

Crisis Communication in Context: History and Publication Trends

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This study aims to describe the development of crisis communication as a subfield of Communication Studies, through an analysis of data taken from journal publications. By tracing the origins of crisis communication, this study identifies some of the primary forces that have influenced its development. Next, the results of an analysis of crisis communication articles drawn from twelve periodicals over nineteen years within the larger communication discipline are offered. The results suggest that Journal of Applied Communication Research has been the most common outlet for this subdiscipline, human subjects data accounts for less than half of the published research, and that crisis communication articles are often prominently featured in mainstream Communication journals. An authorship analysis suggests leading scholars in the subdiscipline, and potential centers of excellence at Wayne State University, Michigan State, and the University of Central Florida.

Keywords: Crisis communication, Risk Communication, Citation Analysis, Pedagogy

Academic disciplines are constituted around particular objects of research and fields of practice. As such, disciplines have a body of accumulated specialist knowledge, including theories and concepts, use common terms and methods, and have an institutional manifestation often through an academic curriculum (Krishnan, 2009). Crisis communication is a relatively new discipline with especially significant theoretical and practical implications. Although by definition, disciplines are somewhat stable, they tend to evolve and expand over time in response to a variety of factors. The interests of researchers, funding opportunities, new methods, paradigms, and the emergence of new or visible issues and problems are all contributing factors. This evolutionary process often begins with the publication of a few articles, which prompts broader interest and new questions, manifesting in the development of subfields and usually reflected in journal publications. Consistent with our understanding of paradigmatic shifts (see Kuhn, 1962), the transition from “normal science” to “extraordinary research” brings exploratory research and new discoveries, often by clusters of scholars working in the same research domain or even the same institution. By examining these critical moments, the history of a subfield can be evaluated, and speculation offered concerning its future.

The purpose of this study is to trace the development of crisis communication as a subfield of Communication, through an analysis of journal publications. Rather than provide a comprehensive review of crisis communication theory and research, we focus on trends leading to the origin of the crisis communication field and identify some of the primary forces

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that have influenced its development. Next, the results of an analysis of crisis communication articles from the larger Communication discipline are outlined, specifically examining methods, theory, authors and the journals that publish crisis research. We believe this data may be useful for readers of *JACA* in documenting publication trends in the subfield and in making strategic planning arguments related to crisis and risk research, and is consistent with a history of published citation analyses and “research about research” in the journal.

The Origins of the Field

From a praxis standpoint, it could be argued that crisis communication emerged much earlier with the development of the profession of public relations and by the 1950s was established as an area of public relation practice. Ivy Lee, often described as one of the founders of public relations, got his start managing corporate responses to transportation accidents. In fact, Lee authored the first corporate press release in 1906 in response to a Pennsylvania Railroad disaster. A train derailed from a bridge in Atlantic City, causing more than 50 deaths and Lee was responsible for managing both the organization’s public response and interactions with the media. Lee went on to work for several railroad companies and oil and gas firms, managing issues and responding to crises, including unionizing efforts (Hallahan, 2012; Hiebert, 1966). Lee’s approach involved openness and transparency, a dramatic change in direction from the established “fraud, hoax, distortion, and stunts to factual information, understanding and sound policies” (Hiebert, 1966, p. 9). Other early practitioners of public relations, such as Edward Bernays and Arthur Page, also focused on crisis communication as part of larger efforts in issue and reputational management. By the 1950s, crisis communication was a recognized and specialized function of public relations (Coombs, 2010).

Early research and practice in crisis communication were informed by anecdotal insights, “war stories,” and to a lesser degree, case studies (Coombs, 2010, p. 23). Although these accounts were largely consistent regarding the principles of effective crisis communication, they were neither systematic nor informed by theory, and failed to constitute a coherent body of research literature. This began to change in the 1980s, however, with the publication of more systematic case studies and the application of rhetorical theory to the problem of crisis communication. Moreover, scholarship examining facework and apologia from scholars such as Erving Goffman (1955) and Ware and Linkugel (1973) became more widely cited. The frameworks of both face maintenance and apologia subsequently influenced future crisis research, as evident with Situational Crisis Communication Theory and Image Repair/Restoration Theory (Benoit, 1995).

Several notable case studies were published around the 1980s, including Erikson’s (1976) examination of the Buffalo Creek disaster, Fink’s (1986) analysis of the Three Mile Island Disaster, Seeger’s (1986) analysis of the Challenger Disaster, and analysis of the Tylenol poisoning and subsequent response (Benson, 1988; Benoit & Lindsey, 1987). Around the same time, rhetorical scholars began applying critical frameworks to post-crisis communication. This included the seminal work of William Benoit (1995) on image repair. A number of investigators followed Benoit’s lead to explore the dynamic of image repair, reputational management, and attribution processes within the context of crisis (Coombs, 2014; Hearit, 2006). By the mid-1990s, programs of crisis communication research were established both in public relations and in the larger field of Communication, though it was still quite limited in terms of theoretical development. As such, dramatic cases of crisis have and continue to drive the field (see Heath, 2011; Palenchar, 2010). Examples include the Exxon Valdez Oil Spill

(Small, 1991), and the Valuejet crash (Fishman, 1999), Hurricane Katrina (Spence, Lachlan, & Griffin, 2007), the terrorist attacks of 9/11 (Lachlan, Spence, & Seeger, 2009; Seeger, Venette, Ulmer, & Sellnow, 2002), Hurricane Sandy (Lachlan, Lin, & Del Greco, 2014) along with the water crises in West Virginia (Gethcell, 2018) and Flint, Michigan (Day, O'Shay-Wallace, Seeger, & McElmurry, 2019) as well as a number of smaller, localized crises which focused the attention of researchers, created funding opportunities, and provided the research community with common referents.

At the same time, important work was being produced in allied fields including management and sociology and to a lesser degree in political science, anthropology, psychology, and public health (see Coombs, 2011; Schwarz, Seeger, & Auer, 2016). Enrico Quarentelli (1988) and Dennis Mileti (1992) established the field of disaster sociology, addressing questions of communication, coordination, and media coverage. Disaster sociology is a robust body of research that contributes important insights into the functional role of communication in disaster response. Organizational theory approached crisis as an applied problem that required strategic management responses, including Shirvastava's (1984/1992) analysis of the Bhopal, Union Carbide Disaster and Perrow's (1984) analysis of Three Mile Island, and Weick's (1993) examination of the Mann Gulch disaster. Thomas Birkland's (1997) work on disasters and public policy agendas promoted research interest within political science. Oliver-Smith (1996) explored crises using the principles of applied anthropology. These related fields contributed important concepts and methods to the emerging area of crisis communication. Thus, a number of simultaneous research advances in Communication as well as other disciplines helped lay the groundwork for what would soon become a fully developed subdiscipline bolstered by the publication of handbooks between 2010 and the present. Such handbooks include the *Handbook of Risk and Crisis Communication* (Heath & O'Hair, 2010), *The Handbook of Crisis Communication* (Coombs and Holladay, 2012), and *The Handbook of International Crisis Communication Research* (Schwarz, Seeger, and Auer, 2016). The focus provided by these and similar books helped create a more coherent framework for ontology, epistemology and methodology.

Therefore, crisis communication has roots in strategic responses and applied communication, as well as several related social science fields. One of the tensions in the field concerns the grounding of crisis communication as essentially a public relations function designed to repair or restore an organization's damaged image (see Coombs, Frandsen, Holladay, & Johansen, 2010; Ulmer, Seeger & Sellnow, 2007). Although efforts have been made to trace the crisis communication in the public relations journals (see An & Cheng, 2011; Avery, Lariscy, Kim, & Hocke, 2010) we examine the representation of this research within a different, and we believe, broader context.

Representation in the Literature

Many academic fields or subdisciplines emerge first through various collections of literature and authors (Spence, 2019), and then through cogent and recognizable programs of research and study. Huber and Morreale (2002) suggest that disciplines share intellectual histories, agreements and disputes, methods and have identifiable communities of scholars involved in the teaching and research enterprise. Within organizational communication, Mumby and Stohl (1996) addressed the issue of defining organizational communication as a discipline and cited one problem: the lack of a "*Journal of Organizational Communication*." In the same way that Mumby and Stohl (1996) argued that the scholars in organizational communication created a sense of community through the literature regardless of its source,

it could be argued that the same has been true of crisis communication. While anecdotal evidence suggests that the subdiscipline has ascended to prominence in mainstream Communication journals in recent years, to date a systematic analysis has not been forwarded explicating a cogent research community and canon within that literature. To that end, the following research question is proposed:

RQ1: To what extent is crisis communication research represented in recent Communication scholarship?

The characteristics of a subdiscipline are shaped by the theoretical and methodological assumptions inherent in the scholarship that drives it to fruition. As noted by several scholars, data collection for crisis researchers can be difficult at best to problematic at worse, making crisis research unique in several ways. Crisis research in field settings creates significant procedural obstacles to scholars. By definition, crises are unexpected, non-routine events, the conditions of which often are not favorable toward traditional methods of data collection (Seeger, Sellnow, & Ulmer, 2003). The circumstances around such events are novel, and their unpredictability makes data collection challenging (see Spence & Lachlan, 2010). The proliferation of social media has created new venues for examining crisis communication however as noted, data collection in crisis situations are unstructured, untested, and between crisis scholars and within the literature, there is little discussion or agreement on the best means to achieve research goals (Nelson, Spence, & Lachlan, 2009; Spence, Lachlan, & Rainear, 2016). Thus, researchers have often moved to experiments and simulations to learn more about communication in crisis events (Seeger & Sellnow, 2013; Johansen, Aggerholm, & Frandsen, 2012). Furthermore, post-crisis data collection, including surveys (Burke, Spence, Lachlan, 2009; 2010), interviews and case analyses have also become popular (Benoit, 2018; Lin et al., 2017). With research represented in diverse outlets, understanding what methods and settings are used in crisis research will allow questions to emerge and potential research gaps to be filled. Therefore, the following research question is offered:

RQ2: What are common data collection methods and settings represented in crisis communication research?

In addition to setting, the participants used in research has been identified as a challenge in crisis communication research, given concerns over the generalizability of the findings (Spence & Lachlan, 2010; Spence, Lachlan & Rainear, 2016). There has been some debate in the social sciences over issues concerning the validity of findings associated with different participant pools. More specifically, researchers question the validity of communication studies using student samples. The frequent use of students as a sample has created a genre of research sometimes derided as the “science of the sophomore” (Sears, 1986; Henry, 2008), and questions around other types of recruitment are still subject to debate (Sheehan & Pittman, 2016). The use of student samples to test the effects of crisis messages is troubling, especially considering that students are often not in a position to make decisions regarding mitigation or recovery, and only represent a small cross section of the population (see Spence & Lachlan, 2010). Given restrictions involved with locating vulnerable populations, coupled with the fact that laboratory experiments can be put together easily at a university where crisis research takes place, the following research question is offered:

RQ3: To what extent are student samples represented in crisis communication research?

Finally, noted by Griffin, Bolkan, and Dahlbach (2018) there are many benefits that research confers upon faculty and the institutions of higher education. As such, the volume of scholarly productivity has driven many research agendas. This is also the case for funding agencies and philanthropic organizations. Therefore, to examine normative trends in authorship in crisis communication articles, the final research question sought to question authorship trends in crisis communication scholarship within the journals under consideration.

RQ4: What are the authorship trends in crisis communication scholarship?

Methods

A census of articles in twelve communication journals spanning nineteen years (2000–2018) was completed, resulting in the examination of 127 crisis communication articles. As an analysis of publicly available documents, the study was exempt from IRB consideration at the authors' home institutions. To be included in the article count, the article was required to be a regular article or part of a colloquia. Editorial statements, editorial introductions, statements from association presidents, and book reviews were not included in the article count. From the over 4200 articles that fit that criteria, articles then had to be classified as crisis or not crisis in scope. To be classified as a crisis communication article, the coder needed to identify the article as fitting into the following criteria: a) the article focused on a personal or organizational challenge or threat that was identified as having the potential to create negative outcomes for the actor/organization involved; b) the author(s) of the article identified the article as dealing with crisis communication in the title, abstract or keywords; c) the article examined the communication response to a challenge or threat characterized as crisis; the article advanced theory or methods centering on crisis communication; d) articles that focused on “personal crisis” or “trauma” were not included; e) finally, studies that may have dealt with a crisis event, but focused on non-crisis aspects were not included as a crisis article. This conceptualization disqualifies many studies that focus on risk and health from inclusion. That was a central decision as the intent was to focus on crisis communication. Conceptualizations of risk are broad and can be confounded with health. Once these 127 crisis communication articles were selected from the universe of all available articles within the population defined, they were subject to additional coding to address the four research questions in the study.

The twelve communication journals that were selected for analysis were: *Communication Monographs*, *Communication Studies*, *Communication Research Reports*, *Communication Reports*, *Communication Theory*, *Communication Quarterly*, *The Western Journal of Communication*, *Journal of Communication*, *Southern Journal of Communication*, *Howard Journal of Communications*, *Human Communication Research* and the *Journal of Applied Communication Research*. The selection of periodicals included in this analysis were based off historical precedent (see Hickson, Self, Johnstson, Peacock, & Bodon, 2009) and were chosen to give the most substantial representation of crisis literature in the broader Communication field and specifically the content of crisis articles. It should be noted that our goal was to examine the prevalence of crisis communication in mainstream Communication journals, as an indication of the prominence of the subdiscipline in Communication scholarship. Although other journals such as *Public Relations Review* and *Journal of Contingencies and Crisis Management* may have provided more crisis articles and represented additional crisis scholars, our central goal was evaluating

the representation of crisis scholarship in mainstream communication journals and the publication trends associated with these articles. We thus adhered to an operational definition of central journals that broadly focused on Communication, and is well represented in the citation analysis literature (see Bolkan, Griffin, Holmgren, & Hickson, 2012; Griffin, Bolkan, & Dalbach, 2018; Griffin, Bolkan, Holmgren, & Tutzauer, 2016; Hickson et al., 2009; Spence & Baker, 2003).

Measures

Type of Measurement

Articles were classified as using qualitative measures, quantitative measures, mixed measures/methods, or no measures. An article was categorized as quantitative if it used meaningful numeric symbols while an article was considered qualitative if it employed meaningful non-numeric symbols such as interviews, focus groups, thematic analysis, or ethnography. The study was coded as mixed measurement if there was a combination of quantitative or qualitative measures used (e.g., a study used a scale and an interview). Finally, a study was coded as no measurement if none was used, such as theory development or literature reviews.

Data collection and setting

The manner in which data were collected and the research setting was also investigated. Categories for data collection included nine categories that emerged from discussions between the coders. They were not reduced for this initial analysis and included survey, experiment, archival data (which included textual analysis, rhetorical analysis, case study, content analysis, and other texts), meta-analysis, interviews, ethnography, focus groups, literature reviews (which included commentaries and theory development) and observation.

For the data collection setting, these included the following categories: field research, laboratory research, mail surveys, human-assisted surveys, online (including social media harvestings) multiple settings, no settings (archival, case study, literature reviews, rhetorical analysis) and focus groups.

Study participants

Also examined were the participants used for the studies. These included student samples, completely volunteer/compensation not specified, social media recruitment, Mechanical recruitments (specifically MTurk/Qualtrics), multiple recruitment methods, no participants, or participants that receive financial compensation (without mechanical recruitment). The decision to have mechanical recruitment, which involves paid compensation, as a category that was separate from financial compensation was done for two reasons. First, these methods of recruitment are become more popular and there is much debate surrounding their use (see Kees et al, 2018; Sheehan, & Pittman, 2016). Second, it provides a baseline of the use of this type of recruitment which is distinct from other forms of paid research participation.

Theory

An open-ended item attempted to examine the theoretical framework in which each article was couched. This meant that coders were not required to choose from a list, but rather identified the theory used and entered the information into the spreadsheet.

Additional Information

Other information collected was author name, Altmetric score, article placement within an issue, and citation count from Crossref.

Intercoder Reliability

A reliability check on the closed-ended judgments was performed by two of the authors of the study. In order to evaluate reliability, an intact volume of a single journal was chosen (i.e., *Communication Studies*, Volume 65). This volume was chosen as it contained a number of crisis communication articles, varying methodologies and data collection methods, and included a special issue. This yielded a total of 37 articles for the reliability check. Variables included article type (whether or not it was crisis communication), measurement type, data collection procedure, data collection setting, participant type, and whether or not the article was part of a special issue.

Intercoder reliability was assessed using ReCal2 (Freelon, 2010). Strong reliability was found for all variables involving closed-ended judgments. Scott's Pi was detected at .91 for measurement type, .73 for research setting, and .91 for data collection. Perfect agreement was found for article type, participant type, and whether or not the article was part of a special issue.

Results

The results reveal a portrait of the nature of crisis communication research over the past nineteen years, in terms of key journals, authorship, and trends in scholarly inquiry. A number of analyses were conducted to explore the first research question, addressing the prevalence and representation of crisis communication articles in mainstream Communication journals. The data reveal a consistent pattern in the relative frequency of crisis communication publications across the journals, ranging from a minimum of two in both 2002 and 2004 to 10 in 2014 and 2015 (see Table 1). The years 2006, 2007, 2008, 2009, and 2016 were also notable with nine each. The highest number published in one year in a given journal is eight, in the *Journal of Applied Communication Research* in 2007; this was likely accounted for by a special issue on the Atlantic Hurricane Season. In terms of consistently publishing crisis communication scholarship, *Communication Studies* published at least one crisis article per year in 12 of the 19 years included in the analysis. At the other end of the continuum, *Human Communication Research*, *Communication Theory* and *Howard Journal of Communication* published a single crisis article each in two different years, and none were published in *Communication Reports*.

Position in the issue lineup was also examined as part of the analysis for research question one. In sum, 15.7% of the articles in the analysis were the lead article in a given issue, while 70% of the articles were published in the first four article positions (see Table 3). The most common article position was second (21%), followed by fourth (17%). The *Journal of Applied Communication Research* was the most likely to place crisis articles in the lead position,

with seven of its 40 publications occupying this placement, and it was most likely to publish a crisis article in the second position. Across all 127 articles in the analysis, the mean position was 3.68 ($SD = 2.18$).

Additionally, the number of times an article was cited and the Altmetric score of each article was also examined. Article citations were based off Crossref citations listed on the journal landing page for each article. At the time of data collection, the three most cited articles all appeared in the *Journal of Applied Communication Research* (Seeger, 2006, Austin, Liu & Ji, 2012, Procopio & Procopio, 2007 with 254, 115, and 100 citations respectively). For Altmetric scores, two of the three top scores also appeared in the *Journal of Applied Communication Research* and one in *Communication Quarterly* (Seeger, 2006, Sellnow, Iverson & Sellnow, 2017 and Spence et al., 2015 with scores of 57, 48 and 28 respectively), see Tables 4 and 5.

Next, the analyses for research question two went on to examine specific procedural and methodological trends in the field. In terms of measurement approach, 48% of the studies in the analysis were quantitative, while 38% were qualitative. A total of 4% used a mixed methods approach, while 10% of the articles did not utilize a means of analysis or the analysis could not be determined; these were accounted for mostly by commentary pieces and literature reviews.

In terms of data collection, 42% of the articles in the analysis relied on archival data, while 13% each relied on surveys or experiments. Literature reviews and commentary accounted for 10% of the data, while 7% relied on interviews, 2% on focus groups, 2% participant observation, and a single case was identified for both ethnography and meta-analysis. For research setting, “none/not applicable,” accounted for 50% of the data. Human delivered surveys accounted for 9%, field surveys 13%, and online experiments accounted for 9%. Data harvested through social media made up 4% of the cases, 3% each were laboratory procedures and online surveys, while focus groups and mail surveys each accounted for 2% of the cases. Finally, an open-ended item attempted to examine the theoretical framework in which each article was couched. At least 10% of the articles in the analysis include some component of Image Restoration Theory. A total of 6% were identified as grounded in restorative rhetoric/renewal. Another 4% relied on Exemplification Theory, while 6% contained no discernible theory at all. Uncertainty Reduction Theory and Media Dependency Theory accounted for another 2% each of the articles.

Participant type was also examined in order to address research question three. The most common cases were those that did not use research participants (53%). This was followed by volunteer samples at 28%, student samples at 9%, multiple approaches at 3%, paid respondents at 2%, and mechanically collected participants at 1%.

Finally, the analyses for research question four identified prominent authors across this timespan (see Table 6). This analysis included all authorships regardless of author order, and in some cases featured articles coauthored by two or more individuals on the list. The results of this analysis suggest clusters of crisis communication scholars at specific departments. The top scholars in the analysis were identified by the total number of publications. From among these authors, three earned their doctoral degree at Wayne State University, while two each earned the degrees at Michigan State and North Dakota State. Three of the scholars on the list are presently employed at the University of Central Florida.

Discussion

Taken together, the findings paint a portrait of the trends and common themes in crisis communication literature over the past nineteen years, along with useful information on the

placement of the subdiscipline in a larger context, especially as it pertains to theory and to journal placement.

The findings for journal placement draw attention to a small number of outlets that consistently publish crisis communication research. Given the applied nature of this type of inquiry and the commonly accepted goal of deriving useful interventions for organizations and emergency responders, it is perhaps unsurprising that the *Journal of Applied Communication Research* featured the most crisis literature over the timeline of the study. Similarly, the inclusion of *Communication Studies* as one of the key outlets for crisis research makes sense given the history of the journal and its parent association. The *Central States Communication Association* has been an academic home to many of the key scholars and departments in the subdiscipline for decades. The prevalence of Wayne State University and North Dakota State University on the list of top authors speaks further to this argument. Furthermore, *Communication Studies* had three editors in this timeframe with a background in crisis communication. Although this is not meant to imply bias on the part of these editors, it is often the case that authors choose their publication targets based on their perceptions of the editor and his/her knowledge base, or areas of inquiry to which he/she believe they will be receptive. By the same token, the absence of crisis communication research in *Communication Reports* can perhaps be accounted for by the history of strong interpersonal research associated with both the journal and with the Western States Communication Association.

The surprising count on this list is perhaps *Communication Research Reports* (CRR). Given that this is a short-form, quantitative journal, the prevalence of crisis communication literature is a sharp contrast to other data suggesting that qualitative and archival analysis is more common across the body of studies in the current analysis. At the same time, the short format of CRR is consistent with the theorizing, or perhaps lack thereof, germane to the subdiscipline. Crisis communication studies, especially quantitative ones, often contain relatively brief theoretical development, because the ultimate goal is to inform the effectiveness of applied interventions. In this sense, the short format of CRR may be driving crisis scholars to seek it as an outlet, and that quantitative scholars, in particular, may be drawn to its parsimonious approach to argument development, with a greater focus on data and results.

Placement within journals also highlights the prominence or seriousness with which crisis scholarship is taken. That 15% of the articles occupy the lead position in the issue in which they are published suggests that the field, on the whole, may wish to showcase crisis research given its tangible relevance and social importance; this is further supported by the findings that the overwhelming majority of the articles in the analysis were located in the first four positions within any given issue.

The authorship data suggests that particular departments and institutions may be prominent in both producing crisis research, and training crisis communication scholars. In fact, many of the individuals on the list have coauthored at varying points, and there are several identifiable mentor-mentee relationships and research clusters. Wayne State University, North Dakota State University, and Michigan State University are prominently featured both in terms of training and in terms of current institutional affiliations, while three of the scholars on this list currently work at the University of Central Florida.

Taken together, this data suggests that there may be identifiable centers of excellence in the crisis communication subfield, along with outlets that are particularly receptive to crisis scholarship. Although much has been made of fragmentation within the field and disaggregation of scholars by specialty area, the current data would suggest that there are a small number of departments central to the conversation regarding crisis communication scholarship, and an even smaller number of journals in which this work typically appears.

The findings of the current content analysis also provide valuable methodological information concerning the state of this scholarship and the degree to which it can inform practitioners and policymakers. Nearly half of the studies identified rely on archival data, while “none/not applicable” accounted for over half of the identified research settings, and over half (54%) of the studies did not use human participants. Although it may be the case that there has been an increase in human factors crisis communication research in recent years, archival, qualitative, and mixed-methods approaches are still common. Literature reviews and commentary still account for a significant proportion as well, suggesting that these methods of inquiry are still commonplace and influential to our thinking.

The open-ended data for theoretical approach suggests that the subdiscipline lacks coherence in terms of theoretical positioning. Over 20 different theoretical approaches were identified from among the 127 articles in the current analysis. The prevalence of Image Restoration Theory and related constructs – 10% of the identified articles – suggests that the impact of William Benoit’s seminal work in this area is still having a profound influence on the framing of crisis communication study. Similarly, on the non-quantitative side of the subdiscipline, restorative rhetoric and discourse of renewal account for a significant proportion of the theoretical framing. In terms of quantitative work, uncertainty reduction, media dependency, and exemplification theory account for noteworthy proportions of the theoretical framing. Perhaps not surprising, it is apparent that like much of the field of Communication, theory and method are strongly intertwined, and crisis researchers on both sides of this divide may be well advised to continue to listen to each other as they formulate future inquiry.

Finally, the citation and Altmetric scores provide a unique insight into article use and sharing. The top cited article was also the article with the highest Altmetric score. Moreover, the article was published in 2007 when Facebook and Twitter were in their infancy and tracking of online use and sharing of research had not yet started. This indicates that crisis research articles do not have to be recent to be shared on social media and highlight the timelessness of the research. The fact that the top three cited articles and two of the top three articles in Altmetric scores all came from the *Journal of Applied Communication Research* coupled with that journal publishing the most crisis articles, indicates its relevance in crisis scholarship.

Limitations and future directions

An obvious limitation in this research is its scope of the journals examined. Arguments can be made for an inclusion of journals such as *Public Relations Review* or the *Journal of Contingencies and Crisis Management*, however, many crisis articles in such outlets may not have a direct focus on Communication, which was central to this study. The authors made the decision to focus on journals identified in past *Communication Education* citation analyses as central, though future research may wish to expand this list. Additionally, the year 2000 was chosen as a starting point for analysis. It is likely that an earlier starting point may change some aspects of the story in relations to methods, participants and theory which emerged as dominant in the literature.

Furthermore, the current research was collected over a period of six months by three separate coders. Although the results were checked for intercoder reliability and general agreement, the data was not collected via electronic harvesting. Although open to various human error, electronic data harvesting also has noted flaws. Moreover, we purposefully excluded book-length treatments from this analysis. Although these works make important contributions through more extensive summaries and theory development, the peer-review

process is typically much different. The future development of the field should rely more in tested theories and propositions and less on anecdotal observations.

Another limitation worth noting is the data used for both citation count and Altmetric score. Citation count data was collected from the article landing page and reported by Crossref (www.crossref.org). Results may be different if more inclusive databases were used such as Google Scholar. Additionally, Altmetric (www.altmetric.com) was used as it is represented on the article landing page for all the publishers used in this study (Taylor & Francis and Wiley). Other alternative metric aggregators such as Impactstory (www.impactstory.org), Webometric Analyst (<http://lexiurl.wlv.ac.uk/index.html>), Kudos (<https://growkudos.com>), PlumX (www.plumanalytics.com), or ResearchGate (www.researchgate.net) all provide citation metrics that may tell a different story.

It is also worth noting that there are identifiable focus events that have driven much of the research in crisis communication, especially that associated with natural disasters and massively destructive events. Historic events like the September 11 attacks and Hurricane Katrina often bring new issues and previously unconsidered research questions to the forefront, and it is likely that the COVID-19 pandemic is having the same effect at this writing. Time will tell what impact the specific conditions surrounding COVID – such as its unusually long duration and geographically disparate impacts – will influence the next few years of crisis communication scholarship.

Conclusion

Although the subdiscipline of crisis communication has made significant strides in crystallizing as an area of academic study, it is clear that this is an ongoing evolutionary process. This subfield is clearly growing perhaps driven by notable crises such as Hurricane Katrina (Lachlan & Spence, 2007), the 9/11 attacks (Spence et al., 2006), the Ebola pandemic (Sellnow-Richmond, George, & Sellnow, 2018), and the Flint Water Crisis (Day, O'Shay-Wallace, Seeger & McElmurry, 2019). The results of the current study reveal that the theoretical positioning of the area is still highly variable, and reliant mostly on theories are drawn from other arms of Communication scholarship or from perspectives in Psychology, Sociology, and Management. Further, the reliance on non-human subjects approaches to an inquiry is apparent, as over half of the research in the current examination did utilize a data collection method, suggesting that crisis research is still largely reliant on message-based approaches to the subdiscipline. At the same time, the citation analysis indicates that there may be centers of excellence that have emerged in crisis communication research, and that specific journals have similarly emerged as the showcase outlets for dialogue. Crisis communication articles are also recognized as timely and relevant, as evidence by their placement in journal lineups, and it is probable that the subdiscipline will continue to grow given its tangible, real-life implications for the mitigation of health and human suffering. In fact, trends identified outside this analysis include interdisciplinary approaches and teams including public health, engineering, and agriculture as well as an influx of extramural funding opportunities. It is the hope of the current authors snapshots of the field such as this one will continue to document the development and growth of the subdiscipline in terms of theory, method, productivity, and placement.

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Table 1

Number of Articles per year by journal

	CS	HCR	CM	JoC	WJC	CRR	SJC	CT	CQ	CR	HJoC	JACR	TOTAL
2000	0	0	1	0	0	0	0	0	2	0	0	0	3
2001	1	0	0	0	0	3	0	0	1	0	0	0	5
2002	0	0	0	0	2	0	0	0	0	0	0	0	2
2003	1	0	0	0	0	0	1	1	0	0	0	0	3
2004	1	0	0	0	1	0	0	0	0	0	0	0	2
2005	0	0	0	0	0	7	0	0	0	0	0	0	7
2006	0	0	0	1	1	1	0	0	0	0	0	6	9
2007	1	0	0	0	0	0	0	0	0	0	0	8	9
2008	1	0	0	1	0	1	5	0	0	0	0	1	9
2009	3	0	0	0	1	0	0	0	0	0	1	4	9
2010	1	1	1	0	0	1	0	0	0	0	0	0	4
2011	0	0	0	0	1	0	1	1	0	0	1	4	8
2012	1	0	0	0	0	0	1	0	0	0	0	4	6
2013	1	1	1	0	1	1	0	0	0	0	0	2	7
2014	6	0	1	1	1	1	0	0	0	0	0	0	10
2015	4	0	0	1	0	0	1	0	1	0	0	3	10
2016	0	0	0	1	0	3	1	0	0	0	0	4	9
2017	4	0	0	0	0	0	2	0	0	0	0	2	8
2018	0	0	0	0	2	1	1	0	1	0	0	2	7
Total	25	2	4	5	10	19	13	2	5	0	2	40	127

Table 2

Total Number of Articles by Journal, 2000-2018

Journal	n	Percentage
Journal of Applied Communication Research	40	(31.4%)
Communication Studies	25	(19.7%)
Communication Research Reports	19	(15.0%)
Southern Journal of Communication	13	(10.2%)
Western Journal of Communication	10	(7.9%)
Journal of Communication	5	(3.9%)
Communication Quarterly	5	(3.9%)
Communication Monographs	4	(3.1%)
Human Communication Research	2	(1.6%)
Howard Journal of Communication	2	(1.6%)
Communication Theory	2	(1.6%)
Communication Reports	0	(0.0%)

Table 3

Articles by Article Position by Journal

	1	2	3	4	5	6	7	8	9	10+	Total
CS	3	7	6	4	2	1	1	0	1	0	25
HCR	0	1	0	1	0	0	0	0	0	0	2
CM	0	0	0	1	2	1	0	0	0	0	4
JoC	2	0	0	1	0	1	1	0	0	0	5
WJC	2	1	2	2	2	1	0	0	0	0	10
CRR	1	2	2	2	2	1	3	2	3	1	19
SJC	2	3	4	3	1	0	0	0	0	0	13
CT	1	0	1	0	0	0	0	0	0	0	2
CQ	0	0	3	2	0	0	0	0	0	0	5
HJoC	0	0	0	0	1	1	0	0	0	0	2
CR	0	0	0	0	0	0	0	0	0	0	0
JACR	7	8	5	6	8	2	3	0	1	0	40
Total	18	22	23	22	18	8	8	2	5	1	127

Table 4

Top 3 most cited articles

Author	Year	Journal	Times Cited (Crossref)
Seeger, M. W.	2007	JACR	254
Austin, L., Liu, B.F., & Jin, Y.	2012	JACR	115
Procopio, C. H., & Procopio, S. T.	2007	JACR	100

Table 5

Top 3 articles in Altmetric score

Author	Year	Journal	Altmetric Score
Seeger, M. W.	2007	JACR	57
Sellnow, D., Iverson, J., & Sellnow, T.	2017	JACR	48
Spence, P.R., Lachlan, K. A, Lin, X, & del Greco. M.	2007	CQ	28

Table 6

Top Authors by Total Authorships

Name	Current Affiliation	Graduate Institution		
T. Sellnow	Central Florida	Wayne State	17	(13.4%)
P.R. Spence	Central Florida	Wayne State	16	(12.6%)
K.A. Lachlan	Connecticut	Michigan State	13	(10.2%)
S. Veil	Kentucky	North Dakota State	6	(4.7%)
S. Venette	Southern Mississippi	North Dakota State	4	(3.1%)
X. Lin	Penn State – Scranton	Kentucky	4	(3.1%)
D. Westerman	North Dakota State	Michigan State	4	(3.1%)
M.W. Seeger	Wayne State	Indiana	4	(3.1%)
D.D. Sellnow	Central Florida	Wayne State	4	(3.1%)

*Numerous Authors at 3 publications (2.4%)