

Extending Renewal to Organizational Preparedness: Development and Test of Readiness for Renewal Instrument

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Abstract

The purpose of this paper was to develop the construct of readiness for renewal and evaluate its underlying psychometric properties. We drew on discourse of renewal to develop and refine a scale through two studies. In Study One, we collected data from a single high reliability organization (N=340) to investigate a seven-factor structure of readiness for renewal: *organizational values, significant choice, provisional communication, stakeholder relationships, organizational learning, prospective vision, and effective organizational rhetoric*. A seven-factor structure lacked discriminant validity, and we followed up with a second study. In Study Two, we collected data from 376 full-time employees at organizations that had recently experienced crises. Our findings supported a bifactor solution, with manifest variables loading onto a general construct as well as four specific constructs: *ethical communication, organizational learning, prospective vision, and effective organizational rhetoric*.

Crises are non-routine, surprising events that simultaneously threaten high priority organizational goals and create opportunities (Ulmer, 2012). Although crises are low probability, high consequence events, most organizations will experience a crisis (Ulmer, Seeger, & Sellnow, 2015).

Crisis communication is a critical competency in organizations (Ulmer et al., 2015). Prior business and managerial communication research has examined challenges responding to crises (Hale, Dulek, & Hale, 2005), the influence of past crises on current responses (Coombs, 2004), the role of internal (Mazzei, & Ravazzani, 2015) and external (Dean, 2004) stakeholders, multicultural environments (Fatima Oliveira, 2013), leadership characteristics (Jamal, & Abu Bakar, 2015), and message strategies such as apology (Patel & Reinsch, 2003), denial of responsibility (Bamber, & Parry, 2016; Brühl, & Kury, 2016), image building (Benoit, & Czerwinski, 1997; Cowden, & Sellnow, 2002), metanarrative (Venette, Sellnow, & Lang, 2003), and strategic ambiguity (Johansson, & Nord, 2017). Although crisis management is an ongoing process (Coombs, 2014; Veil, 2011), most communication research focuses on response or post-crisis recovery compared to preparation (Coombs, 2010).

As Taleb (2010) notes, organizations spend too little time preparing for crises. Preparation can decrease the likelihood of a crisis or mitigate the fallout. Prior research indicates that some organizations engage in activities to prepare for crises (Avery, Graham, & Park, 2016; Cloudman & Hallahan, 2006; Lee, Woeste, & Heath, 2007; Schwarz & Pforr, 2011). This research addresses crisis communication tactics (Cloudman & Hallahan, 2006), and the presence or absence of crisis plans, crisis management teams, and training (Lee et al., 2007). Extant research has demonstrated the significance of discursive practices in crisis response and post-crisis recovery (Johansson & Nord, 2017; Ulmer, et al., 2015; Veil, 2011). Although crises complicate typical communication response strategies (Hale et al., 2005), organizations that practice ethical communication, learn directly or vicariously from organizational failures, frame reality effectively, and articulate a forward-looking vision in normal times have a better chance of recovering in disruptive times (Ulmer et al., 2015). Consequently, we draw on the discourse of renewal (Ulmer et al., 2015) to develop and refine an instrument to assess pre-crisis readiness through two studies. Our first study gathered data from a single high reliability organization (HRO). HROs exist in high-risk environments that have potential for economic harm or loss of life, yet persistently stave off major crises (Veil, 2011). Our second study included full-time employees at multiple organizations which experienced a crisis in the previous six months. Together, these studies support assessing organizational discourse as part of the ongoing cycle of crisis management.

Theoretical Framework: Discourse of Renewal

The discourse of renewal offers an alternative to theories of image restoration (Benoit & Czerwinski, 1997; Cowden & Sellnow, 2002; Ericson, Weber, & Segovia, 2011), and denial of responsibility (Bamber & Parry, 2016; Brühl, R., & Kury). Renewal is a fresh sense of purpose and direction after an organization emerges from a crisis (Seeger & Sellnow, 2016; Ulmer et al., 2015). Discourse of renewal focuses on *organizational learning*, *ethical communication*, *prospective vision*, and *effective organizational rhetoric*.

Organizations that learn from their own failures or those of others are more likely to rebound (Ulmer et al., 2015). *Organizational learning* is the acquisition of knowledge to shift attitudes and beliefs and ultimately results in successful behavior changes. Learning can result from direct experience; it can also occur vicariously such as when organizational leaders observe failures or crises experienced by similar organizations and take action to avoid them.

In addition to learning, another factor that influences organizational renewal is *ethical communication* (Ulmer et al., 2015), or the communication choices that people in organizations make and how they relate to values, standards, and norms. Ethical communication focuses on *organizational values*, *stakeholder relationships*, *provisional communication*, and *significant choice*. *Values* refer to what leaders and members should or ought to do, such as openness and honesty, and provide clarity in responses to organizational crises. Positive stakeholder relationships are based on collaboration and equity and provide a “reservoir of goodwill” during times of crisis (Seeger, 2006). *Provisional communication* refers to the instinctive rather than strategic responses by leaders that attempt to escape responsibility and blame. *Significant choice* provides the ideal circumstances for free and informed decision making (Nilsen, 1974). For example, organizations enable significant choice by providing clear, unbiased information about issues that affect their stakeholders.

Related to ethical communication, a third factor that shapes renewal is *prospective vision*. This relates to the orientation (past or future) that an organization takes following a negative event. Organizations that spend more time looking in the rearview mirror are less resilient than those that focus on moving

forward after a problematic event. Through optimism, organizations can find the opportunity within a crisis to help move toward a renewing response.

A final factor that affects organizational ability to renew is *effective organizational rhetoric*. This is the organization's ability to structure reality for stakeholders following a problematic event; to convince stakeholders to stick with the company; and to become a model to others in the industry and beyond. Because leaders have the ability to see a crisis as an opportunity, they must ensure that stakeholders see the crisis similarly. By co-creating meaning between the organization and its stakeholders, leaders can structure a reality of optimism and commitment (Ulmer et al., 2015).

Rationale and Hypotheses

Renewal studies have examined organizational responses after a crisis has occurred, including earthquakes (Sellnow, Iverson, & Sellnow, 2017), oil spills (Nelson & Reiersen, 2012), mass shootings (Wombacher, Herovic, Sellnow, & Seeger, 2017) and terrorist attacks (Veil, Sellnow, & Heald, 2011), for example. Renewal occurs after a crisis when organizational leaders understand and use values as a basis for crisis communication, take a forward-looking view after negative events, model effective rhetoric, and learn and disseminate lessons to internal and external stakeholders. Yet, several of the findings of renewal studies emphasize that the conditions for renewal are likelier based on communication practices before a crisis occurs (Ulmer et al., 2015). Coombs (2010) critiques the limited applicability of renewing discourse to organizations that meet certain preconditions. Hence, this study aims to extend discourse of renewal to the pre-crisis stage by assessing members' perceptions of their organizations' communication practices. Such an extension is warranted and valuable to business and management communication to incorporate into the crisis management cycle, and may suggest areas for the organization (leaders, members) to act more mindfully to prevent or mitigate the harms of crises (Veil, 2011).

Discourse of renewal articulates several related factors which contribute to an organization's renewal (Ulmer et al., 2015). We take this as guidance to develop the construct of "readiness for renewal" and explore its psychometric properties. The theory suggests renewal is a multifaceted construct, meaning it consists of a number of interrelated attributes (Law, Wong, & Mobley, 1998). Specifically, in contrast to unidimensional constructs, multidimensional constructs are conceptualized under an overall abstraction, which is both meaningful to theory and parsimonious. The extent to which this is so remains an empirical question because prior studies have not developed a quantitative measure of renewal. Thus, we propose the following hypothesis:

Hypothesis 1: Organizational members perceive communication practices that constitute readiness for renewal which align on multiple dimensions.

Assuming that readiness for renewal is multidimensional, it is important to evaluate the relationships among factors. That is, are the constructs correlated with one another but not so much as to remain distinct? Is readiness for renewal a higher-order construct? Under a correlated factors model, an organization illustrates readiness for renewal if it shows one or more of the dimensions, while under a higher-order model an organization should report a large amount for each of the renewal practices to score highly on the construct. Alternatively, can readiness for renewal be represented with a general factor and specific factors which contribute above and beyond it? Such a model estimates a general latent variable with more content validity than the individual facets alone, while also evaluating the unique contributions of those facets (Chen, Hayes, Carver, Laurenceau, & Zhang, 2012). Thus, we propose the following, competing hypotheses to evaluate in our studies.

Hypothesis 2a: Organizational readiness for renewal is better evaluated as a set of interrelated practices with a multifactor structure.

Hypothesis 2b: Organizational readiness for renewal is better assessed as a second-order factor underlying multiple, first-order factors.

Hypothesis 2c: Organizational readiness for renewal is better represented as a bifactor structure, with a general factor and specific factors.

Study One

The purpose of Study One was to a) generate questionnaire items based on discourse of renewal, and b) test hypotheses related to model of best fit. Although discourse of renewal addresses four main factors (Ulmer et al., 2015), we reasoned it would be appropriate to treat subdomains of *ethical communication* (values, significant choice, stakeholder relations, and prospective vision) articulated in the theory as separate factors. Hence, in Study One, we tested models with seven factors of renewal: *organizational values, significant choice, provisional communication, stakeholder relationships, organizational learning, prospective vision, and effective organizational rhetoric.*

Item Generation

To develop the initial questionnaire, we examined literature on discourse of renewal. These definitions and operationalizations provided the boundaries for writing scale items. Questions were written with the organization/department as the target for response. A total of 80 Likert-type items were developed, which included an equal number of positively and negatively worded statements. The 7-point Likert scale provides greater statistical reliability than scales with fewer response options and a wider range of variation for participants' attitudes or opinions toward an object (Alwin & Krosnick, 1991).

The item pool questionnaire was sent out to individuals who completed either an organizational communication course or crisis communication course at University of Arkansas-Little Rock and University of Arkansas for Medical Sciences, as well as communication faculty who were familiar with discourse of renewal. These individuals were appropriate because of their familiarity with crisis communication concepts. Forty-eight individuals piloted the instrument, and provided qualitative feedback that included assessments about the relevance, clarity, and comprehensiveness of items.

The pilot study revealed good internal consistency of the items which were grouped together conceptually. Positively worded items tended to have higher Cronbach α levels (α range 0.63 to 0.88) compared to negatively worded items (α range 0.30 to 0.87). We modified the questionnaire, including halving the number of questions, removing negatively worded questions because of poor inter-item correlations, adding questions to help with face validity, and improving question language (consistent use of pronouns, revising metaphorical language in questions, etc.). The modifications were intended to reduce fatigue and lower the quit rate (36 % started but did not finish), improve the reliability of the question items, and make various clarifications to improve the quality of the survey. In addition to changes on some question items, we revised instructions to specify the target organization and to direct participants to think about its responses to negative events in the last several years. The process of creating items from existing qualitative research on discourse of renewal and seeking expert feedback helped to establish content validity of the instrument (DeVellis, 2016).

Survey Construction

The questionnaire consisted of 40 Likert-type items with statements anchored by a 7-point Likert scale ranging from “very strongly disagree” to “very strongly agree”. At the request of the participating organization, participants also had a “do not know” option. Appendix A includes question items for Study One. Participants also answered several demographic questions regarding their tenure with the organization, training, department, and role in crisis management.

Readiness for renewal. The readiness for renewal questionnaire included 40 questions that address *organizational values, stakeholder relationships, significant choice, provisional communication, organizational learning, prospective vision, and effective organizational rhetoric.*

The construct of *values* was measured by respondents’ answers to 5 questions, including “My organization’s values are clearly conveyed to members”.

We operationalized *stakeholder relationships* by participants’ responses to 9 questions such as “In my organization, we treat the public as an equal partner”.

Significant choice was measured by responses indicating agreement/disagreement with 5 questions such as “When communicating with the public about a potential harm, we provide information about what can be done to protect oneself.”

Provisional communication was operationalized by responses to 4 questions such as “When a problem arises that our organization is involved in, our messages express concern for those who are affected”.

Organizational learning, the way in which organizations adapt to their environments, was measured by participants’ responses to 8 statements such as “When a problem occurs, my organization takes actions to prevent similar failures in the future”.

Prospective vision measured respondents’ perceptions of their organization’s forward- or backward-looking orientation in light of negative events. This was operationalized as their responses to 4 questions such as “When a crisis event occurs, we express a commitment to those involved to ‘bounce back.’”

Effective organizational rhetoric measured participants’ perceptions of their organization’s ability to effectively structure reality for stakeholders after a negative event with 5 questions, such as “When facing a threat, we are capable of convincing our stakeholders to stick with us through the problem.”

Research Site and Sample

Researchers obtained permission to enter the research site, a state agency located in the Southern United States. The agency is a health organization with approximately 2,800 employees, with a central office and local units distributed throughout the state. The researchers worked with the agency’s office of communications to recruit eligible participants, which included all full-time personnel at both headquarters and units throughout the state.

This study site was appropriate for a study of organizational renewal because health agencies have been characterized as high reliability organizations (HROs) (Chu, 2008). The organization’s scientific review committee approved reporting on measures for factor analysis (i.e., those to evaluate model fit).

However, the committee requested the researchers not publish not to publish descriptive statistics (mean and standard deviation) about the organization's responses because data were collected through a convenience sample (not representative of the organization overall), and because the instrument had not yet been validated.

Two requests to participate were disseminated through the organization's office of communication with an endorsement from executive leadership. These inquiries resulted in 340 participants, or about 12.4% of the agency's personnel, filling out the survey. Not all participants completed the questionnaire because they marked answers as "do not know" or left them blank. In total, this resulted in 189 fully completed questionnaires or 6.7% of the organization.

The 340 participants were in positions of program staff (n=129, 37.9% total sample), other (n=103, 30.3%), middle management (n=51, 15%), program management (n=43, 12.6%), senior management (n=9, 2.6%), and executive leadership (n=4, 1.2%). Experience with the organization included 0 to 5 years (n=101, 29.7%), 6 to 10 years (n=58, 17.1%), 11 to 15 years (n=53, 15.6%), 16 to 20 years (n=34, 10%), and over 20 years (n=92, 27.1%). The majority of respondents did not have a crisis communication role (n=208, 61.2%), while 37.9 % had roles such as crisis response (n=87, 25.6%), consequence management (n=2, 0.6%), interagency coordination (n=6, 1.8%), executive leadership (n=7, %), technical expertise or subject matter expertise (n=27, 7.9%). Three participants did not indicate their role (0.9%). The majority of participants had not received crisis communication training (Crisis Emergency Risk Communication, CERC) (n=197, 57.9%), 39.4% had (n=134), and 9 people did not indicate whether they were CERC trained. CERC (Reynolds & Seeger, 2005) is an evidence-based, communication-training program targeted to public health professionals and public information officers.

Measures

The questionnaire consisted of 40 Likert-type items with statements anchored by a 7-point Likert scale ranging from "Very Strongly Disagree" to "Very Strongly Agree". At the request of the participating organization, participants also had a "Do Not Know" option. Appendix A includes question items for Study One.

The construct of *values* was measured by respondents' answers to 5 questions, including "My organization's values are clearly conveyed to members".

We operationalized *stakeholder relationships* by participants' responses to 9 questions such as "In my organization, we treat the public as an equal partner".

Significant choice was measured by responses indicating agreement/disagreement with 5 questions such as "When communicating with the public about a potential harm, we provide information about what can be done to protect oneself."

Provisional communication was operationalized by responses to 4 questions such as "When a problem arises that our organization is involved in, our messages express concern for those who are affected".

Organizational learning, the way in which organizations adapt to their environments, was measured by participants' responses to 8 statements such as "When a problem occurs, my organization takes actions to prevent similar failures in the future".

Prospective vision measured respondents' perceptions of their organization's forward- or backward-looking orientation in light of negative events. This was operationalized as their responses to 4 questions such as "When a crisis event occurs, we express a commitment to those involved to 'bounce back.'"

Effective organizational rhetoric measured participants' perceptions of their organization's ability to effectively structure reality for stakeholders after a negative event with 5 questions, such as "When facing a threat, we are capable of convincing our stakeholders to stick with us through the problem."

Data Analysis

We employed confirmatory factor analysis (CFA), a theory-based approach that tests how well data fit hypothesized models (Morrison, 2009). CFA was appropriate because it provides stronger evidence of dimensionality compared to exploratory factor analysis (EFA) (Levine, 2005).

Lavaan, (Rosseel, 2012) a structural equation modeling package in R 3.3.2 (R Core Team, 2016), was used to test hypotheses. We used several different indices to assess how well our data aligned with the hypothesized models. We employed Full Information Maximum Likelihood (FIML) to include data from all 340 respondents rather than only those 189 with complete responses. FIML uses all available data (i.e., including participants who have missing data either from blanks or "do not know" responses), and is recommended over other methods for handling missing data such as list-wise deletion, pairwise deletion, or mean replacement (Newman, 2014).

Our analyses tested four different models. Model 1 was a single-factor solution with readiness for renewal responsible for all 40-item responses. This model was included to evaluate discriminant validity, i.e., to compare a single-factor model to multi-factor models and test hypothesis 1. Model 2 was a seven, correlated-factors solution: *values, stakeholder relationships, provisional communication, significant choice, effective organizational rhetoric, organizational learning, and prospective vision*. Model 3 consisted of the same seven factors from Model 2, with the addition of a second-order readiness for renewal factor. The difference between Model 2 and Model 3 was in the relationship of the constructs to each other. Model 2 forms readiness for renewal from its dimensions, or as an algebraic function of them (Law et al., 1998). Model 3 was a latent model, where a higher-order abstraction (readiness for renewal) leads to the dimensions. Under Model 2, an organization illustrates readiness for renewal if it shows one or more of the seven dimensions. Under Model 3, an organization should report a large amount for each of the renewal practices to score highly on the readiness for renewal construct. Model 4 was bifactor model, with items loading onto a general factor, as well as seven, uncorrelated specific latent factors named in Model 2. According to Chen et al., (2012), the bifactor model can provide more information beyond total score or individual score approaches for multifaceted constructs. Such a model estimates a general latent variable with more content validity than individual facets alone and simultaneously evaluates the unique contributions of those facets.

Results of Study One

Table 1 provides the fit indices for each of the different models, except for Model 4 which could not be computed. To determine the best fitting model of the three, we conducted a sequential chi-square test. If the test is significant, the more complex model (with fewer degrees of freedom) is a better fit. If it is not significant, the simpler model (with more degrees of freedom) is better fitting. Model 2 was statistically the best fit compared to Model 3, the higher-order model, $\Delta\chi^2 = 108.7$ ($\Delta df = 14$), $p < 0.001$.

Table 1

Study One: Confirmatory Factor Analysis Results of Readiness for Renewal

Model	Compared to	χ^2	df	χ^2/df	$\Delta\chi^2$	AIC	BIC	RMSEA [LL, UL]	CFI	TLI	SRMR
Single factor (M1)	M3	2,739.08 ^c	740	3.70	776.1 (7) ^c	30,256.91	30,716.386	0.089 [0.086, 0.093]	0.839	0.830	0.047
Four factor, oblique (M2)	M3	1,854.29 ^c	719	2.57	108.7 (14) ^c	29,414.121	29,954.003	0.068 [0.064, 0.072]	0.908	0.901	0.039
Four factor, higher order model (M3)	-	1,962.988 ^c	733	2.67		29,494.817	29,981.093	0.070 [0.067, 0.074]	0.901	0.894	0.042
Criterion		P<0.05		<5				<0.06	>0.95	>0.95	<0.08

Note: N=340. AIC=Akaike information criterion; BIC=Bayesian information criterion; RMSEA = Root Mean Square Error of Approximation; LL=lower limit for 95% confidence interval; UL=upper limit for 95% confidence interval; CFI=comparative fit index. TLI=Tucker-Lewis index; SRMR=standardized root mean square residual

a=p<0.05 b=p<0.01 c=p<0.001

Reliability information and fully standardized factor loadings for the correlated factors model are included in Table 2.

Table 2

Reliability Information and Fully Standardized Factor Loadings from the Correlated Factors Confirmatory Factor Analytic Model

Item	N	DNK	Blank	Item-Total r	V	SC	SR	PC	OL	PV	EOR
V1	332	7	1	0.72	0.79 ^c						
V2	335	3	2	0.76	0.87 ^c						
V3	325	13	2	0.6	0.72 ^c						
V4	335	4	1	0.7	0.80 ^c						
V5	330	9	1	0.71	0.78 ^c						
SC1	337	1	2	0.71		0.81 ^c					
SC2	322	17	1	0.68		0.79 ^c					
SC3	291	46	3	0.69		0.76 ^c					
SC4	302	35	3	0.77		0.77 ^c					
SC5	331	8	1	0.72		0.83 ^c					
SR1	333	7	0	0.77			0.78 ^c				
SR2	306	34	0	0.73			0.79 ^c				
SR3	307	31	2	0.79			0.84 ^c				
SR4	316	23	1	0.81			0.83 ^c				

Item	N	DNK	Blank	Item- Total r	V	SC	SR	PC	OL	PV	EOR
SR5	292	44	4	0.8			0.83 ^c				
SR6	318	19	3	0.75			0.77 ^c				
SR7	303	32	5	0.84			0.89 ^c				
SR8	301	35	4	0.81			0.87 ^c				
SR9	310	28	2	0.81			0.84 ^c				
PC1	327	12	1	0.8				0.85 ^c			
PC2	321	16	3	0.73				0.79 ^c			
PC3	323	13	4	0.8				0.88 ^c			
PC4	306	31	3	0.68				0.71 ^c			
OL1	324	16	0	0.73					0.75 ^c		
OL2	334	3	3	0.84					0.87 ^c		
OL3	311	28	1	0.83					0.87 ^c		
OL4	330	9	1	0.74					0.78 ^c		
OL5	324	12	4	0.72					0.77 ^c		
OL6	298	37	5	0.85					0.85 ^c		
OL7	319	19	2	0.85					0.88 ^c		
OL8	312	27	1	0.79					0.83 ^c		
PV1	305	33	2	0.84						0.90 ^c	
PV2	296	43	1	0.81						0.90 ^c	
PV3	322	16	2	0.83						0.91 ^c	
PV4	307	31	2	0.86						0.88 ^c	
EOR1	308	31	1	0.64							0.70 ^c
EOR2	282	50	8	0.78							0.84 ^c
EOR3	282	55	3	0.79							0.83 ^c
EOR4	303	33	4	0.87							0.91 ^c
EOR5	298	42	0	0.83							0.88 ^c

Note: a=p<0.05 b=p<0.01 c=p<0.001

To establish discriminant validity of Model 2, we computed both average variance extracted (AVE) and the hetero-trait mono-trait (HTMT) ratio of correlations of latent variables. AVE is one of the most frequently used criteria for discriminant validity, but it is susceptible to problems and is sometimes incorrectly reported (Henseler, Ringle, & Sarstedt, 2015). AVE should meet two criteria (Fornell & Larcker, 1981). First, it should exceed 0.50 for each latent construct, which it did (range= 0.623[values], to 0.80 [prospective vision]). Second, the squared correlation between pairs of constructs should be smaller than AVE for each construct, which was not the case. For HTMT, it is recommended that inter-construct correlations not exceed a threshold of 0.85 or 0.90 (Henseler, et al., 2015). Several pairs of constructs exceeded 0.90, indicating a lack of discriminant validity between them. See Table 3 for HTMT and AVE of Model 3.

Table 3

Study One: Bivariate Correlations, AVE, and Shared Variance for Correlated Factors Model

	V	SC	SR	PC	OL	PV	EOR
V	.62	.54	.72	.67	.72	.60	.67
SC	.73	.62	.81	.72	.67	.72	.64
SR	.85	.90	.68	.83	.79	.79	.77
PC	.82	.85	.91	.64	.81	.72	.76
OL	.85	.82	.89	.90	.67	.88	.88
PV	.77	.85	.89	.85	.94	.80	.88
EOR	.82	.80	.88	.87	.94	.94	.70

Note: Correlations are below the diagonal, squared correlations are above the diagonal, and AVE is in the diagonal.

To sum up, Study One revealed mixed support for H1 and H2a, but no support for H2b or H2c. Given these findings, we reviewed our items and conceptualization of a seven-factor model of readiness for renewal. We revised our models to focus on four rather than seven factors of renewal – consolidating *values*, *significant choice*, *prospective vision*, and *stakeholder relationships* into a single factor of *ethical communication*, and retaining the three other latent variables. Treating *ethical communication* as a single latent variable made sense based on discourse of renewal and because of high inter-construct correlations between these four latent factors. Although *organizational learning*, *prospective vision*, and *effective rhetoric* had high inter-correlations, we maintained these as separate constructs. In evaluating items, we determined two questions were more appropriate for *organizational learning* than *prospective vision*. Consequently, we also wrote two additional questions to better reflect *prospective vision* and to ensure at least four items per latent construct. In addition, we sought to reduce the number of questions from 40 to 21. As well, we revised the wordings on some of the questions where “stakeholder” was included across several of the questions, replacing it with synonyms such as “partners,” “collaborators,” and “constituents.” Further, instructions for the questionnaire were rewritten to focus on negative events within the last six months instead of the previous two years. Based on changes to the model and questionnaire, we collected additional data in a follow-up study (Study Two) with a different sample. Given the high correlations between factors, we concluded we would again have to include alternative models, i.e., a second-order factor and bifactor model.

Study Two

The intentions of Study Two were to a) test our refined measure on a more diverse sample of U.S. employees whose organizations had recently experienced crises, b) assess our hypothesized models of readiness for renewal, and c) examine whether organizational member characteristics and crisis type influenced perceptions of readiness for renewal. Specifically, in Study Two, we evaluated different models with four factors including *ethical communication*, *organizational learning*, *prospective vision*, and *effective organizational rhetoric* contributing to organizational readiness for renewal. We also posed an additional research question regarding membership characteristics and a hypothesis regarding crisis type. Previous research suggested member demographic characteristics covary with organizational constructs (Canary, Riforgiate, & Montoya, 2013; Gailliard, Myers, & Seibold, 2010). Ulmer et al. (2015) argued that the conditions for renewal were more likely if the triggering event that led to the crisis was accidental.

Research Question 1: How do perceptions of organizational readiness for renewal relate to member demographic characteristics (age, tenure with the organization)?

Hypothesis 3: Organizational members will perceive a higher level of readiness for renewal if their organization experienced an unintentional crisis compared with an intentional crisis.

Sample

We recruited participants for Study Two via Amazon's Mechanical Turk (MTurk). Scholars have established MTurk as a viable data source for scale development research. MTurk samples include diverse employees and have findings consistent with other sources of data (Clark, Michel, Early, & Baltes, 2014). Opportunities to participate in various tasks are available on the MTurk website. Participants were compensated \$2 for completing the survey. To be eligible to participate in the study, subjects had to be employed full-time (at least 35 hours a week) by an organization that had undergone a crisis in the previous six months.

Participants ranged in age from 19.67 years ($M=33.68$, $SD=8.93$) to 73.75. Tenure with organization spanned from 0.33 years to 50.33 years ($M=5.62$ years, $SD=4.88$). The majority of respondents was male ($n=219$, female= 157). The education breakdown of participants was as follows: 4-year degree ($n=152$), some college ($n=96$), 2-year degree ($n=51$), professional degree (39), high school graduate ($n=33$), and doctorate ($n=5$). Most of the participants were white ($n=294$), followed by Black or African American ($n=41$), Asian ($n=25$), other ($n=12$), and prefer not to disclose ($n=3$).

The organizations that participants reported working for ranged small to medium enterprises (499 or fewer employees, $n=255$) and larger establishments (500 or more, $n=121$). Respondents worked for diverse organizations including: agriculture, arts and recreation, computer and electronics manufacturing, construction, education (K-12 and colleges and universities), finance and insurance, government and public administration, health care and social assistance, hotel and food services, information services and data processing, legal services, military, publishing, real estate, retail, religious, scientific or technical services, software, telecommunications, transportation and warehousing, utilities, wholesale, and other industries. The types of crises faced reported by participants included intentional ($n=229$) as well as unintentional ($n=147$).

Measures

Readiness for renewal. The readiness for renewal questionnaire included 21 Likert-type questions (1=Very Strongly Disagree to 7=Very Strongly Agree) that address *organizational learning*, *ethical communication*, *prospective vision*, and *effective organizational rhetoric*.

Organizational learning was measured by participants' responses to 6 statements such as "When a problem occurs, my organization takes actions to prevent similar failures in the future."

Ethical communication included 6 statements regarding stakeholder relationships, significant choice, and provisional communication. For example, "On the whole, my organization has a 'reservoir of goodwill' with external stakeholders it can draw on in the event of a problem."

Prospective vision measured respondents' perceptions of their organization's forward- or backward-looking orientation in light of negative events. This was operationalized as their responses to 4 questions such as "When a crisis event occurs, we express a commitment to those involved to 'bounce back.'"

Effective organizational rhetoric measured participants' perceptions of their organization's ability to structure reality for stakeholders after a negative event based on 5 Likert-type questions. For example, "When facing a threat, we are capable of convincing our stakeholders to stick with us through the problem." Appendix B includes renewal question items for Study Two.

Data Analysis

Prior to conducting confirmatory factor analyses, we screened the initial data set for incorrect responses to an attention check, and for univariate and multivariate normality. Three participants failed the attention check question, and 9 cases were deleted because scores deviated "in a substantially atypical manner" from multivariate normality (DeSimone et al., p. 172), resulting in a sample size of 376. We also inspected the inter-item correlation matrix and removed two questionnaire items (EOR4 and OL6) that had correlations that were higher with variables from than those within their respective construct.

In our analysis, we tested the same hypotheses as in Study One, and applied maximum likelihood (ML) estimation, which is robust against violations of the assumption of multivariate normality (Barbour, Jacocks, & Wesner, 2013). Following our approach from Study One, our analysis tested four different models. Model 1 was a single-factor solution with readiness for renewal responsible for all 19 items. This model was included to provide support for discriminant validity. Model 2 was a four-factor solution represented by *ethical communication*, *effective organizational rhetoric*, *organizational learning*, and *prospective vision*. Model 3 included the same factors as Model 2, with a second-order factor representing readiness for renewal. Under Model 2, a respondent's organization illustrates readiness for renewal if it shows one or more of the four dimensions. Under Model 3, a respondent's organization should report a large amount for each renewal practices to score highly on the readiness for renewal construct. Model 4 was a bifactor model, with the same four factors as Model 2, and all 19 indicators loading onto a general factor.

Results of Study Two

Table 4

Study Two: Confirmatory Factor Analysis Results of Readiness for Renewal

Model	Compared to	χ^2	df	χ^2/df	$\Delta\chi^2$	AIC	BIC	RMSEA [LL, UL]	CFI	TLI	SRMR
Single factor (M1)	M3	565.22 ^c	152	3.71	298.07 (4) ^c	20,502.63	20,651.95	0.085 [0.078,0.093] pclose=0.000	0.91	0.89	0.044
Four factor, oblique (M2)	M3	260.57 ^c	146	1.78	6.58 (2) ^a	20,209.98	20,382.88	0.046 [0.037, 0.055] Pclose=0.779	0.975	0.971	0.031

Model	Compared to	χ^2	df	χ^2/df	$\Delta\chi^2$	AIC	BIC	RMSEA [LL, UL]	CFI	TLI	SRMR
Four factor, higher order model (M3)	-	267.15 ^c	148	1.80		20,212.56	20,377.61	0.046[0.037, 0.055] Pclose=0.748	0.974	0.970	0.032
Bifactor, general factor and four orthogonal factors (M4)	M3	235.54 ^c	133	1.77	31.61 (15) ^b	20,210.95	20,434.94	0.045 [0.036,0.055] Pclose=0.789	0.978	0.971	0.028
Criterion		P<0.05		<5				<0.06	>0.95	>0.95	<0.08

Note: N=376. AIC=Akaike information criterion; BIC=Bayesian information criterion; RMSEA = Root Mean Square Error of Approximation; LL=lower limit for 95% confidence interval; UL=upper limit for 95% confidence interval; CFI=comparative fit index. TLI=Tucker-Lewis index; SRMR=standardized root mean square residual
a=p<0.05 b=p<0.01 c=p<0.001

Table 4 provides the fit indices for each of the different models. To determine the best-fitting model, we conducted a sequential chi-square test, with the higher-order model (Model 3) as the comparison. Model 2 ($\Delta\chi^2 = 6.58$, $\Delta df = 2$, $p < 0.05$) and the Model 4 ($\Delta\chi^2 = 31.61$, $\Delta df = 15$, $p < 0.01$) were better fits. The correlated factors and bifactor model cannot be compared directly with the sequential chi-square test (Credé & Harms, 2015). However, other model selection indices indicated that Model 3 was the more parsimonious model.

To aid in model evaluation, we computed both average variance extracted (AVE) of the latent variables, and the hetero-trait mono-trait (HTMT) ratio of correlations for Model 3. HTMT was below 0.90 for all factors. AVE was above 0.50, but squared correlations exceeded AVE for some factors. Given the mixed findings on discriminant validity, and because bifactor models allow to model common and unique variance, we support the use of the bifactor model (Model 4).

Table 5

Study Two: Bivariate Correlations, AVE, and Shared Variance for Correlated Factors Model

	EC	PV	OL	EOR
EC	.59	.77	.77	.64
PV	.88	.63	.76	.74
OL	.88	.87	.55	.74
EOR	.80	.86	.86	.60

Correlations are below the diagonal, squared correlations are above the diagonal, and AVE is in the diagonal.

Descriptive statistics, reliability information, and fully standardized factor loadings for the bifactor model are included in Table 6. We estimated reliability for Model 4, including omega total (ω_t) and omega

hierarchical (ω) for the overall scale and subscales, which are appropriate for multidimensional data (Cho & Kim, 2015). Overall scale reliability was 0.96; hierarchical omega for the general construct was 0.92. Although the subscales overall were reliable, most of the variance was explained by the general construct. The general construct also accounted for 84.2% of explained common variance (ECV). Given this situation, it is best to rely on the total score rather than the scores for each of the subscales (DeMars, 2013). Figure 1 shows the bifactor confirmatory factor analysis model with standardized loadings.

Table 6

Study Two: Descriptive Statistics, Reliability Information, and Fully Standardized Factor Loadings from the Bifactor Confirmatory Factor Analytic Model

Item	M	SD	Skewness	Kurtosis	Item-total correlation	Global Factor	Effective organizational rhetoric	Ethical communication	Organizational Learning	Prospective Vision
EOR1	4.3	1.5	-0.20	-0.33	0.72	0.69 ^c	0.54 ^c			
EOR2	4.5	1.5	-0.24	-0.35	0.79	0.77 ^c	0.42 ^c			
EOR3	4.8	1.2	-0.26	-0.23	0.72	0.71 ^c	0.20 ^c			
EOR5	4.7	1.3	-0.34	0.03	0.61	0.60 ^c	0.20 ^b			
EC1	4.9	1.3	-0.48	-0.12	0.77	0.75 ^c		0.35 ^c		
EC2	5.5	1.4	-0.59	-0.25	0.78	0.75 ^c		0.38 ^c		
EC3	4.6	1.3	-0.20	-0.38	0.67	0.65 ^c		0.26 ^c		
EC4	4.8	1.4	-0.43	-0.32	0.69	0.66 ^c		0.24 ^b		
EC5	5.5	1.3	-0.48	-0.19	0.7	0.68 ^c		0.28 ^c		
EC6	5.2	1.3	-0.46	-0.26	0.77	0.75 ^c		0.29 ^c		
OL1	5.3	1.3	-0.61	0.21	0.63	0.63 ^c			0.23 ^b	
OL2	5.2	1.4	-0.66	-0.08	0.65	0.65 ^c			0.17 ^a	
OL3	5.1	1.4	-0.47	-0.25	0.73	0.73 ^c			0.24 ^b	
OL4	5.3	1.4	-0.60	-0.18	0.74	0.73 ^c			0.39 ^c	
OL5	4.8	1.4	-0.23	-0.60	0.76	0.76 ^c			0.19 ^b	
PV1	5.2	1.3	-0.51	-0.18	0.77	0.77 ^c				0.26 ^c
PV2	5.1	1.3	-0.44	-0.25	0.78	0.77 ^c				0.40 ^c
PV3	5.3	1.4	-0.84	0.48	0.79	0.79 ^c				0.24 ^c

Item	M	SD	Skewness	Kurtosis	Item-total correlation	Global Factor	Effective organizational rhetoric	Ethical communication	Organizational Learning	Prospective Vision
PV4	4.7	1.3	-0.15	-0.33	0.66	0.65 ^c				0.18 ^b
Common Variance						84.2%	5.3%	4.8%	2.9%	2.7%
Omega total ω_t						0.96	0.87	0.90	0.86	0.87
Omega hierarchical ω_h						0.92	0.18	0.14	0.09	0.10
Manifest scores for the total						93.52 (19.11)				

Note: a=p<0.05 b=p<0.01 c=p<0.001

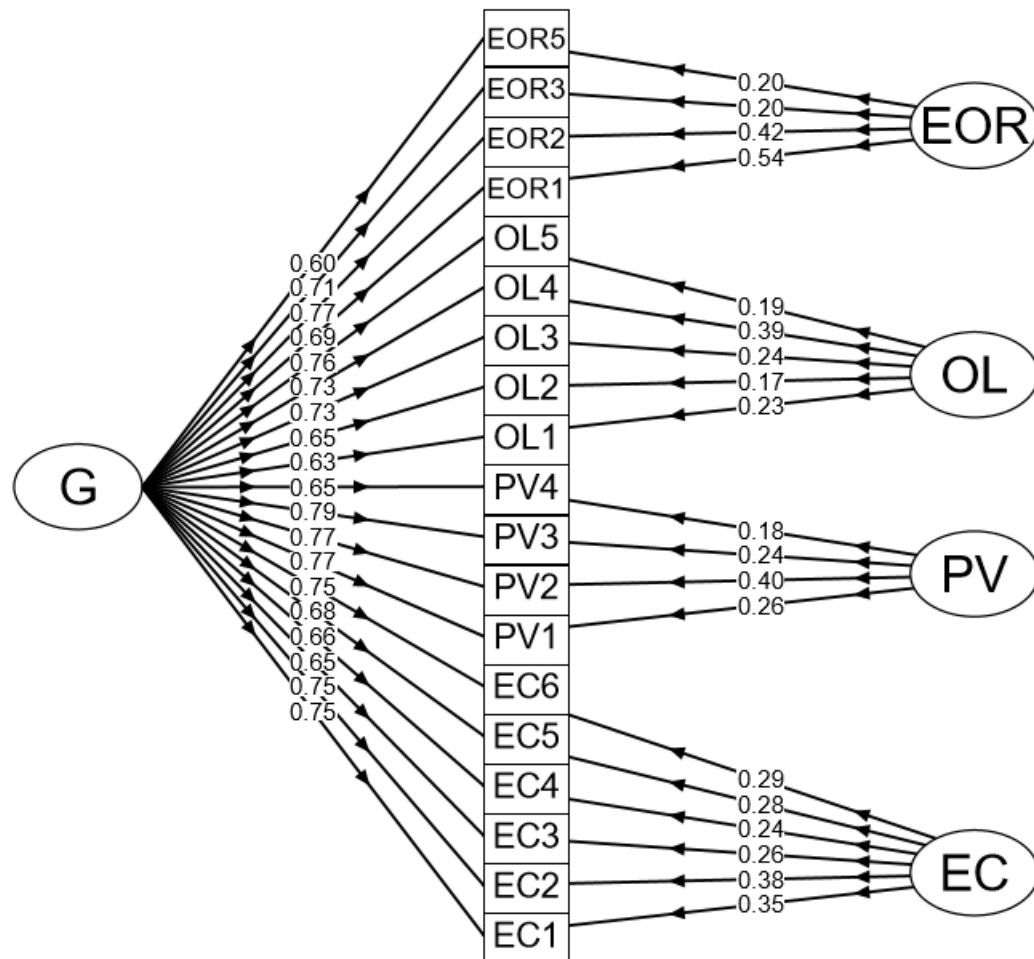


Figure 1. Bifactor model of readiness for renewal.

To answer RQ 1 and H3, the relationships between total renewal scores and demographic characteristics were evaluated using the Mann-Whitney U-test (type of crisis) and Spearman's rho correlation coefficients (age, tenure with organization). Nonparametric methods were applied because of a slight deviation of the distribution of total scores from normality (skewness= - 0.32, kurtosis= -0.23) according to the Shapiro-Wilk test ($W=0.989$, $p<0.01$). The total scores had a theoretical range from 19 to 133, such that a higher score indicated a greater level of perceived organizational readiness for renewal. In response to RQ1, total scores were independent of participant age ($r=0.03$, $p=0.53$, two-tailed), but were slightly, positively associated with participants' tenure with the organization ($r=0.10$, $p<0.05$, two-tailed). Regarding H3, participants whose organizations experienced an unintentional crisis ($M=101.8$, $SD=17.63$) perceived higher levels of readiness for renewal ($U=10,106$, $p<0.001$, one-tailed) compared with those who experienced intentional crises ($M=88.66$, $SD=18.46$). An effect size was calculated and indicated a medium effect for intentionality of the crisis ($r=0.34$).

Discussion and Implications

This paper centered on the development of questionnaire item pool, and two subsequent studies investigating the factor structure of organizational readiness for renewal. Readiness for renewal refers to the communication practices that organizations regularly engage in to provide a buffer against the negative impacts of crises. The questionnaire development in this study established content for subsequent studies. Study One collected data from a single high reliability organization (HRO). Our models indicated some misspecification between theory and data, and lack of discriminant validity. The high inter-construct correlations (over 0.90) further supported the need to investigate readiness for renewal as a second-order factor structure or bifactor structure. Study Two sought to correct some of these issues from the first investigation.

In Study Two, our findings supported a bifactor structure, where items were part of an overarching factor that represented readiness for renewal, and specific factors that represented ethical communication, organizational learning, effective organizational rhetoric, and prospective vision. Item analysis of the instrument indicated that each item contributed significantly to the general factor; as well, each related significantly to its designated specific factor. Reliability estimates for the bifactor solution revealed that the general construct of renewal had high internal consistency. However, accounting for the influence of general construct, the contributions of each subscale were not high enough to support individual interpretation of the subscales (Reise, Morizot, & Hays, 2007). In turn, this suggests calculating and interpreting the total score only. Data regarding variances illustrated a similar pattern, with the general construct accounting for most of the explained common variance (82.4%) and the remaining constructs accounting for only 2.7-5.3% of common variance.

The implications for discourse of renewal theory are important to address. The alternate models tested in both studies provide different theoretical interpretations. The individual factors model (H2a) suggests an expression of any of the dimensions (e.g., ethical communication, organizational learning, prospective vision, and effective organizational rhetoric) represents readiness for renewal. The bifactor model (H2c) illustrates general and specific contributions to variance, which has advantages over interpreting only subscales or total scale scores. In this case, the interpretation of a total score was supported. Essentially, this interpretation means that to demonstrate readiness for renewal one would have to score highly on all facets rather than any one of the facets. In light of discourse of renewal theory, this interpretation makes sense. Successful examples of renewal are those where an organization practiced all of the facets of the theory (Veil et al., 2011), while unsuccessful cases are those where one or more are attempted or other conditions were not met due to crisis or organization type. Cotton III, Veil, and Iannarino (2015) found that after the Fukushima Daiichi nuclear power plant disaster, Tokyo Electric Power Company (TEPCO) attempted major tenants of renewal (prospective vision, organizational learning) but did not because of its unethical communication practices and organizational rhetoric which failed to convince stakeholders about the type of crisis (tsunami and earthquake and not the company's shortcomings).

This paper also addresses calls for thought leadership on crisis communication by Ulmer (2012) to export crisis communication knowledge to organizations and public officials and also test normative theories of crisis communication in real time. This questionnaire could be deployed quickly during an actual crisis or following a crisis. In turn, researchers could use the questionnaire to inform organizational crisis planning. Importantly, the findings from this survey may provide a perception check to these organizations, and suggest areas for improvement. Our shortened (from 40 to 19 questions) questionnaire could be used with other measures of pre-crisis assessment (for example: Cloudman &

Hallahan, 2006; Pauchant & Mitroff, 1992) for business and managerial communication researchers who are interested in incorporating readiness for renewal into their work.

Limitations and Future Directions

Limitations regarding our study should be addressed. Study One was limited to a specific organization, and the response rate for this study was low for the organization overall. Single organizations may have idiosyncratic practices which affect interpretation of results beyond the entity. Moreover, because of the low response rate, the findings are not representative of the organization as a whole. As noted earlier, because of a “do not know” option, our study had a large amount of missing data. For example, some of our questions may have been too difficult for some of our respondents to answer because they may not be aware of all of their organization’s communication practices. Nevertheless, this single sample study helped to refine the questionnaire and redefine our model of renewal.

Study Two’s sample was based on convenience sampling, and was not representative of the U.S. population of organizations or the U.S. population. Further, participation was restricted to individuals employed by an organization which had experienced a crisis within the previous six months. Both studies were not longitudinal, and perceptions of readiness for renewal may vary over time. Hence, a longitudinal study may more accurately assess perceptions of organizational readiness for renewal.

Our studies suggest further areas of research on crisis readiness. Research should continue to investigate the psychometric properties of readiness for renewal. Because the general factor dominated item scores, in Study Two we interpreted the instrument only with the total score. The bifactor solution will need replication in future research. Should the bifactor model hold up in subsequent studies, the model presents an opportunity to explore the common and unique impact of on variables such as employee satisfaction, turnover intentions, and long-term commitment (DuFrene & Lehman, 2014). In addition, future studies should conduct longitudinal research on readiness for renewal, and test some of the theoretical propositions of discourse of renewal including the type of organization (publicly traded, privately held), previous crisis experience and perceptions of responsibility (if applicable). At the same time, research on renewal should extend beyond the United States (c.f., Cotton III et al., 2015; Sellnow et al., 2017; Ulmer & Pyle, 2016) and examine international organizations’ readiness for renewal. The questionnaire could also be adapted to focus on communities’ readiness for renewal (c.f., Littlefield, Reiersen, Cowden, Stowman, & Feather, 2009; Reiersen & Littlefield; Veil et al., 2011).

Conclusion

The purpose of this study was to develop a measure to assess “readiness for renewal,” which is the organization’s communication practices that provide a protective buffer in the event of high consequence, low probability negative events such as crises. This paper’s contributions are theoretical, methodological, and practical. Theoretically, this paper extends renewal to the pre-crisis stage. Methodologically, this paper explores the psychometric properties of readiness for renewal. Practically, this paper provides a tool that organizations that are concerned with preparing for crisis can use to check perceptions, to continue doing what works and to take corrective action where there are growth opportunities.

References

- Avery, E. J., Graham, M., & Park, S. (2016). Planning makes (closer to) perfect: Exploring United States' local government officials' evaluations of crisis management. *Journal of Contingencies and Crisis Management*, 24(2), 73-81. doi:10.1111/1468-5973.12109
- Alwin, D.F., & Krosnick, J.A. (1991). The reliability of survey attitude measurement: The influence of question and respondent attributes. *Sociological Methods & Research*, 20(1), 139-181. doi:10.1177/0049124191020001005
- Bamber, M., & Parry, S. (2016). A study of the employment of denial during a complex and unstable crisis involving multiple actors. *International Journal of Business Communication*, 53(3), 343-366.
- Barbour, J. B., Jacocks, C. W., & Wesner, K. J. (2013). The message design logics of organizational change. *Communication Monographs*, 80(3), 354-378. doi:10.1080/03637751.2013.788251
- Benoit, W. L., & Czerwinski, A. (1997). A critical analysis of USAir's image repair discourse. *Business Communication Quarterly*, 60(3), 38-57. doi:10.1177/108056999706000304
- Brühl, R., & Kury, M. (2016). Rhetorical tactics to influence responsibility judgments: Account giving in banks presidents' letters during the financial market crisis. *International Journal of Business Communication*, 1-27. doi:10.1177/2329488415627356
- Canary, H. E., Riforgiate, S. E., & Montoya, Y. J. (2013). The policy communication index: A theoretically based measure of organizational policy communication practices. *Management Communication Quarterly*, 27(4), 471-502. doi:10.1177/0893318913494116
- Chen, F. F., Hayes, A., Carver, C. S., Laurenceau, J. P., & Zhang, Z. (2012). Modeling general and specific variance in multifaceted constructs: A comparison of the bifactor model to other approaches. *Journal of Personality*, 80(1), 219-251. doi: 10.1111/j.1467-6494.2011.00739.x
- Cho, E., & Kim, S. (2015). Cronbach's coefficient alpha: Well known but poorly understood. *Organizational Research Methods*, 18(2), 207-230. doi:10.1177/1094428114555994
- Chu, P.W.L. (2008). Using mixed methods to identify high reliability organization measures for local health department disaster preparedness. Unpublished doctoral dissertation.
- Coombs, W. T. (2004). Impact of past crises on current crisis communication: Insights from situational crisis communication theory. *The Journal of Business Communication*, 41(3), 265-289. doi:10.1177/0021943604265607
- Coombs, W.T. (2010). Parameters for crisis communication. In W. T. Coombs & S. J. Holladay (eds.), *Handbook of crisis communication* (pp. 17-53). Malden, MA: Blackwell Publishing.
- Cowden, K., & Sellnow, T. L. (2002). Issues advertising as crisis communication: Northwest Airlines' use of image restoration strategies during the 1998 pilot's strike. *The Journal of Business Communication*, 39(2), 193-219. doi:10.1177/002194360203900203
- Clark, M. A., Michel, J. S., Early, R. J., & Baltes, B. B. (2014). Strategies for coping with work stressors and family stressors: Scale development and validation. *Journal of Business and Psychology*, 29(4), 617-638. doi:10.1007/s10869-014-9356-7
- Cloudman, R., & Hallahan, K. (2006). Crisis communications preparedness among US organizations: Activities and assessments by public relations practitioners. *Public Relations Review*, 32(4), 367-376. doi:10.1016/j.pubrev.2006.09.005
- Cotton III, A. J., Veil, S. R., & Iannarino, N. T. (2015). Contaminated communication: TEPCO and organizational renewal at the Fukushima Daiichi nuclear power plant. *Communication Studies*, 66(1), 27-44. doi:10.1080/10510974.2013.811427
- Dean, D. H. (2004). Consumer reaction to negative publicity: Effects of corporate reputation, response, and responsibility for a crisis event. *The Journal of Business Communication*, 41(2), 192-211. doi: 10.1177/0021943603261748

- DeMars, C. E. (2013). A tutorial on interpreting bifactor model scores. *International journal of testing*, 13(4), 354-378. doi:10.1080/15305058.2013.799067
- DeSimone, J. A., Harms, P. D., & DeSimone, A. J. (2015). Best practice recommendations for data screening. *Journal of Organizational Behavior*, 36(2), 171-181. doi:10.1002/job.1962
- DeVellis, R. F. (2016). *Scale development: Theory and applications*. Thousand Oaks, CA: Sage Publications, Inc.
- DuFrene, D. D., & Lehman, C. M. (2014). Navigating change: Employee communication in times of instability. *Business and Professional Communication Quarterly*, 77(4), 443-452. doi:10.1177/2329490614544736
- Erickson, S. L., Weber, M., & Segovia, J. (2011). Using communication theory to analyze corporate reporting strategies. *The Journal of Business Communication*, 48(2), 207-223. doi:10.1177/0021943611399728
- Fatima Oliveira, M. D. (2013). Multicultural environments and their challenges to crisis communication. *The Journal of Business Communication*, 50(3), 253-277. doi: 10.1177/0021943613487070
- Gailliard, B. M., Myers, K. K., & Seibold, D. R. (2010). Organizational assimilation: A multidimensional reconceptualization and measure. *Management Communication Quarterly*, 24(4), 552-578. doi:10.1177/0893318910374933
- Hale, J. E., Dulek, R. E., & Hale, D. P. (2005). Crisis response communication challenges: Building theory from qualitative data. *The Journal of Business Communication*, 42(2), 112-134. doi:10.1177/0021943605274751
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. doi:10.1007/s11747-014-0403-8
- Jamal, J., & Abu Bakar, H. (2015). The mediating role of charismatic leadership communication in a crisis: A Malaysian example. *International Journal of Business Communication*, 54(4), 369-393. doi:10.1177/2329488415572782
- Johansson, C., & Nord, L. (2017). The simple truth: Ambiguity works. Discursive strategies by Swedish public authorities during the 2008 financial crisis. *International Journal of Business Communication*, 1-17. doi:10.1177/2329488417710439.
- Law, K. S., Wong, C. S., & Mobley, W. M. (1998). Toward a taxonomy of multidimensional constructs. *Academy of management review*, 23(4), 741-755. doi: 10.5465/AMR.1998.1255636
- Lee, J., Woeste, J. H., & Heath, R. L. (2007). Getting ready for crises: Strategic excellence. *Public Relations Review*, 33(3), 334-336. doi: 10.1016/j.pubrev.2007.05.014
- Levine, T. R. (2005). Confirmatory factor analysis and scale validation in communication research. *Communication Research Reports*, 22(4), 335-338. doi: 10.1080/00036810500317730
- Littlefield, R. S., Reiersen, J., Cowden, K., Stowman, S., & Feather, C. L. (2009). A case study of the Red Lake, Minnesota, school shooting: Intercultural learning in the renewal process. *Communication, Culture & Critique*, 2(3), 361-383. doi:10.1111/j.1753-9137.2009.01043.x
- Mazzei, A., & Ravazzani, S. (2015). Internal crisis communication strategies to protect trust relationships: A study of Italian companies. *International Journal of Business Communication*, 52(3), 319-337. doi:10.1177/2329488414525447
- Morrison, J.T. (2009). Evaluating factor analysis decisions for scale design in communication research. *Communication Methods and Measures*, 3(4), 195-215. doi:10.1080/19312450903378917
- Nelson, S. J., & Reiersen, J. L. Following the Deepwater Horizon oil rig explosion and spill. *Journal of the Communication, Speech & Theatre Association of North Dakota*, 25, 37-52. Retrieved from http://www.cstand.org/UserFiles/File/Journal/JCSTAND_25.pdf#page=23
- Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods*, 17(4), 372-411. doi:10.1177/1094428114548590

- Nilsen, T. R. (1974). *Ethics of speech communication* (2nd ed.). Indianapolis, IN: Bobbs-Merrill.
- Ortiz, L. A., Region-Sebest, M., & MacDermott, C. (2016). Employer perceptions of oral communication competencies most valued in new hires as a factor in company success. *Business and Professional Communication Quarterly*, 79(3), 317-330. doi:10.1177/2329490615624108
- Patel, A., & Reinsch, L. (2003). Companies can apologize: Corporate apologies and legal liability. *Business Communication Quarterly*, 66(1), 9-25. doi:10.1177/108056990306600103
- Pauchant, T. C., & Mitroff, I. I. (1992). *Transforming the crisis-prone organization: Preventing individual, organizational, and environmental tragedies*. San Francisco: Jossey-Bass.
- R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from <https://www.r-project.org/>
- Reiersen, J. L., & Littlefield, R. S. (2012). History, healing, and hope: Reconceptualizing crisis renewal theory by developing a model for marginalized communities. *Review of European Studies*, 4(4), 29. doi:10.5539/res.v4n4p29
- Reise, S. P., Morizot, J., & Hays, R. D. (2007). The role of the bifactor model in resolving dimensionality issues in health outcomes measures. *Quality of Life Research*, 16(1), 19-31. doi:10.1007/s11136-007-9183-7
- Reynolds, B., & Seeger, M.W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication*, 10(1), 43-55. doi:10.1080/10810730590904571
- Rosseel, Y. (2012). Lavaan: An R package for structural equation model. *Journal of Statistical Software*, 48(2). Retrieved from <https://www.jstatsoft.org/article/view/v048i02>
- Schwarz, A., & Pforr, F. (2011). The crisis communication preparedness of nonprofit organizations: The case of German interest groups. *Public Relations Review*, 37(1), 68-70. doi: 10.1016/j.pubrev.2010.10.002
- Seeger, M. W. (2006). Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research*, 34(3), 232-244. doi:10.1080/00909880600769944
- Seeger, M., & Sellnow, T. L. (2016). *Narratives of crisis: Telling stories of ruin and renewal*. Palo Alto, CA: Stanford University Press.
- Sellnow, D. D., Iverson, J., & Sellnow, T. L. (2017). The evolution of the operational earthquake forecasting community of practice: the L'Aquila communication crisis as a triggering event for organizational renewal. *Journal of Applied Communication Research*, 1-19. doi:10.1080/00909882.2017.1288295
- Taleb, N. N. (2010). *The black swan: The impact of the highly improbable*. Random House.
- Ulmer, R. R. (2012). Increasing the impact of thought leadership in crisis communication. *Management Communication Quarterly*, 26(4), 523-542. doi:10.1177/0893318912461907
- Ulmer, R. R., & Pyle, A. S. (2016). International organizational crisis communication. In A. Schwarz, M.W. Seeger, and C. Auer, *The Handbook of International Crisis Communication Research* (pp. 108-118). Malden, MA: John Wiley & Sons, Inc.
- Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2015). *Effective crisis communication: Moving from crisis to opportunity*. Thousand Oaks, CA: Sage Publications.
- Veil, S. R. (2011). Mindful learning in crisis management. *Journal of Business Communication*, 48(2), 116-147. doi: 10.1177/0021943610382294
- Veil, S. R., Sellnow, T. L., & Heald, M. (2011). Memorializing crisis: The Oklahoma City national memorial as renewal discourse. *Journal of Applied Communication Research*, 39(2), 164-183. doi:10.1080/00909882.2011.557390
- Venette, S. J., Sellnow, T. L., & Lang, P. A. (2003). Metanarration's role in restructuring perceptions of crisis: NHTSA's failure in the Ford-Firestone crisis. *The Journal of Business Communication* (1973), 40(3), 219-236. doi:10.1177/002194360304000303

- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with non-normal variables: Problems and remedies. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56-75). Thousand Oaks, CA: Sage.
- Wombacher, K., Herovic, E., Sellnow, T. L., & Seeger, M. W. (2017). The complexities of place in crisis renewal discourse: A case study of the Sandy Hook Elementary School shooting. *Journal of Contingencies and Crisis Management*, 1-9. doi: 10.1111/1468-5973.12186

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Appendix A: Study One: Questionnaire Items

Item
V1. When communicating with the public, members of my organization use our core values to respond.
V2. My organization's values are clearly conveyed to our members.
V3. In my organization, employees can name our guiding values.
V4. In my organization, we routinely discuss what we value.
V5. In general, people in my organization live by our values.
SC1. When communicating with the public about a potential harm, we provide information about what can be done to protect oneself.
SC2. When we do not have all of the facts at hand, our messaging acknowledges the uncertain nature of a situation.
SC3. We reach out to stakeholders immediately after a negative event, even when we do not have information readily available.
SC4. We have a process in place that helps to resolve competing values about what information to share.
SC5. Our communication with the public focuses on the facts, rather than emotional appeals.
SR1. In my organization, we treat the public as an equal partner.
SR2. Communication with our stakeholders is a two-way street.
SR3. When one of our stakeholders raises a concern about a potential threat, we take that seriously.
SR4. We actively solicit concerns and questions from the public.
SR5. We touch base with our stakeholders, even when we lack new information to share.
SR6. My organization engages marginalized or underserved populations effectively.
SR7. On the whole, my organization has a "reservoir of goodwill" with external stakeholders it can draw on in the event of a problem.
SR8. My organization cares about repairing harm done to a stakeholder relationship following a negative event.
SR9. In the face of a problematic event, my organization adapts our messages to meet the needs of diverse external groups.

PC1. When a problem arises that our organization is involved in, our messages express concern for those who are affected.

PC2. When we communicate about a serious issue, we speak from our values, rather than a carefully planned script.

PC3. We speak earnestly about the challenges ahead if a problem occurs.

PC4. In a negative situation, we are more concerned about helping our stakeholders than protecting our reputation.

OL1. In my organization, we embrace failure as an opportunity to learn.

OL2. When a problem occurs, my organization takes actions to prevent similar failures in the future.

OL3. We put steps in place to avoid similar issues when another organization confronts a negative event.

OL4. My organization provides opportunities for people to report problems.

OL5. Retention of knowledge is a priority in my organization.

OL6. My organization is capable of scanning the environment to heed warning signals.

OL7. My organization sees the big picture when it comes to problems.

OL8. My organization adapts when traditional routines constrain our actions.

PV1. After a negative event, my organization is forward-looking in our communication with stakeholders.

PV2. My organization shares the lessons learned with our stakeholders following a negative event.

PV3. After a problem, my organization reflects on the steps to prevent it again.

PV4. When a crisis event occurs, we express a commitment to those involved to “bounce back.”

EOR1. Our communication about a negative event usually expresses a silver lining.

EOR2. We are capable of convincing our stakeholders to stick with us through a problematic event.

EOR3. Generally, we are effective at getting our stakeholders to see problems in a similar light.

EOR4. In the event of a problem, our communication is a model for organizations in our field and beyond to follow.

EOR5. We are seen as a model in our industry for resolving problems.

Appendix B: Study Two: Questionnaire Items

Item
EOR1. We are seen as a model in our industry for resolving problems.
EOR2. In the event of a problem, our communication is a model for organizations in our field and beyond to follow.
EOR3. Generally, we are effective at getting our stakeholders to see problems in a similar light.
EOR4. We are capable of convincing our collaborators to stick with us through a problematic event. *
EOR5. Our communication about a negative event usually expresses a silver lining.
EC1. In general, people in my organization live by our values.
EC2. My organization’s values are clearly conveyed to our members.
EC3. On the whole, my organization has a “reservoir of goodwill” with external stakeholders it can draw on in the event of a problem.
EC4. We have a process in place that helps to resolve competing values about what information to share.
EC5. When communicating with the public about a potential harm, we provide information about what can be done to protect oneself.
EC6. When a problem arises that our organization is involved in, our messages express concern for those who are affected.
OL1. Retention of knowledge is a priority in my organization.
OL2. My organization provides opportunities for people to report problems.
OL3. We put steps in place to avoid similar issues when another organization confronts a negative event.
OL4. After a problem, my organization reflects on the steps to prevent it again.
OL5. My organization shares the lessons learned with our constituents following a negative event.

OL6. In my organization, we embrace failure as an opportunity to learn. *

PV1. When a crisis event occurs, we express a commitment to those involved to “bounce back.”

PV2. After a negative event, my organization is forward-looking in our communication with our partners.

PV3. Throughout a crisis event, my organization remains hopeful.

PV4. My organization views crises as turning points that have the potential for future positive outcomes.

Note: *Indicates removed from the CFA analyses