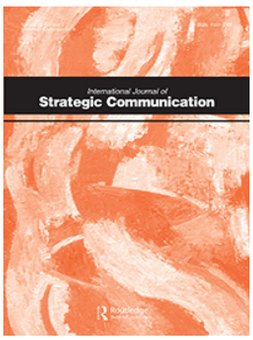

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Lessons for Crisis Communication on Social Media: A Systematic Review of What Research Tells the Practice

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ABSTRACT

This study analyzes explicit pieces of advice for effective social media crisis communication given by researchers in various subdisciplines of strategic communication. The themes are identified by a systematic content analysis of peer-reviewed journal articles and conference papers (n = 104) published between 2004 and 2017. Five overall thematic "lessons" are identified and critically discussed. These are that effective social media crisis communication is about: (1) exploiting social media's potential to create dialogue and to choose the right message, source and timing; (2) performing precrisis work and developing an understanding of the social media logic; (3) using social media monitoring; (4) continuing to prioritize traditional media in crisis situations; and finally, (5) just using social media in strategic crisis communication. These guidelines mainly emerged from quantitative research conducted in the context of the United Stated and on Twitter. There is need for more research focusing on other platforms and other empirical material. There is also a future need for an in-depth methodological discussion of how to further bridge the gap between research and practice on a global scale, and how to develop more evidence-based recommendations for strategic crisis communication practitioners.

Introduction

In the wake of the development of social media, for-profit, governmental, and nongovernmental organizations around the world have worked frantically to identify how social media platforms can be used as effective tools for strategic communication in times of crisis. After the June 2012 IRGC workshop, organizations such as the OECD (Organisation for Economic Co-operation and Development) identified 12 good practices for the use of social media in risk and crisis communication, for example to raise public awareness about risks and crises, for monitoring and situational awareness, and to identify survivors and victims (Wendling, Radisch, & Jacobzone, 2013). IATA (the trade association for the world's airlines) has introduced similar "best practices" and "guidelines" for airline companies and suggest that a social media policy should be developed during "peacetime" and not in the middle of a crisis (IATA, 2016). Nongovernmental organizations such as the Red Cross suggest that effective social media crisis communication is about using a calm and appropriate tone, constantly monitoring social media, and realizing that social media is not a substitute for traditional media (American Red Cross, 2013). Another important piece of advice is to keep trying, because "best practice" will emerge (Booz Allen Hamilton, 2009).

The growing interest in lists of dos and don'ts for social media usage during crises is not, however, limited to different kinds of organizations' development of policies for the use of social media during crises, disasters and emergencies. During the last decade, a number of scientific studies have also offered

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online and social media crisis communication practitioners practical implications and/or "best practices" in the areas of informatics (see e.g., White & Plotnick, 2010), marketing, public relations and strategic communication (see e.g., Eriksson, 2012; Fischer & Kim, 2011; González-Herrero & Smith, 2010; Taylor & Kent, 2007) as well as disaster- and crisis-management research (see e.g., Houston et al., 2015; Veil, Buehner, & Palenchar, 2011). Such rapidly growing research, together with analysis and consolidation of practitioners' crescent experiences, is a crucial part of developing effective tools for crisis communication practice, according to representatives of the public relations and communication industry (Booz Allen Hamilton, 2012).

But there are still some weaknesses in the scientific development of such concepts for effective social media crisis communication. One problem is that existing lessons and "best practice" advice for social media crisis communication developed in research often have been based on more unsystematic samples of earlier published research studies (see e.g., Veil et al., 2011) and/or from single practical experiences or experiments (see e.g., Chung & Lee, 2016; Ketter, 2016; Wang, 2016) rather than from more systematic reviews and/or meta-analyses of earlier existing studies (Baumeister & Leary, 1997). Another weak point is that current systematic reviews of research on crisis communication and social media first and foremost analyze collective characteristics and trends of theories and theoretical models, research topics, crisis types, social media platforms, sample types, and research methods in existing studies (see e.g., Cheng, 2016; Cheng & Cameron, 2017; Rasmussen & Ihlen, 2017; Thomas, Schrock, & Friedman, 2016; Wang & Dong, 2017) rather than how the current research as a whole contributes to knowledge about effective practice of social media crisis communication.

According to Baumeister and Leary (1997), a good systematic review should describe directions for theory development and research topics, but should also provide implications for practice and policy. While some existing reviews do contain prescriptive suggestions for practitioners (see e.g., Cheng & Cameron, 2017; Thomas et al., 2016), there is still a shortage of systematic reviews that more clearly focus on advice from researchers to crisis communication practitioners. A final dilemma is that existing systematic knowledge reviews on digital crisis communication produce their overviews of this multidisciplinary research field on the basis of a limited sample of studies in either communication and public relations research (e.g., Cheng, 2016; Wang & Dong, 2017), informatics (e.g., Reuter & Kaufhold, 2018; Simon, Goldberg, & Adini, 2015) or disaster management (e.g., Abedin, Babar, & Abbasi, 2014; Houston et al., 2015). Altogether, this study argues that the current knowledge about advice for effective practice of social media strategic crisis communication has not yet fully been systematically explored and aggregated. This study's overall aim is therefore to find out and critically discuss what global strategic crisis communication practitioners can learn from research in the different research subfields that give explicit advice for effective social media crisis communication. The first research question in this study is:

(RQ1): What main lessons delivered by scholars to crisis communication practitioners are possible to identify in the existing research in different subdisciplines of social media and crisis communication?

It is also important to systematically identify the research base for the identified lessons for effective social media crisis communication. There are at least three reasons for that. Firstly, research on both crisis communication (see e.g., Coombs & Holladay, 2010) and social media crisis communication (see e.g., Austin & Jin, 2017) tends to a high degree to be linked to Western countries, and primarily to the United States. A survey performed in over 40 countries shows, however, that almost half of communication professionals today communicate internationally on a regular basis (Zerfass, Moreno, Tench, Verčič, & Verhoeven, 2013). This confirms that communication practitioners work in an environment where it is "increasingly impossible to escape communicating across national, cultural, and linguistic borders" (Hallahan, Holtzhausen, van Ruler, Verčič, & Sriramesh, 2007, p. 27).

Therefore it is important to explore whether there is also a geographical bias in the knowledge base for the identified overall lessons, which may reduce their applicability in a global context. Second, it is

important to know which platforms the research on social media crisis communication addresses, as people from different countries and belonging to different generations tend to use different social media platforms (Statista, 2018). In addition, different social media platforms have different attributes and sociability functions in times of crisis communication (Eriksson & Olsson, 2016).

Third, it is important to know if the identified advice was developed through experimental studies or more descriptive observation studies. Fraustino, Liu, and Jin (2012) point out that experimental studies investigating causal relationship are a preferred way to develop future best practices for social media crisis communication. However, it is not obvious that experimental studies always give better results when it comes to explaining and guiding real-world social phenomena outside the experimental research situation (Levitt & List, 2007). To investigate and discuss what kind of studies and research the identified lessons primarily are based on, the study's second research question is as follows:

(RQ2): What are the characteristics of the knowledge base and research context (e.g., research subdiscipline, research design, first authors'/scholars' origin, analytical and methodological approaches used, and social media platform analyzed) in the development of this main lessons?

Finally it is important to note that this systematic research review, inspired by a grounded-theory approach (see Strauss & Corbin, 1998) does not rest on – or examine – prevailing (social media) crisis communication theories and/or concepts, nor have the overall inclusion criteria for studies in the review been governed by one single definition of crisis communication. Instead, the identification of resources and starting sample was guided by the requirement that the included studies and their authors – regardless of subdiscipline – should use the term "crisis communication" to name and discuss the phenomena they are studying.

Methodology and methods used

Like earlier literature reviews on crisis management and crisis communication (see e.g., An & Cheng, 2010; Avery, Lariscy, Kim, & Hocke, 2010; Ruggiero & Vos, 2013) this study was conducted by the formal procedure for a systematic literature review (Jesson, Matheson, & Lacey, 2011). This study argues that a systematic review is capable of addressing broader questions than isolated empirical studies can do (Baumeister & Leary, 1997). To systematically and deeply investigate the existing research on crisis communication and social media, this study applies both qualitative and quantitative analysis methods, analyzing a large sample of peer-reviewed articles (and conference papers) from different subfields and/or journals (see Appendix B). The systematic review comprised three steps: (a) identification of resources/articles; (b) selection and description of the final sample; and (c) systematic analytical work.

Identification of resources and starting sample

The starting point for identifying resources for the data collection (i.e., publications analyzing social media and crisis communication) was to search relevant databases. The search was limited to articles published between 2004 and 2017. There were two reasons for examining this time frame in this study: (1) during 2004 the now largest social media platform, Facebook, was launched; and (2) other early social media platforms also began to attract scientific attention (see also Kümpel, Karnowski, & Keyling, 2015). Research concerning social media and crisis communication is, as mentioned, going on in different scientific subdisciplines with different traditions and cultures for publication (Hong Ha & Boynton, 2014), which in turn creates a need for adaptation to routines in diverse subfields with an interest in social media crisis communication. The search (performed in October 2017) for literature from different subdisciplines were therefore conducted on four databases (Communication & Mass Media Complete, Science Direct, Scopus, and Web of Science).

The reason was not to miss any scientific subdiscipline performing studies in the crisis communication area. The search terms included ("crisis communication") and ("crisis informatics") in

combination with ("social media") in abstracts and/or in keywords/topics, depending on the search engine's design. Other databases than the four chosen ones were also tested (for example, databases specifically containing studies from informatics and system science, etc.). However, the number of "hits" was very low in these databases when the search term "crisis communication" was used. Therefore, these databases were not selected. On the other hand, conference papers were included because informatics has a strong tradition of publishing important research results in conference proceedings. The first sample results from the four databases were limited to peer-reviewed articles and conference papers, and altogether covered a very large number of articles and papers (N_1 = 486, N_2 = 308 after "double hits" had been deleted) from the period 2011–2017 (until October) from a wide range of journals, which reinforced the image of a very expansive area of research that needs to be narrowed down in order to be explained and visualized.

Choice of final sample and inclusion criteria

The next stage of the work consisted of filtering the articles in the starting sample. This important second selection process consisted of a time-consuming and careful online investigation and close reading of each article. The articles (and conference papers) addressing the following inclusion criteria were considered for the final sample: the article (a) gives explicit advice and/or lessons concerning social media crisis communication to crisis managers and/or crisis communicators in the abstract, discussion and/or conclusion section; (b) directs advice and lessons to crisis managers and/or crisis communicators more than to ICT-developers and/or programmers; (c) is a peer-reviewed, full-length research article/paper; (d) is available online; (e) is in English; (f) is not a knowledge review that risks creating a bias in the aggregated research material; and, (g) includes empirical studies. For an article to be considered to contain explicit advice for practitioners it should contain statements like "as part of monitoring the effects of a crisis communication effort, crisis managers need to map the various subarenas, assess how people are reacting in the various subarenas, and adapt their crisis messaging to those reactions" (Coombs & Holladay, 2014, p. 53), "these tools should be incorporated into any crisis managers' evolution for successful crisis response that meets the emotional needs of an organization's publics" (Brummette & Sisco, 2015, p. 95), or similar. The selection process resulted in a final sample of 104 journal articles and conference papers (see Appendix A); a sample of studies that all included explicit recommendations for crisis communication practitioners.

Systematic analytical work and description of overall quantitative sample

To systematically identify lessons for practitioners from the aggregated research and also to generate knowledge about the research process behind the development of the identified overall lessons, the analysis was divided into three phases. First, 157 explicit but thematic pieces of advice from scholars to practitioners were identified in abstracts, discussions and/or conclusions within articles in the sample (see Appendix A). These explicit suggestions were then compressed into five overall themes through inductive coding. These five overall themes were not known prior to analysis; instead they were developed through a continuous comparative method in which the coder (the author of the article) reviewed all identified pieces of explicit advice and sought to distinguish categories.

The work in the second analytical phase was based on a qualitative grounded-theory approach (Strauss & Corbin, 1998). The five thematic lessons finally identified through this analytical processes were, however, partly inspired by the discussion about the need for "simple rules" (Ulmer & Pyle, 2016) for effective crisis communication practice. The idea of such "simple rules" derives from complexity science, and its proponents call for a limited number of "flexible guideposts for action"; guideposts able to be used in different global and international contexts, though also in need of local adaptation (Ulmer & Pyle, 2016, p. 111). Concrete examples of such simple rules are, according to

Ulmer and Pyle, communicative activities like being honest, ensuring openness, and not withholding information.

In the third analytical phase, a quantitative descriptive content analysis (Neuendorf, 2002) was conducted of the research context characteristics of the studies building up each identified thematic lesson. The nine categories coded in this quantitative analytical phase included articles': (a) publication year; (b) first author's origin/institutional affiliation (U.S. or other); (c) main research subdiscipline (Communication studies; Information management and social science and psychology of computer use; Crisis- and disaster-management research; Others). For coding purposes, the main research subdiscipline was determined by the subject area of the publishing journal, not by researchers' institutional affiliation; (d) social media platform under investigation (Facebook; Twitter; Weibo; Instagram; others); (e) social media user under investigation (crisis managing organizations; citizens/consumers/stakeholders); (f) type of crisis managing organization under investigation (business organization; government-, regional- and/or local authorities/municipalities or other nonprofit organizations); and, (g) type of crisis under investigation (natural hazards/disasters/accidents; crises of organizational distrust; riots); The crisis types used in the coding also need further explanation.

Even if it is possible to categorize crises in several ways, for instance in line with Coombs's situational crisis communication theory (see e.g., Coombs & Holladay, 2010), only three crisis types emerged as relevant for this study. After the first close reading of the articles in the sample, a clear distinction was identified between studies exclusively related to natural crises/disasters/accidents (e.g., in the subfield of crisis- and disaster-management research) and studies related to crises of distrust (e.g., in communication studies investigating the use of different image-repair strategies in social media). A number of studies were also exclusively linked to riots. This way of categorizing was in line with the grounded-theory approach guiding the overall study; (h) analytical and methodological approach used (quantitative methods; qualitative methods; mixed methods); (i) research design (nonexperimental; experimental). In discussions between the members of the overall research team (all with Ph.D.'s) during all three analytical phases, the reliability of the coding was repeatedly checked.

Previous studies on risk, crisis and social media have shown that this area of research has been the subject of an increasing number of studies during the last decade, predominantly by U.S. and Western scholars; that they are characterized by quantitative approaches; and finally that many analyses concern the use of Twitter (see e.g., Rasmussen & Ihlen, 2017). The quantitative data in this study showed similar features overall (see also Figure 1). The quantitative descriptive content analysis showed that 2011 was the starting point for delivering explicit advice concerning effective social media crisis communication (see studies authored by Liu, Austin, & Jin, 2011; Muralidharan, Dillistone, & Shin, 2011; Schultz, Utz, & Göritz, 2011; Park, Kim, Cha, & Jeong, 2011) and that the volume of articles including explicit advice increased during the analyzed period.

A majority of the research articles were written by U.S. scholars, but articles including advice were also presented by scholars from other countries/regions. The main subfield presenting explicit advice on social media crisis communication to practitioners is communication studies (including public relations, strategic communication and corporate communication, etc.), which is followed by the subfield of information management and social science and psychology of computer use. A relatively large proportion of the articles delivering advice are primarily interested in the social media platform Twitter. The number of studies analyzing societal crises is higher in the sample than of studies analyzing corporate crises. It is also more common for the articles presenting explicit advice and recommendations to analyze natural hazards, disasters and accidents than to analyze crises of distrust. A relatively large proportion of the articles use quantitative analytical and methodological approaches, compared to those using qualitative analytical and methodological approaches. Relatively few studies are experimental. This overall quantitative data about the manifest content in the articles serves as a starting point for the results section, where we identify and present the knowledge base and research context characteristics for each identified overall lesson.

Items	Occurrence (%)
Publication year	2011 (4%), 2012 (8%), 2013 (11%), 2014 (15%), 2015 (17%), 2016 (31%), 2017, until October (15%)
First author origin	United States (61%), Other countries (39%)
Main research sub- discipline	Communication studies (52%), Information management and social science and psychology of computer use (24%), Others (13%), Crisis- and disaster-management research (11%)
Social media platforms under investigation	Twitter (70%), Facebook (43%), others (25%), Weibo (5%), Instagram (2%)
Social media user under investigation	Crisis managing organizations (64%), Citizens/customers/stakeholders (49%)
Type of crisis communicating organization under investigation	Government-, regional- and/or local authority or other non-profit organizations (63%), Business organizations (42%)
Type of crises under investigation	Natural hazards/disasters/accidents (64%), Crises of organizational distrust (41%), Riots (7%)
Analytical and methodological approach	Quantitative methods (60%), Qualitative methods (24%), Mixed-methods studies (14%)
Research design	Non-experimental (81%), experimental (19%)

Figure 1. Research context characteristics for the overall sample of articles/papers in the study (n = 104).

Results

Lesson 1: Effective social media crisis communication is about using the potential for dialogue and choosing the right message, source and timing

The most common advice identified into the overall sample of articles concerned the need to develop dialogue and to choose the right message, source and timing for effective social media crisis communication (59%, n = 61), and the frequency of the advice increased continuously during the period (see Figure 2). Effective dialogue seems mainly to be about taking actions in social media that demonstrate that the organization is listening to affected or critical citizens and consumers during crisis situations even if "genuine dialogue is not easily achieved during a social media crisis" (Ott & Theunissen, 2015, p. 101). In a corporate communication context, a crises can generate a lot of discussion in social media, and organizations need to be proactive and active participants by using dialogic strategies to reinforce organizational images (Spence, Lachlan, Sellnow, Rice, & Seeger, 2017). Such strategies can for example concern engaging stakeholders through social media in helping the organizations find best solutions for responding to the crisis (Romenti, Murtarelli, & Valentini, 2014). However, the dialogue strategy does not appear to be effective in all situations. Ott and Theunissen (2015) found that a dialogical approach is only effective if the users are affected by the crisis; if they are not, a dialogue strategy may fuel anger.

Effective social media crisis communication is also about choosing the right social media message. But how an effective message really should look is not uniform across contexts. In the context of managing business crises in China (on the social media platform Weibo) scholars recommend the use of traditional crisis communication strategies such as apology and justification as tools for effective crisis communication. But these scholars also show that the "overuse of the apology message strategies may lead to apology resistance/. . ./even if the apology comes from the CEO or top management" (Ngai & Jin, 2016, p. 487). Other studies find that a denial message strategy (e.g., scapegoating) is the most useful way to reduce indignation, criticism and the spread of online rumors (Roh, 2017).

There are also studies arguing that "accommodative strategies appear to be more successful than denial or diminishing strategies" (Ott & Theunissen, 2015, p. 102) and that blaming others is not an effective crisis response message strategy in the social media landscape (see e.g., Schwarz, 2012). However, not all studies find apology strategies of various kinds to be the most effective. Some

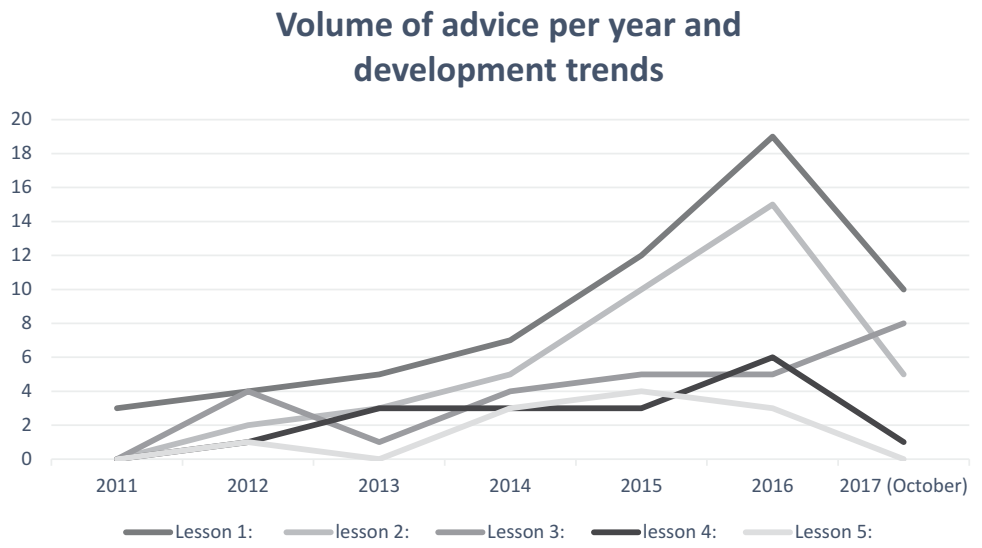

Figure 2. The volume of instances of research-based advice (N_{total} = 157) per identified lesson during the period 2011–2017 (October).

scholars recommend using informational messages and tactics in social media, rather than apology messages. They argue that informational messages speed up and increase secondary crisis communication in social media at the same time as such messages generate greater acceptance of the crisis managing organization and shape more positive attitudes than messages containing emotional apologies (Chung & Lee, 2016; Schultz et al., 2011). Meanwhile, several studies argue that different forms of message strategies are needed in social media and web environments, depending on the type of crisis and the publics' emotions (Park & Cameron, 2014; Schultz et al., 2011). A concrete example is that emotional conversational message tactics on Facebook are argued to be more effective then informational messages and tactics during strongly emotionally laden crisis situations (Gerken, van der Land, & van der Meer, 2016).

Effective social media crisis communication is also about choosing the right source for social media messages. How people ascribe blame during crises of distrust does not solely depend on the crisis-response message strategy. It also depends the source and on perceptions of source and content credibility. The choice of source affects both credibility and the extent to which the message is shared in the social media sphere (Snoeijers, Poels, & Nicolay, 2014; Utz, Schultz, & Glocka, 2013; van Zoonen & van der Meer, 2015). Liu, Fraustino, and Jin (2015) argue that the source has a greater effect on citizens' and customers' information seeking than on their information sharing. Other studies find that the use of an official source influences the propagation of online rumors positively for the strategic communicator (Andrews, Fichet, Ding, Spiro, & Starbird, 2016).

Whether it be the impersonal crisis-communicating organization, an employee, executives, or traditional mass media institutions, the source of a social media message seems also to play an important role for effective crisis communication (see also lesson 2). Van Zoonen and van der Meer (2015) show the high importance of employees as an effective source in crisis situations characterized by distrust in an organization. They find that regardless of crisis-response messages, employees' communications generated a stronger effect on reputation than organizational communication. Along the same lines, Snoeijers et al. (2014) argue that having a human face as a source will have a greater effect on the effectiveness of social media crisis communication than using an anonymous organizational social media account. In connection to this, Park and Cameron (2014) show that, in the new media environment, organizations' public relations officers and spokespersons are perceived as credible and trustworthy sources during crisis situations. In addition, officials should try to design

and establish hashtags that produce a feeling of unity, or should be early adopters of such symbolic hashtags (Williams, Woods, & Staricek, 2017).

The need for up-to-date, fast and timely communication is the final ingredient in the first overall lesson for effective social media crisis communication. Keeping up with the rapidness of social media is promoted as highly important for effective crisis communication (Andrews et al., 2016; Luoma-Aho, Tirkkonen, & Vos, 2013; Spence, Lachlan, Lin, & Del Greco, 2015; Wang & Zhuang, 2017; Westerman, Spence, & van der Heide, 2014). Up-to-date information is important to perceived credibility, because slow updates decrease credibility; nevertheless, posting social media messages too quickly may instead decrease the level of perceived competence of the organization: "both too fast and too few slow updates may impact specific credibility perceptions" (Spence, Lachlan, Edwards, & Edwards, 2016, p. 66). There are also studies that consider that updating too slowly may lead to loss of existing or potential followers (Wang & Zhuang, 2017). Other studies recommend timely use of social media to prevent the spreading of rumors (Crook, Glowacki, Suran, Harris, & Bernhardt, 2016; Fowler, 2017; Gerken et al., 2016). Crisis managing organizations are also recommended to use Twitter for "stealing thunder" and "filling the silence" during crises. Such Twitter advocators consider that "practitioners should not try to find new information to tweet for the sake of tweeting; instead they should let the new information emerge from the investigation naturally" (Fowler, 2017, p. 726). Filling the silence can be as simple as telling the public that there is no new information to report.

This first identified lesson about the importance of dialogue, message, source and timing is based primarily on research studies performed by U.S. researchers (67%, $n = 40$) but also on research from other countries (35%, $n = 21$). The lesson is also to a large degree based on studies from the subdiscipline of communication studies (63%, $n = 38$). Most of the studies which present advice about dialogue, message, source and timing analyze Twitter (62%, $n = 37$), followed by studies analyzing Facebook (38%, $n = 23$). The lesson is based on studies that concern both public authorities (53%, $n = 32$) and business organizations (47%, $n = 28$). This first lesson is also based both on studies that analyze natural hazards, disasters and accidents (52%, $n = 31$) and on studies analyzing crises of distrust (45%, $n = 27$). Finally, it is recommended to a high degree by studies using a quantitative analytical and methodological approach (70%, $n = 42$) at the same time as about a quarter of the studies include experiments (27%, $n = 16$). Figure 3 displays summary and examples of qualitative and quantitative data.

Lesson 2: Effective social media crisis communication is about being prepared, understanding social media logic, and making friends before you need them

The second most common piece of advice is about the need for precrisis work, including adaptation to social media logic (40%, $n = 41$). The frequency of this second recommendation increased continuously during the period (see Figure 2). This second overall lesson more specifically concerns the importance of "making friends before you need them" (Park et al., 2011, p. 303). This second lesson also concerns the need for adaptation to the overall social media logic and the need to plan for strategic social media use already before a crisis hits the organization.

If citizens and customers do not even know where to look for information, or where and how they can contribute their own information, crisis information will probably not be shared by social media users (Guo, 2017; Spence et al., 2017). Getchell and Sellnow (2016) find, as another example, that an organization should establish itself in the social media sphere before the risk and/or crisis situation arises, and demonstrate that the organization is there to disseminate information, communicate and listen. Guidry, Messner, Jin, and Medina-Messner (2015) show the importance of developing social media policies including guidelines for employees' future private social media use during crises already before the crisis happens, to make the employees "part of the brand." Preparing for social media crisis communication can even increase the chance of becoming a "hub" in the extensive information flows and reduce the spread of uncontrolled and false information during a

Examples of lessons/advice and authors	Knowledge base and research context characteristics
"...information strategy turned out to be the most successful communication strategy in the experiment" (Schultz, Utz & Göritz, 2011,p.25)	Lesson based mainly on research from U.S.A. but also on research from other countries
"Technical translation strategy generated more public acceptance of the message and more positive emotions than a crisis response strategy" (Chung & Lee, 2016, p. 341)	Lesson based primarily on communication studies
"...more conversational updates were more successful than those in an official tone of voice" (Freberg, Saling, Vidoloff & Eosco, 2013, p. 191)	Lesson based on analysis concerning both public authorities' and business organizations' crisis communication
"...Organizations faced with crises should use less defensive and more accommodative crisis response strategies"(Ki & Nekmat, 2014, p. 145)	Lesson based on both natural hazards and crises of distrust studies
"Success in communication today depends heavily on using the right language, finding the right issue arenas, getting there early, and answering the needs raised in those arenas" (Luoma-aho, Tirkkonen & Vos, 2013, p. 239)	Lesson based primarily on analysis of Twitter, but also of Facebook
	Lesson based mainly on quantitative studies
	Lesson based to some degree on studies using an experimental design

Figure 3. Effective social media crisis communication is about using the potential for dialogue and choosing the right message, source and timing. Summary and example of qualitative and quantitative descriptive data.

future disaster and/or crisis (see e.g., Comunello, Parisi, Lauciani, Magnoni, & Casarotti, 2016; Derani & Naidu, 2016; Tampere, Tampere, & Luoma-Aho, 2016).

There are several other reasons for organizations to prepare for crises and to include social media in these preparations, according to the studies which form the basis for this second important overall lesson. One such reason is the possibility to avoid so-called "information vacuums" during future crises and emergencies by preparing educational messages and materials already before a crisis occurs. Such precrisis work can enable crisis managing organizations to fill potential silences that otherwise might lead to the harmful spread of social media rumors (Crook et al., 2016). A further reason for crisis communication planning that includes social media is that the content and opinions in social media during crises very often undergo "bifurcation" or become "flashpoints of change." Such developments require powerful preplanned redirects and fast changes when it comes to crisis message strategies (Dalrymple, Young, & Tully, 2016). Authorities also need to assign resources and time for crisis management in advance, because these often are in short supply once a crisis occurs (Rutsaert et al., 2014; Tampere et al., 2016). Spialek, Czlapinski, and Houston (2016) similarly argue that public authorities can create good conditions for community resilience by ensuring that citizens actively engage with social media and form a digital connection/relation with the authorities already before a crisis. For example, private individuals' use of Facebook and Twitter to talk about a

threatening tornado positively affected the degree of community resilience, compared to their reading newspapers and watching television news, according to the study.

Several scholars also argue for the need to develop knowledge about, and establish a strong presence on, multiple different social media platforms before the next crisis hits the organization (Eriksson & Olsson, 2016; Guidry, Jin, Orr, Messner, & Meganck, 2017). At the same time public relations professionals need to prepare for managing "more media platforms than ever before, more voices, more types of data (text, video, audio) while understanding how information is being shared among risk bearers during crisis" (Freberg, Palenchar, & Veil, 2013, p. 184).

This second overall lesson that was identified, like several of the other lessons, derives to a large degree from research by U.S. scholars (62%, n = 25). It is based on research performed in the subdiscipline of communication studies (30%, n = 12), the subfield of information management and social science and psychology of computer use (22%, n = 9) and in the subfield of crisis- and disaster-management research (18%, n = 7). Another characteristic is that the lesson was largely developed through analyses concerning governments' and public authorities' crisis communication work (70%, n = 28) and analyses concerning natural hazards, etc. (78%, n = 31). This second overall lesson was also to a much greater degree developed using quantitative (62%, n = 25) rather than qualitative (25%, n = 10) analytical and methodological approaches. Few studies, however, have an experimental design (10%, n = 4). This second lesson is finally to a higher degree based on Twitter analyses (58%, n = 23) than on analysis of Facebook (25%, n = 10). Figure 4 displays summary and examples of qualitative and quantitative data.

Lesson 3: Effective social media crisis communication is about using social media for monitoring

The next overall lesson identified concerns the great potential of social media – if used well – to serve as tool for listening to citizens and the public debate in media as a part of risk and crisis management (Gaspar et al., 2014; Howell, 2015; Luoma-Aho et al., 2013). The recommendation to monitor social

Examples of lessons/advice and authors	Knowledge base and research context characteristics
"Best practices for risk and crisis communication stress the importance of establishing a strong network as a part of the pre-crisis planning phase" (Getchell & Sellnow, 2016, p. 605)	Lesson based primarily on U.S. research Lesson based on research from different sub-disciplines
"Developing social media policies that include guidelines for using Instagram and other social media platforms will be the key" (Guidry, Messner, Jin & Medina-Messner, 2015, p. 355)	Lesson based primarily on research concerning public authorities and natural hazards, disasters and accidents Lesson based primarily on analysis of Twitter
"An organization can allocate more energy to post-crisis actions if it has successfully created and maintained a digital community prior to the crisis" (Gou, 2017, p. 762)	Lesson based mainly on quantitative studies Lesson based to a low degree on experimental studies

Figure 4. Effective social media crisis communication is about being prepared, understanding social media logic, and making friends before you need them. Summary and example of qualitative and quantitative descriptive data.

media was found in 27 articles (26%). During 2017 (until October), the advice concerning monitoring increased sharply (Figure 2). Several studies recommend such social media monitoring as a vital part of the organization's issues management efforts. Organizations should scan social media to monitor their environments for emerging issues, and also be proactive and early in tracking online hot-issues among publics (Krishna & Vibber, 2017; Veil, Reno, Freihaut, & Oldham, 2015).

By scanning social media, crisis managers should also assess what important publics are arguing in different emerging subarenas (Coombs & Holladay, 2012b, 2014; Johansen, Johansen, & Weckesser, 2016). Another possibility afforded by social media scanning is for crisis managers to identify so-called "paracrises" before they develop into problematic and costly full-fledged crises (Coombs & Holladay, 2012a). Johansen et al. (2016) show that analyzing social media content creates opportunities for an organization to learn more about not only their "faith-holders, but also their hate-holders" (p. 302) during a crisis. Social media monitoring is also recommended as a way to evaluate the emotional character of a crisis (Gerken et al., 2016) and a way to perform preventive analyses of how people express their coping with different threats, such as food hazards (Gaspar et al., 2014). Some scholars also argue the importance of strategic organizations not only monitoring online news stories, but also monitoring audiences' comments about them in the digital sphere (Spence et al., 2017).

Several studies recommend and highlight Twitter as the most effective tool for social media monitoring. Lachlan, Spence, and Lin (2014) find that Twitter is an especially important social media tool for evaluating specific audience needs and concerns about risk issues. By monitoring Twitter, they argue, it is possible to detect differences in risk perception across diverse audiences. Gaspar et al. (2014) also recommend monitoring Twitter as a way to detect upcoming issues. Although admitting that an assessed sample of Twitter feeds from the platform may not be representative of all concerned and engaged people, they claim that it is possible at an early stage to detect and identify coping expressions such as anger, blaming others, etc. during crises of distrust. Finally, there are also studies taking a public relations viewpoint, recommending monitoring as way to strengthen the public relations practitioner's position in the dominant coalition within an organization preparing for and managing crises (Strauss & Jonkman, 2017). A powerful communication practitioner, in turn, leads to effective crisis communication, according to this logic.

According to the quantitative data, this third identified lesson is based, to a higher degree than the others, on studies by both U.S. scholars (59%, n = 16) and scholars from other countries (41%, n = 11). It is also based on studies both from the subdiscipline of communication studies (56%, n = 15) and the subfield of information management and the social science and psychology of computer use (30%, n = 8). Many studies promoting this lesson analyze Twitter (37%, n = 10), followed by other social media platforms (26%, n = 7). Analyses concerning Facebook (19%, n = 5) come in third place as a basis for this third lesson. When it comes to type of managing organization under investigation, many of the studies analyze business organizations (63%, n = 17), followed by governmental, regional and/or local authorities (26%, n = 7). A majority of the studies investigate crises of distrust (59%, n = 16), but relatively many studies also explore natural hazards, disasters and accidents (41%, n = 11). Finally, this third overall lesson, like many of the others, was to a large degree based on a quantitative analytical and methodological approach (52%, n = 14). A small portion of the studies, however, had an experimental design (11%, n = 3). Figure 5 displays summary and examples of qualitative and quantitative data.

Lesson 4: Effective social media crisis communication is still about prioritizing traditional media

The fourth overall lesson identified partly plays down the importance of social media for effective crisis communication. Such advice was identified in 17 articles (16%) in the sample. The main idea of this lesson is that crisis managers and crisis communication practitioners should take into account the fact that traditional media is considered a more credible information source during a crisis than social media (see e.g., Arlikatti, Taibah, & Andrew, 2014; Cooley & Jones, 2013; Formentin, Bortree,

Examples of lessons/advice and authors	Knowledge base and research context characteristics
"…external stakeholders who are users of social media are an excellent resource that can be gauged to identify the informational and emotional needs of an organization's publics" (Brummette & Sisco, 2015, p. 96)	Lesson based on research from different geographical regions
	Lesson based primarily on communication studies and studies in information management, computer social science and psychology
"For practice, it is beneficial to monitor the faith-holders in the social media sub-arenas, as they represent a unique asset and may prove useful as crisis communicators" (Johansen, Johansen & Weckesser, 2016, p. 301)	Lesson based primarily on research concerning business organizations
	Lesson based primarily on analysis of crises of distrust
"…Emergency managers may be able to use the systematic analysis of Twitter content in identifying audience needs" (Lachlan, Spence & Lin, 2014, p. 554)	Lesson based mainly on analysis of Twitter, other social media platforms and Facebook
	Lesson based mainly on quantitative studies
	Lesson based to a low degree on experimental studies

Figure 5. Effective social media crisis communication is about using social media for monitoring. Summary and example of qualitative and quantitative descriptive data.

& Fraustino, 2017). Television, radio and public events are still the most effective crisis communication tools, while social media platforms (e.g., Facebook and Twitter) are not perceived as at the same level, especially when it comes to crisis communication with diversified groups of citizens, and groups with different crisis information needs (Arlikatti et al., 2014).

Social media is therefore first and foremost a complement to the already existing channels for crisis communication (see e.g., Brengarth & Mujkic, 2016; Liu, Jin, & Austin, 2013) and should only be treated as an additional part of a broader communication strategy combining traditional and social media (Gurman & Ellenberger, 2015). Austin, Liu, and Jin (2012) argue that "professionals should [make] careful and deliberate use of social media, while not neglecting traditional media in crisis responses" (p. 203). The reason is that audiences use social media first and foremost for sharing personal information with family/friends, rather than searching for crucial crisis information during emergencies. Another reason is that traditional media content, compared to other media forms, seems to have a particularly strong impact on how publics communicate about crises (Liu et al., 2013). Other scholars find that crisis messages delivered via traditional media strongly preserved the distrusted organization's credibility and decreased negative responses in the social media sphere (Formentin et al., 2017). Altogether, crisis communication practitioners should therefore "disseminating disaster information from as many sources as possible and through as many forms as possible" (Liu et al., 2015, p. 60) to achieve effective crisis communication.

The studies that build up this fourth overall lesson come to a very high degree from the United States. (71%, $n = 12$). It is important to note that according to the quantitative data this lesson to a relatively high degree is based on studies in the subfield of communication studies (47%, $n = 8$). The knowledge base for this lesson was also largely developed using a quantitative analytical and methodological approach (71%,

n = 12), more specifically survey-studies of citizens' trust of different media channels during real crisis events, or experiments concerning media use and credibility during crisis situations, for example. Many are experimental studies (35%, n = 6). The lesson largely rests on studies that analyze citizens'/customers' (82%, n = 14) media use or behavior during crises. This lesson also is based to a very high degree on studies dealing with crises managed by governments and public authorities (n = 13) as opposed to crises managed by business organizations (n = 1). This lesson was also developed by studies analyzing use of both Twitter (82%, n = 14) and Facebook (59%, n = 10). Figure 6 displays summary and examples of qualitative and quantitative data.

Lesson 5: Effective social media crisis communication is just about using social media

This last overall lesson identified promotes the idea that social media is a crucial component of effective crisis communication in its own right. Such explicit advice was found in 11 articles (11%) but a more implicit "gospel" of social media was visible in many articles in the sample. Scholars delivering this kind of explicit advice to practitioners argue for example that organizations and crisis communication managers no longer can afford to neglect to integrate social media into crisis management: "the only choice is how to do so" (Xu & Wu, 2015, p. 248). Another example is the idea that when it comes to social media, crisis- and risk-communication practitioners "cannot ignore its possible benefits anymore" (Rutsaert et al., 2014, p. 92). Social media crises can be seen as an opportunity because "crises can be transformed into a marketing campaign" and change "unfavorable factors into advantageous ones" (Wang, 2016).

There are also lists of detailed reasons why social media must be used in strategic crisis communication. A first such reason is that social media – and especially Twitter – create

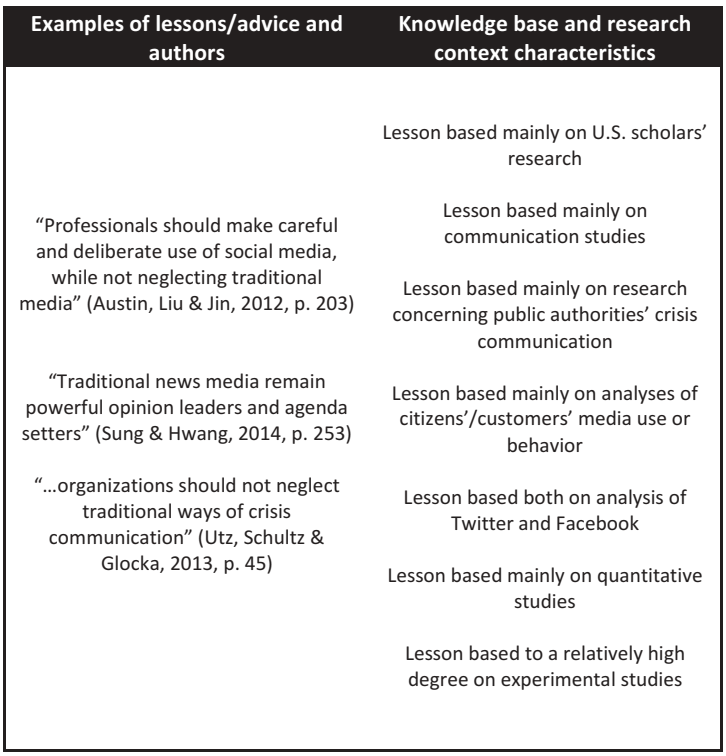

Figure 6. Effective social media crisis communication is still about prioritizing traditional media. Summary and example of qualitative and quantitative descriptive data.

opportunities for immediate transmission of important crisis information to "as many people as possible" (Gaspar et al., 2014, p. 253). A second reason is the great impact of social media, which makes it a better choice than traditional media for avoiding the wide dissemination of misinformation during crises (Huang, Starbird, Orand, Stanek, & Pedersen, 2015; Husain et al., 2014). Thirdly, social media technology is considered to offer communication possibilities that enforce the key principles of effective risk communication and effective crisis management. Such principles are about speed and the possibility for direct communication between crisis managing organizations and citizens/customers/stakeholders, as well as about establishing trust and the possibility to work as a credible information source (Panagiotopoulos, Barnett, Bigdeli, & Sams, 2016; Rutsaert et al., 2014). Such optimistic advice about the possibilities of social media highlights social media's ability to bypass news media, engage in formal and informal interactions, and support information sharing and collaboration (see e.g., Dabner, 2012; Ketter, 2016; Simon, Aharonson-Daniel, El-Hadid, & Adini, 2015).

The quantitative content analysis shows that this final identified lesson, characterized by an optimistic view of social media, is not correlated with studies performed and developed in specific countries/regions (U.S. scholars, 36%, n = 4; Other origin of scholars, 54%, n = 7) or in specific research subdisciplines (others, 36%, n = 4; communication studies, 27%, n = 3; information management, computer and social science and psychology of computer use, 27%, n = 3; crisis- and disaster-management research, 9%, n = 1). This lesson is also based on studies analyzing business organizations' (45%, n = 5) and/or public authorities' crisis communication (64%, n = 7). More of the studies analyzed Twitter (36%, n = 4) than Facebook (9%, n = 1), however. When it comes to research methods employed in developing this optimistic lesson, there is an equal distribution between qualitative (45%, n = 5) and quantitative (36%, n = 4) analytical and methodological approaches. Finally, only a single study (9%, n = 1) has an experimental design. Figure 7 displays summary and examples of qualitative and quantitative data.

Examples of lessons/advice and authors	Knowledge base and research context characteristics
"Organizations cannot ignore social media in their crisis communication any longer" (Huasain et al. 2014, p. 227)	Lesson based on research from different geographical regions and research sub-disciplines
"…organizations no longer have a choice about whether to integrate social media into crisis management" (Xu & Wu, 2015, p. 248)	Lesson based primarily on analysis of Twitter Lesson based on both qualitative and quantitative studies
"On the platform of social media, crises can be transformed into marketing campaigns" (Wang, 2016, p. 69)	Lesson based on a very low level of experimental studies

Figure 7. Effective social media crisis communication is just about using social media. Summary and example of qualitative and quantitative descriptive data.

Discussion and conclusions

This study has tracked five research-based lessons for effective global social media crisis communication by means of an extensive systematic and interdisciplinary review. By aggregating recommendations from a number of studies – from different disciplines – the study finds that effective crisis communication is about using social media's potential to create dialogue and to choose the right message, source and timing; performing precrisis work and developing an understanding of social media logic; using social media monitoring; and continuing to prioritize traditional media in crisis situations. Finally, in line with some researchers' explicit "gospel" of social media, effective crisis communication is also about just using social media in its own right during crises.

The overall lessons are relatively similar to advice and recommendations for effective social media crisis communication previously suggested by crisis communication scholars in different subdisciplines (see e.g., Houston et al., 2015; Lin, Spence, Sellnow, & Lachlan, 2016; Veil et al., 2011) and practitioners (see e.g., American Red Cross, 2013; Booz Allen Hamilton, 2009; IATA, 2016). In this way, the study confirms the ideas that have emerged in recent years about effective social media crisis communication practice. Although the most common recommendations for practitioners concern using social media's potential for dialogue, choosing the right message, source and timing, making preparations, and understanding social media logic, the recommendation about using social media for monitoring has increased significantly during the last year. This can be interpreted as indicating that monitoring and big data are a rapidly growing research area in crisis communication; an area where the amount of advice and recommendations from scholars to crisis communication practitioners seems to be increasing rapidly.

Another aim of this study was to explore and discuss the knowledge base and contextual conditions of the studies forming the basis for the identified lessons. Understanding such contextual conditions enables us to discuss the recommendations' applicability and discuss whether they are valuable for practitioners in different geographical contexts and in different types of crisis situations, etc. There are many similarities in the knowledge base and research characteristics of the various lessons identified, but there are also some differences. We begin by discussing the most obvious similarities and the importance of these similarities for crisis communication practitioners with an increased need for global communication skills (Schwartz, Seeger, & Auer, 2016; Zerfass et al., 2013).

All the identified lessons are to a large extent based on studies by U.S. scholars, primarily using quantitative analytical and methodological approaches. A large proportion of the identified lessons also rest on analyses of Twitter. It is not obvious, however, that this preponderance of U.S. studies will make the lessons less useful for global practitioners. Crisis communication research from an applied and strategic point of view – as with global academia in general – has long been conducted in the United States, and less so in other parts of the world (see e.g., Rasmussen & Ihlen, 2017). The extensive U.S. research experience probably has led to high skill in performing studies and analyses developing advice and "best practice" recommendations for practitioners. However, there is still a need for such studies conducted by scholars from other continents and contexts. This could, for example, increase our understanding of the importance of different media usage patterns and cultural factors for effective social media crisis communication.

An and Cheng (2010) showed that the narrative of crisis communication research over thirty years does not privilege any particular analytical and methodological approach over others. A contrary result emerges in this study, when it comes to studies presenting explicit advice for practitioners concerning effective social media crisis communication. In this area quantitative methodologies and methods dominate. This study argues, therefore, that the tendency toward methodological hegemony in this subarea of crisis communication research needs to be reassessed to enable crisis communication practitioners to genuinely understand the effective practice of global social media crisis communication. Another possible weak point to take into account in a global practitioner context is, finally, the large extent to which Twitter studies – independent of scholars' origin, research subdiscipline and methodological approaches – are used as a foundation for the development of the overall lessons/recommendations identified. Twitter use differs widely between

countries, and in many countries use of Twitter is very low compared to Facebook for example. Based on the number of active users, Twitter only comes in eleventh place on the global social media ranking (Statista, 2018). Despite this, much of the advice about the use of social media in crisis communication is based on Twitter studies. Third, it is important to note that just a few of the recommendations identified in this study were developed in experimental studies (with the exception of lesson four: continue to prioritize traditional media). This can be seen as both a strength (Levitt & List, 2007) and a weakness (Fraustino et al., 2012).

There are also some interesting differences in the knowledge base and research characteristics of the different tracked lessons for effective social media crisis communication, which need to be taken into account. The first overall lesson identified and presented (using social media's potential for dialogue and choosing the right message, source and timing) tends to have a broader and more substantiated knowledge base than several of the other lessons. Compared to the other lessons, this first lesson is based on the largest volume of studies, including advice from scholars with different origins studying natural hazards, crises of distrust, authorities, business organizations, different social media platforms, etc. This first lesson was also to a rather great extent developed through nonexperimental and experimental studies alike.

By way of comparison, the third overall lesson, concerning the need for social media monitoring, is largely based on studies primarily analyzing business organizations and crises of distrust, and few of these studies had experimental designs. The fourth lesson (continue to prioritize traditional media), compared to the other tracked lessons, is to a very large degree based on studies analyzing citizens'/customers' media use during crises managed by governments and/or public authorities. It is also important to note that this fourth lesson – which partly plays down the role of social media in favor of traditional media – to a higher degree than the others was developed through experimental studies. According to Fraustino et al. (2012), such experimental studies investigating causal relationship are an acceptable way to develop best practice for social media crisis communication. Although there are several similarities in the lessons' overall knowledge bases, there are obviously important differences that should be considered if individual lessons are to be applied to a diverse and global strategic communication practice.

Finally, it is important to note that the overall lessons or guideposts for effective social media crisis communication tracked in this study do not seem to differ very much from already existing conceptions of "best practice" in crisis communication in general (see e.g., Heath, 2006; Seeger, 2006). Despite the powerful digitization of society in recent years, the development of social media, and the fast-growing body of research concerning social media crisis communication, the overall lessons identified here still primarily seem to be about actions like the need for pre-event planning, partnerships with the public, listening to the public's concerns, and understanding the audience's need for credible sources. The question is why it looks like this. One explanation can be that the already existing best practice approaches for crisis communication primarily developed in an "old" media context are so general, and also perhaps so well substantiated, that they continue to operate despite the changed media landscape.

Another explanation is that the new social media landscape for crisis communications seems to work much like that of the old media society – even if the new situation is faster and has more players. In this new landscape, the same basic logic and conditions for applied crisis communication seem to rule as before. Such a conclusion is supported by several of the studies that partly downplay the importance of social media for effective crisis communication (see e.g., Austin et al., 2012; Formentin et al., 2017). A third explanation may be the research design dilemma that arose when this study wanted to create a few flexible guideposts, in line with Ulmer and Pyle (2016) recommendations, which may gloss over details in favor of more general patterns. Effective social media crisis communication might be about the same overall basic logics and patterns as effective crisis communication in general – but there are likely to be differences in the contextual factors and situational variables connected to a mobile and social-media-dominated landscape.

Of course, the results of this study are limited by the selection of empirical material and the implementation of analytical work. The ambition to accomplish an interdisciplinary, systematic knowledge survey on the one hand, and on the other hand to use just few search terms in the data

collection, such as "crisis communication," "crisis informatics," and "social media," made the study manageable – but also limited. A broader data collection strategy using several key words connected to crises and the new media landscape would probably also have been a fruitful method for identifying good advice and recommendations for global crisis managers and crisis communication practitioners. However, such a study would not systematically explore the interdisciplinary research that explicitly contributes concrete advice to crisis communication practitioners.

This study developed and tested a new systematic method for evolving research-based overall lessons for crisis communication practitioners in the context of strategic communication. Previous successful ways to develop systematic research-based knowledge about the practice of effective crisis communication have been to combine literature and examples of social media use with earlier best practice recommendations (see e.g., Veil et al., 2011) or to systematically summarize recommendations from expert interviews and/or roundtables (see e.g., Janoske, Liu, & Madden, 2013; Seeger, 2006). Even if studies in the area of crisis communication historically often have successfully developed best practice advice for practitioners, the analytical process building up existing advice/lessons does not seem to be reflected upon and discussed very much in the area of strategic communication. The ambition of this study, finally, was to initiate such a discussion in future strategic communication and crisis communication research. A starting point for such continued and in-depth discussion can be found in this study as well as in neighboring research fields with more experience of bridging the gap between research and practice. For example, in the health sciences (see e.g., Kazdin, 2008) there is a high level of methodological experience concerning scholars' work to enhance practitioners' knowledge base and to develop evidence-based recommendations.

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Appendix A. Explicit pieces of advice from studies in the sample.

Study/Author/Year	*Lesson 1* … is about using the potential for dialogue and choosing the right message, source and timing	*Lesson 2* … is about being prepared, understanding social media logic, and making friends before you need them	*Lesson 3* …is about using social media for monitoring	*Lesson 4* … is still about using traditional media	*Lesson 5* … is just about using social media
#1. Andrews et al. (2016)	✓			✓	
#2. Arif et al. (2016)		✓	✓		
#3. Arlikatti et al. (2014).				✓	
#4. Austin et al. (2012)			✓	✓	
#5. Brengarth and Mujkic (2016)				✓	
#6. Brummette and Sisco (2015)			✓		✓
#7. Chewning (2015)	✓				
#8. Cho, Jung, and Park (2013)	✓				
#9. Chung and Lee (2016)	✓				
#10. Comunello et al. (2016)		✓			
#11. Cooley and Jones (2013)				✓	
#12. Coombs and Holladay (2014).			✓		
#13. Coombs and Holladay (2012a)			✓		
#14. Coombs and Holladay (2012b)	✓		✓		
#15. Crijns, Cauberghe, Hudders, and Claeys (2017)	✓		✓		
#16. Crook et al. (2016)	✓	✓			
#17. Dabner (2012)		✓			✓
#18. Dalrymple et al. (2016)	✓	✓			
#19. Derani and Naidu (2016)	✓				
#20. Diers and Donohue (2013)		✓			
#21. Eriksson and Olsson (2016)					
#22. Formentin et al. (2017)	✓			✓	
#23. Fowler (2017)	✓				
#24. Fraustino and Ma (2015)	✓				
#25. Freberg (2012)	✓				
#26. Freberg et al. (2013)		✓			
#27. Freberg, Saling, Vidoloff, and Eosco (2013)	✓				
#28. Gaspar et al. (2014)			✓		✓
#29. Gerken et al. (2016)	✓		✓		
#30. Getchell and Sellnow (2016)		✓			

(*Continued*)

(Continued).

Study/Author/Year	*Lesson 1* … is about using the potential for dialogue and choosing the right message, source and timing	*Lesson 2* … is about being prepared, understanding social media logic, and making friends before you need them	*Lesson 3* …is about using social media for monitoring	*Lesson 4* … is still about using traditional media	*Lesson 5* … is just about using social media
#31. Graham, Avery, and Park (2015)					
#32. Guidry et al. (2017)	✓	✓			
#33. Guidry et al. (2015)		✓	✓		
#34. Guo (2017)		✓			
#35. Gurman and Ellenberger (2015).	✓	✓		✓	
#36. Howell (2015)		✓	✓		
#37. Huang et al. (2015)		✓			✓
#38. Hughes and Palen (2012)		✓			
#39. Husain et al. (2014).					✓
#40. Jin, Liu, and Austin (2014)	✓	✓			
#41. Johansen et al. (2016)			✓		
#42. Jong and Duckers (2016)			✓		
#43. Kavanaugh et al. (2013)		✓			
#44. Ketter (2016)	✓				
#45. Ki and Nekmat (2014)	✓				
#46. Kim (2016)	✓				
#47. Knuth, Szymczak, Kuectiekbalaban, and Schmidt (2016)	✓	✓			
#48. Krishna (2017)			✓		
#49. Lachlan et al. (2014)	✓		✓		
#50. Lachlan, Spence, Lin, Najarian, and Del Greco (2016)	✓		✓		
#51. Lin, Lachlan, and Spence (2016)		✓			
#52. Liu et al. (2011)	✓				
#53. Liu, Fraustino, and Jin (2016)				✓	
#54. Liu et al. (2015)	✓			✓	
#55. Liu et al. (2013)	✓			✓	
#56. Liu, Kim, and Pennington-Gray (2015)	✓	✓	✓		
#57. Lou and Zhai (2017)	✓	✓	✓		
#58. Luoma-Aho et al. (2013)	✓		✓		
#59. Makitalo, Tuominen, Timonen, and Tikanmaki (2015)		✓			
#60. Manika (2017)	✓		✓		

(*Continued*)

(Continued).

Study/Author/Year	*Lesson 1* … is about using the potential for dialogue and choosing the right message, source and timing	*Lesson 2* … is about being prepared, understanding social media logic, and making friends before you need them	*Lesson 3* …is about using social media for monitoring	*Lesson 4* … is still about using traditional media	*Lesson 5* … is just about using social media
#61. Maresh-Fuehrer and Smith (2016)					✓
#62. Mazer et al. (2015)	✓	✓	✓		
#63. McGuinness and Marchand (2014)		✓			
#64. Morris, Mueller, and Jones (2014)				✓	
#65. Muralidharan, Dillistone, and Shin (2011)	✓				
#66. Neubaum, Roesner, Rosenthal-von der Patten, and Kraemer (2014)		✓			
#67. Ngai and Jin (2016)	✓				
#68. Omilion-Hodges and McClain (2016)		✓		✓	
#69. Ott and Theunissen (2015)	✓				
#70. Panagiotopoulos et al. (2016)	✓				✓
#71. Patton, Eschmann, Elsaesser, and Bocanegra (2016)	✓	✓			
#72. Park and Cameron (2014)	✓				
#73. Park et al. (2011)	✓	✓			
#74. Rice and Spence (2016)	✓	✓			
#75. Roh (2017)	✓		✓		
#76. Romenti et al. (2014)	✓				
#77. Roshan, Warren, and Carr (2016)	✓				
#78. Rutsaert et al. (2014)		✓	✓		✓
#79. Ryan (2013)				✓	
#80. Schultz et al. (2011)	✓				
#81. Schwarz (2012)	✓				
#82. Seong and Park (2013).		✓			
#83. Simon et al. (2015)		✓			✓
#84. Snoeijers et al. (2014)	✓				
#85. Spence et al. (2016)	✓				
#86. Spence et al. (2015)	✓				

(*Continued*)

(Continued).

Study/Author/Year	*Lesson 1* … is about using the potential for dialogue and choosing the right message, source and timing	*Lesson 2* … is about being prepared, understanding social media logic, and making friends before you need them	*Lesson 3* …is about using social media for monitoring	*Lesson 4* … is still about using traditional media	*Lesson 5* … is just about using social media
#87. Spence et al. (2017)	✓	✓	✓		
#88. Spialek et al. (2016)		✓			
#89. Strauss and Jonkman (2017)			✓		
#90. Sung and Hwang (2014)				✓	
#91. Tagliacozzo and Magni (2016)	✓	✓		✓	
#92. Tampere et al. (2016)		✓			
#93. Utz et al. (2013)				✓	
#94. van Zoonen and van der meer (2015)	✓				
#95. Veil et al. (2015)	✓		✓		
#96. Veil, Sellnow, and Petrun (2012)	✓		✓		
#97. Wan, Koh, Ong, and Pang (2015)	✓				
#98.Wang (2016)	✓				✓
#99. Wang and Zhuang (2017)	✓				
#100. Westerman et al. (2014)	✓	✓			
#101. Williams et al. (2017)	✓				
#102. Wukich (2016).	✓	✓			
#103. Ye and Ki (2017)	✓				
#104. Xu and Wu (2015).	✓	✓		✓	✓
Total number of article (N_1 = 104) Total pieces of advice (N_2 = 157)	61	41	27	17	11

Note. Explicit pieces of advice from studies in the sample.

Appendix B: Included subdisciplines, peer-reviewed journals, and conference proceedings in the sample

Subdiscipline	Included peer-reviewed journals and conference proceedings
Communication studies	*Asia Pacific Public Relations Journal, Communication Research, Communication Research Reports, Communication Quarterly, Corporate Communications, Journal of Applied Communication Research, Journal of Business and Technical Communication, Journal of Computer-Mediated Communication, Journal of Communication Management, Journal of Health Communication, Journal of Public Relations Research, Journalism & Mass Communication Quarterly, Media International Australia, Public Relations Inquiry, Public Relations Review, Science Communication, Southern Communication Journal*
Information management and social science and psychology of computer use	*ACM Conference on Computer-supported Cooperative Work and social Computing, Computers & Industrial Engineering, Computers in Human Behavior, International Journal of Human-Computer Studies, IEEE Conference proceedings, International Journal of Information Management, Social Informatics, Social Science Computer Review, System Research and Behavioral Science*
Crisis- and disaster-management research	*Disasters Prevention and Management, Journal of Homeland Security and Emergency Management, International Journal of Emergency Management, International Journal of Disaster Risk Reduction; Journal of Contingencies and Crisis Management, Natural Hazards*
Others	*Annals of Geophysics, Food Policy, International journal of Hospitality Management, Technological Forecasting and Social Change, The Internet and Higher Education, Tourist Management, Procedia Economics and Finance*

Note. Included subdisciplines, peer-reviewed journals, and conference proceedings in the sample.