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MEDIATED DISASTER AND REMOTE CARE: LINKING TRAUMA AND RESOURCE LOSS OR GAIN

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The study examines how Chinese people respond to Japanese victims in the wake of the great East Japan earthquake in 2011. Employing conservation of resources theory, this study investigated the way in which processing media messages about a natural disaster influences altruistic help. Results showed that different patterns of media information processing (i.e., systematic vs. heuristic) led to different degrees of intrusion and perceived gain/loss of resources. Systematic information processing positively predicted psychological intrusion, perceived gain, and perceived loss of resources. Heuristic information processing, in contrast, only negatively predicted psychological intrusion. Both psychological intrusion and perceived gain of resources positively predicted a Chinese respondent's intention to help the victims of the earthquake, but perceived loss of resources did not. Implications of the findings are discussed in relation to media effects, trauma, and disaster relief.

Key words: Natural disaster; Media effects; Trauma; Japan earthquake; Systematic versus heuristic information processing.

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In recent years, the world has seen quite a few severe earthquake attacks, such as the Sichuan earthquake which struck China in 2008 and the great East Japan earthquake in March 2011 (hereafter abbreviated as the Japan quake). The consequences of those quake strikes are devastating and long-lasting, whether in terms of death toll or economic loss.

The Japan quake registered a magnitude of 9.0 on the Richter scale, with a death toll of nearly 30,000 (Sina news report, 2011). More devastating were the ensuing tsunami and nuclear radiation which pushed the nation into the abyss of suffering. Millions of people across the world followed media coverage of the disaster, and responded in different ways. Among those, Chinese people demonstrated mixed, diverse, and even polarized reactions. As is well known, the delicate and often conflicting relationship between China and Japan is rooted in the war back in the 1930s. The longtime friction between nations has also complicated the attitudes that the two groups of people hold toward each other.

Drawing on information processing theory (Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003) and the conservation of resources theory (COR; Hobfoll, 1989), this paper examines Chinese people's consumption of media coverage of the Japan quake, the impact of the adverse event (e.g., intrusion), and perceived gain and loss of resources. The study is of theoretical significance by interfacing research on disaster communication and media studies. Practically, the study contributes to a better understanding of how media coverage of a disaster influences the general public; furthermore, it sheds light on the long-standing delicate relationship between Japan and China.

To begin, the paper reviews relevant literature on remote disasters, media information processing, COR theory, and altruistic helping. Second, a summarization of focus group discussions, sample characteristics, research procedure, and measurement instruments is presented. Third, analytical results and significant findings are reported. Finally, research implications, along with limitations and future directions, are discussed.

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LITERATURE REVIEW

Remote Disaster

A natural disaster like an earthquake often has multiple consequences, including psychological intrusion or trauma in addition to loss of lives and properties. The latent but severe psychological or mental effects are not just limited to those who directly experience the disaster. Rather, the impact of a disaster could extend to those who learn and experience the tragedy via media. Such vicarious disaster experience is termed as a remote disaster, which can result in remote or distance trauma. Similarly, Terr et al. (1999) utilized the term "distant trauma" to describe people's reactions (e.g., stress symptoms) to a real disaster observed from a remote and safe place, and such observation often takes place through mass media. In that study, those who watched the occurrence of the space shuttle Challenger disaster in the USA experienced severe psychological symptoms.

Conservation of Resources Theory

An enlightening theoretical framework for disaster research is the COR theory. The basic tenet of the COR theory is that "people strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources" (Hobfoll, 1989, p. 516). Hobfoll classified four different kinds of resources: object resources (e.g., house), conditions (e.g., marriage), personal characteristics (e.g., personal orientation), and energies (e.g., knowledge).

Traumatic Effect (Intrusion)

According to COR theory, traumatic events like natural disaster are often stressful. Such stressful or traumatic effects could take different forms such as intrusion or avoidance (Horowitz, Wilner, & Alvarez, 1979). Past research has shown that mediated disasters have significant traumatic effects on audiences. For instance, Young (2007) reported that watching the September 11th attack through media coverage resulted in visual trauma (i.e., mental suffering of images of a disaster) for viewers, almost as severe as seeing the attack in person. Moreover, characteristic of a struggle between memory and amnesia, a visual trauma tends to be lasting and haunting. The impact traumatic imagery registers can play out subconsciously, and construct "present pasts" (Yang, 2009, p. 31).

Gain and Loss of Resources

Hobfoll (2001) emphasized that COR dovetails with appraisal theory, in terms of the generating nature of loss of resources. Specifically, loss of resources entails personal appraisal, but such an appraisal involves subjective, objective, and social components. Hobfoll further pointed out that the list of key resources is not exhaustive, though past studies have identified more than 70 different resources in the COR framework. The author further contended that loss of resources should be investigated within a self-nested-in-group-in-culture framework, which implies that the COR integrates micro, meso, and macro levels of appraisals.

Zamani, Gorgievski, and Zarafshani (2006) proposed an integrative model of COR theory in light of "ecological analogy," arguing that resources at different levels, including individual, group, and community, are often

interrelated with each other. The integrative perspective echoes Hobfoll's (2001) self-nested-in-group-in-culture framework. Particularly, as the world becomes increasingly globalized, one's perceived loss of resources from a natural disaster could become ever broader, rather than being limited to personal belongings.

Dialectically speaking, a disaster has both positive and negative effects. On the one hand, human beings have to absorb the pain of loss and tribulations of suffering; on the other hand, people may cultivate a strong will or mature outlook on life. As a case in point, personal and community growth after adversity has drawn more attention in recent years (Durkin & Joseph, 2009). As Cooper (2011, May 31) pointed out, a devastating disaster like the Japan earthquake could bring about some positive outcomes, too. For instance, rescue and reconstruction efforts can create new job opportunities, and refuel the engine of economy, particularly at the time of a long-standing financial recession across the globe.

Garrison and Sasser (2009) interviewed 50 families in the area directly affected by Hurricane Katrina, and examined how these families made meaning of the traumatic event. Their results showed that people are able to find benefits from and make sense of adversity in different ways. Specifically, interviewees reported that the adversity resulted in improved relationships and willingness to put material goods on a back burner. Besides, the adversity taught them to value the order in social environment, to respect higher power (e.g., God), to accept reality, and to better understand old adages (e.g., "behind every cloud is a silver lining").

Littleton, Axsom, and Grills-Taquechel (2009), from the perspective of COR theory, looked at the relationship between psychological distress and gain and loss of resources, following the mass shooting at Virginia Tech in 2007. The study showed resource loss positively predicted the reported magnitude of psychological distress. Conversely, resource gain negatively predicted reported psychological distress. Moreover, the effect of resource gain on psychological distress was weaker as compared to that of resource loss. In light of the COR theory, the first research question asks

RQ1: What gain and loss of resources have Chinese people perceived in the wake of the Japan quake?

Media Information Processing

The two different but interrelated routes of information processing (i.e., systematic and heuristic) have been well documented in the communication field, particularly in risk communication (Kahlor et al., 2003). Systematic information processing entails careful, deliberative, and effortful cognitive practices, whereas heuristic processing entails simple and fast decision-making rules. Moreover, systematic processing often leads to stable and consistent attitudinal or behavioral outcomes. Heuristic processing, in contrast, leads to ephemeral and easy-to-change outcomes.

Meyers-Levy and Maheswaran (2004) contended that message effects on audiences (e.g., individual judgments) depend on different processing patterns. Griffin, Neuwirth, Giese, and Dunwoody (2002) examined the mode of information processing in risk communication settings, and found a strong negative relationship ($r = -.48$) between heuristic and systematic processing. The study showed that systematic processing evoked more deep-seated beliefs as compared to heuristic processing. Further, one's strongly held risk-related beliefs greatly influence attitudes, assessments, and judgments of hazards. The study basically demonstrated that the two modes of information processing function across different risk communication scenarios. Furthermore, the two modes are not polarized opposites, instead they can occur simultaneously. In light of the above discussion, the following research hypotheses were proposed:

H1: The more one is involved in systematic information processing, the higher intrusion will result.

H2: The more one is involved in heuristic information processing, the less intrusion will result.

Different modes of information processing may lead to different media effects. Systematic mode entails ef-

fortful, attentive, and motivated information processing. In contrast, heuristic mode signifies detached, effortless, and passive information processing. Put differently, the former involves more cognitive activity and the latter involves less. Then, it is legitimate to hypothesize the following:

H3a: Systematic information processing positively predicts perceived resource loss.

H3b: Heuristic information processing negatively predicts perceived resource loss.

H4a: Systematic information processing positively predicts perceived resource gain.

H4b: Heuristic information processing negatively predicts perceived resource gain.

Altruistic Helping

Living in a global world, human beings are more likely to show care and help for each other in the wake of a disaster. Sociological research shows that, when natural disasters occur, altruistic and prosocial actions become the dominant response (Perry & Lindell, 2003). The altruistic behaviors that develop reflect a socially integrative response; responders converge to offer assistance in various forms, such as donations of time, money, and other needed resources (Perry & Lindell, 2003).

After the earthquake attack, people across the world contributed in different ways to rescuing the victims. Donating money, time, blood, or information is just a snapshot of the shining humanitarian care between human beings. The study by Westerman, Spence, and Lachlan (2009) showed that, the more one is touched by TV coverage of Hurricane Katrina, the more likely one will be to donate money and time to those affected by disasters. Therefore, the following hypotheses are proposed:

H5: Intrusion positively predicts altruistic helping.

H6: Perceived resource loss positively predict altruistic helping.

H7: Perceived resource gain positively predict altruistic helping.

The above relationships were summarized in a structural model, which was tested by using latent variable modeling technique.

PILOT STUDY

Five focus groups, with seven-eight participants in each group, were conducted to help create measure items on loss and gain of resources. Participants of focus groups were undergraduate students, randomly recruited from a public university on the coast. Trained research assistants moderated and recorded group discussions. The main discussion question was: “In your view, what losses and gains the Japan quake has brought to you?” Probes and follow-up questions were also employed to help tease out more information about loss and gain of resources.

Responses from five groups were aggregated together. After reviewing all items carefully, the research team removed redundant items and the ones not tapping into the current Japan quake context at face value. The final retained items for loss and gain of resources are presented in Table 1.

METHOD

Sample

Respondents from four different universities on the eastern coast of China completed a paper and pencil survey. Data were collected two weeks after the earthquake. Overall, 700 questionnaires were returned; 686 were retained for analyses after removing those with multiple missing data. Of the sample, 40.1% were male and 59.9%

were female, with an average age of 21.8 years (*SD* = 2.63). Students completed the 15-minute questionnaire for course credits and a $2 incentive. The whole research procedure was strictly in line with APA ethics guidelines.

TABLE 1
Principal components analysis of resource loss/gain items

Items	Factor 1	Factor 2	Factor 3
Loss			
Killing of lives	.19	**.84**	–.08
Damage to cities	.08	**.84**	.12
Harm to natural environment	–.07	.53	.36
Economic loss for Japan	.09	.41	.54
Economic loss for other nations	.12	.07	**.79**
Difficulty to buy Japan's products	.31	–.01	**.63**
Disruption of important plans	**.78**	.05	.22
Disruption of daily life	**.87**	.04	.07
Loss of life peace	**.82**	.11	.11
Loss of Japanese culture	.45	.11	.36
Eigenvalues	3.25	1.64	1.05
Variance explained	32.52%	16.40%	10.54%
Gain			
Driving Japan's economy	.03	.01	**.83**
Driving another nations' economy	.07	.06	**.77**
Improving Japan's national image	.16	.34	.44
Consciousness of self-protection	.23	**.87**	.09
Learning more about quakes	.21	**.87**	.04
Knowing more about Japan	.30	.48	.37
Sense the value of life	**.82**	.15	.10
Reflection on life meaning	**.83**	.14	.12
Valuing disaster prevention	.59	.35	.01
Increasing care between people	**.76**	.20	.10
Eigenvalues	3.79	1.38	1.07
Variance explained	37.87%	13.81%	10.74

Note. Factor loadings in bold type indicate those items retained.

Measures

Information processing. Seven items culled from prior research (Kahlor et al., 2003) were adapted to assess information processing in the context of the Japan quake. The instructions read as follows: "Next, we want to know how you read news coverage about the Japan earthquake. To what extent do you agree with the following statements?" Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

According to Kim (2008), principal component analysis (PCA) is used to reduce the number of variables, and common factor analysis (CFA) is used to identify the latent conceptual structure underlying observable varia-

bles. More specifically, PCA is a linear combination of variables whereas CFA is about the measurement model of a latent variable. Considering the latent nature of information processing styles, it is sensible to apply factor analysis to investigate the typology of the construct. Specifically, principal-axis factors analysis (promax rotation) yielded two interpretable factors. In reference to the rule of .60/.40 cut-off loadings (i.e., loading above .60 on one factor and below .40 on the other factors), one item cross-loaded on two factors about equally and hence was removed. The first factor represented systematic information processing (eigenvalue = 3.05, Cronbach's alpha = .78), accounting for 43.60% of the total variance. The four corresponding items were: "I tried hard to think about the quake-related media coverage," "I had a deeper understanding of the disaster via reading news coverage," "I usually finished reading the quake-related reports, even if I disagreed or disliked some points of them," "I typically can relate the quake news reports to my own life." Another factor represented heuristic information processing (eigenvalue = 1.27, r = .52), accounting for 18.18% of the total variance. The two corresponding items were: "I just skimmed through the mains contents while reading quake news," and "I seldom spent much time reading quake-related news report."

Resource loss/gain. As discussed in the pilot study, loss and gain of resources were measured, respectively, with 10 items each. The instructions read: "Below are aspects of losses (gains) that the Japan quake has brought about. Indicate the magnitude of loss (gain), in your view." Response options ranged from 0 (*not at all*) to 3 (*impressive*).

Considering the nature and number of measurement items, a goal here is to reduce the number of variables so as to more succinctly capture the concept — resource loss/gain. For that purpose, it is more suitable to apply PCA instead of factor analysis (Kim, 2008). Two principal component analyses with varimax rotation were conducted, separately, on the loss and gain items. In reference to the same rule mentioned earlier, three interpretable loss factors and three gain factors were identified. The loss factors were labeled as: life control (eigenvalue = 3.25, α = .81), accounting for 32.52% of the total variance; damages to lives and cities (eigenvalue=1.64, α = .66), accounting for 16.40% of the variance; and economic loss (eigenvalue = 1.05, r = .35), accounting for 10.54% of the variance. The three gain factors were labeled as meaning of life (eigenvalue = 3.79, α = .79), accounting for 37.87% of the total variance; knowledge of disaster prevention (eigenvalue = 1.38, r = .73), accounting for 13.81% of the variance; and economic gain (eigenvalue = 1.07, r = .42), accounting for 10.74% of the variance. Items with high loadings were averaged to create an index to denote a particular loss/gain dimension. High scores refer to high loss or gain.

Intrusion. The impact of event scale was adapted to assess intrusion (Horowitz et al., 1979). The measurement items include: "Many things can invoke my feelings about the Japan quake," "I often think about the Japan earthquake," "I cannot help thinking about the quake," "Pictures about the quake often popped up in my mind," and "I have strong feelings toward the Japan quake." Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores on the five items were averaged to create an index denoting the magnitude of intrusion (α = .89).

Helping. In light of prior literature on disaster helping, one single item was used in the present study. The item reads as: "I am willing to donate money to the Japanese quake victims." A 5-point scale was used with response options ranging from 1 (*not at all*) to 5 (*very much*).

RESULTS

Before conducting structural equation modeling analysis, data normality and missing data were examined. Statistics and plots showed that the data did not violate the assumption of multivariate normality. On the key analysis variables, there was only a small amount of missing data which was replaced by means. AMOS (version 18.0) was used for structural modeling analysis with maximum likelihood estimation. Due to the large number of resource loss/gain items, item parceling was employed and composite scores on each dimension were modeled. Item parceling, particularly under conditions of length instruments, is advantageous, because it increases model parsimony and

reduces chances of correlated error terms (Little, Cunningham, Shahar, & Widaman, 2002). The internal-consistency approach was used to create three parcels for the variable loss and three parcels for the variable gain, as each variable had three dimensions evidenced by principal components analysis.

The following fit indices were adopted to assess model fit: the χ^2 value, comparative fit index (CFI), the standardized root mean square residual (SRMR), the root mean square error of approximation (RMSEA), the goodness-of-fit index (GFI), and the incremental index of fit (IFI). The cut-off values for these indices were set at: CFI > .90, GFI > .90, IFI > .90, RMSEA < .06, SRMR < .08 (Hu & Bentler, 1999; Kline, 2005). The results showed that the model fitted the data well (χ^2 = 170.573, *df* = 55, GFI = .963, CFI = .954, IFI = .954, RMSEA = .055 with CI [.046, .065], SRMR = .037).

All the predicted relationships were supported (see Table 2 and Figure 1). Specifically, systematic information processing positively predicted intrusion (β = .54, $p < .001$), whereas heuristic information processing negatively predicted intrusion (β = –.12, $p < .01$). Systematic information processing positively predicted perceived resource loss (β = .42, $p < .001$) and resource gain (β = .46, $p < .001$), whereas heuristic information processing did not show any statistically significant effect on loss/gain. Intrusion (β = .22, $p < .001$) and resource gain (β = .14, $p < .05$) positively predicted the intention to help, whereas perceived resource loss did not have a statistically significant effect on helping. Results also showed a statistically significant indirect effect through the path systematic → intrusion → help (β = .12, $p < .05$). Using a bootstrap estimation with 1,000 resamples, the indirect effect was statistically significant with 95% CI [.08, .58] (Hayes, 2013).

TABLE 2
Regression weight of tested model

Structural Weights	*B*	*SE B*	ß	C.R.
Direct effects				
systematic → intrusion	.56	.04	.54***	12.77
heuristic → intrusion	–.11	.04	–.12**	–3.10
systematic → loss	.24	.04	.42***	6.43
heuristic → loss	.03	.03	.07	1.12
systematic → gain	.31	.03	.46***	9.62
heuristic → gain	–.01	.03	–.01	–0.23
intrusion → help	.32	.07	.22***	4.39
loss → help	.24	.20	.09	1.22
gain → help	.32	.15	.14*	2.10
systematic ↔ heuristic	–.45	.04	–.51***	–11.96
Indirect effect				
systematic → intrusion → help	.18	.09	.12*	2.01

Note. *SE* = standard error; C.R. denotes the critical ratio of t-test.
*$p < .05$. **$p < .01$. ***$p < .001$.

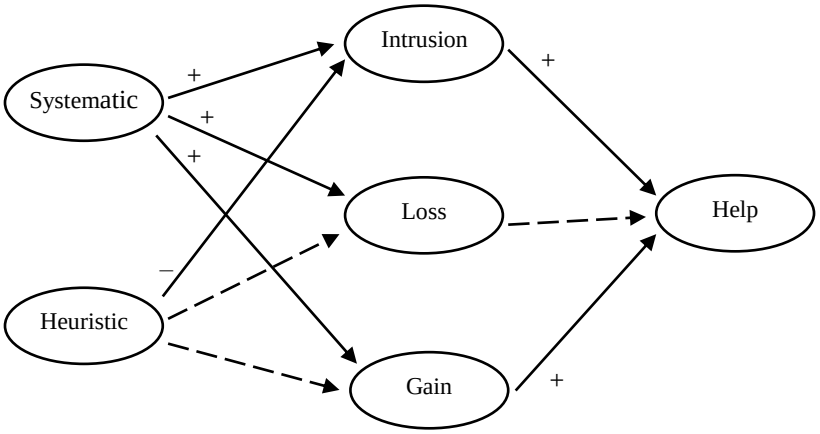

FIGURE 1
Final revised model.
Dashed lines denote hypothesized but statistically nonsignificant paths.
Plus and minus signs denote the positive and negative regression weights, respectively.
The indirect effect along the path systematic → intrusion → help is statistically significant, too.

DISCUSSION

The results supported the research hypothesis that different patterns of media information processing lead to different degrees of intrusion. In general, the more one is motivated, engaged, and effortful in following the earthquake coverage, the more likely one will be stricken or influenced by the disaster event. Such a finding provides support for media information processing/effect theories, and is consistent with prior literature that media plays a significant role in resulting in distant trauma (Kennedy, Charlesworth, & Chen, 2004; Sacco, Galletto, & Blanzieri, 2003). This finding is also interesting in the context of new media. One of the most important characteristics of the Internet and social media is interactivity. Interactive media tend to engage audiences much more than traditional media. As more and more people seek information and follow news on the Internet and exchange views and opinions on social media, it is plausible to predict that the impact of distant trauma will be more pronounced in a more developed media environment. This may have important implications for disaster relief efforts in terms of taking full advantage of new media to reach out and affect people.

Interestingly, intrusion significantly predicted Chinese people's intention to help Japanese victims. In contrast, perceived resource loss did not have a meaningful effect, though, perceived resource gain did have a significant but weak effect. Such a comparison does inform about the differing natures of intrusion and resource perception. Compared to intrusion, perceived resource loss/gain involves more cognitive activity, which lacks emotional driving. In contrast, intrusion is more likely to evoke sympathy or empathy, which further leads to altruistic helping. The role that empathy plays in helping behavior has been well supported by past research. Avdeyeva, Burgetova, and Welch (2006), for example, found that people felt impelled to help victims as damages of the Katrina attack were so shocking and senseless. Gustavo, Eisenberg, Troyer, Switzer, and Speer (1991) contended that strong emotional responses are likely to lead to altruistic help for disaster victims. In other words, when people are emphatically aroused, they are more likely to respond in the wake of a disaster attack.

Limitations and Future Directions

First, the study employed a convenience student sample, which could limit the generalization of research findings. Typically, researchers face great time constraints when studying a natural disaster, particularly the early rescuing stages. Researchers, however, should make every effort to locate different populations for future studies.

Second, it only takes a few seconds for the earthquake to destroy tons of homes and kill millions of people. But, the effect of the quake is lasting and complex. The cross-sectional design of the present study cannot fully reveal such a long-term effect. Therefore, future research should employ longitudinal designs to investigate the impact of a natural disaster like the earthquake.

Third, speaking of media effects, it would be more enlightening to inspect the impact of concrete media content. Our study only looked at media information processing in general, and hence, does not tell us what types of media messages result in which effects. Thus, future research, employing media content analysis and linking particular contents to certain effects, is promising and valuable.

REFERENCES

Avdeyeva, T. V., Burgetova, K., & Welch, I. D. (2006). To help or not to help? Factors that determined helping responses to Katrina victims. *Analysis of Social Issues and Public Policy*, *6*, 159-173. doi:10.1111/j.1530-2415.2006.00113.x

Cooper, M. (2011, May 31). *Reconstruction lifts economy after disasters*. Retrieved from https://www.nytimes.com/ 2011/06/01/us/01storm.html

Durkin, K., & Joseph, S. (2009). Growth following adversity and its relation with subjective well-being and psychological well-being. *Journal of Loss and Trauma*, *14*, 228-234. doi:10.1080/15325020802540561

Garrison, M. E., & Sasser, D. D. (2009). Families and disasters: Making meaning out of adversity. In K. E. Cherry (Ed.), *Lifespan perspectives on natural disasters: Coping with Katrina, Rita, and other storms* (pp. 113-130). New York, NY: Springer.

Griffin, R. J., Neuwirth, K., Giese, J., & Dunwoody, S. (2002). Linking the heuristic-systematic model and depth of processing. *Communication Research*, *29*, 705-732. doi:10.1177/009365002237833

Gustavo, C., Eisenberg, N., Troyer, D., Switzer, G., & Speer, A. L. (1991). The altruistic personality: In what contexts is it apparent? *Journal of Personality and Social Psychology*, *61*, 450-458. doi:10.1037/0022-3514.61.3.450

Hayes, A. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513-524.

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, *50*, 337-421. doi:10.1111/1464-0597.00062

Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine*, *41*(3), 209-218.

Hu, L. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling*, *6*, 1-55. doi:10.1080/10705519909540118

Kahlor, L., Dunwoody, S., Griffin, R. J., Neuwirth, K., & Giese, J. (2003). Studying heuristic-systematic processing of risk communication. *Risk Analysis*, *23*, 355-368. doi:10.1111/1539-6924.00314

Kennedy, C., Charlesworth, A., & Chen, J. (2004). Disaster at a distance: Impact of 9.11.01 televised news coverage on mothers' and children's health. *Journal of Pediatric Nursing*, *19*, 329-339. doi:10.1016/j.pedn.2004.09.003

Kim, H. (2008). Common factor analysis versus principal component analysis: Choice for symptom cluster research. *Asian Nursing Research*, *2*, 17-24. doi:10.1016/S1976-1317(08)60025-0

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guilford Press.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, *9*, 151-173. doi:10.1207/S15328007SEM0902_1

Littleton, H. L., Axsom, D., & Grills-Taquechel, A. E. (2009). Adjustment following the mass shooting at Virginia Tech: The roles of resource loss and gain. *Psychological Trauma: Theory, Research, Practice, and Policy*, *1*, 206-219. doi:10.1037/a0017468

Meyers-Levy, J., & Maheswaran, D. (2004). Exploring message framing outcomes when systematic, heuristic, or both types of processing occur. J*ournal of Consumer Psychology*, *14*, 159-167. doi:10.1016/S1057-7408(04)70143-6

Perry, R. W., & Lindell, M. K. (2003). Understanding citizen response to disasters with implications for terrorism. *Journal of Contingencies and Crisis Management*, *11*(2), 49-60.

Sacco, K., Galletto, V., & Blanzieri, E. (2003). How has the 9/11 terrorist attack influenced decision making? *Applied Cognitive Psychology*, *17*, 1113-1127. doi:10.1002/acp.989

Sina. (2011, March 28). *The Japan earthquake resulted a death toll of more than 28000*. Retrieved from http://news.sina.com.cn/w/2011-03-28/161822195287.shtml

Terr, L. C., Bloch, D. A., Michel, B. A., Shi, H., Reinhardt, J. A., & Metayer, S. (1999). Children's symptoms in the wake of challenger: A field study of distant-traumatic effects and an outline of related conditions. *American Journal of Psychiatry*, *156*, 1536-1544. doi:10.1176/ajp.156.10.1536

Westerman, D., Spence, P. R., & Lachlan, K. A. (2009). Telepresence and the exemplification effect of disaster news. *Communication Studies*, *60*, 542-557. doi:10.1080/10510970903260376

Yang, A. (2009, May). *Chinese media in change: A comparison of Chinese media framing of the 2003 SARS crisis and the 2008 Sichuan Earthquake*. Paper presented at the annual meeting of the International Communication Association, Chicago, IL.

Young, A. (2007). Images in the aftermath of trauma: Responding to September 11th. *Crime Media Culture*, *3*, 30-48. doi:10.1177/1741659007074444

Zamani, G. H., Gorgievski, M. J., & Zarafshani, K. (2006). Coping with drought: Towards a multilevel understanding based on conservation of resources theory. *Human Ecology*, *34*, 677-692. doi:10.1007/s10745-006-9034-0