this model might perform in an alternate context, particularly one as “firearm friendly” as the United States. Additionally, individual perceptions of the participation of their friends and family in firearms behaviors provide support for the principles of cultural transmission and warrant further study. The significance of other cultural transmission variables also shore up this assertion and further justify additional inquiry. It is also interesting that parental relationships have some relevance when discussing whether the respondents’ other friends and family would like to own firearms. It is also important to note that these same parental relationships may be relevant for respondent desire to carry a firearm for protection as well. In our view, this is an additional validation of the assertion that firearms activities can be passed on to others via cultural transmission.

A fourth observation that we would like to make underscores the performance of the belief measures. While we concede that these measures did not attain traditional levels of significance, they did do so at the .10 level. In assessing our results, one could argue that

future researchers should consider including such measures in their tests of this perspective given that one of the two belief indicators was significant at the .10 level for each of the four equations. This is a relevant point to make because not only is belief an important cultural transmission concept, the items utilized here approached traditional significance in a society where religious views and participation are frowned upon, a not unimportant finding. Relatedly, while religious commitment did not attain significance, the  $\exp(b)$  for the measure was in the expected direction and performed relatively well for Models 3 and 4. We believe that potential exists for this concept to make significant contributions to future studies for much the same reason that we believe it to be true of the measures of belief. Societies that allow for religious belief and participation could be fertile ground for these or similar items in future tests.

In sum, we believe it significant that a model of cultural transmission, which attempted to predict the odds of engaging in firearms behavior in China, performed in a way that might be expected in a more “firearms friendly” society. These results are especially poignant since China is a society that essentially discourages both positive firearms activity and to some extent, religious expression. Findings such as these are important and deserve further investigation, clarification, and comment.

As with all electronic surveys, we note some limitations to our findings, particularly given the cross sectional nature of the data collection. Future tests of the cultural transmission theory should include longitudinal data, if possible. Such a research design would allow for a clearer statement regarding causation between the cultural transmission model and the outcome firearms variables. In addition, future investigators might also try to collect more detailed information from parties participating in the instruction of culture as well as those receiving such instruction. More specifically, access to teachers, parents, and administrators would provide a unique opportunity in this area of inquiry. Additionally, given the direct nature of the firearms related questions, it is possible that respondents to some extent surmised the topic under investigation. As a result, we cannot discount the possibility that social desirability in the responses occurred. Finally, since the data was collected from only two Chinese universities, in two separate cities, the generalizability of these findings is limited.

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