

# APPENDIX B: HOW TO READ A RESEARCH ARTICLE

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The discussions of research articles throughout the text may provide all the guidance you need to read and critique research on your own. But reading about an article in bits and pieces in order to learn about particular methodologies is not quite the same as reading an article in its entirety in order to learn what the research discovered. The goal of this appendix is to walk you through an entire research article, answering the review questions introduced in Appendix A. Of course, this is only one article, and our walk will take different turns than a walk through another article would take, but after this review, you should feel more confident when reading other research articles on your own.

For this example, we will use an article by Yi-Fen Lu, Yi-Chun Yu, Ling Ren, and Ineke Marshall, which provides a test of self-control theory with a sample of Chinese adolescents (reprinted in this volume on page 502). It contributes to our understanding of the power and efficacy of self-control theory. This theory specifies that the impact of self-control variables should not be affected by culture, but very few studies exist that have tested the theory in non-Western contexts generally, or in China specifically. Moreover, the article is published in a reputable criminological journal, the *Journal of Contemporary Criminal Justice*, indicating that the article makes an important contribution to what is known about the causes and correlates of delinquent behaviors.

We have reproduced below each of the article review questions from Appendix A, followed by our answers to them. After each question, we indicate the chapter in this book to review for information on how to answer the question. With some answers, we indicate the page or pages from the article where you can find the answer. You can also follow our review by reading through the article itself and noting our comments.

1. What is the basic research question or problem? Try to state it in one sentence. (Chapter 2)  
Is low self-control associated with misbehavior among juveniles in China? Is any impact of this variable independent of an effect of measures of social bond theory and individual demographic variables? (37)
2. Is the purpose of the study explanatory, evaluative, exploratory, or descriptive? Did the study have more than one purpose? (Chapter 1)  
The study is explanatory. The authors wish to establish the potential impact of one (set of) variable(s) on another—measures of self-control and the social bond on the incidence of deviant behavior in juveniles in a specific cultural context.
3. Was the theoretical framework presented? What was it? Did it seem appropriate for the research question addressed? Can you think of a different theoretical perspective that might have been used? (Chapter 2)  
Two different theoretical frameworks are specifically being tested in this article—Gottfredson and Hirschi’s self-control theory and Hirschi’s social bond theory (34). This study is designed as a test of those theories as applied in an underresearched context (China). It would certainly be possible to examine the accuracy of other Western theories of delinquency with this population as well.
4. What prior literature was reviewed? Was it relevant to the research problem? Was it relevant to the theoretical framework? Does the literature review appear to be adequate? Are you aware of (or can you locate) any important omitted studies? (Chapter 2)  
In the section called “Theory and Prior Research,” Lu et al. discuss the basics of self-control and social bond theories and cite a variety of other studies that have tested both of these theories. In addition, they provide a discussion of studies that have applied concepts from either theory in non-Western—specifically East Asian—contexts. Given the purpose of the study—to establish the efficacy of either or both of these theoretical frameworks

in a non-Western context—the review of these areas of research appears to be appropriate and adequate. We leave it to you to decide whether any important studies were omitted.

5. How well did the study live up to the guidelines for science? Do you need additional information in any areas to evaluate the study? To replicate it? (Chapter 2)

The study clearly involves a test of ideas (two formal theories) against empirical reality (measures of behavior among Chinese adolescents). The methods section of the article (37–41) clearly tells us how the investigation was systematically carried out—there’s a careful (and well-specified) research design. This design is well documented and clear (and obviously publicly disclosed, as the article has been published). The authors clarify their assumptions in the “Theory and Prior Research” section of the paper (34–37). There is a full section in the paper devoted to discussion of measures (38–41)—that is, the ways in which key concepts in the study were defined and measured. The authors are building on other empirical research and attempting to replicate previous studies but in a very different cultural context. They clearly maintain an interest in theory—they take a deductive approach to knowledge and present a test of specific theories. They do not make any assumptions about what they will find—for example, they write that the analysis examines what effect of self-control measures—if any—remains after considering the effect of measures of social bond theory and demographic controls. They clearly have no assumptions about the potential impact of those social control measures. Their goal is to search for patterns of regularities in the data—do predictable and discernible patterns emerge in an examination of the delinquent behaviors of Chinese teenagers? Thus, this study seems to exemplify adherence to basic scientific guidelines.

6. Did the study seem consistent with current ethical standards? Were any trade-offs made between different ethical guidelines? Was an appropriate balance struck between adherence to ethical standards and use of the most rigorous scientific practices? (Chapter 3)

The authors make no specific references to adherence to ethical standards nor is there a specific citation for approval by an Internal Review Board for their study methodology. However, given that all four authors are employed at major American universities, it is likely safe to assume that such a review by a human subjects board did take place. The questionnaire used in the study was asking adolescents about deviant behavior, and the authors do tell us that this questionnaire was anonymous. While there is no reason to assume that ethical standards were not upheld, the authors might have been more specific in their description of the methodology in this respect.

7. What were the major concepts in the research? How, and how clearly, were they defined? Were some concepts treated as unidimensional that you think might better be thought of as multidimensional? (Chapter 4)

The following concepts were used in the research: risky behavior, minor delinquency, self-control, attachment, school commitment, involvement, belief, age, gender, family structure, and delinquent peers. The definitions of the key concepts linked with the two theories (self-control, attachment, school commitment, involvement, and belief) receive special attention (39–40). Several of the variables used in the study are multidimensional. For example, the operationalization of the key concept of *self-control* utilizes an index designed to tap into various dimensions of this measure. Three of the four aspects of social bond (attachment, involvement, and belief) were measured with multiple items. The fourth (school commitment) was operationalized as the response to a single item on the survey (“How well do you do in school compared with other students in your class?” 40). This measure of school commitment might have been more complex, although the strategy the authors use is not inconsistent with the way this concept has been operationalized in other research.

8. Were any hypotheses stated? Were these hypotheses justified adequately in terms of the theoretical framework? In terms of prior research? (Chapter 2)

The authors offer no specifically stated set of hypotheses about the ways in which self-control and social bond theory will perform in predicting the delinquent behaviors in this population of Chinese youth. They certainly do identify the results of previous research with regard to the study of these measures in various contexts (34–37), but they do not express any expectations about the relationships that might be found in this cultural context.

9. What were the independent and dependent variables in the hypothesis or hypotheses? Did these variables reflect the theoretical concepts as intended? What direction of association was hypothesized? Were any other variables identified as potentially important? (Chapter 2)

There are two dependent variables—prevalence of risky behavior and of minor delinquency. Independent variables are self-control, attachment, school commitment, involvement, and belief. Demographic control variables include age, gender, family structure, and delinquent peers. These variables are all directly related to the theories being tested (38–41).

10. Did the instruments used—the measures of the variables—seem valid and reliable? How did the author attempt to establish this? Could any more have been done in the study to establish measurement validity? (Chapter 4)

Because both self-control and social bond theories have been widely tested in the field, there are certain agreed-upon operationalizations of concepts relevant for these theories (all of which are discussed in the article). With regard to the survey instrument used to collect the data, the authors note that the “validity and reliability of the . . . core questionnaire have been examined and found to be quite satisfactory” (38). Standardized measures (such as “Grasmick et al.’s . . . self-control scale, including 12 items on impulsivity, risk-seeking, self-centeredness, and temper”<sup>39</sup>) were also used. It appears that the authors made use of established measures that had been previously subject to examination for reliability and validity.

11. What were the units of analysis? Were they appropriate for the research question? If groups were the units of analysis, were statements made at any point that are open to the ecological fallacy? If individuals were the units of analysis, were statements made at any point that suggest reductionist reasoning? (Chapter 5)

The unit of analysis in this study was an individual—a student in a school in China. This unit of analysis is appropriate for this research question, as the theories being tested here are ones that predict individual-level behavior. There are no statements that suggest reductionist reasoning.

12. Was the study design cross-sectional or longitudinal, or did it use both types of data? If the design was longitudinal, what type of longitudinal design was it? Could the longitudinal design have been improved in any way, as by collecting panel data rather than trend data or by decreasing the dropout rate in a panel design? If cross-sectional data were used, could the research question have been addressed more effectively with the longitudinal data? (Chapter 6)

This study was cross-sectional. Data were collected from the Chinese students at a single point in time.

13. Were any causal assertions made or implied in the hypotheses or in subsequent discussion? What approach was used to demonstrate the existence of causal effects? Were all three criteria for establishing causal relationships addressed? What, if any, variables were controlled in the analysis to reduce the risk of spurious relationships? Should any other variables have been measured and controlled? How satisfied are you with the internal validity of the conclusions? (Chapters 5, 6)

While the authors do not specifically say that they are in pursuit of causal relationships, there is some evidence that might be used to suggest the existence of a causal relationship. They establish association between the independent and dependent variables. They also address issues of spuriousness directly—the impact of self-control measures is examined both without and with the addition of measures of social bonds. The four control variables used (age, gender, family structure, and delinquent peers) are also appropriate in an effort to address spuriousness. These measures might be expected to be associated with both the independent and the dependent variable, so including them as controls is a wise move. There are potentially more problems with the time order element. Because data were collected at only a single point in time, it might be difficult to ascertain, for some measures, the direction of the causal relationship. For example, it is possible that a low level of school commitment (measured with a question that asked how well the respondent was doing in school) might have a causal association with deviant behavior (as predicted in social bond theory). It is also possible, however, that engaging in some risky behaviors (such as drinking alcohol) could have an effect on school performance (the measure of school commitment). So, while some of the elements of a causal relationship are present, it is not certain that all three are found in this study.

14. Was a sample or the entire population of elements used in the study? What type of sample was selected? Was a probability sampling method used? Did the authors think the sample was generally representative of the population from which it was drawn? Do you? How would you evaluate the likely generalizability of the findings to other populations? (Chapter 5)

A probability sample is used in the study. The authors utilized a multistage cluster technique to randomly select middle schools in the city of Hangzhou, and then randomly select one class each of seventh-grade, eighth-grade, and ninth-grade students in each school. All students in that randomly selected class were then asked to participate in the research. The site selected for the study was chosen because “the city is a vivid reflection of the social and demographic changes in the coastal area in China where the economic boom has been the most noticeable” (38). Consequently, the youth randomly selected from this population should be representative of a part of China that is of special interest. The random selection of participants should have ensured that the findings are generalizable.

15. Was the response rate or participation rate reported? Does it appear likely that those who did not respond or participate were markedly different from those who did participate? Why or why not? Did the author(s) adequately discuss this issue? (Chapters 5, 7)

The response rate was quite high—96%. Lu et al. note that this very high response rate might be attributed in part to cultural factors. Response rates to self-administered surveys in China are routinely this high, while studies done in the United States with comparable methodologies have seen response rates in the area of 75%. The high response rate is a good thing, of course, with regard to the confidence a reader can have in the results of the study. It is also significant that Lu et al. provide context for this (perhaps seemingly inordinately) high response rate.

16. Was an experimental, survey, participant observation, or some other research design used? How well was this design suited to the research question posed and the specific hypotheses tested, if any? Why do you suppose the author(s) chose this particular design? How was the design modified in response to research constraints? How was it modified in order to take advantage of research opportunities? (Chapters 7, 8)

The study employed a survey methodology. A great deal of other research (cited in the paper) that has tested both self-control and social bond theory with adolescents in the West has also used survey methodologies. The fact that survey research is established as a vehicle for examining the types of questions that are of interest here was likely a factor in the selection of this methodology for this study. The survey used in this study is based on a previously used instrument (the International Self-Report Delinquency survey). In writing about this survey, the authors state, “The validity and reliability . . . have been examined and found to be quite satisfactory” (38). The site of the study, China, did require a translation of this instrument. Lu et al. note that the translated survey was pretested with a group of Chinese exchange students “to make the questionnaire better fit the Chinese social, cultural, and language contexts” (38).

17. Was an evaluation research design used? Which type was it? What was the primary purpose of the evaluation? (Chapter 11)

No, this study is not an evaluation design.

18. Were multiple methods used? Were the findings obtained with the different methods complementary? (Chapter 12)

This study used only survey methodology. Given the fact that the impact of cultural context was a variable of interest here, it is possible that this research question could also be effectively addressed with a more qualitative methodology in the future—one that would allow for the discovery of context and the application of meaning on the part of the subjects.

19. Was any attention given to social context? To biological processes? If so, what did this add? If not, would it have improved the study? Explain. (Chapter 5)

Compared to other countries, the authors note that the Chinese education system is extremely competitive. They also note that China puts greater *emphasis* on *academic success* than any other aspect of school life. Despite this emphasis, student’s attachment to their school did not predict delinquency. However, similar to Western

nations, self-control had a significant inverse relation with both adolescent minor risky behavior (smoking and drinking) and minor delinquency (weapon carrying, group fighting, and vandalism).

- 20.** Summarize the findings. How clearly were statistical and/or qualitative data presented and discussed? Were the results substantively important? (Chapters 13, 15)

The authors include a “Discussion and Conclusions” section where they clearly summarize the major findings of the analysis. They found that the results of the study in this Chinese context were comparable to those found with Western (primarily American) samples. Self-control was found to be inversely related to measures of both risky behavior and minor delinquency. The effects of the self-control measure remained even after including social bond measures and the demographic variables in the model, and the self-control variables had a stronger effect than did the social bond measures. Among the social bond measures, only belief and family attachment were found to have a significant effect on the dependent variables. Self-control was found to be more strongly related to minor delinquency than to risky behaviors.

- 21.** Did the author(s) adequately represent the findings in the discussion and/or conclusion sections? Were conclusions well-grounded in the findings? Are any other interpretations possible? (Chapter 13, 15)

Lu et al. have an extensive “Discussion and Conclusions” section in which they summarize and review the major findings of their analysis and also offer some insight into the significance of and potential problems with the research. First, it is a significant step to find confirmation of the predictions of self-control and social bond theory in a non-Western population of children. The authors made it clear that this was a primary goal of the study, and the fact that these theories perform as predicted in a very different cultural context adds to the evidence supporting the universality of these relationships. There are also some notable limitations in the study, which Lu et al. point out (47). For example, only a small amount of the total variance in risky behaviors or delinquency is accounted for by the variables used in this study. Thus, the authors recommend that other “theoretical explanations, such as general strain theory, may be considered for future investigations” (47). They also suggest that more direct comparison of the data from this study with that obtained with the same (or similar) instruments in other countries would be useful: “The ISRD-2 survey has been implemented in 30 countries, (and) future research may explore the comparative aspect of self-control across different cultures to examine the explanatory power of self-control theory” (47).

- 22.** Compare the study to others addressing the same research question. Did the study yield additional insights? In what ways was the study design more or less adequate than the design of previous research? (Chapters 2, 12, 15)

The most significant thing about this study was its confirmation of the findings of many other studies regarding the impact of self-control and social bond variables on delinquency. The fact that these data came from a very different cultural context—China—was the main point of the research. In their explication of the theory, Gottfredson and Hirschi “pointed out (that) ‘culture variability is not important in the causation of crime and we should look for constancy rather than variability in the definition of and causation of crime’” (33). The application and testing of the theory in other cultural contexts—as was done in this study—can therefore be considered a necessary part of testing this popular and powerful approach to explaining delinquency and crime.

Lu et al. do call attention to some measurement issues with their study that might have been problematic. In measuring the key variable of self-control, they use an established index (Grasmick et al.’s self-control scale), but they use only the short version (with 12 items) of this widely tested instrument.

- 23.** What additional research questions and hypotheses are suggested by the study’s results? What light did the study shed on the theoretical framework used? On social policy questions? (Chapters 2, 15)

The results of this study definitely contribute to the validation of self-control and social bond theories, offering a test of the theories in a non-Western context. In order to establish that the impact of self-control measures on the likelihood of the occurrence of criminal or delinquent behaviors is universal, the theory should be tested in more cultural contexts. This successful application in China also only involved students in one province of this very large country—more data from within China, as well as from other Asian countries, would be useful. Lu et al. argue that additional theoretical perspectives (e.g., strain theory) should also be tested in the cultural context of China.