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### One size doesn't fit all: Measuring news reception East and West

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## One size doesn't fit all: Measuring news reception East and West

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This article investigates how and why measures developed in the American context yield different results in China. Research in the United States has shown that a person's level of political knowledge is a stronger and more consistent predictor of news reception compared to alternative measures, such as media consumption or education. Yet a case study of news reception of pension reform in Beijing demonstrates that attentiveness and education constitute more valid indicators than knowledge. These differences in the empirical findings may result from translation from English into Chinese as well as specifics of the Chinese education system. However, when using valid measures the relationship between attentiveness and news reception is strong among Beijing residents, revealing that information-processing works as anticipated based on American media research.

**Keywords:** news reception; media effects; information-processing; audience; interest; attention; exposure; education; knowledge; measurement

### Introduction

The question of how to apply Western ideas and theories to the Chinese context has been central to the discussion about the future of China since the nineteenth century. At the time, the Qing dynasty, already in decline, faced the challenge of combatting the technologically more advanced armies of imperialist powers. Slogans such as “Take Chinese learning for the base and Western learning for practical use” (*Zhongxue Wei Ti, Xixue Wei Yong*) illustrate that Chinese intellectuals tried to respond to this challenge by finding a new approach to science in order to strengthen the nation. How this new approach ought to look and to what extent it should adopt theories and methodologies developed outside of China has dominated debates about where Chinese science and academia is heading until today. Chinese media studies is not an exception in this respect.

An insightful article by Zhang (2006) illustrates this point. Zhang described two common approaches to studying communications in China. The first one could be called a “nativist” approach. In order to build a purely Chinese theory of communications, scholars re-visit classical works of literature written long before the birth of modern China (see, for example, Sun, 1997). One problem with this approach is that evidence from the Chinese classics is too fragmentary to form a basis for systematic theory. In addition, one might wonder which time periods and documents are representative for a “purely” Chinese culture as ancient Chinese society was ethnically diverse and influenced by the outside. Therefore, most scholars of Chinese communication have turned to an “international” approach. Works that fall into this

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category take theories and methodologies developed outside of China and employ those in the study of Chinese communication (see, for example, Chan, 2000; Chen & Mi, 1989; Ke, 2004; Yu, 2003). Mostly empirical in nature, this type of research often reveals a discrepancy between relationships found in advanced industrialized democracies and China (see, for example, Sun, Chang, & Yu, 2001). This discrepancy is often interpreted as China constituting an exception and thus revealing limitations of common theories of communication. Yet there is an alternative explanation for observing a mismatch between theory and empirical findings: the methodological instruments used to test the theory outside of China might not be suitable to the Chinese context, thus producing faulty results. A case in point is, for example, measurement error in survey work resulting from relying on survey questions that have different meanings in China compared to abroad. If that was the case, theories developed outside of China might very well be applicable to the Chinese context, but only if the research was based on survey instruments that were adapted to China's specific environment.

This article demonstrates that theories about news reception developed in the American context fit urban China, but only when using valid measurement. Research in the United States has shown that a person's level of political knowledge is a stronger and more consistent predictor of news reception compared to alternative measures, such as media consumption or education. Yet a case study of news reception of pension reform in Beijing shows that attentiveness and education constitute more valid indicators than knowledge. These differences result from translation of English into Chinese as well as specifics of the Chinese education system. Yet when using valid measures theories about why people receive the news about an issue from media outlets are applicable to China. Chinese urban residents get the news if they pay attention to it, which is consistent with common theories about news reception.

Since all evidence provided in this article deals with pension reform, I begin with some background information on news coverage on this issue. After a comparison of survey questions used in American media research and the Beijing Area Studies (BAS), a randomly sampled survey conducted in Beijing, I conducted concept validity tests of a series of indicators for news reception, including demographic indicators, media use, knowledge, and attentiveness. The conclusion offers suggestions to improve measurement of news reception in Chinese surveys.

### **A case study of news reception of pension reform**

To investigate how well measures developed in the American context fit the Chinese context I am relying on a case study of news reception about pension reform in Beijing. Because of the large number of pensioners in China, their growing numbers, and problems associated with pension deficits, pensions are an important topic of concern to many citizens. When not receiving pensions, retirees have frequently turned to demonstrations and sit-ins in local government offices (Hurst & O'Brien, 2002). To address rising social grievances among citizens, the government has implemented pension reform as part of a broader effort to build a social insurance system. Under the new system the financial and administrative burden is shared between employers, workers, national agencies, and local governments instead of being provided by work units (Frazier, 2004). The Chinese media have increasingly

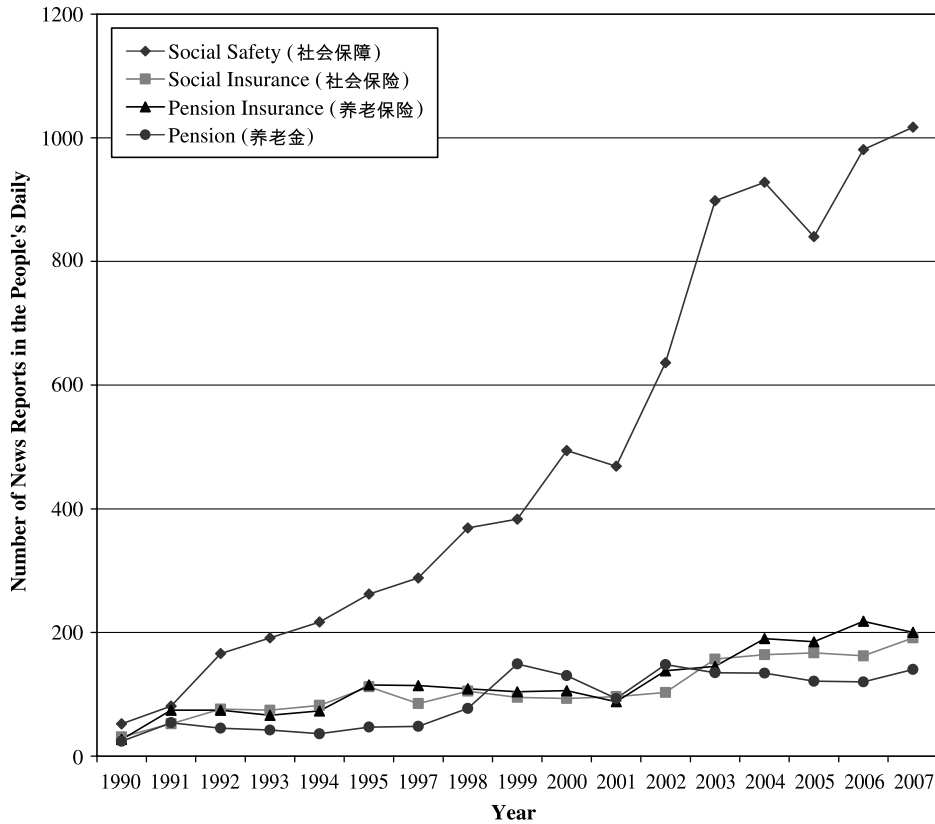


Figure 1. Growth of news reports related to pension reform in the People's Daily. Source: *Renmin Ribao* Full-Text Database.

reported on these changes in the social security system. Figure 1 illustrates that the number of newspaper articles including keywords, such as social safety, social insurance, pension insurance, or pension have increased since the adoption of pension reform in the early 1990s. By 2005 the People's Daily reported, on average, about every second day about pension insurance. Clearly, pension reform is an important topic that the press covers on a regular basis.

Who learns about pension reform when reading the news? Data for this case study are drawn from the Beijing Area Studies of Beijing Residents 2004 (BAS). Sampling was done according to probability proportional to size (PPS), a form of stratified random sampling. The resulting sample included registered Beijing residents with, on average, 11 years of education, 47 years of age, and a personal income of about 2,212 RMB a month. About 57% of the sample was male. The response rate, calculated by the final sample size divided by the total number of people sampled, was 56.1% ( $n = 617$ ). The polling of the BAS involved lengthy face-to-face interviews with respondents conducted by trained university students.

Although the BAS was not specifically designed to examine the research question, the survey represents the best data source available to us as of 2008. First, random sampling was strictly employed, a feature that is rare among conductors of public

opinion polls in China.<sup>1</sup> Second, Chinese media scholars have primarily relied on media consumption to investigate media effects on the Chinese mainland. The BAS included a greater variety of measures than any other survey I am aware of, thus allowing for a comparison between different kinds of measures. Finally, the conductors of the survey, the Research Center of Contemporary China, have 20 years experience applying survey methodology in China. Although there is room for improvement of the measures employed in the BAS, the problems that remain are very common to Chinese public opinion surveys. In the absence of an academic discussion about the validity of survey instruments, polling institutes tend to develop survey questions “from scratch” based on a general understanding of commonly-used measures in China and abroad. This study is a first attempt to systematically compare how well a series of indicators fare with respect to measuring news reception in China.

#### *Indicators of news reception in American media research and the Beijing area studies*

The concept of news reception rests on the idea that people selectively seek, choose, and screen the information they use. A situation in which a person comes into contact with news stories through the means of a medium is often described as *news exposure*. But mere exposure to the news does not necessarily imply that a person receives the media message. As a person attends to the news story that is presented, she starts *encoding* the message, which activates working memory. Important pieces of information are subsequently *stored* in long-term memory. *News reception* requires exposure, encoding, and storage of a media message (Bergen, Grimes, & Potter, 2005; Price & Zaller, 1993).

The “learning gap” between exposure and reception can be of critical importance for a researcher, who is, for example, interested in why one medium might be more effective for learning than another (see, for example, Baum, 2002; Prior, 2003). Recently, scholars of Chinese communication have explored similar research questions when examining how to best educate adolescents in the use of the media (Chen, 2006; Wang, 2007). Reception also constitutes a necessary, but insufficient, condition for media effects on people’s attitudes. In addition to reception, other factors, such as, for example, education, age, or party affiliation, can make people more susceptible or resistant to a media message (Zaller, 1992). In China, media credibility induces urban residents to be more easily influenced by media messages (Stockmann, 2007). Therefore, news reception constitutes a key concept for researchers who try to understand what people learn from and to what extent they are influenced by the media.

Here I compare the validity of various measures for news reception in the BAS with findings from American media research. When examining concept validity, we are analyzing whether an indicator is measuring what it is supposed to measure. In other words, if there is systematic error in the measurement instrument. In order to test concept validity of various indicators for news reception, we first need to observe whether a person has actually received a piece of information and then examine its relationship with various indicators for this concept. The stronger the relationship between an indicator and the concept, also called *de-facto* news reception, the higher the quality of the indicator.

The ability to recall a news story constitutes the standard way of measuring news reception in the absence of laboratory experiments. In a highly influential study,

Price and Zaller (1993) asked in general terms whether a person remembered a series of recent news stories about a particular person or event, followed by an open-ended question to control whether the respondent knew details about the story. This dummy variable was used to measure de-facto news reception. Similarly, the BAS included a survey question that asked whether a person knew that China implemented reform of the social pension system. In contrast to Price and Zaller, the BAS question does not directly refer to the media as information source. Nevertheless, responses would have very likely been similar when referencing the news media. Pension reform is a topic that is frequently covered by the news media (see also Figure 1) and the news media constitute the predominant information source on pension reform for Beijingers.<sup>2</sup> Based on this question I created a dummy variable for de-facto news reception. Forty-nine percent of Beijing residents had heard that pension reform had been implemented, 51% had not. This question is not an ideal measure of de-facto news reception, but it allows us to replicate the examination of concept validity by Price and Zaller with respect to one issue – pension reform. Relying on only one issue obviously places limitations on our ability to generalize the empirical findings to reception of news on public affairs. To make more general claims, this case study should be replicated based on improved measurement and with respect to other news stories.

Next, I lay out the indicators that have been used to measure news reception in American media studies and the theoretical considerations behind them. These measures are compared with relevant indicators in the BAS. When explaining the different measures, I follow the order in which they have historically appeared in media research, starting with demographic indicators, followed by media use, knowledge, and attentiveness.

### *Demographic indicators*

American media scholars traditionally have used socio-demographic measures as indicators for learning the news, either separately or in combination with self-reported media use. A key demographic indicator has been education. The logic behind the use of education as an indicator of news reception is that better-educated people are more adept at learning and have been socialized to attend more carefully to political affairs. They are also more likely to be placed in social and occupational settings where an understanding of public issues is valued (Price & Zaller, 1993; Tichenor, Donohue, & Olien, 1970). However, factors other than education such as changes in the political or information environment can raise a person's level of awareness (Hutchings, 2001; Jerit, Barabas, & Bolsen, 2006). Therefore, education cannot fully capture news reception since people with varying levels of education considerably vary with respect to what kind of news and how much news they receive.

In the BAS, education was measured based on self-reported years of education.<sup>3</sup> Despite education, age could also have an influence on a person's reception of news about pension reform. Naturally, a person becomes more motivated to learn about changes in the pension system as she advances more towards retirement age. In addition, a person's work experience is likely to matter. In state-owned enterprises and government units employees often spend more time reading newspapers subscribed by the work unit and attending meetings organized by the trade union.



These workers may be more likely to get information about the pension system than those working in private and foreign enterprises. I therefore added a dummy variable indicating work experience at a state-unit.

### *Media use and exposure to information*

Studies of media effects in the United States have often employed media use as measure for media reception. Media exposure is also very common in research on media effects in the China field (Chen & Sun, 1995; Ke, 2004; Yu, 2001; Zhang & Mi, 1989). This practice is based on the notion that those who consume news media more often are also more likely to retain information conveyed through the news media. A main problem of this indicator is that surveys mostly rely on self-reported rates of media use which inflate a person's actual consumption of the news media. Americans, for example, exaggerate their own media use by 300%, on average, and as much as 800% for some demographic groups (Prior, 2007a). This bias is particularly worrisome as it is systematic: The younger, the more affluent, and those with children under 18 are particularly likely to inflate responses.<sup>4</sup>

Where does over-reporting come from? According to survey methodologists, respondents generally undergo a five-stage process when answering questions about behavioral frequency (Schwarz, 1999; Tourangeau, Rips, & Rasinski, 2000). Errors may occur at any of these stages. Giving a response requires respondents to first understand what behavior the question refers to. Subsequently, they need to recall the relevant behavior and map them onto a time-frame, if the question refers to a specific time period. Third, they estimate its frequency and fourth, map it onto the answer categories provided in the question. At the last stage, respondents decide to either give a true answer or a socially (or politically) desirable response. In case of media use researchers have concluded that over-reporting primarily occurred at the second, third, and final stage.

The predominant view among survey methodologists is that inflated rates of media use are caused by considerations just before the respondent gives the final response to the question. Participants exaggerate their response in order to conform to ideas about what constitutes a "good citizen" – a so-called "desirability effect" (Belli, Traugott, Young, & McGonagle, 1999; Bernstein, Chadha, & Montjoy, 2001). Recently, Prior (2007b) did not find evidence for desirability effects when reporting media use. Instead, he argued that lack of effort by the respondent to accurately search their memory (at the second stage of the survey-response) and flaws in accurately estimating the frequency of their past behavior (at the third stage of the survey response) leads to over-reporting. Overall, self-reported measures of media exposure in surveys clearly lead to systematically biased results, thus weakening our ability to rely on media use as indicator for news reception.

The BAS devoted some space to the measurement of mass media exposure, including a series of questions asking respondents whether they often read newspapers, watched the news on TV, or read the news on the internet. Based on these items I created three dummy variables for reading newspapers, watching the news on TV, and reading the news on the internet.<sup>5</sup> In early 2005, about 89% of Beijing residents were frequent consumers of the news on TV, 81% frequently read newspapers, and 18% read the news on the internet. On average, Beijingers consumed about two out of three of these media types.

All indicators for media use in the BAS are based on respondents' self-reported level of media use and refer to "typical" rather than "recent" behavior. These features tend to induce respondents to over-report their actual level of media exposure (Price, 1993). In order to retrieve more accurate results researchers have recommended referring to a shorter interval between the actual behavior and the time of recollection (the survey interview) and therefore use the "past week" – format (see, for example, Baddeley, 1999; Burton & Blair, 1991).<sup>6</sup> In addition, the BAS questions were asked in a leading way, likely resulting in additional over-reporting. For example, the BAS stated "Do you often watch the news on television?" In comparison, the relevant item in the American National Election Studies (ANES) reads "How many days in the past week did you watch the network news on TV?" The ANES phrasing of the question did not imply that the interviewer wanted the respondent to give a positive response. However, even with improved question wording, self-reported media use still continues to be greatly inflated (Prior, 2007a). Therefore, an improved measure could have reduced but not completely eliminated measurement error.

#### *Knowledge and storage of information*

In American public opinion research, a person's level of political knowledge has become the standard measure for news reception. People who possess large stores of information need well-developed "pictures in their head" (Lippmann, 1922) or "schemata" to organize it, and these schemata aid in the acquisition of new information (Converse, 1975; Holbrook, 2002). Thus, knowledge about an issue and media reception are linearly related to one another. Note that the nature of this relationship changes once we are interested in attitude change. Numerous studies have shown that media effects tend to be the largest at medium levels of information. The reason is that the effect of one additional piece of information declines as a person acquires more information (Converse, 1962; McGuire, 1968; Zaller, 1992). This non-linear relationship has also been observed in the Chinese context (Stockmann & Gallagher, 2007).

The knowledge-based measure has two key advantages. Information questions do not suffer as much from over-reporting as self-reported levels of media use, because a person cannot easily reveal information she does not possess. In addition, knowledge questions are more specific than assessments of educational attainment or media use. Therefore, they automatically accommodate individual differences in use of different media outlets and in learning ability (Price & Zaller, 1993).

Yet, similar to other indicators, the knowledge scale is characterized by weaknesses. A first problem is that factual knowledge questions are conceptually not tied to the news media. In countries with educational systems that strongly emphasize factual knowledge, such as China, knowledge-based measures might strongly correlate with level of education. In addition, people in urban China get information about politics through their work unit or neighborhood committees. Thus, knowledge items do not necessarily allow researchers to draw the conclusion that the information has been received after reading, watching, or listening to the news.

A second problem is that factual information might be easier to recall for some people than others. Rosenberg (1988) argued that people can be grouped into sequential, linear, and systematic thinkers who focus on different attributes



when making sense of an issue. Those who emphasize the relationships *between* facts or “actions” they observe in the real world might have difficulties to recall factual knowledge. Researchers who are interested in finding out about the structures that link pieces of information together are best advised to develop other measures than knowledge items, or use a combination of facts with alternative measures.<sup>7</sup>

A third set of problems arises from the phrasing of survey questions. The simplest and most common knowledge-questions in American public opinion research ask respondents to identify prominent political figures, political parties, and other groups.<sup>8</sup> An example in the Chinese context would be “What office does Wen Jiabao hold?” One challenge of these knowledge tests is that adequate differentiation between the highly, medium, and less sophisticated requires inclusion of some easy and some harder items. For example, the question “Who is the current president of China?” seems easier than “When was the last time Hu Jintao met with the President of the United States?” Yet the items scholars classify as easy and hard do not necessarily conform to citizens’ abilities to identify the correct answers (Delli Carpini & Keeter, 1996). Knowledge questions may therefore help to draw a broader distinction between those who know something about politics and those who do not, but may not tell much about differences among those who are at least somewhat knowledgeable.

The BAS included a set of specific questions about people’s factual knowledge about pension reform. These questions were intended to differ with respect to the degree of difficulty. Answer categories of all knowledge items required simple agreement or disagreement with a particular statement. Based on three items, I created a scale of factual knowledge about pension reform, ending up with four groups: those who did not know the right answer in any of the three questions; those who gave one right answer; those who gave two correct responses; and those who got all three questions right. Those who confessed their ignorance right away (“don’t know”) were treated the same as those who chose to respond but did not give the correct answer. On average, Beijingers knew only one out of three factual items. They were generally not well-informed about the pension system.

Creating a reliable set of questions is not an easy task. The alpha level of the knowledge scale in the BAS was 0.07. Cronbach’s alpha is an index for the reliability of scales, that is, it tests the extent to which repeated measurement of a construct produce consistent results (Cronbach, 1951). Alpha ranges between zero and one, whereby levels of 0.7 or higher are considered reliable (Nunnally, 1978). A low alpha level indicates that we cannot be confident that we would retrieve similar results if we repeated the study. This already hints at a problem associated with measurement of knowledge levels based on the BAS questions.

The reason for this problem is most likely related to the answer categories of the knowledge questions. It seems quite common in Chinese surveys to ask factual questions that can be answered with either “agree” or “disagree”. Confronted with such a question, a person has a 50% probability to guess the right answer. In order to please the interviewer she might be more willing to guess rather than openly confess her ignorance and report to not know the answer to the question. Research from the American context suggests that a more open format of knowledge questions, such as, for example, asking about the names of politicians, leads to more valid and reliable results.<sup>9</sup>

*Attentiveness and encoding of information*

When researchers of American politics use knowledge items to measure news reception, they assume that factual knowledge is a good indicator for how aware a person is of an issue, because storing factual knowledge in a person's long-term memory requires attentiveness (see, for example, Zaller, 1992). Alternatively, one could attempt to measure a person's ability to encode a message. As media audiences attend to the news story that is presented, they start encoding the message, which activates working memory and increases the likelihood that a piece of information is retained (Bergen et al., 2005; Lang, 2000).

In order to measure a person's level of attention, media scholars have assessed a person's changes in heart rate in response to exposure to media messages (Bolls, Lang, & Potter, 2001; Ravaja, Kallinen, Saari, & Keltikangas-Jaervinen, 2004). Physiological measures are difficult to employ in survey research, but they have been found to be closely linked to self-reported levels of interest in an issue since a person's motivation attracts and maintains attention (Ravaja et al., 2004).<sup>10</sup> These findings are matched by studies in American politics. Researchers found that people need to be motivated in order to learn about politics. A common measure for a person's motivation is her self-reported interest in politics, which tends to be correlated with political knowledge (Bennett, 1996; Delli Carpini & Keeter, 1996; Luskin, 1990). These studies suggest that self-reported indicators for motivation, such as, for example, interest or concern, constitute a valid predictor for news reception in public opinion surveys.

Measures of motivation do not appear to have been used to assess news reception in American media studies. Researchers may not have considered attentiveness as a viable alternative because of the drawbacks it shares with self-reported media use. Similar to self-reported media use, respondents might not want to make an effort to accurately search their memories, make mistakes in accurately estimating the amount of attention paid to an issue, and/or would like to conform to standards about what constitutes a "good citizen". In addition, relying on multiple measures is usually preferred to relying on a single survey question as they pick up different aspects of the same concept and thus complement each other. These or similar considerations may explain the predominance of using factual knowledge questions to assess news reception.

Yet, despite these problems, a question about a person's self-reported levels of attention has two advantages. Most importantly, the question directly relates to the concept that it intends to measure. Furthermore, the survey question can be phrased such that it specifically refers to an issue and the source of information, thus distinguishing between those who are strongly attentive to, for example, local as opposed to the international events, and those who get information through the news media as opposed to other channels. Due to these advantages, attentiveness is worth exploring as alternative indicator for news reception.

The BAS included a question asking how concerned the respondent was about issues related to pensions. The Chinese wording of the survey question uses the term *guanxin* (关心). *Guanxin* can be translated as "being concerned about" or as "paying attention to", because the use of the word implies certain behavior on part of the person who is concerned. A person concerned about pension reform also spends time and energy trying to understand the problems associated with pension reform and

discusses the issue with her friends. Therefore, the question is conceptually closer to attentiveness than mere interest or curiosity and should be treated as different from the American measure. Answer categories of the survey question included being strongly, somewhat, not much, and not at all concerned. The question did not refer to the news media or a specific time period, which probably induced respondents to think about their “typical” behavior rather than their “recent” behavior. On average, Beijingers indicated to be somewhat to strongly attentive to the pension system.

### **Concept validity results and discussion**

The dependent variable, de-facto news reception, is dichotomous. The relationship between independent and dependent variables was therefore modeled as a nonlinear rather than a linear relationship (Kennedy, 2003). To analyze which of the above measures, including interest, knowledge, media use and socio-demographics perform best as a predictor for de-facto news reception, I rely on multiple probit maximum likelihood analysis. In doing so, I follow the same procedure as Price and Zaller (1993) for investigating concept validity, which relies on simple methods. There is no doubt that more complicated techniques could be used to explore the validity of measurement (see, for example, Rosenstone, Hansen, & Kinder, 1986). However, since lack of methodological training constitutes an obstacle for doing more systematic analysis of measurement among researchers of the Chinese media, I have decided in favor of simple statistical techniques that can be replicated by researchers with basic statistical training. When employing multiple probit regression my goal is not so much to interpret coefficients, but to test which indicators are strongly correlated with de-facto news reception. The higher an indicator’s correlation with de-facto news reception, the higher its validity.

Results, displayed in Table 1, show that attentiveness is highly correlated with de-facto news reception and statistically significant. Comparatively, the knowledge measure does not perform well. It is only weakly correlated with de-facto news reception and the results are not statistically significant. If we had to choose a better indicator, we could choose most of the other alternative measures. Surprisingly, education turns out to be strongly related to de-facto news reception, but other socio-demographic indicators, including age and work environment, do not fare as well in the analysis. Similarly, indicators for individual news media types, including television, newspapers, and the internet, are only weakly correlated with the dependent variable. Overall, attentiveness and education produce the best results.

From the perspective of American media research, these results are surprising. Price and Zaller (1993) have demonstrated that a person’s level of political knowledge is a stronger and more consistent predictor of news reception compared to alternative measures, such as media consumption or education. Attentiveness has generally been neglected as an indicator for news reception. Yet in case of the BAS attentiveness performs better than knowledge. These empirical results have most likely been caused by the way in which the knowledge questions have been phrased. When translating conventional measures from English into Chinese, researchers change question wording and answer categories. In the case of attentiveness, the Chinese term *guanxin* added to the concept validity of the measure, but in case of the knowledge scale measurement error was introduced into the survey instrument. The answer categories in the BAS, which simply required respondents to report “agreement”

Table 1. Summary comparison: indicators for news reception (multiple probit regression model). Source: BAS 2004.

Indicators <sup>a</sup>	<i>Dependent Variable: De-Facto News Reception</i> Coefficient (Standard Error)
<i>Encoding:</i>	
Attentiveness	0.93*** (0.25)
<i>Storage:</i>	
Knowledge	0.31 (0.21)
<i>Exposure:</i>	
Watching the News on TV	0.63*** (0.19)
Reading Newspapers	0.23 (0.14)
Reading the News on the Internet	-0.05 (0.16)
<i>Demographics:</i>	
Education	1.14*** (0.36)
Age	0.31 (0.3)
State Unit	0.37*** (0.12)
Intercept	-2.6*** (0.34)
Pseudo R-Squared	0.07
N	606

\*\*\* z-value < 0.01; \*\* z-value < 0.05; \* z-value < 0.1;

<sup>a</sup> All variables were recoded running from 0 to 1. In terms of age, a change from zero to one indicates moving from the lowest (18) to the highest (65) age in the data set. When modeling the relationship between age and news reception non-linearly (adding a squared term in the equation), coefficients do not change significantly. Results can be retrieved from the author.

or “disagreement”, do not allow us to correctly measure a person’s knowledge about pension reform. Questions that require respondents to give a substantial answer also produce more valid results in the Chinese context.<sup>11</sup>

With respect to education, scholars of the American media have argued that the highly educated have been socialized to be more attentive to the news. But are the more sophisticated more concerned about pension reform in the Chinese context? Not according to this sample of Beijing residents. Correlation between the two variables was about zero (-0.08). One possible explanation is that self-reported attentiveness does not capture a person’s true level of attention. That is, an individual may still pay attention to public affairs, even if she believes that she is actually not concerned about politics. Still, an explanation based on false-consciousness would not explain why the two variables are as weakly correlated as they are. Some people should have correct beliefs about their personal levels of attentiveness. Consequently, the two variables should be at least weakly positively related.

A more convincing explanation in the Chinese context may be that education is a rough indicator for a person’s ability in comprehending and storing information.<sup>12</sup> This would explain why education and attentiveness are unrelated with one another: they may pick up different but equally important components of information-processing. Indeed, when allowing attentiveness and education to interact with one another in the multiple regression, the predictive power of the measures doubles

Table 2. Interaction between education and attentiveness (multiple probit regression model). Source: BAS 2004.

Indicators	<i>Dependent Variable: De-Facto News Reception</i> Coefficient (Standard Error)
<i>Interaction Encoding*Storage:</i>	
Attentiveness*Education	2.71** (1.32)
<i>Encoding:</i>	
Attentiveness	-0.67 (0.84)
<i>Storage:</i>	
Education	-0.72 (1.01)
<i>Demographics:</i>	
Age	0.54* (0.28)
State Unit	0.36*** (0.12)
Intercept	-0.79 (0.7)
Pseudo R-Squared	0.06
N	612

\*\*\*z-value < 0.01; \*\*z-value < 0.05; \* z-value < 0.1;

(see Table 2). These results make a lot of sense once we take into consideration the specifics of the Chinese education system. The emphasis of the Chinese education system on memorization may play a role here: exams in China almost exclusively test a person's memory, thus training students in storing information. For example, Dai Jiagan, director of the National Education Examination Authority in 2007, defined an exam as a test that emphasizes knowledge and evaluates the degree to which students memorize textbooks (Dai, 2007). In the United States, exams also aim to test the student's ability to think analytically. For example, the General Record Examinations (GRE) "measures verbal reasoning, quantitative reasoning, and critical thinking and analytical writing skills" (ETS, 2008). Thus, education may be a better proxy for a person's ability to comprehend, organize, and retain the news in China than, for example, in the United States where education emphasizes more strongly analytical thinking rather than memorization of facts.

Despite the above differences in results between China and the United States, there is also similarity with American communication research. Measures for media exposure do generally not perform well. When assuming that people who read, watch, and listen to the media are more likely to receive the news about an event, the indicator generally fares less well compared to others. Even with an improved measure that refers to "past" as opposed to "typical" behavior without inducing a positive response, this result is not likely to change. Numerous works in social psychology and communication studies have demonstrated this result: only being exposed to a particular piece of information does not guarantee that the person will receive it. The high validity of attentiveness confirmed that this is true in China just like in other countries. When using valid measures the empirical analysis reveals that Chinese urban residents get the news if they pay attention to it, which is consistent with common theories about news reception. Overall, theories about why people receive the news about an issue from media outlets are applicable to China.

### Improving concept validity in Chinese survey research

How can researchers of Chinese communication develop a specific Chinese approach to media studies? For those who choose to adopt methodologies originating abroad the answer lies in systematic testing of their validity in China. Measurement in survey research is sensitive to the environment in which the study is conducted. In case of news reception of pension reform in Beijing the Chinese context intervened with concept validity in two ways. First, difficulties arose when translating survey questions from English into Chinese. Many survey questions used in the BAS and in Chinese media research more broadly seem inspired by similar survey instruments developed in the United States. For example, the phrasing of the question on self-reported attentiveness corresponds to American measures of interest in public affairs. However, when translating the survey question the verb *guanxin* implies more than being interested in the English sense of the word. Instead, the term is also associated with attention and concern for an issue. Therefore, the question is not equivalent to the American measure and should not be interpreted as such. Instead, this question picks up motivation as a key factor that leads a person to attend to an issue. It is conceptually closer to attentiveness than mere interest or curiosity and therefore passed concept validity tests.

While rough translation from English into Chinese added substantial value to attentiveness as indicator for news reception, in other cases we have observed a negative effect. Questions for factual knowledge appear similar to the English version, but a closer investigation brought to light problems associated with inaccurate survey responses. As a consequence, the standard measure for news reception in the United States turned out to be an invalid indicator for news reception in case of the BAS. However, improved measurement of factual knowledge may yield similar results.

A second way in which the Chinese context may have influenced measurement in this case study resulted from differences in the nature of education. In the United States researchers have argued that education socializes people to attend more carefully to public affairs. This interpretation did not apply in this particular case. Instead, I have suggested that Chinese education trains students particularly well in comprehending and storing factual information because of its strong emphasis on memorization. Yet education affects people in numerous ways, many of which could positively affect news reception. Therefore, more systematic studies are needed to confirm that education can be used as a proxy-variable for comprehension and storage in China.<sup>13</sup> Therefore, until further concept validity tests have been conducted my pragmatic advice for Chinese media researchers is to rely on an improved version of attentiveness rather than on education as indicator for news reception.

More broadly, this critical examination of the BAS survey questions revealed that current measures of news reception in China do not reach the standards of what has been achieved in communication. Researchers can improve current measurement in two ways: When using self-reported measures reference to recent behavior (the past week) can decrease measurement error resulting from over-reporting; and knowledge items should require substantive responses as opposed to simple agreement or disagreement. These insights have been developed through systematic pre-testing and sharing of research findings among the broader research community. China scholars are well-advised to follow a similar path taking off from the current state of the field.



Without valid measurement the conclusions we draw from survey work are flawed. Therefore, it is only through better measurement that we can advance a theory of communication with Chinese characteristics.

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### Notes

1. In 2004 and 2005 I interviewed 13 polling institutes in Beijing about their sampling techniques. Although most claim to randomly select participants, in 11 cases critical follow-up questions revealed that randomness was interpreted loosely. For example, interviewers interview neighbors if the sampled person is not at home.
2. Today, knowledge about the social security system is tested in National College Entrance Examinations. To test whether de-facto knowledge about pension reform could be explained by knowledge learned while studying for the *gao kao* I investigated whether respondents that went to college and had taken the exam after 1991 (the beginning of the pension reform process) were more likely to know about pension reform. Indeed, when adding this variable to the multiple probit model presented in Table 1, they were (probit coefficient = 0.66, s.e. = 0.51). However, because of the small number who took the *gao kao* since 1991 in the BAS (n = 18), the predominant information source for Beijingers remained the media.
3. The BAS also included a question on the highest educational degree. Results remain stable when using this measure.
4. Correcting for these systematic differences is not an option since we do not have a comprehensive list of individual-level characteristics that explain higher as opposed to lower rates of over-reporting (Prior, 2007a).
5. In order to test different versions of indicators for media exposure, I also developed a three-item indicator for consumption of different media types, differentiating between those who reported not to frequently use any, one, two, and all three media types in order to learn about the news. The logic behind this particular indicator is that media users who rely on more media sources could be more likely to receive news messages. Including this alternative variable coding for media use does not change the results of the multivariate analysis (probit coefficient = 0.76; s.e. = 0.25). Results can be retrieved from the author by e-mail.
6. Recently, Chang and Krosnick (2003) argued that typical week questions were a more valid predictor for the ability to recall political events and knowledge about politics. However, they also found the "typical week"-format to be more valid for the more sophisticated than the less sophisticated, thus demonstrating systematic measurement bias.
7. For an alternative approach to measuring "political competence" by focusing on necessary and sufficient preconditions for a person's ability to perform a particular task see Lupia (2004). For a summary of approaches to measure relationships between factual items see Luskin (1987).
8. For a discussion of alternative approaches see Price (1999) and research notes of the American National Election Studies, available at <http://www.electionstudies.org/>.

9. There is also the possibility for mathematical correction of measurement error due to guessing. Luskin and Bullock (2004) argued that this procedure might be helpful for aggregate description, but not for correlations. An alternative solution are open-ended questions, which are challenging when it comes to coding, however. One of the key issues is when to count a response as correct or incorrect. For possible solutions to this problem, also arising for closed survey-questions, see Price (1999). See Mondak (2001) on the interaction between guessing and explicitly informing respondents that “don’t knows” are welcome.
10. Characteristics of the message, such as, for example, novelty or emotional content, may also attract a person’s attention. Thus, motivation constitutes one of two main factors that can induce a person to attend more or less to the news (Lang, 2000; Ravaja et al., 2004).
11. The bivariate probit coefficient between a knowledge scale on labor law (ranging from 0 to 1) and recall of the labor law was 1.69 (s.e. 0.13). This knowledge scale included substantial knowledge questions and follow-up questions to items that can be answered with “true” or “false”. Source: Survey on Labor Law Mobilization 2005, conducted by Mary E. Gallagher at the University of Michigan in collaboration with the Chinese Institute for Labor Research and the Research Center on Contemporary China.
12. A third possibility would be that the Chinese learn about pension reform in school. This explanation does not apply in this case (see endnote 2).
13. Education also constitutes a resistance-factor in information processing (Geddes & Zaller, 1989). Education may therefore increase the likelihood that a person receives information, but at the same time also increase the chance that she is not convinced by the media.

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## Appendix A

### Question Wording

All variables were coded running from 0 to 1 in order to allow for comparison between coefficients. Don't knows and non-responses were excluded from the analysis.

#### *De-facto New Reception*

您是否知道我国进行了社会养老保险制度的改革？ Do you know about the reform of social pension system in our country?

#### *Attentiveness*

您是否关心社会养老保险方面的问题？非常关心，比较关心，不太关心，根本不关心。 Are you concerned about issues related to social pension insurance? Are you strongly, somewhat, not much, or not at all concerned?

#### *Knowledge*

请您判断社会养老保险制度的说法是否正确：

在我国，退休后的待遇调整是与地方物价涨幅挂钩的。(false);

在我国，现行养老保险个人帐户是“空”的。(true);

政府划转过部分国有资金来充实全国社会保障基金。(true).

Please indicate which of the following statements regarding the pension system is true: In our country, changes in pensions are based on regional price growth. (false); In our country, the personal accounts for pension insurance are 'idle' now. (true); A proportion of state-owned funds are transferred by the government to finance the national social security fund. (true).

#### *Media Exposure*

您经常看报纸么？您经常看电视里的新闻节目吗？您上互联网看新闻吗？ Do you frequently read the newspaper? Do you frequently watch news programs on television? Do you surf the internet to read the news?

#### *Years of Education*

您读过多少年书？ How many years of education have you received?

#### *Age*

请问您是哪年出生的？ Which year were you born?

#### *State Unit*

您在下列哪种性质的单位工作？是在党政机关工作、在国有企事业单位工作、在国有为主的合资、合作或股份制企事业单位工作，还是在其他单位工作？ What kind of work unit are you working at? Is it 1) a government or party unit, 2) a state-owned enterprise / institution, 3) a state-controlled equality, contractual joint venture, or share-holding enterprise / institution, or 4) other work unit? (Answer categories for "other" include: 4a) a private enterprise / institution, 4b) a foreign-capital enterprise / institution, 4c) a state-controlled equality, contractual joint venture, or share-holding enterprise / institution, which is controlled by foreign investors). First three answer categories were coded as "one," the remaining categories as zero.

除了您现在的工作之外，您还在什么性质的单位工作过？是在党政机关工作、在国有企事业单位工作、在国有为主的合资、合作或股份制企事业单位工作，还是在其他单位工作？ Apart from your current job, what kind of work unit have you been working at? (Same answer categories and coding as above).