Striking the right note on social media during a tragic crisis

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The situational crisis communication theory applied to the case of the Germanwings Flight U9525 and its effects on audience response tone

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Abstract

This study is concerned with the crisis communication of Lufthansa on Facebook and Twitter, after the air crash of Germanwings Flight U9525 on 24th of March 2015, where 144 passengers and 6 crew members crashed into the French Alps. A stakeholder analysis by Canny (2016) already categorized this crisis event as a preventable crisis situation, based on the model of the situational crisis communication theory by Coombs (2007), for which a specific set of possible crisis response strategies is suggested as well. However, earlier research shows, that Fortune 500 companies do not always apply the SCCT model correctly on Facebook. This study tries to fill a gap by examining the effectiveness of the SCCT model in a social media context, thus identifies which proper SCCT crisis response strategies were used by Lufthansa during the crisis on Facebook and Twitter and if these have had a positive effect on the audience response tone.

Therefore, a content analysis of the crisis response messages on Facebook and Twitter (N=26) and the user comments (N=2371) on those crisis response posts was carried out. The results show that, for the preventable crisis situation, Lufthansa correctly implemented rebuild- and bolstering strategies into their crisis communication efforts on Facebook and Twitter and also gave instructive information and adjusted new information in all crisis response messages as suggested by the SCCT model. The overall audience response tone however was negative and the most accommodative rebuild- and bolstering strategies, namely the ingratiation strategy solely and the apology strategy in combination with the victimage strategy in a crisis message have had the most positive effect on the audience response tone.

Future research could investigate the correctness of these findings, by determining the audience response tone in an experimental research design, where the effect of exactly the wrong crisis response strategies on the audience response tone is researched.
To crisis management, it is strongly recommended to apply the SCCT model during a preventable crisis not only in traditional media, but also at least on Facebook.

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1. Introduction

On March the 24th 2015, an airbus A320-200 flying from Barcelona El Prat Airport to Düsseldorf Airport crashed into the French Alps 100 kilometers northwest of Nice. The crash followed after constant decent one minute after the last routine contact with the air traffic control and not long after the airplane had reached its assigned cruise altitude. All the 144 passengers and the six crewmembers died in this incident. According to recordings of the black-box, the co-pilot was alone in the cockpit and introduced the decent which led to the accident.

This information was already spread to the public one day after the air crash had happened and the recordings of the black-box had been analyzed. Very quickly, additional information about the co-pilot was given by Lufthansa, putting the accident into the context of a suicidal mission. One of the aspects of the Lufthansa crisis communication was a claim of the Lufthansa CEO Carsten Spohr in a press conference on 24th March 2015 in Cologne, in order to establish understanding for the situation. It was said that 6 years ago, the co-pilot took a break during his apprenticeship for months due to problems with depressions. But it was also assured that after the interruption of the flight training, his skills and competence were verified and that the pilot "was fit in all areas", according to Carsten Spohr, the CEO of Lufthansa.

Organizations, communicating poor during a crisis often make bad situations worse (Marra, 1998). Research has shown that crisis response strategies – what an organization says and does after a crisis – serve to protect organizational reputation and helping aggrieved parties to cope psychologically with a tragic crisis situation (Coombs & Holladay, 1996, in Coombs & Holladay 2008). To do this successfully, managements may apply the Situational Crisis Communication Theory (SCCT) with its central focus on how to inform the audience and protect organizational reputation during a crisis (Coombs & Holladay, 2002).

Nowadays, social media play an increasingly important role in crisis communication, but organizations do not pay enough attention to its significance (Ki & Nekmat, 2014), thus underestimating its impact on a successful crisis management besides the incorporation of traditional media. As research into the Facebook usage of Fortune 500 companies during crises has shown, organizations mostly do not respond under the terms of the Situational Crisis Communication Theory (Ki & Nekmat, 2014). That means, these Fortune 500 companies do not always use the right crisis response strategies in social media according to

the crisis situation at hand and the suggestions from the SCCT. Therefore, in this study, the effectiveness of the theory is tested on the crisis response strategies of Lufthansa and the audience's reaction on Facebook and Twitter that are linked to the air crash of the Germanwings Flight 9525, also by indicating differences among those two social media platforms.

A former stakeholderanalysis by Canny (2016) puts Lufthansa into a preventable crisis situation even when the assumed preventable situation exhibits characteristics of an accidential crisis situation. Assuming Lufthansa to have communicated in a consistent way in traditional and new media according to the Situational Crisis Communication Theory, the audience response tone in the social media can determine the effectiveness of the SCCT on a company's Facebook and Twitter appearance.

The central questions of this research are the following: What crisis response strategies did Lufthansa apply? Did Lufthansa inform the audience and adjusted information in a way that it is suggested by the management guidelines of the SCCT model? What is the effect of correctly applied crisis response strategies on the audience response tone?

2. Theoretical framework

In the first two sections of the theoretical framework, crisis and its possible effects are defined, leading to the relevance of crisis communication. In the following, the Situational Crisis Communication Theory is introduced by first explaining its roots, after which two of the core elements are explained; the crisis situation itself and the crisis response strategies. Having done so, the management guidelines resulting from the SCCT are presented, followed by connecting the theoretical aspects to the Lufthansa case. After that, the role of social media in communication crisis is taken into account, leading to the problem statement and associated research questions.

2.1 Defining crisis and its effects

There have been many attempts in the literature to define a crisis. According to Coombs (2007 in Kyhn, 2008, p.13) it is stated that "there are many books written about crisis management, but there is no one accepted definition of a crisis." They also point out that this might be the case, because researchers writing about crisis hold different perspectives and focuses. Some do that from the perspective of the outcomes of a crisis event with respect to business processes or organizational reputation and again others include holistically or atomistic impact on organizations, thus crises effecting a whole organization or just a part of it (Yum & Jeong 2015; Fearn-Branks, 2002; Anagnos, 2001).

Pearson and Clair (1998 in Kyhn (2008, p.14) claim that "an organizational crisis is a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly." This definition includes most of the different outcomes of a crisis. For example, Yum and Jeong (2015) refer to Coombs (2010, p. 19), because according to him, an outcome of such "an event […] can have negative effect on the organization, industry or stakeholders, if handled improperly." Also Fearn-Banks (2002) highlight the effects of a crisis and look at it from a reputation management perspective. So, Fearn-Banks (2002 in Kyhn, 2008, p.13) refer to it as "a major occurrence with a potentially negative outcome affecting an organization, company or industry, as well as its publics, products, service or, good name". The holistic view on effects of crises is reflected by Anagnos (2001 in Kyhn, 2008), when stating that "a crisis is an event that affects or has the potential to affect the whole of an organization."

Coombs (2007), cited by Kyhn (2008, p.15), incorporates most of the common traits of the different views on crises, when defining a crisis as “the perception of an unpredictable event, that threatens important expectancies of stakeholders and can seriously impact an organization’s performance and generate negative outcomes.”

2.2 Crisis communication

Crisis communication by its definition according to Benoit (1995), is an interaction between an organization, the public and the organization’s stakeholders’ in a post crisis situation, during an ongoing crisis event and in a post-crisis situation. In such a situation, crisis communication is considered to be a central part of an organizational reputation recovery (Gottschalk, 1993) in a crisis management process, including a strategic plan for this recovery from negative impacts (Coombs, 1999), as written in Canny (2016). When an organization is confronted with a crisis event, first the public and organization’s stakeholders try to explain and evaluate the organizational responsibility of the corporate accident, which is often colored by the media, so that the question for an explanation is crucial for an organizations’ response to crises. In such a case, an organization’s management can incorporate the Situational Crisis Communication Theory (SCCT) for an understanding of the situation and a pre-selection of possible response strategies to the public on the basis of responsibility for the specific crisis situation at hand.

2.3 The situational crisis communication theory (SCCT)

The SCCT has its roots in the Attribution theory. According to Yum and Jeong (2015, p. 4), the “Attribution theory is a social psychology theory, that assumes that people make sense of events by explaining the cause of the event.” For example, when there is a crisis, people attempt to explain why the event occurred. Furthermore, Yum and Jeong (2015) give explanation of several dimensions of attribution, like the locus (external vs. internal), controllability (controllable vs. uncontrollable), stability (stable vs. unstable), where locus is “the most fundamental dimension” (Yum & Jeong, 2015, p. 4). If such an event occurs, people tend to explain the crisis event by internal organizational faults, or that the crisis event is due to external factors of the environment, the fundamental dimension of attribution. Also, stakeholders and the public argue to what extent an organization was in control of the causes leading to the crisis and how stable or unstable these causes were. These three dimensions of the Attribution Theory are brought together, when the stakeholders try to estimate an organization’s responsibility after explaining the crisis event. After all, the SCCT provides

insight into a crisis situation on the basis of stakeholders' perception of the organization's responsibility.

According to Coombs (2007), the SCCT is an advancement of the Attribution Theory and is able to test hypotheses related to how perceptions of the crisis situation affect the crisis response and the effects of a crisis response on outcomes such as reputation, emotions, and purchase intentions. The development of the SCCT is also linked to the Relationship Management Theory (Ledingham, 2006), because it "applied the relational perspective to the public relations function of crisis management" (Coombs, 2000, p.73 in Kyhn, 2008). Furthermore, the Neo-Institutional Theory belongs to the roots of the SCCT, because of its key premise to conform to social rules comes into play, where "the relational history becomes a function of events related to either meeting or failing to meet stakeholders' expectations" (Coombs, 2000, pp. 55-77 in Kyhn, 2008). During a crisis, stakeholders are looking back at the relation they had with a company, thus if it meets their expectations and to what extent they have been disappointed or satisfied by its actions. This evaluation is transferred to the perception of an ongoing crisis, where on the basis of the stakeholders' estimation of the organization's responsibility, a certain expectancy of organizational behavior needs to be fulfilled through an adequate response to the crisis at hand.

According to Kyhn (2008, p. 23) the Situational Crisis Communication Theory consists of three core elements: the crisis situation (2.3.1); the crisis response strategies (2.3.2); and a system for matching the crisis situations and crisis response strategies (2.3.3).

2.3.1 Crisis situations according to the SCCT

Coombs (1998) points out that in the first place, it is important for a crisis manager to understand the situation so that he or she can select an appropriate response strategy for the crisis. Whether a defensive or an accommodative response strategy should be applied, depends on how the situation has to be categorized and thus the degree of the organization's responsibility that is allocated to a company by its stakeholders. First, a crisis situation with minimal attributions of organizational responsibility can be placed in the victim cluster. Second, crises situations with low organizational responsibility are seen as those from the accidental cluster and third, a crisis situation with high organizational responsibility from the preventable/intentional cluster. Each cluster investigates the nature of the specific crisis situation and also how the causes for a crisis situation can be characterized.

Victim cluster

The victim cluster includes crisis types in which the organization is also a victim of the crisis. This type of crisis type is characterized by weak attributions of crisis responsibility with a mild reputational threat. It is possible, that in such a crisis type, a *natural disaster* is responsible for the crisis situation. An example might be an earthquake or any act of damage through natural forces. Another type of a victim crisis can be a *rumor*, where false and harmful information about an organization was spread. Furthermore, there can be *workplace violence,* where a current or former employee attacks current employees. Finally, within the victim cluster, *product tampering or malevolence* can occur and in such a situation, an external agent causes damage to an organization (Coombs, 2004).

Accidental cluster

The accidental cluster is a type of crisis, where the organizational actions, which lead to the crisis, were unintentional. This type of crisis is characterized by minimal attributions of the crisis responsibility, leading to a moderate reputational threat. This crisis type can also occur through *challenges*, where a stakeholder claims, that an organization is operating in an inappropriate manner. Furthermore, the accidental crisis situation can be reasoned by *technical-error accidents*, where a technology or failure of equipment has caused an industrial accident. Besides that, the situation might also be caused by a *technical-error product harm,* what means, that a technology or equipment failure is due to the fact, that a product must be recalled (Coombs, 2004).

Preventable/intentional cluster

According to Coombs (2004), the preventable cluster is a type of crisis, where an organization placed people at risk, took inappropriate actions or violated a law. This kind of crisis type is characterized by strong attributions of crisis responsibility and a severe reputational threat, as Coombs (2004) points out. Crisis situations fall into the preventable/intentional cluster, if the crisis is caused by a *human-error accident,* where human error causes an industrial accident. Furthermore, *human-error product harm* occurs, when due to a human error, a product must be recalled. Another reason for such a type of crisis can be an *organizational misdeed without injuries,* where stakeholders are deceived without injury, or *organizational misdeed with injuries,* where stakeholders are placed at risk by management and injuries occur. A last reason for a crisis situation of the preventable cluster can be an *organizational misdeed management misconduct,* where laws or regulations are violated by the management (Coombs, 2004).

It is necessary to know what kind of crisis situation is given, so that appropriate response strategies can be selected, which match with the characteristically circumstances of the crisis event.

2.3.2 Crisis response strategies according to the SCCT

According to the SCCT, there are primary crisis response strategies and secondary crisis response strategies. Within the primary crisis response strategies, there are *deny crisis response strategies, diminish crisis response strategies* and *rebuild crisis response strategies*, which all will be lined out in the following paragraphs. The secondary response crisis response strategies, usually used additionally to the primary response strategies, are the *bolstering crisis response strategies.*

Deny crisis response strategies

According to Coombs (2007), a deny crisis response strategy is called *attack the accuser,* where the crisis manager confronts the person or group claiming that something is wrong with the organization. Using the *denial strategy*, a crisis manager asserts that there is no crisis. Applying the *scapegoat strategy*, a crisis manager blames some persons or group outside of the organization for the crisis.

Diminish crisis response strategies

Coombs (2007) explains that the *excuse strategy* is used, when a crisis manager minimizes organizational responsibility by denying to have had the intention to do harm or it is claimed, that the organization was not in control of the events that caused the crisis. Incorporating the *justification strategy,* a crisis manager minimizes the perceived damage caused by the crisis.

Rebuild crisis response strategies

Employing the *compensation strategy*, a crisis manager offers money or other gifts to the victims of the crisis situation. Another strategy within this category of strategies is the *apology strategy*, where a crisis manager indicates that the organization takes full responsibility for the crisis and asks stakeholders for forgiveness (Coombs, 2007).

Bolstering crisis response strategies

It is explained by Coombs (2007) that the *reminder strategy* is utilized, when stakeholders are told about the past good works of the organization. Furthermore, Coombs (2007) explains that when the *ingratiation strategy* is drawn on, crisis managers praise stakeholder and/or reminds them of past good works. Applying the *victimage strategy*, crisis managers remind

stakeholders that the organization is a victim of the crisis, too. The bolstering crisis response strategies are secondary crisis response strategies, usually used in addition to the primary crisis reactions.

2.3.3 SCCT management guidelines for responding to organizational crises

Coombs (2007) provides managers with certain guidelines that should be followed. These guidelines are concerned with the proper crisis response strategy matching the crisis situation, which is based on the stakeholder's perception of the organizational responsibility for the crisis and the prior relationship reputation among stakeholders.

Table 1: SCCT management guidelines

Organizational responsibility/characteristics of crisis situation	SCCT recommendation for crisis response strategy
1. Minimal attributions of crisis responsibility (victim crises), no history of similar crises and a neutral or positive prior relationship reputation	1. Informing and adjusting information
2. Workplace violence, product tampering, natural disasters and rumors	2. Victimage strategy can be used as part of the response
3. Crisis with minimal attribution of crisis responsibility (victim crises) coupled with a history of similar crises and/or negative prior relationship reputation	3. Diminish crisis response strategies
4. Crises with low attributions of crisis responsibility (accident crises), no history of similar crises and a neutral or positive prior relationship reputation	4. Diminish crisis response strategies
5. Crises with low attributions of crisis responsibility (accident crises), coupled with a history of similar crises and/or negative prior relationship reputation	5. Rebuild crisis response strategies
6. Crises with strong attributions of crisis responsibility (preventable crises) regardless of crisis history or prior relationship reputation	6. Rebuild crisis response strategies
7. Rumor and challenge crises	7. Deny crisis response strategies
8. Consistency in crisis response strategies;	8. Mixing deny crisis response strategies with either diminish or rebuild strategies will erode the effectiveness of the overall response

Source: Coombs (2007)

2.4 The case of Germanwings Flight U9525 – Crisis definition, SCCT and the air crash brought together

As the crash of the German Wings Flight U9525 on March the 24th 2015 involved the death of 144 passengers and six crew members, a crisis situation for the Lufthansa Company and

especially for Germanwings is given. It was an event that had a negative effect on the organization and its stakeholders, if handled improperly (Coombs, 2010, p. 19).

In the case of Lufthansa and the Germanwings Flight 9525 neither a *natural disaster* nor a *rumor*, either *workplace violence* or *product tampering* with low attributions of organizational responsibility with a mild reputational threat caused the air crash. Therefore it can be definitely excluded to categorize the crisis event to be one of the victim cluster. Less clearly is, if the Germanwings crisis event is fits the accidental or the preventable/intentional cluster (Coombs, 2007). A case analysis of the Germanwings crash in 2015 conducted by Canny (2016) takes the response of primary and secondary the stakeholders like investors, the ministry of Digital Infrastructure, the German Civil Aviation Authorities, the European Aviation Safety Agency, employees, customers, suppliers, the press and the media and competitors into account. Even a technical-error accident and an organizational misdeed with injuries, but most of all, a human-error accident was considered to be the case by the stakeholders in the analysis by Canny (2016). Therefore, it seems to be likely that Lufthansa has been confronted with a crisis situation from the preventable cluster in the light of the SCCT.

According to the SCCT model, for crisis types from the preventable cluster, **primary rebuild response strategies** and in addition **secondary bolstering response strategies** are worth considering. Those are thus primarily the strategies of *compensation* and *full apology,* but also the *reminder, ingratiation* and *victimage* strategies as secondary responses. This leads to the first hypothesis:

H1: Given the preventable crisis situation, Lufthansa applies the rebuild and bolstering strategies

Additionally to the rebuild and bolstering strategies, the management guidelines suggest, that an organization has to give instructional information and must steadily adjust new information during crisis events. Especially in crisis situations that are new to the organization and its stakeholders, thus never occurred before in the past.

H2: Given the preventable crisis situation, Lufthansa gives instructional information and/or adjusts information in every single crisis message, as suggested by the SCCT management guidelines for cases with no similar events in the organizational crisis history

According to the findings of the small scale study (N=5) by Canny (2016), 64% of the strategies (n=7) used in two/press releases, two press conferences and one Youtube Video shortly after the crisis are from the bolstering cluster. 36% (n=4) were from the rebuild cluster.

The *victimage strategy* was applied in 37% (n=4), followed by the *apology strategy* used in 27% (n=3), and the *reminder strategy* in 18% (n=2) and the *ingratiation strategy* and compensation strategy respectively in 9% (n=1) of the time. With respect to a crisis situation from the preventable cluster, Lufthansa applied accommodative crisis response strategies to a situation with a high degree of organizational responsibility from a stakeholders' perspective. These results confirm that the crisis response strategies outside the social media landscape concerning the case of the Germanwings flight 9525 were in line with the SCCT suggestions and management guidelines by Coombs (2007).

It is reasonable to assume, that Lufthansa chose for the same crisis response strategies on social media, for reasons of consistency in its crisis communication on traditional media channels as well as on new media channels like Facebook and Twitter.

2.5 Crisis communication in social media and SCCT

Now it is interesting to explore whether the suggested crisis response strategies according to the SCCT model were also applied on the social media platforms of Lufthansa/Germanwings, in order to test the effectiveness of the SCCT in a social media context. In times of crisis, not only the response strategy is crucial, but also the medium itself, as examined by Liu, Jin and Austin (2013). They found that an individual's reaction to a crisis is more positively when they came to know about it by the organization through social media than from traditional media or offline word-of-mouth communication.

The need for the incorporation of social media to crisis management by organizations is thus rising. This assumption is motivated through Ki and Nekmat (2014), who examined the Facebook usage of Fortune 500 companies and the effectiveness of its crisis management by applying the SCCT. The Facebook pages of those companies that had used Facebook for crisis management were manually reviewed and the response strategies were noted when they found a message with respect to a crisis. The study found crisis types with degrees of responsibility ranging from low to high; the victim cluster, the accidental cluster and the preventable/intentional cluster. Besides that, many different crisis response strategies have been identified. "Among the companies that employed Facebook for crisis communication,

the most commonly used crisis response strategies were *justification* and full *apology*, followed by *excuse*, *scapegoating* and *denial*" (Ki & Nekmat, 2014, p. 145). It is also stated that those findings reflect the need for companies in crisis situations to apply less defensive and more accommodative crisis response strategies (Coombs & Holladay, 1996; Coombs & Holladay, 2002 in Ki & Nekmat, 2014, p. 145), what might be even more important in a social media context, because the degree of accommodativeness can influence the audience response tone.

For example, Utz, Schultz and Glocka (2013) figured out, that crisis communication via Facebook in the case of the nuclear disaster of Fukushima ended up in a more favorable reputation and less secondary crisis reaction compared to traditional media. Also Bradford and Garret (1995) in Ki & Nekmat (2014, p. 145) claim that the more acceptance of responsibility is shown by accommodative strategies like apologizing, the more positive are the reactions by the audience and the less damage to the reputation is experienced by an organization.

Thus, if Lufthansa and Germanwings also applies the accommodative crisis response strategies fitting the preventable cluster, stakeholders' and social media audiences' reactions must have been neutral or positive rather than negative. This would confirm the effectiveness and applicability of the SCCT model not just in traditional, but also in new media like Facebook or Twitter.

H3: An accommodative response strategy positively affects the audience response tone

3. Research design and method

The research design and method section begins with a categorization and definition of a case study. After having explained the method, in this case a content analysis, it is described what is going to be measured. Having done so, the intercoder-agreement of the research instrument is described.

3.1 Single case-study

This study can be classified as a single case-study, because the crisis resulting from the air crash of the Germanwings flight 9525 is the starting point of this study. This is done in order to get to know which crisis response strategies have been used and if these have had a positive effect on the audience response tone in the user comments. Doing so, the effectiveness and the applicability of the SCCT and its management guidelines from the theoretical model are tested to be also valid in a social media setting.

3.1.2 Instrumental type of a case study

Because this case study intents to test the validity of the SCCT in a social media context, the type of case study can be classified as an instrumental case study. After all, it aims at providing breeding ground for future research that could refine the SCCT theory for an application in crisis communication in social media.

3.1.3 Descriptive type of a case study

This study can be categorized as a descriptive case study as well. That is because the crisis communication of Lufthansa/Germanwings is an intervention to the crisis (Stake, 1995 in Baxter, Jack, 2008, p. 549). This study has therefore a connection to a real-life context, in which a theory (SCCT) serves as the framework for the investigation of its validity and effectiveness on social media platforms as well.

3.2 Method

In order to come to know which crisis response strategies were used by Lufthansa, a content analysis of their press releases on Facebook and Twitter in the time period from 24 – 8 June 2015 has been carried out. According to Stemler (2001, p. 1) a content analysis is “a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rule of coding.” The coding schemes with the defined categories were derived from the different SCCT crisis response strategies and consist of two parts: the crisis response strategies (unit A) and the audience response tone (unit B). (Appendix 7.1)

3.2.1 Measurement

Crisis response strategy (unit A)

In order to determine the crisis response strategies in Lufthansa's social media activities before, during and after the crisis event, the Facebook posts and Tweets on Twitter were manually reviewed and coded according to the Unit A of analysis of the coding scheme (see Appendix 7.1). The Facebook posts and Twitter Tweets included posts that only once have been published in the English language. On Facebook Lufthansa Deutschland channel, 10 relevant crisis messages related to the case of the Germanwings flight U9525 were included in the analysis and on Twitter, 27 relevant crisis messages were incorporated into the total sample of crisis messages. The 27 crisis messages on Twitter were summarized into 16 crisis messages, because on Twitter, for some crisis response messages more than one post was necessary. (See appendix 8.2 for examples)

Audience response tone (unit B)

In a next coding step, the 476 comments for determining the audience response tone on Twitter, were coded as directly aimed at the organization Lufthansa (Code: 14), indirectly aimed at the organization or crisis message (Code: 15), and not at all directed at the Lufthansa organization or the crisis message (Code: 16). That was done in order to get an impression of the amount useful reactions to the crisis responses on Twitter, so that an appropriate sample size for measuring the audience response tone on Twitter could be calculated. Due to a bigger amount of reactions on Facebook, with a total number of 2398 comments in the time period from 24th of March to 8th of June 2015, this first coding step was only executed in prior on the comments on Twitter. That is because on Facebook, a sufficient number of useful comments was expected and those who were not at all directed at the organization or crisis messages, thus those which were not useful, were selected during the coding of the Facebook comments as being neutral, positive or negative.

For the coding of the audience response tone, Unit B of the coding scheme was applied (see Appendix 7.1). That included a positive reaction, thus comments "in which the audience expresses support for the organization and/or its actions" (Ki, Nekmat, 2014, p.143) and a negative reaction to the crisis message, namely comments, "in which the audience expresses anger, unhappiness, blame, skepticism, or made arguments against the organization and/or the crisis communication message (Ki, Nekmat 2014, p.144). Comments on both Facebook and Twitter, that did "not fall into either the positive or the negative categories" (Ki, Nekmat

2014, p.144) and/or in which the audience expresses compassionateness or sorrow, were coded as being neutral. The expression of compassionateness or sorrow to be coded as neutral, was added to the definiton as a revision of the measure instrument after a first round of the pretest in order to establish a proper inter-coder-reliability.

3.2.2 Inter-Coder-Reliability

The measuring instrument, thus the coding scheme, was tested with two other coders to determine the inter-coder reliability. Kassarjian (1977, p. 9) say "that the requirement of objectivity stipulates that the categories of analysis be defined so precisely that different analysts may apply them to the same body of content and secure the same results." To guarantee an appropriate inter-coder-agreement of the coding scheme, both the first unit of analysis, and the second unit of analysis were pretested with other coders.

The Unit A of the codebook include all 10 response strategies from the SCCT model and a 11th category under which all corporate communication on the crisis event is subsumed, that contains instructive information or adjusts information in the course of time during the ongoing organizational crisis.

In the first round of testing the coding scheme to the crisis response messages (unit A), 47 agreements were observed. That equaled 59,49% out of all observations, among which 14.95% of the congruent observations were expected by chance, resulting in a Kappa value of 0.524. The strength of agreement was thus considered to be moderate, what asked for a second pretest with a further coder after the revision of the codebook. The second round of pretesting the first unit, ended up in an agreement of 88.68% of all observations by the coders of which 27,13% were expected to be congruent by chance. Through the revision of the codebook, Kappa value increased to 0.845 so that the strength of intercoder agreement could be considered as very good.

For testing unit B of the coding scheme, a stratified random sample of 20 Twitter comments and 20 comments on the Facebook posts was taken from chosen sample. Pretesting unit B of the codebook for the first time, 51.35% of the observations matched, while 40.39% were expected to be agreements by chance. This led to a very poor Kappa value of 0.184, calling for a revision of the definition of the neutral audience response tone. Before the second round of the pretest, the definition of the neutral audience response tone was adjusted to the tragedy. Therefore, expressions of compassionateness and sorrow were also defined as neutral, because they are neither a positive nor a negative reaction to the corporate communicative

response frame and more a reaction to the sad news itself. The revision of the 40 comments during round 2 of pretesting unit B of the measuring instrument led to 32 observed agreements between the researcher and the other coder. This number equals 80.00% of all observations of which 17.1, thus 42.81% of the agreements were expected by chance. The strength of unit B from the coding scheme was then considered to be good (Kappa = 0.650).

3.2.3 Tests for the analysis

Hypothesis 1 and hypothesis 2 aim at testing the application of the SCCT response strategies and the management guidelines, which were incorporated in the crisis communication efforts of Lufthansa. Therefore, frequency tests were carried out, in order to get to know to what extent Lufthansa applied the strategies correctly and followed the advices from the management guidelines, which result from the theory. The differences between the social media platforms Facebook and Twitter were derived through Chi-Square tests with respect to the applied crisis response strategies by Lufthansa. Having done this, the correctness of the theoretical implementation for the given crisis situation was determined.

Hypothesis 3a and 3b take it a step further and aim at testing the audience response tone of the social media audience of Lufthansa. This was tested through a one-sample t-test, in order to determine the overall audience response tone. Doing so, the effectiveness of the SCCT in a social media context could be investigated. An independent two-sample t-test was also conducted to get to know whether one of these two platforms exhibits any differences, thus whether there was another audience response tone on Facebook than on Twitter. Then, the effect of the strategies on the audience response tone was determined by a two group sample t-test.

Due to the smaller sample size of the response strategies on both Facebook and Twitter, in comparison to a way larger sample of the comments, which aim at measuring the audience response tone, hypotheses 1 and hypothesis 2 are based on a more qualitative approach, while the data for testing hypothesis 3 and 3a, form the basis for a more quantitative approach.

4. Results

4.1 Results crisis response strategies

4.1.1 Frequencies crisis response strategies

Table 2 presents the frequencies of the SCCT crisis response strategies used by Lufthansa throughout the social media channels of Facebook and Twitter during and after the crisis, in the time period from 24th of March – 8th of June 2015. The percentages of the crisis response strategies are based on a total amount of 26 crisis response messages; 10 on Facebook and 16 on Twitter. One crisis response message always contained more than one crisis response strategy, so that in the whole sample of 26 crisis messages, in total 33 times a strategy from the rebuild and bolstering cluster and only one time a strategy from the diminish cluster were applied.

Table 2. ***Frequencies crisis response strategies***

	Total (%)	Facebook	Twitter
Deny Strategies			
Attack the Accuser	0 (0%)*	0 (0%)*	0 (0%)*
Denial	0 (0%)*	0 (0%)*	0 (0%)*
Scapegoat	0 (0%)*	0 (0%)*	0 (0%)*
Dimnish Strategies			
Excuse	1(3,85%)*	0 (0%)*	1 (6,25%)*
Justification	0 (0%)*	0 (0%)*	0 (0%)*
Rebuild Strategies			
Compensation	3 (11,54%)*	0 (0%)*	3 (18,75%)*
Apology	12 (46,15%)*	4 (40%)*	8 (50%)*
Bolstering Strategies			
Reminder	3 (11,54%)*	2 (20%)*	1 (6,25%)*
Ingratiation	7 (26,92%)*	5 (50%)*	2 (12,5%)*
Victimage	8 (30,77%)*	5 (50%)*	3 (18,75%)*
Totals crisis response strategies:	34* (100%)	16* (47,06%)	18* (52,94)
Totals crisis Messages:	26** (100%)	10** (38,46%)	16** (61,54%)

* amount/frequencies contain doublings of crisis response strategies in different crisis response posts

** total amount/frequency of crisis response posts

In the 26 crisis messages, 6 of the 10 crisis response strategies from the SCCT model were present. The most frequently incorporated crisis response strategy was the apology strategy (46,2%), followed by the victimage strategy (30,8%). The ingratiation strategy has been

applied in 26,9% of all crisis response messages, while in all crisis response messages, the excuse strategy and the compensation strategy were each used in 11,5% of all cases. Except from the excuse strategy, which was only used in a small amount of 3,9% of all cases, these strategies all derive from the rebuild and bolstering cluster, thus supporting *Hypothesis 1*.

On Twitter, the least implemented strategy was the excuse strategy, namely only in one of the 16 posts on this social media, which equals 6,3%. The most frequently applied crisis response strategy on Twitter was the apology strategy (50%), followed by the victimage strategy (18,5%) which was on Twitter solely applied with an equal percentage of 18,5% by the compensation strategy which were followed by the ingratiation strategy (12,5%). Next to the excuse strategy, which was applied in 6,3% of all cases, the same lowest frequency of 6,3% was found for the reminder strategy on Twitter.

Despite the excuse strategy, all applied crisis response strategies on Twitter derive from the rebuild and bolstering cluster.

On Facebook, not the apology strategy, but the most frequently applied crisis response strategies were the compensation strategy and the ingratiation strategy, which both occured in 50% of all crisis response messages. These two strategies were followed by the apology strategy with an implementation in 40% of all the times and in the end, by the reminder strategy, that was detected in 20% of all crisis messages.

As mentioned before, on Facebook, neither the excuse strategy nor other strategies besides those from the rebuild and bolstering strategies were applied.

Additionally supporting *hypothesis 2*, in all crisis response messages of Lufthansa during and after the crisis, additional instructions were given like referring to the hotline in case of urgent questions and information was adjusted for example when there was new information about the reasons for the air crash, what is necessary according to the management guidelines, if no similar crisis event had occurred in the organization‘s crisis history before. Giving instructions and/or adjusting new information in all crisis response messages, as suggested by the management guidelines for a preventable crisis situation, also supports *hypothesis 2*.

4.2 Results audience response tone

4.2.1 Overall audience response tone

Table 3 presents the overall audience response tone in both social media, Facebook and Twitter. The percentages are based on a total amount of N=2371 comments, which respectively can have a negative (-1), neutral (0) or positive (+1) audience response tone.

Table 3. ***Overall audience response tone***

Audience Response Tone	Frequency	Percentage (%)
Negative (-1)	617	26,0
Neutral (0)	1216	51,3
Positive (1)	538	22,7
Total	2371	100

Referring to the frequencies, the overall audience response tone on Facebook as well as on Twitter, was negative. 617 times, a negative user comment was posted, which equals 26% of the whole sample. A positive audience response was found in 538 user comments, what equals 22,7% of all comments. However, in most comments, a neutral audience response tone was detected, what draws up on 51,3%. But a t-test is conducted to verify the overall audience response tone, documented in table 3, showing that the mean score of the overall audience response tone (M = -0,03) is significantly negative t(-2,33) = - 2.327, p = .02.

Table 4. ***Mean score of overall audience response tone***

	Mean	*SD*	*t*	*df*	*p*
Audience Response Tone	-0,03	0,70	-2,33	2370	0,02

(-1) negative audience response tone
(0) neutral audience response tone
(+1) positive audience response tone

4.2.2 Audience response tone Facebook versus Twitter

Table 5 shows the results of an independent sample t-test, in order to compare the mean scores of the audience response tone in both social media.

Table 5. ***Audience response tone Facebook versus Twitter***

			Audience Response Tone			
		Mean per medium	Negative (-1)	Neutral (0)	Positive (+1)	Total
Social Medium	Facebook	-0,009	490 (24,4 %)	1045 (52,1%)	472 (23,5%)	2007 (100%)
	Twitter	-0,168	127 (34,9%)	171 (47,0%)	66 (18,1%)	364 (100%)
Total			617 (26,0%)	1216 (51,3%)	538 (22,7%)	2371 (100%)

On Facebook, 1045 comments with a neutral tone (52,1%), 472 comments with a positive tone (23,5%) and 490 comments with a negative tone (24,4 %) were posted in reaction to the crisis messages. On Twitter, 171 comments with a neutral tone (51,3%), 66 comments with a positive tone (18,1%) and 127 comments with a negative tone (34,9%) were posted by users under the crisis messages online.

There was a significant difference between the scores of the audience response tone for user comments, that were made on Facebook (M = -0,0090, SD = 0,69245) and for those, that were made on Twitter (M = - 0,1676, SD = 0,70959); $t(4) = 2369$, $p < 0,05 = p = ,00$).

4.2.3 Effect of SCCT strategies on audience response tone

Bringing the SCCT response strategies together with the audience response tone, in order to investigate the effect of the strategies on it, differences between the combinations of the crisis response strategies, but also differences between the two social media are brought to light.

At first, in table 7, the frequencies of all the combinations of different strategies are indicated, that were applied in the crisis response messages and on which a user comment was made in the two social media. Some SCCT crisis response strategies occurred solely, others in combination with one or two other strategies. The reason, why the combinations of strategies were made up are the following. Testing *hypothesis 3*, it was aimed at measuring the effect of the accommodativeness of the strategies on the audience response tone. In order to get information about the effect of several strategies on the audience response tone, a new

variable had to be made up. Finally, the combinations were made up, so that the difference of this effect on audience response tone could be measured, so that it could be detected which combinations of strategies had the most positive effect and if those were also the most accommodative strategies from the SCCT model.

Table 7. ***Frequencies, mean score and F-Value crisis response strategies solely and in combination***

	Total (%)	**M (SD)**	**Facebook** (F= 62,90)	**M (SD)**	**Twitter** (F=4,29)	**M (SD)**
Apology/Victimage	975 (41,1%)	-0,009 (0,45)	776 (38,7%)	0,000 (0,40)	199 (54,5%)	-0,045 (0,60)
Only informing/adjusting info	366 (15,4%)	-0,344 (0,84)	320 (15,9%)	-0,356 (0,84)	46 (12,6%)	-0,261 (0,80)
Apology	307 (12,9%)	-0,378 (-0,78)	231 (11,5%)	-0,355 (0,79)	76 (20,8%)	-0,447 (0,77)
Victimage	263 (11,1%)	0,015 (0,49)	263 (11,5%)	0,015 (0,49)	0 (0%)	-
Apology/Victimage/ Ingratiation	243 (10,2%)	0,313 (0,81)	231 (11,5%)	0,325 (0,81)	12 (3,3%)	0,083 (0,81)
Ingratiation	112 (4,7%)	0,680 (0,62)	112 (5,6%)	0,680 (0,62)	0 (0%)	-
Excuse/Apology	18 (0,8%)	-0,167 (0,79)	0 (0%)	-	18 (4,9%)	-0,167 (0,79)
Compensation	14 (0,6%)	-0,308 (0,85)	0 (0%)	-	14 (3,8%)	-0,308 (0,85)

(-1) negative audience response tone
(0) neutral audience response tone
(+1) positive audience response tone

In reaction to the crisis response messages, which contain the combination of the apology and victimage strategy, most of the user comments were posted, namely in 41,1% of all cases. This combination has an average score of M = -0,009 on the overall audience response tone. On Facebook, the combination of the apology and the victimage strategy results in a neutral audience response tone (M=0,000), while on Twitter, this combination has a negative audience response (M=-0,045) as a consequence. These findings indicate, that the apology and victimage strategy in combination, have more positive impact on Facebook, than on Twitter.

On crisis response messages containing the victimage strategy, which was only the case on Facebook, 263 times a user comment was made, what equals 11,1% of all the cases. The mean score of the audience response tone on those messages is M = 0,015.
This one is followed by a combination of the apology, victimage and ingratiation strategy, on which 243 times a user reacted with a comment on that crisis post, what equals 10,2% of all. The mean score of this combination on the overall audience response is positive M = 0,313. On Facebook, this combination of strategies had a more positive effect (M = 0,325) than on Twitter (M = 0,083).
On messages with the excuse strategy and the apology strategy in combination was commented 18 times, thus in 0,8% of all the cases with a mean score of M = -0,167 on the overall audience response tone. This combination was only used on Twitter. On crisis posts that contain the compensation strategy, which also was only applied on Twitter, 14 user comments were made. These are 0,6% of all comments and the compensation strategy has a mean score of M = -0,308 on the overall audience response tone.
On crisis response messages containing the ingratiation strategy, 112 user comments were posted on Facebook, but none on Twitter, what is equal to 4,7% of all comments and the overall audience response tone is M = 0,680. This finding indicates, that the ingratiation strategy solely applied, has the most positive effect on the audience response tone.

A one-way ANOVA analysis was carried out, in order to compare the effect of the combinations of SCCT strategies on the audience response tone. On Facebook, significant effects of specific combinations of SCCT strategies on the audience response tone, at the $p < 0,05$ level [$F (6, 2000) = 62.90$, $p = .00$] were present.

The multiple comparisons using Bonferroni Tests show, that there are many significant differences in the audience response tone, when specific combinations of crisis response strategies were used.

At first, the mean differences between all the combinations of SCCT strategies relative to the ingratiation strategy are described, because this strategy seems to have the most positive effect on the audience response tone. There are no negative mean differences, what means, that the ingratiation strategy has the highest score in the audience response tone as a consequence, in comparison to each of the other strategies in combination.

Furthermore, the mean difference of the ingratiation strategy relative to all the other SCCT strategies is statistically significant. The ingratiation strategy (M = 0,680, SD = 0,62)

results in a significantly more positive audience response tone than it is the case with other strategies from the SCCT model.
The combination of the ingratiation, victimage and apology strategy follows the ingratiation with respect of the most positive effect on the audience response tone on Facebook. This again provides evidence that the application of rebuild and bolstering strategies as suggested by the SCCT model, also have effectiveness in the social media, because they have a more positive effect on audience response tone than all the other strategies.
A combination of the ingratiation and the victimage strategy hast the third highest, positive effect on the audience response tone on Facebook. For Facebook, all in all, these findings verify *hypothesis 3.*

The one-way ANOVA analysis was carried out, in order to compare the effect of the combinations of SCCT strategies on the audience response tone. Also on Twitter, there was a significant effect of specific combinations of SCCT strategies on the audience response tone, at the $p < 0,05$ level [$F(5, 358) = 4.29$, $p = .001$].

This led to Post Hoc comparisons, using the Bonferroni Test, which detected only one significant difference in the audience response tone's mean between two of the seven groups of different combinations of the SCCT strategies, which were applied to the crisis messages on Twitter.
The Post hoc comparison, using Bonferroni test, showed, that the mean score of the audience response tone when using the apology strategy and victimage strategy ($M = -0,045$, $SD = 0,60$), it was significantly different to the mean score of the audience response tone when using the apology strategy ($M = -0,447$, $SD = 0,77$) solely in a crisis message.

As the SCCT suggests, the mixture of rebuild- and bolstering strategies is most suited for a preventable crisis situation. Given the fact, that the apology strategy is less accommodative than the victimage strategy, also the Post hoc comparisons result in a finding that shows on Twitter, there is the most positive effect on the audience response tone with the apology strategy from the rebuild cluster and the victimage strategy from the bolstering cluster in combination, what supports *hypothesis 3.*

5. Discussion and conclusion

According to Kyhn (2008, p. 23) the Situational Crisis Communication Theory consists of three core elements: the crisis situation (2.3.1); the crisis response strategies (2.3.2); and a system for matching the crisis situations and crisis response strategies. The crisis situation, identified as a preventable crisis situation according to the stakeholder analysis of Canny (2016), asked for the applied rebuild and bolstering strategies, so that the match between the crisis situation and the response strategies was given.

This study introduced several questions. One of these questions was, whether Lufthansa has mainly incorporated rebuild- and bolstering strategies in their crisis communication on Facebook and Twitter, as it would be suggested by the SCCT in case of a preventable crisis situation. This questions was raised because earlier research into the application of the SCCT by Fortune 500 companies on Facebook showed that nearly in all crisis communication efforts on Facebook, the SCCT had not been applied correctly by the companies. Lufthansa is also listed as a Fortune 500 company, but the results of this study show, that Lufthansa correctly apply rebuild- and bolstering strategies on Facebook and Twitter, as suggested for the crisis situation at hand. (Compare table 7) Also the management guidelines have been correctly implemented, because the suited strategies were combined with messages in which there was given instructive information or new information was adjusted. However, on Twitter, in one crisis message, the excuse strategy was applied, even though this strategy is not suggested for a preventable crisis situation.

Canny (2016) already found that in traditional media, in the case of the Germanwings crash, the correct response strategies were applied, so that it was expected to be the same on the social media platforms. And that is indeed the case. Whether one of the combinations of the present response strategies in the crisis communication efforts results in a more positive audience response tone, than another combination, was also a concern. More precisely, the question was, whether a combination of more accommodative strategies has a more positive effect on the audience response tone, than a combination of less accommodative strategies. The ingratiation strategy had the most positive effect on audience response tone, followed by the apology strategy in combination with the victimage strategy. These are also the most accommodative strategies of the SCCT model. In this study it is found, that the more accommodative a response strategy, the more positive the audience response is.

In expectation of a correct application of the SCCT and the SCCT management guidelines on Facebook and Twitter, the audience response tone was expected to be more positive as it would be the case if the SCCT would not have been applied correctly. The overall mean score of the audience response tone however, is negative. Looking at the audience response tone for Facebook and Twitter separately, the audience response tone on Facebook is less negative than on Twitter. This is an interesting finding, because in both social media, following SCCT suggestions, the correct response strategies have been applied, but on Facebook the audience response tone was more positive than on Twitter. In this study it is thus found, that the SCCT is more effective when applied to Facebook, than when applied to Twitter. That is because on Facebook, the correct SCCT strategies have a more positive effect on the audience response tone than on Twitter.

Lufthansa correctly followed the SCCT, but this still not created a positive audience response. The effectiveness of the SCCT in social media is thus not completely given, mostly in cases where it is asked for an adequate response in crisis situations with human loss. At least, the overall audience response tone is negative, but that is also due to all expressions of sorrow, compassionateness and condolence, which were coded as being a neutral. These expressions were present more often than a negative or positive audience response tone in this case of the air crash.

Table 7 in the results shows, that the combination of solely the ingratiation strategy had the most positive effect on the audience response tone followed by the victimage and apology strategy in combination, because the victimage and the ingratiation strategy are also the most accommodative response strategies from the SCCT model.

Therefore, it can be suggested to crisis managers, to always apply the correct SCCT crisis response strategies for the crisis situation at hand. The more accommodative the strategies, the better the outcome in the form of positive user comments, thus also a more favorable audience response tone.

One of the most interesting findings with respect to the differences of the mean score of the audience response in one of the two different social media Facebook and Twitter is the following: On Facebook, the results show that the audience response tone is significantly higher than the mean score of the audience response tone on Twitter, as a result of the incorporated crisis response strategies by Lufthansa.

Future research, could focus on media characteristics and user activity to explain the more negative audience response tone on Twitter in comparison to Facebook. The Limitations, the

practical implications and future research are webbed together very tightly, because after this study we still do not know what happened if the wrong crisis response strategies, thus not the fitting ones to the crisis situation at hand would have been applied. And even more, we still do not know, if this would have had an even more negative overall audience response tone as a consequence. Future research could aim at verifying the findings of this study by testing the wrong crisis response strategies and the effect on audience response tone in an experimental research design, where participants are asked to comment on fictitious crisis messages with the wrong crisis response strategies. This would benefit the verification of this study, because we would know that the audience response tone would be different or at least more negative, than when the suggested crisis response strategies from the SCCT would not have been applied by Lufthansa.

All in all, it is suggested to crisis managers to strictly apply the correct SCCT response strategies. In a preventable situation; the more accommodative the response strategy, the more positive and better is the tone management seeks to strike.

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7. Appendices

7.1 Table 1. Codebook/measuring instrument

Code		**Codename**	**Full Definition**		**Example**
Response Strategy					
	Deny Crisis Response Strategies				
	1	Attack the accuser	Management claims there is no crisis		e.g. There is no reason to be upset at the moment
	2	Denial	Management confronts the person or group that is claiming something is		e.g. The authorities totally got it wrong in their

			wrong		investigations about the case at hand
	3	Scapegoat	Management tries to shift the blame to some person or group outside of the organization (e.g. The organization blames a supplier for the crisis)		e.g. There is no internal responsibility for the actual crisis
	Dimnish Crisis Response Strategies				
	4	Excuse Strategy	Management tries to minimize the organization's responsibility for the crisis by claiming they did not intend for the crisis to happen and/or could not control the		e.g. The coverage of the crisis creates an image of the event, for which there was no intention or possibility to

			events leading up to the crisis		change things were going by Lufthansa
	5	Justification	Management attempts to minimize perceptions of damage resulting from the crisis and suggests that the crisis is not as bad as it may seem		e.g. The news may let the crash seem to be worse than they actually are…
	Rebuild Crisis Response Strategies				
	6	Compensation	Management compensates victims with money or other gifts		e.g. To all victims and their relatives of the crisis, we will give…
	7	Apology	Management publicity admits its responsibility		e.g. We are deeply sorry for

			and asks victims and others for forgiveness		what happened/ We are very affected by what happened, we are sad… Those affected by the crisis are in hour thoughts
	Bolstering Crisis Response Strategies				
	8	Reminder	Management tells stakeholders about the past good works of the organization		e.g. It has always been our priority to serve our customers in the best way we can. Our organizational history shows

					these efforts. We will maintain our high standards.
	9	Ingratiation	Management praises stakeholders		e.g. Thank you very much for your understanding of the situation. All of you did a good job.
	10	Victimage	Management reminds stakeholders that the organization is a victim of the crisis too		e.g. Thoughts are with all the victims of the crisis. We all experience this crisis as

					something that affects us as an organization and has never happened before in such a manner.
	11	Informing instructions and/or adjusting information	Management gives instructional information and adjustes it at a time more information about the crisis is available		e.g. Updates, Breaking News, hyperlinks or other cues to external information sources and communication channels
Audience					

Response Tone					
	13	Positive	Comments in which the audience expresses **support** for the organization and/or its actions. (Ki, Nekmat 2014)		e.g. you are doing a great job, Lufthansa. Stay up with that good work e.g. I still trust Lufthansa e.g. I'll be flying with Lufthansa in the future
	14	Negative	Comments in which the audience expresses **anger, unhappiness,**		e.g. How can you…

			blame, skepticism, or made **arguments against** the organization and/or the crisis communication message. (Ki, Nekmat 2014)		e.g. I'll never fly with Lufthansa again e.g. Dare you,
	15	Neutral	Comments that do not fall into either the positive or negative categories (Ki, Nekmat 2014) and/or in which the audience expresses **compassionateness** or **sorrow**.		e.g. audience commented that they were not affected by the crisis (Ki, Nekmat 2014) e.g. my sympathy for all vicitms

Targeting Crisisresponse message					
	14	Directly targeted on Lufthansa			
	15	Indirectly targeted on Lufthansa			
	16	Not at all targeted on Lufthansa			
	18	Directly targeted on Lufthansa in another language than english			
	19	Indirectly targeted on Lufthansa in another language than english			

7.1.1 Pretest Codebook Unit A

Table 2 Pretest Unit A (Crisis Response Strategies, Round 1)

	A	B	C	D	E	F	G	H	I	J	K	L	Total
A	0	0	0	0	0	0	0	0	0	0	0	0	**0**
B	0	0	0	0	0	0	0	0	0	0	0	0	**0**
C	0	0	0	0	0	0	0	0	0	0	0	0	**0**
D	0	0	0	2	0	0	0	0	0	0	0	0	**2**
E	0	0	0	0	0	0	0	0	0	0	0	1	**1**
F	0	0	0	0	0	2	0	1	0	0	0	12	**15**
G	0	0	0	0	0	0	9	1	0	2	0	5	**17**
H	0	0	0	0	0	0	0	2	0	0	0	1	**3**
I	0	0	0	0	0	0	0	0	3	0	0	2	**5**
J	0	0	0	0	0	0	1	0	0	6	0	2	**9**
K	0	0	0	0	0	0	0	0	0	1	23	3	**27**
L	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**0**	**2**	**0**	**2**	**10**	**4**	**3**	**9**	**23**	**26**	**79**

Number of observed agreements: 47 (59.49% of the observations)
Number of agreements expected by chance: 11.8 (14.95% of the observations)

Kappa= 0.524
SE of kappa = 0.056
95% confidence interval: From 0.413 to 0.634
The strength of agreement is considered to be 'moderate'.

The calculations above only consider exact matches between observers. If the categories (A, B, C...) are ordered, you may also wish to consider close matches. In other words, if one observer classifies a subject into group B and the other into group C, this is closer than if one classifies into A and the other into D. The calculation of weighted kappa, below, assumes the categories are ordered and accounts for how far apart the two raters are. This calculation uses linear weights.

Weighted Kappa= 0.373

Table 3. Pretest Unit A (Crisis Response Strategies, Round 1)

	A	B	C	D	E	F	G	H	I	J	K	Total
A	0	0	0	0	0	0	0	0	0	0	0	**0**
B	0	0	0	0	0	0	0	0	0	0	0	**0**
C	0	0	0	0	0	0	0	0	0	0	0	**0**
D	0	0	0	2	0	0	0	0	0	0	0	**2**
E	0	0	0	0	0	0	0	0	0	0	0	**0**
F	0	0	0	0	0	2	0	1	0	0	0	**3**
G	0	0	0	0	0	0	9	1	0	2	0	**12**
H	0	0	0	0	0	0	0	2	0	0	0	**2**
I	0	0	0	0	0	0	0	0	3	0	0	**3**
J	0	0	0	0	0	0	1	0	0	6	0	**7**
K	0	0	0	0	0	0	0	0	0	1	23	**24**
Total	**0**	**0**	**0**	**2**	**0**	**2**	**10**	**4**	**3**	**9**	**23**	**53**

Number of observed agreements: 47 (88.68% of the observations)
Number of agreements expected by chance: 14.4 (27.13% of the observations)

Kappa= 0.845
SE of kappa = 0.058
95% confidence interval: From 0.731 to 0.958
The strength of agreement is considered to be 'very good'.

The calculations above only consider exact matches between observers. If the categories (A, B, C...) are ordered, you may also wish to consider close matches. In other words, if one observer classifies a subject into group B and the other into group C, this is closer than if one classifies into A and the other into D. The calculation of weighted kappa, below, assumes the categories are ordered and accounts for how far apart the two raters are. This calculation uses linear weights.

Weighted Kappa= 0.886

Assessed this way, the strength of agreement is considered to be 'very good'.

7.1.2 Pretest Codebook Unit B

Table 4 Pretest Unit B (Audience Response Tone, Round 1)

	A	B	C	Total
A	2	2	1	5
B	0	12	3	15
C	0	12	5	17
Total	2	26	9	37

Number of observed agreements: 19 (51.35% of the observations)
Number of agreements expected by chance: 14.9 (40.39% of the observations)

Kappa= 0.184
SE of kappa = 0.130
95% confidence interval: From -0.070 to 0.438
The strength of agreement is considered to be 'poor'.

The calculations above only consider exact matches between observers. If the categories (A, B, C...) are ordered, you may also wish to consider close matches. In other words, if one observer classifies a subject into group B and the other into group C, this is closer than if one classifies into A and the other into D. The calculation of weighted kappa, below, assumes the categories are ordered and accounts for how far apart the two raters are. This calculation uses linear weights.

Weighted Kappa= 0.215

Assessed this way, the strength of agreement is considered to be 'fair'.

Table 5 Pretest Unit B (Audience Response Tone, Round)

	A	B	C	Total
A	3	0	2	5
B	1	10	4	15
C	0	1	19	20
Total	4	11	25	40

Number of observed agreements: 32 (80.00% of the observations)
Number of agreements expected by chance: 17.1 (42.81% of the observations)

Kappa= 0.650
SE of kappa = 0.107
95% confidence interval: From 0.440 to 0.860
The strength of agreement is considered to be 'good'.

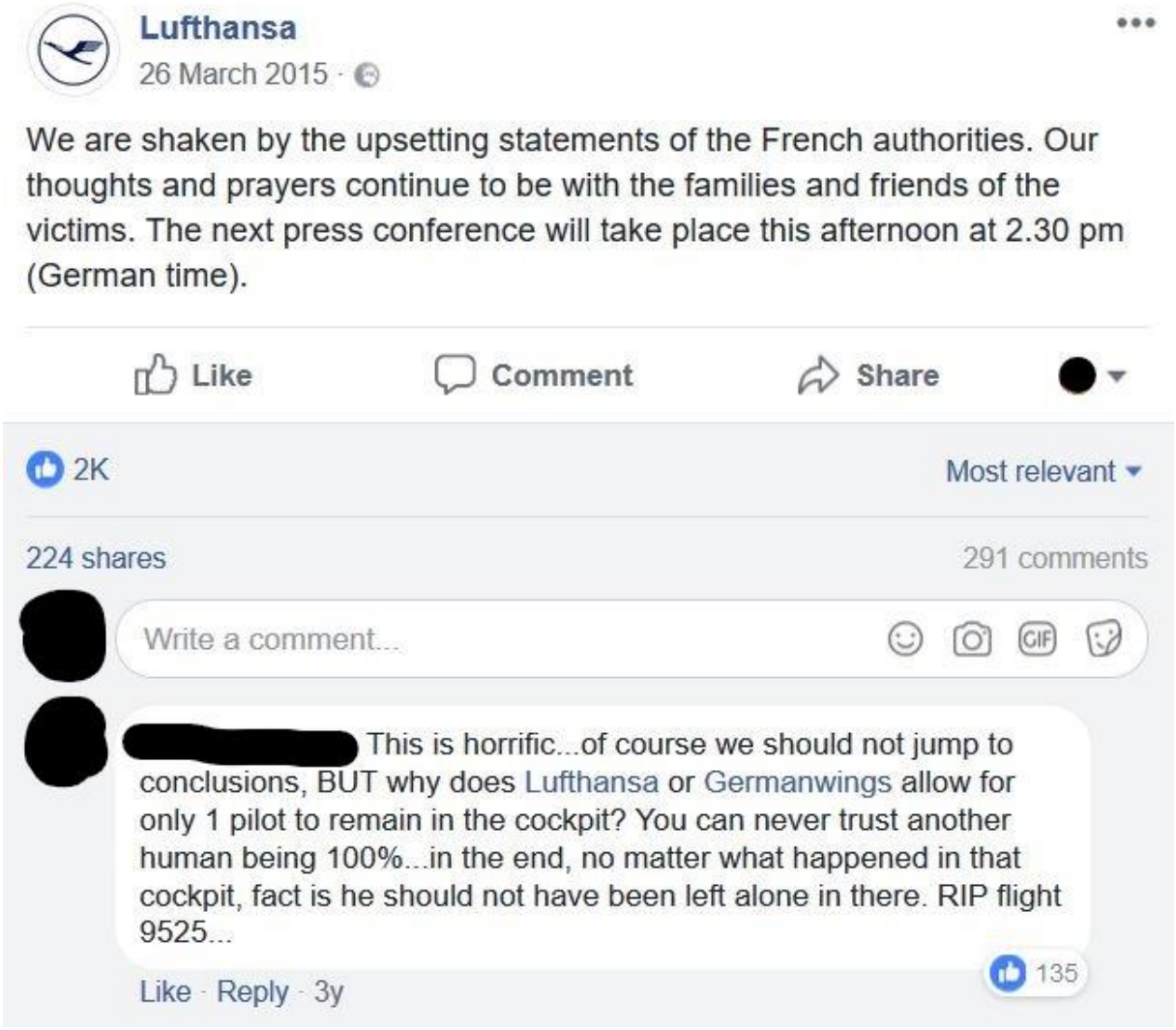
The calculations above only consider exact matches between observers. If the categories (A, B, C...) are ordered, you may also wish to consider close matches. In other words, if one observer classifies a subject into group B and the other into group C, this is closer than if one classifies into A and the other into D. The calculation of weighted kappa, below, assumes the categories are ordered and accounts for how far apart the two raters are. This calculation uses linear weights.

Weighted Kappa= 0.643

Assessed this way, the strength of agreement is considered to be 'good'.

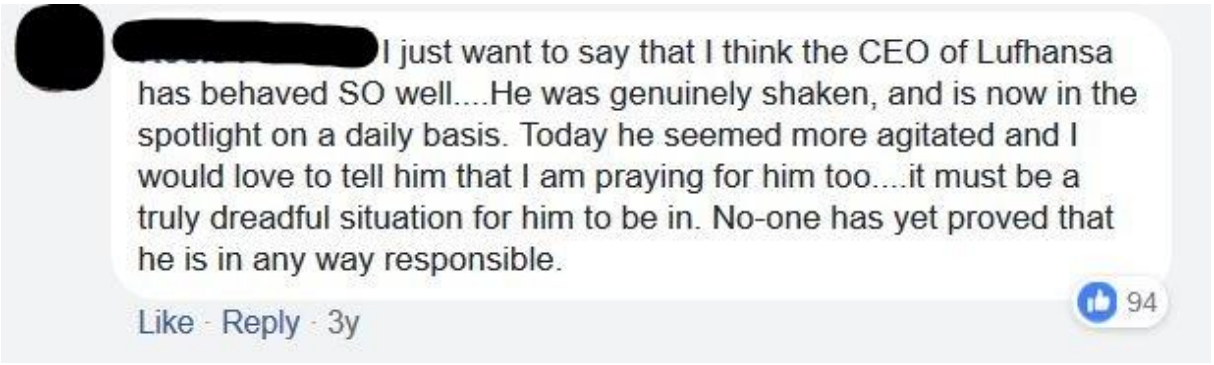
7.2 Example posts Facebook and Twitter

Screenshot 1: Example of Facebook crisis post including a negative comment



Screenshot 2: Neutral Facebook comment

Screenshot 3: Positive Facebook comment



Screenshots 4: Twitter crisis post (3 Posts, that were taken together to one crisis message)

7.3 Oneway Anova Analysis

Table 6. ***One-way Anova Analysis of audience response tone by combination of strategies on facebook***

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	152,691	6	25,448	62,902	,000
Within Groups	809,148	2000	,405		
Total	961,839	2006			

Table 7. ***Multiple Comparisons***

Dependent Variable: Audience Response Tone

Bonferroni

(I) Combination_Present_Strategies	(J) Combination_Present_Strategies	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Only Informing/Adjusting Information	Victimage	-,37146*	,05294	,000	-,5325	-,2104
	Apology/Victimage	-,35625*	,04226	,000	-,4848	-,2277
	Apology/Ingratiation/Victimage	-,68093*	,05492	,000	-,8480	-,5139
	Apology	-,00127	,05492	1,000	-,1683	,1658
	Ingratiation/Victimage	-,66706*	,08205	,000	-,9166	-,4175
	Ingratiation	-1,03482*	,06983	,000	-1,2472	-,8224

Victimage	Only Informing/Adjusting Information	,37146*	,05294	,000	,2104	,5325
	Apology/Victimage	,01521	,04538	1,000	-,1228	,1533
	Apology/Ingratiation/Victimage	-,30947*	,05736	,000	-,4839	-,1350
	Apology	,37019*	,05736	,000	,1957	,5447
	Ingratiation/Victimage	-,29560*	,08370	,009	-,5502	-,0410
	Ingratiation	-,66336*	,07177	,000	-,8817	-,4450
Apology/Victimage	Only Informing/Adjusting Information	,35625*	,04226	,000	,2277	,4848
	Victimage	-,01521	,04538	1,000	-,1533	,1228
	Apology/Ingratiation/Victimage	-,32468*	,04767	,000	-,4697	-,1797
	Apology	,35498*	,04767	,000	,2100	,5000
	Ingratiation/Victimage	-,31081*	,07739	,001	-,5462	-,0754
	Ingratiation	-,67857*	,06429	,000	-,8741	-,4830
Apology/Ingratiation/Victimage	Only Informing/Adjusting Information	,68093*	,05492	,000	,5139	,8480
	Victimage	,30947*	,05736	,000	,1350	,4839
	Apology/Victimage	,32468*	,04767	,000	,1797	,4697
	Apology	,67965*	,05918	,000	,4996	,8597
	Ingratiation/Victimage	,01386	,08496	1,000	-,2446	,2723
	Ingratiation	-,35390*	,07324	,000	-,5767	-,1311
Apology	Only Informing/Adjusting Information	,00127	,05492	1,000	-,1658	,1683
	Victimage	-,37019*	,05736	,000	-,5447	-,1957
	Apology/Victimage	-,35498*	,04767	,000	-,5000	-,2100
	Apology/Ingratiation/Victimage	-,67965*	,05918	,000	-,8597	-,4996
	Ingratiation/Victimage	-,66579*	,08496	,000	-,9242	-,4073
	Ingratiation	-1,03355*	,07324	,000	-1,2563	-,8108
Ingratiation/Victimage	Only Informing/Adjusting Information	,66706*	,08205	,000	,4175	,9166
	Victimage	,29560*	,08370	,009	,0410	,5502

	Apology/Victimage	,31081*	,07739	,001	,0754	,5462
	Apology/Ingratiation/Victimage	-,01386	,08496	1,000	-,2723	,2446
	Apology	,66579*	,08496	,000	,4073	,9242
	Ingratiation	-,36776*	,09529	,002	-,6576	-,0779
Ingratiation	Only Informing/Adjusting Information	1,03482*	,06983	,000	,8224	1,2472
	Victimage	,66336*	,07177	,000	,4450	,8817
	Apology/Victimage	,67857*	,06429	,000	,4830	,8741
	Apology/Ingratiation/Victimage	,35390*	,07324	,000	,1311	,5767
	Apology	1,03355*	,07324	,000	,8108	1,2563
	Ingratiation/Victimage	,36776*	,09529	,002	,0779	,6576

*. The mean difference is significant at the 0.05 level.

Table 8. ***One-way ANOVA Analysis of Audience Response Tone by Combination of Strategieson Twitter***

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10,340	5	2,068	4,293	,001
Within Groups	172,438	358	,482		
Total	182,777	363			

Table 9. ***Multiple Comparisons***

Dependent Variable: Audience Response Tone

Bonferroni

(I) Combination_Present_Strategies	(J) Combination_Present_Strategies	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Only Informing/Adjusting Information	Apology/Victimage	-,21564	,11354	,875	-,5512	,1199
	Apology/Ingratiation/Victimage	-,34420	,22497	1,000	-1,0090	,3206
	Apology	,18650	,12965	1,000	-,1966	,5696
	Compensation	,04682	,21800	1,000	-,5974	,6910
	Excuse/Apology	-,09420	,19295	1,000	-,6644	,4760
Apology/Victimage	Only Informing/Adjusting Information	,21564	,11354	,875	-,1199	,5512
	Apology/Ingratiation/Victimage	-,12856	,20630	1,000	-,7382	,4811
	Apology	,40214*	,09359	,000	,1256	,6787
	Compensation	,26247	,19868	1,000	-,3246	,8496
	Excuse/Apology	,12144	,17082	1,000	-,3833	,6262
Apology/Ingratiation/Victimage	Only Informing/Adjusting Information	,34420	,22497	1,000	-,3206	1,0090
	Apology/Victimage	,12856	,20630	1,000	-,4811	,7382
	Apology	,53070	,21559	,214	-,1064	1,1678
	Compensation	,39103	,27783	1,000	-,4300	1,2120
	Excuse/Apology	,25000	,25865	1,000	-,5143	1,0143
Apology	Only Informing/Adjusting Information	-,18650	,12965	1,000	-,5696	,1966

	Apology/Victimage	-,40214*	,09359	,000	-,6787	-,1256
	Apology/Ingratiation/Victimage	-,53070	,21559	,214	-1,1678	,1064
	Compensation	-,13968	,20830	1,000	-,7552	,4759
	Excuse/Apology	-,28070	,18193	1,000	-,8183	,2569
Compensation	Only Informing/Adjusting Information	-,04682	,21800	1,000	-,6910	,5974
	Apology/Victimage	-,26247	,19868	1,000	-,8496	,3246
	Apology/Ingratiation/Victimage	-,39103	,27783	1,000	-1,2120	,4300
	Apology	,13968	,20830	1,000	-,4759	,7552
	Excuse/Apology	-,14103	,25261	1,000	-,8875	,6054
Excuse/Apology	Only Informing/Adjusting Information	,09420	,19295	1,000	-,4760	,6644
	Apology/Victimage	-,12144	,17082	1,000	-,6262	,3833
	Apology/Ingratiation/Victimage	-,25000	,25865	1,000	-1,0143	,5143
	Apology	,28070	,18193	1,000	-,2569	,8183
	Compensation	,14103	,25261	1,000	-,6054	,8875

*. The mean difference is significant at the 0.05 level.