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Communication Management and Trust: Their Role in Building Resilience to "Surprises" Such as Natural Disasters, Pandemic Flu, and Terrorism

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Communication Management and Trust: Their Role in Building Resilience to "Surprises" Such As Natural Disasters, Pandemic Flu, and Terrorism

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ABSTRACT. In times of public danger such as natural disasters and health emergencies, a country's communication systems will be some of its most important assets because access to information will make individuals and groups more resilient. Communication by those charged with dealing with the situation is often critical. We analyzed reports from a wide variety of crisis incidents and found a direct correlation between trust and an organization's preparedness and internal coordination of crisis communication and the effectiveness of its leadership. Thus, trust is one of the most important variables in effective communication management in times of "surprise."

Key Words: *communication; disasters; resilience; trust*

INTRODUCTION

Resilience is a new concept for many managers and policy makers. It requires a change in thinking about the goals of preparing for some kinds of risk that might overwhelm all efforts to resist them such as powerful hurricanes, pandemics, or terrorist attacks. The Resilience Alliance has defined resilience as the "capacity of a system to absorb disturbance, undergo change, and still retain essentially the same function, structure, identity, and feedbacks" (http://www.resalliance.org/; see also Gunderson 2000). In other words, the system has the ability to bounce back after a "surprise." Although a system with resilience capacity is likely to be sustainable over a long period of time, resilience does not necessarily mean that the system will look just like it did before a surprise. Often the system will have to change as it adapts to new situations, but it will survive. Thus, a resilience strategy does not guarantee short-term stability, but if a system exhibits resilience, it is likely to be stable in the long term (Hanson and Roberts 2005).

How would one design or redesign a communication system if one wanted to build resilience for individuals or groups? That is, if one wanted to increase the chances that individuals and groups would bounce back fairly quickly from surprises like a tsunami or pandemic flu. The first thing one would do is try to understand what makes people and institutions resilient (Masten 2001, Allenby and Fink 2005, Longstaff 2005). One would find that communication is an absolutely essential element of resilience in many systems. However, policy discussions of the role of communication in times of surprise have tended to take a focus that is limited to the technical reliability of communication systems, and often, the messages sent by these systems are just assumed to be effective. When the content is dealt with at all, planners often assume that handing out brochures or broadcasting government-approved updates on the situation will allow people to put their lives back together as quickly as possible. However, all attempts to distribute information will be in vain if the people receiving it do not trust the message or the sender of the message (Griffin et al. 2004).

In many animal species, and even in some plants, information about opportunities and dangers in the environment is used by all individuals. This information can be obtained by observing what works and does not work for others. If everyone uses trial-and-error tactics, this information reduces the number of errors and increases the number of

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successes for the individuals in the group. Some species that live together use deliberate signals about where to find food, e.g., the famous bee dance, or the presence of predators, e.g., specific noises made by many species to signal danger (Danchin et al. 2004). However, information exchange only increases the chance of survival for individuals if the information is correct and transmitted accurately. In systems in which individuals cannot double-check the information before acting on it, this requires that the sender of the information be trusted.

The necessity of a trusted source for individual and group risk assessment has been well established (Slovic 2000). Functions for which information must be trustworthy include scanning for changes in resources and trustworthy individuals and detecting damage, intruders, and dangerous trends. Individuals or organizations use this type of trusted information to make critical decisions about their safety (Blanchard-Boehm 1998, Atwood and Major 2000, Comfort et al. 2003); the fact that they trust the information does not mean that it is accurate. Someone might trust information that turns out to be false. However, generally, people trust information that comes from a trusted source and/ or is consistent with the facts as known. A trusted source is someone who people do not perceive to have a reason to lie to them and who they believe has access to accurate information. If the trusted source provides information that is inconsistent with the facts as known, e.g., the situation is not under control although it was stated to be, people must either change their trust of the source or their trust in their own observations.

For individuals and organizations, trust often requires a "deep and constant engagement" (K. Chin *unpublished manuscript*), a give and take that builds faith in the other(s) over time. It cannot be established on the first day of a disaster. This leads to the conclusion that trusted communication must be planned. Trusted communications not only allow emergency responder organizations to help people build their own resilience, but to help them build their own internal resilience. Trusted communication will allow the organization and individuals within it to adapt more quickly by increasing the potential for change (Berkes and Folke 2002) and enhancing the adaptive cycle of the organization (Holling and Gunderson 2002).

Resilience in a situation like a hurricane or pandemic requires that individuals and organizations have the ability both to receive trusted information from a central source that can see the whole picture (i.e., a point-to-multipoint system, e.g., government and news organizations; Quarantelli 2002) and to contact individuals to ascertain damage to specific people and assets (i.e., a point-to-point system, e.g., telephony and email; Samarajiva 2005). If individuals and groups do not have access to both of these systems, there is a much greater likelihood of panic (Glass and Schoch-Spana 2002, Surowiecki 2004).

Advance planning for communication that will enable resilience is, in most cases, a function of government. In most countries, only governments can look at their entire communications sector of both point-to-point and point-to-multipoint firms, so they are uniquely situated to see how each agency and industry can play a roll in resilience communication. For example, appropriate communication policies can deal with any market failures, including those of firms, that do not deliver the services needed for the resilience of individuals and groups. The right mix of these communication assets may be different for each country and will often be different in various parts of countries. The difference will be particularly acute between urban and rural areas. There is an important role for government in maintaining the communication functions for this classic public good, but not necessarily the current technology for the dissemination of information. For example, in some communities, telephone services such as "reverse 911" may be the best way to broadcast important information.

Perhaps the most important and least understood role for policy makers is insuring that emergency communications can be trusted by other emergency responders and by the public. This seems to mean that at a minimum, they provide for ongoing communication that helps to build trust and that they mandate plans for communications in times of surprise.

Trust within the organizations that must respond to a surprise, e.g., governments, nongovernmental organizations, media, telecommunications, and electric utilities, also has an effect on their ability to produce trusted communications for others. This aspect of communication management in times of

crisis has not been well studied. How does trust affect the management of crisis communication and the plans for communication in such times? We next describe research that was undertaken to test the role of trust in the planning and management of communication in crisis situations.

METHODS

To test these ideas about the role of trust in emergency or crisis situations, we gained access to an extensive collection of reports about situations defined as involving a crisis. The Transboundary Crisis Management Data Bank is maintained by the Moynihan Institute of Global Affairs, Maxwell School of Citizenship and Public Affairs, Syracuse University, Syracuse, New York, USA. These reports include a wide variety of situations that became crises, along with information about how they were handled. Each report is coded for a wide variety of factors. Our analysis was limited by this preexisting coding, but we were able to find strong correlations in the data to support several hypotheses and to develop a model that illustrates our findings. Because effective leadership was coded in the data, we included it as a possible significant variable, but acknowledge that this is a much-debated concept.

Hypotheses and research questions

We proposed two hypotheses and two research questions regarding the relations among crisis management variables. More specifically, we examined how crisis management antecedents such as trust and crisis-handling leadership affect crisis management outcomes such as internal coordination of crisis communications among crisis managers and attribution of crisis fault to external parties, mediated by the degree of crisis preparedness (Fig. 1). We also explored how the relations imposed differed when we controlled for the degree of crisis surprise to crisis managers in the proposed model (Fig. 2).

First, we proposed a positive effect of leadership on crisis preparedness and the coordination of crisis communications as follows. In hypothesis 1a, the effectiveness of the leadership in dealing with a crisis is positively associated with the preparedness for a crisis. In hypothesis 1b, the effectiveness of the leadership in dealing with a crisis is positively

associated with the internal coordination of crisis communications.

Second, we proposed that more crisis preparedness will lead to more internal coordination of crisis communications and less attribution of crisis fault to external parties as follows. In hypothesis 2a, the preparedness for a crisis is positively associated with the internal coordination of crisis communications. In hypothesis 2b, the preparedness for a crisis is negatively associated with the attribution of crisis fault to parties other than their own actors.
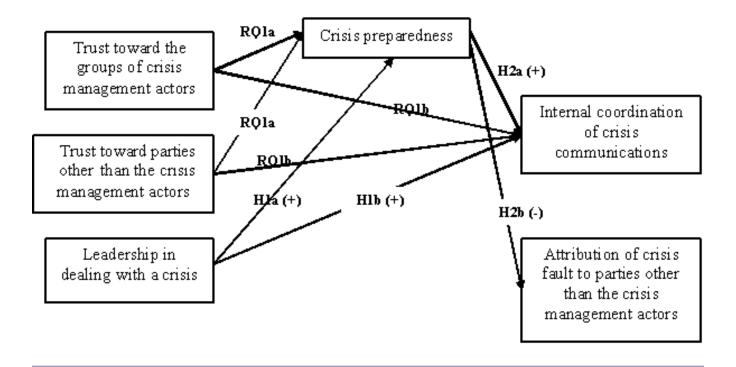
Third, for the effects of trust on crisis management outcomes, we explored how internal and external trust (i.e., the level of trust that the crisis management actors display toward their own group or parties other than their own, respectively) affects crisis management variables. We proposed that solid internal trust leads to better internal coordination of crisis communications, whereas a lack of external trust leads to more preparedness for a potential crisis. Hence, we examined the following research questions. Research question 1a: To what extent is there a relationship between the level of trust that the crisis management actors display toward their own groups or other parties and the preparedness for a crisis? Research question 1b: To what extent is there a relationship between the level of trust that the crisis management actors display toward their own groups or other parties and the internal coordination of crisis communications?

Finally, controlling for the effects of crisis surprise (i.e., how unexpected the crisis was for the crisis managers), we also explored how the relationships suggested above might be different. Thus, research question 2 was: Controlling for the effect of the degree of unexpected crisis occurrence to the crisis managers, how different are the effects of leadership, crisis preparedness, and trust on crisis management?

Proposed models

Two path models were proposed on the basis of the suggested hypotheses and research questions. In model A (Fig. 1), trust displayed toward both the crisis management actors and other parties leads to better preparedness for a crisis and better internal coordination of crisis communications. Leadership in dealing with a crisis predicts the preparedness for

Fig. 1. Model A: Proposed baseline model of crisis communication management, with hypothesis notation.

the crisis and the internal coordination of crisis communications. Finally, the degree of preparedness for a crisis positively influences the internal coordination of crisis communication and lessens the degree of the attribution of crisis fault to parties other than the crisis management actors. Thus, model A was the baseline model, in which:

Crisis preparedness = a0 + b1(internal trust) + b2 (external trust) + b3(leadership) + e (1) Crisis communications = a0 + b1(internal trust) + b2 (external trust) + b3(leadership) + b4(crisis preparedness) + e (2) Attribution of crisis fault = a0 + b1(crisis preparedness) + e (3)

In addition to the relations imposed in model A, the degree of crisis surprise was controlled in model B by additional structural paths from crisis surprise to the internal coordination of crisis communication and the degree of the attribution of crisis fault (Fig. 2). Thus, model B comprised:
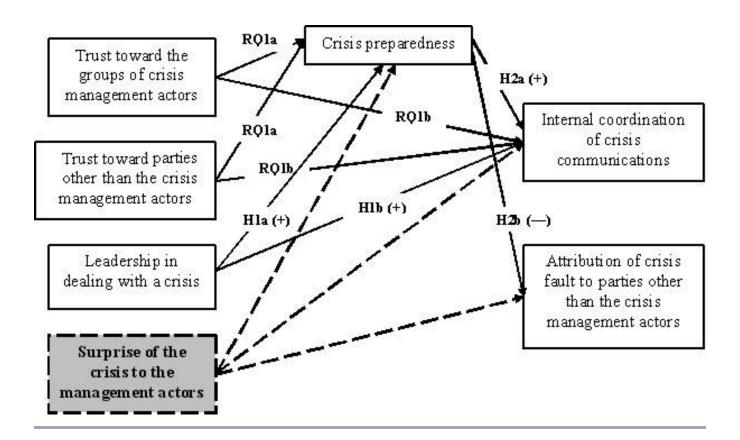
Crisis preparedness = a0 + b1(internal trust) + b2 (external trust) + b3(leadership) + b4(crisis surprise) + e (4) Crisis communications = a0 + b1 (internal trust) + b2(external trust) + b3(leadership) + b4(crisis preparedness) + b5(crisis surprise) + e (5) Attribution of crisis fault = a0 + b1(crisis preparedness) + b2(crisis surprise) + e (6)

Description of data

The data consisted of 82 crisis cases collected from different regions of the world for seven crisis types: environmental, fiscal, natural disaster, legal, military, political, and technological. There were

Fig. 2. Model B: Proposed model of crisis communication management controlling for crisis surprise, with hypothesis notation.

nine environmental crisis cases, 13 fiscal crisis cases, seven natural disaster crisis cases, five legal crisis cases, 10 military crisis cases, 33 political crisis cases, and five technological crisis cases (Table 1). The unit of analysis was the crisis case ($N = 82$).

Measurement items and data reduction

Independent variables

To measure trust, we used two variables of trust: trust that the crisis management actors display toward the internal group of crisis management and trust toward external parties other than their own. Each variable had two measurement items: trust exhibited in their behavior and trust exhibited in their statements. The reliabilities for internal trust

and external trust were 0.71 and 0.89, respectively (Table 2).

To measure leadership in dealing with a crisis, we used two measurement items: the nature of the effect of leadership on the crisis and the degree of experience with similar crises possessed by the person or group providing the leadership. The reliability for leadership was 0.71.

Mediator

The degree of crisis preparedness was used as a mediator between the crisis antecedents of trust and leadership and the crisis management outcomes of internal coordination of crisis communications and attribution of crisis fault to external parties. This crisis preparedness mediator was gauged as a composite of six measurement items: the presence of standard operating procedures (SOPs), the use of

Table 1. List of cases from the Transboundary Crisis Management Data Bank.

Case type	No.	Name	Perceived threat	Crisis dur-ation	Level of surprise	Uncertainty of crisis definition
Environm-ental	26	1988 epidemic among harbor seals	Medium	Long	High	Medium
	28	Baia Mare disaster	Medium	Long	High	Low
	21	*Cryptosporidium* outbreak	Medium	Short	High	Medium
	9	Exxon Valdez	High	Short	Medium	Medium
	31	Greece EU case	Medium	Long	Medium	Low
	32	Japan and the MOX fuel falsification	Low	Long	Medium	Medium
	43	Love Canal	Medium	Medium	Medium	Medium
	115	The U.S. BSE crisis	Medium	Long	Low	Medium
	20	Yellowstone forest fire	High	Medium	Low	Medium
Fiscal	108	1975 New York City financial crisis	High	Long	Medium	Medium
	7	1997 Korean financial crisis	Medium	Long	High	Medium
	3	Albanian pyramid scheme	High	Long	Medium	Medium
	15	Daewoo Group financial crisis	High	Medium	Low	Low
	53	Estonia economic overheating 1997	Medium	Long	Medium	Medium
	48	Latvia Banka Baltija	Medium	Medium	High	Medium
	105	Long-term capital and the Federal Reserve	High	Long	High	Medium
	107	Thailand and currency crisis of 1997	High	Long	Medium	Medium
	104	The collapse of Arthur Andersen	Medium	Long	Medium	Medium
	109	The collapse of WorldCom	Medium	Medium	Medium	Medium
	10	The Enron collapse	Low	Long	High	†
	5	The Hanbo scandal	High	Medium	Medium	Low
	6	Y2K in Korea	High	Long	Medium	High
Legal	46	Biker wars in Scandinavia 1994–1997	Medium	Long	High	Low
	54	Estonia Kostivere arms robbery 1997	Medium	Long	Medium	Medium
	50	Estonia refugees 1994–1995	High	Long	Low	Low
	4	Riots in Malegaon	High	Medium	Medium	Low

(con'd)

	24	The federal raid on Ruby Ridge	Medium	Long	Low	Low
Military	29	Bhopal (Chaudhary)	High	Short	High	Medium
	51	Estonia peacekeepers 1997	Medium	Short	High	Low
	12	Gulf War crisis	Medium	Long	High	Low
	44	NATO Kosovo crisis	High	Long	Low	Medium
	111	Ranger school deaths 1995	Medium	Short	Medium	Low
	14	Sino-U.S. plane crash incident	Medium	Short	High	Low
	22	Somalia (Seitz)	Medium	Long	Medium	Medium
	121	The attack on Pearl Harbor	High	Short	Medium	Medium
	18	U.S. intervention in Somalia (Averil)	Medium	Long	Medium	Medium
	120	U.S. Navy out of Vieques	Medium	Long	Medium	Low
Natural disaster	37	Earthquake in Gujarat, India	High	Medium	High	Low
	40	Flash floods in Sirsa, India	Medium	Medium	Medium	Medium
	34	Labor Day storm	Medium	Short	High	Low
	52	Latvia spring flood 1998	Medium	Medium	Low	Medium
	58	M.S. Estonia ferry disaster	High	Short	High	Medium
	45	Red River floods 1997	Medium	Long	Low	Medium
	62	Slovenia earthquake 1998	Medium	Medium	High	Low
Political	25	1981 air traffic controllers strike	High	Long	Low	Low
	129	Armed conflict in Macedonia 2001	High	Medium	Medium	Medium
	137	Assassination attempt on President Reagan	High	Short	High	Medium
	114	Bay of Pigs	High	Medium	†	Low
	116	Benin and the slave ship crisis	High	Long	Medium	Medium
	47	Columbine school shooting (Lamaranna)	High	Long	High	Medium
	30	Cuban missile crisis	High	Short	High	Low
	113	D.C. anthrax situation	High	Short	High	High
	112	D.C. sniper	High	Medium	High	High
	8	Disaster at Waco	High	Long	Medium	Medium
	38	Election bombing in Andhra Pradesh, India	Medium	Short	High	Low
	49	Estonia hijacking 1994	Medium	Medium	Medium	Low

	55	Estonia referendum 1993	High	Medium	Medium	Medium
	36	Ethnic violence in Assam, India	Medium	Long	Low	Medium
	35	FAA and September 11	High	Medium	High	Medium
	11	Fall of President Fujimori	High	Medium	High	Medium
	19	India Pakistan Brinkmanship crisis	High	Long	High	Low
	13	Iran hostage crisis and the Carter Administration	High	Long	Medium	Medium
	27	Korean cargo truckers boycott	Medium	Long	Medium	Medium
	56	Latvia Russian crisis 1998	Medium	Medium	Medium	Medium
	57	Latvia Russian Securities	Medium	Medium	Medium	Medium
	42	Lima hostage drama	High	Medium	High	Low
	110	Madrid bombing 11 March 2004	Medium	Short	High	Low
	33	Nuclear waste site crisis	Low	Medium	Medium	Low
	106	Pan Am 103 and Syracuse University	Medium	Medium	High	High
	77	Pastrana's peace process	High	Medium	Low	Medium
	59	President Bush's rejection of the Kyoto Protocol	Medium	Medium	Low	Low
	60	Slovenia independence	High	Short	Low	Medium
	61	Slovenia Kosovo crisis	Medium	Medium	Low	Medium
	17	Ukrainian border crisis	Medium	Medium	Medium	Medium
	118	U.S. Military and the Mayaguez incident	High	Short	Medium	Low
	117	U.S. troop deployments from Turkey	Medium	Long	Medium	Medium
	1	YMCA	Low	Long	High	Medium
Technological	2	Accident at Three Mile Island (March)	High	Short	High	Medium
	119	Apollo 13	High	Short	Medium	High
	16	Columbia Shuttle disaster	Medium	Short	Medium	Medium
	41	Hemodialysis deaths in Croatia	High	Short	High	Medium
	39	Sampoong department store collapse	High	Medium	Medium	Medium

†No evaluation available.

Table 2. Measurement items and their reliability.

Variable	Item	Alpha
Internal trust	Level of trust the actors display toward their own group through behavior and deeds Level of trust the actors display toward their own group through words	0.71
External trust	Level of trust the actors display toward others outside their own group through behavior and deeds Level of trust the actors display toward others outside their own group through words	0.89
Leadership in dealing with a crisis	Nature of leadership effect on crisis Degree of experience of leadership with similar crises	0.71
Crisis preparedness	Presence of standard operating procedures (SOPs) Whether SOPs were used Effect of SOPs on the crisis Familiarity with similar crises Training for crises Available leadership	0.63
Internal coordination of crisis communications	Level of coordination among actors or within the organization in communicating with stakeholders and the media	
Attribution of crisis fault to other parties	Degree of crisis fault that the actors attribute to parties/groups other than their own	
Surprise to crisis management actors	Degree of unexpected occurrence of the crisis to the crisis management actors	

SOPs, the effect of SOPs during the crisis, the familiarity with similar crises, the training for the crisis, and the availability of command and control systems. The reliability for this variable was 0.63.

Dependent variables

The level of internal coordination of crisis communications was measured by this question asked by data gathers: "What is the nature of the coordination within the actor/organization in communicating with stakeholders and the media?" The attribution of crisis fault to parties other than the management group was measured by the following question: "To what extent are the actors attributing fault to parties/group other than their own?"

Control variable

The control variable, i.e., surprise to crisis management actors, was measured by the following question: "How unexpected was the crisis for the decision makers?"

RESULTS

Descriptive statistics and bivariate correlations

Among the variables, crisis preparedness had the largest standard deviation (Table 3), indicating that there was great variability in the degree of crisis preparedness among the 82 crisis cases. The descriptive data indicate moderate variation in the other variables among the 82 crisis cases (Table 3).

Table 3. Zero-order correlations of the variables, with means and standard deviations.

| Variable | Mean | SD | Variable | | | | | | |
			1	2	3	4	5	6	7
1. Crisis preparedness	9.57	3.52	1						
2. Internal trust	3.02	1.18	–0.083	1					
3. External trust	2.19	1.11	–0.340*	0.371*	1				
4. Coordination of crisis communication	2.98	1.46	0.197	0.345*	0.097	1			
5. Leadership	3.97	1.56	0.264*	0.001	0.020	0.385**	1		
6. Attribution of crisis fault	1.51	0.88	–0.248*	0.048	–0.067	0.008	0.098	1	
7. Crisis surprise	1.21	0.72	–0.365**	0.151	0.151	–0.218	–0.256*	0.004	1

*$P < 0.05$, **$P < 0.01$.

In bivariate correlations, crisis preparedness was significantly correlated with external trust, leadership, attribution of crisis fault, and crisis surprise. Internal trust was significantly correlated with external trust and internal coordination of crisis communications. Internal coordination of crisis communications was significantly correlated with leadership. Finally, leadership was significantly negatively correlated with crisis surprise (Table 3).

Fit of data to proposed models

The proposed models were valid in terms of multiple indices of model fit (Table 4). According to Byrne (1994, 2001), Kline (1998), and Hu and Bentler (1999), a structural equation model can be valid when the ratio of the degrees of freedom to the chi-square value is < 3, the comparative fit index is ≥ 0.95, and the root mean square error of approximation is < 0.08. Both models fit these criteria (Table 4).

Effects of leadership

The effectiveness of leadership in dealing with a crisis was associated positively with both crisis preparedness and internal coordination of crisis communications (Table 5). However, with crisis surprise held constant in model B, both of the relations became insignificant, with decreased effect sizes. Thus, the effect of leadership in crisis management was positive, but became moderate when the level of surprise to the management actors was controlled.

Table 4. The results of model fit.

Parameter	Model A†	Model B‡
Number of crisis cases	82	82
Degrees of freedom	4	4
Chi-square	4.049	3.702
Model *P*	0.339	0.448
Degrees of freedom/chi-square	1.012	0.926
Comparative fit index	0.998	1.000
Root mean square error of approximation (90% confidence interval)	0.012 (0.000–0.169)	0.000 (0.000–0.162)
Akaike information criterion§	50.049	65.702

†The baseline model.
‡The model in which crisis surprise is controlled.
§To compare models, a smaller Akaike information criterion indicates better fit.

Effects of crisis preparedness

There was a positive effect of crisis preparedness on the internal coordination of crisis communications (Table 5). However, with crisis surprise held constant in model B, this relation remained positive, but insignificant. In addition, more crisis preparedness resulted in less attribution of crisis fault to parties other than the crisis management actors (Table 5). Even with crisis surprise controlled in model B, this relation remained significant. To summarize, the effect of crisis preparedness on crisis communications was decreased or became insignificant when the degree of crisis surprise was considered. Nonetheless, more crisis preparedness led to less attribution of crisis fault to external parties, even when the degree of crisis surprise was held constant in the analysis.

Effects of trust

There was a significant effect of internal trust on the internal coordination of crisis communications (Table 5). Even with crisis surprise controlled in model B, the effect remained significant and positive. In contrast, less external trust led to more crisis preparedness (Table 5). When crisis surprise was controlled in model B, the relation was still significant and negative. To summarize, there were differentiated effects of internal and external trust on crisis management variables, even when crisis surprise was held constant in the analysis. Internal trust was positively associated with better internal coordination of crisis communications, whereas less external trust led to significantly more crisis preparedness. Despite a positive correlation between internal and external trust (Table 3), these types of trust functioned differently in affecting crisis management variables.

DISCUSSION

We think that our findings will be relevant in planning for a wide variety of potential surprises. The analysis of these 82 transboundary crisis cases shows strong support for the idea that a higher level of trust exhibited by the participants/actors leads to better internal coordination of crisis communications

Table 5. The results of the direct effects of leadership in crisis management: standardized path coefficients.

Independent variable		Dependent variable	Model A†			Model B‡		
			Beta§	SE	*P*	Beta§	SE	*P*
External trust	→	Crisis preparedness	−0.325	0.461	0.023	−0.297	0.443	0.030
Leadership in dealing with a crisis	→	Crisis preparedness	0.277	0.246	0.011	0.206	0.244	0.056
Internal trust	→	Crisis preparedness	0.033	0.421	0.815	0.096	0.398	0.469
Surprise to crisis management actors	→	Crisis preparedness				−0.281	0.530	0.009
Crisis preparedness	→	Attribution of crisis fault to other parties	−0.248	0.027	0.021	−0.284	0.029	0.013
Surprise to crisis management actors	→	Attribution of crisis fault to other parties				−0.101	0.141	0.385
Crisis preparedness	→	Internal coordination of communications	0.332	0.034	0.022	0.240	0.035	0.104
Internal trust	→	Internal coordination of communications	0.349	0.107	0.019	0.371	0.103	0.011
Leadership in dealing with a crisis	→	Internal coordination of communications	0.265	0.074	0.053	0.223	0.073	0.104
External trust	→	Internal coordination of communications	−0.060	0.136	0.733	−0.054	0.130	0.751
Surprise to crisis management actors	→	Internal coordination of communications				−0.227	0.160	0.103

†The baseline model.
‡The model in which crisis surprise is controlled.
§Standardized beta coefficient.

with the organization's stakeholders and the media. This finding was still relevant when we controlled for the degree of crisis surprise to the management actors. Trust, it seems, must be a two-way street. The local population needs a trusted source of information, and that source is more likely to be trustable if they trust the people with whom they will communicate; for example, "I will trust local government if it trusts me enough to be prepared to tell me the whole story."

Our findings also indicate that more crisis preparedness can lead to significantly less attribution of blame to other parties. This was still relevant, even when we controlled for crisis surprise in the analysis. Obviously, this insight could have direct political benefits for both elected government officials and agency managers, who are often the ones blamed, but it is also important for other organizations. Reducing the "blame game" both during and after a crisis will increase the flow of information because people trying to respond will

not be as worried about second-guessers, and this will give everyone more information about what is working, and more importantly, what is not working. This flow of trusted information makes the organization itself more resilient by increasing its capacity to learn from each new crisis. Making preparations in advance to keep information about what is and is not working flowing to everyone can also make these organizations a more trusted source of information for others.

The data also suggest a cautionary finding. It appears that organizations that have high levels of trust in their own groups have reduced levels of preparedness for a crisis. Although it is not clear from the data what causes this, we can speculate that it might be an unwarranted confidence (in retrospect) in one's own team or in the ability of the organization to bounce back from a crisis. An unwarranted trust in the group or its technical capability would actually reduce its resilience and that of the populations that it is trying to serve.

CONCLUSION

A local population is more likely to bounce back from a crisis such as a natural disaster or terrorist attack if it has access to trusted information. This means that the population trusts the sender of the information or that it has access to alternative sources of information that can verify a less-than-trusted source. A local population that has immediate access to a trusted source of information will be able to act on the information immediately without taking time to verify it. The population will adapt more confidently to the situation. This confidence will enable individuals, businesses, and communities to bounce back quickly from even a terrible challenge to their very existence.

A community that builds trusted communications within and among emergency responders, including the media, will also react more quickly to the unique situation presented by every crisis. The organizations that must deal with a surprise will be better-trusted sources of information, among themselves and by the public, if they plan for the internal and external coordination of communications that will take place. This coordination will be more effective if the organizations trust the people with whom they will communicate. However, an unwarranted belief in an organization's own ability to be resilient in the face of a crisis may make it less

likely to do the planning necessary to achieve trusted communication.

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