Factors that influence organisational crisis perception from an internal stakeholder's point of view

ABSTRACT

This paper starts from the premise that crisis is a perception and that one of the best ways to conquer a crisis is not to allow it to develop in the first place. By detecting or perceiving a crisis before other stakeholders do, an organisation can prevent or mitigate a crisis. Few studies have considered the question of whether organisations put the right people in the right places to be able to see a crisis coming. Within an organisation, managers are usually well placed to take decisions to initiate crisis communication, but they seem to be reluctant to do so or may not wish to see an impending crisis. Communication professionals should have a better perception of a crisis, but they rarely find themselves in a position to have a substantial impact on the management decision to communicate during a crisis. In this paper, we study crisis perception by individuals in a large governmental organisation during various stages of an unfolding crisis and compared perception scores to individual profiles based on study background, professional situation and crisis experience. This study involves a large-scale scenario-driven survey with 'crisis perception' as the main dependent variable. The results of this specific case indicate that an academic communication degree, a high hierarchical position in the organisation and crisis experience are positively related to an augmented perception of an impending organisational crisis.

KEYWORDS

crisis communication; crisis perception; situational awareness; organisational crisis; strategic communication; public relations

1 INTRODUCTION

An incident evolves into a crisis when someone perceives it as such. This understanding arises from the definition of a crisis by Coombs (2014): "a crisis is a perception of an unpredictable event that threatens important expectancies of stakeholders related to health, safety, environmental and economic issues, and which can seriously impact an organization's performance and generate negative outcomes" (p. 3). We can furthermore deduce from this definition that, as long as no one perceives a situation as a crisis, there will be no crisis. Following good practices in communication, when an organisation is the first to perceive an impending crisis, it has the advantage of having more time to gather information and to communicate proactively through organisational crisis communication (Coombs, 2014; Williams, Bourgeois & Croyle, 1993). The perception of a possible crisis occurs through individual staff members, and thus it is in the interest of an organisation to have the right people in the right places. Therefore, this study focuses on the rarely researched viewpoints of individual members of an organisation during a pre-crisis phase. A person's profile may have an influence on his or her individual perception or awareness of a situation as a crisis. The research question of this study is as follows: how does the individual profile of a member of an organisation relate to crisis perception from within that same organisation? Based on the literature, we derived several hypotheses delineating the role of individual profiles in (pre-)crisis perceptions. We will test these assumptions in the context of a large governmental organisation through a large-scale survey that includes different scenarios in an unfolding crisis situation.

The contribution of this research to the profession of public relations and crisis communication is a better understanding of how organisations can gain strategically valuable time by perceiving a crisis early and by choosing the right people to do so. To contribute to public relations and crisis communication theory, this research uncovers some of the dynamics in play during a pre-crisis phase, a crucial moment in a developing crisis and an aspect that has not been fully researched.

2 THEORETICAL FRAMEWORK

2.1 CONCEPTUALIZING ORGANISATIONAL CRISES

To be able to conceptualize and afterwards measure crisis perception by individual members from within an organisation, a concise and clear working definition of crisis is indispensable. Based on the most cited authors in the crisis communication literature, we constructed a working definition of crisis for this research (Hermann, 1963; Tjosvold, 1984; Fink, 1986; Mitroff, Shrivastava & Udwadia, 1987; Benoit, 1997; Pearson & Clair, 1998; Mitroff, 2001; James, Wooten & Dushek, 2011; Ulmer, Sellnow & Seeger, 2013; Coombs, 2014):

> A crisis starts to evolve when a stakeholder perceives that an organisation can no longer meet his expectations. Initially, very little information is available on the ongoing situation, which may impede the decision to communicate and can endanger the organisation's interests. A crisis attracts the attention of other stakeholders and of the media, depending on the responsibility attributed to the organisation by the stakeholders and on the organisational communication, which may amplify or play down the crisis'.

A more visual approach to the concept of crisis perception can be found in Marynissen, Pieters, Van Dorpe, van het Erve and Vergeer (2010), who studied the need for information during an organisational crisis. Figure 1 shows that at first the available information on an incident evoking a crisis is not sufficient to allow management to take fully informed decisions to solve the crisis. The initial information is even less sufficient to fulfil the stakeholders' needs for it. However, not communicating will lead to an information vacuum. The organisation should fill that vacuum with its own information; others, however, may fill it with rumours, opinions, grievances, etc.

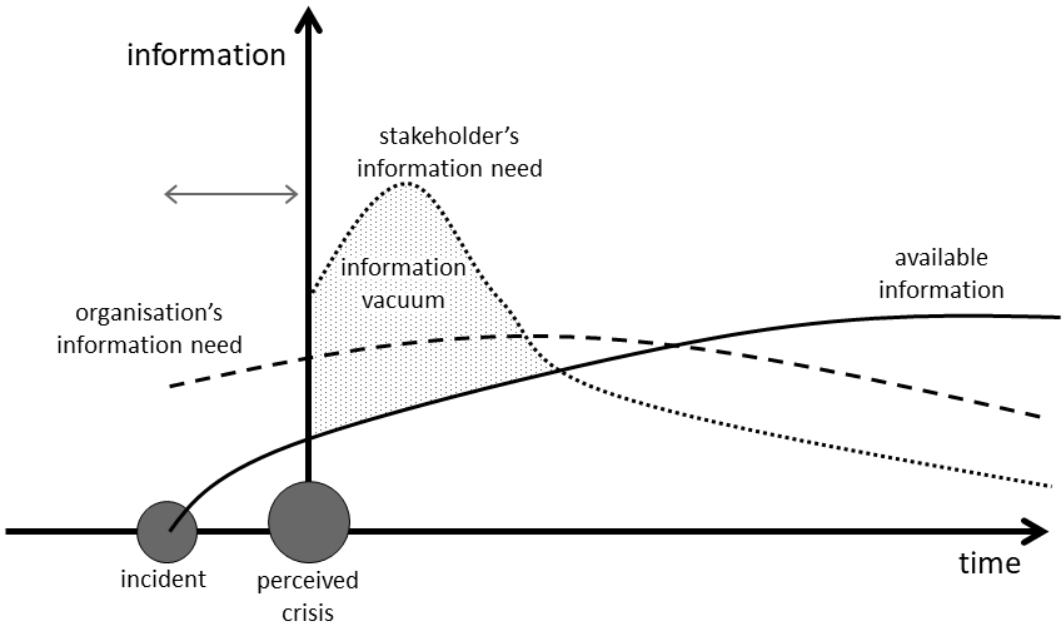

Figure 1: needs and availability of information during a crisis (adapted from Marynissen et al., 2010)

Figure 1 shows a time lapse (double-pointed arrow) between an incident and the moment when someone perceives it as a crisis. The organisation can use that time to better prepare its communication and for potentially mitigating the situation. Any stakeholder can perceive an event as a crisis, which is the reason an organisation had better not wait too long to communicate, to avoid having to take up a defensive role. The self-disclosure strategy of stealing thunder (Arpan & Roskos-Ewoldsen, 2005), in which an organisation announces

the crisis itself, is one way to take the communication lead in a crisis. By doing so, an organisation gains credibility and can frame that communication, which becomes much more difficult to do when they are not the first to communicate (Williams et al., 1993).

Considering the above and the role of communication during a crisis, as made explicit in our working definition, crisis communication is therefore a strategic policy instrument which calls for communication expertise, as we will further demonstrate. The earlier an organisation can communicate about a crisis, the higher the chances of success, if the communication is in line with what stakeholders expect. Early communication does imply, however, that an organisation perceives a crisis first. But as perception occurs through staff members, the organisation depends on them. Theories on management and risk show us that individual profiles determine people's perceptions (e.g. Slovic, 2000). It is thus of the utmost importance to gain insights into crisis perception from within an organisation.

2.2 CRISIS PERCEPTION

In studies of a crisis as the perception of an event, the role of the first perceiver, as explained above, is a subject that crisis communication scholars have rarely considered. In one of the first studies to tackle this, Billings, Milburn & Schaalman (1980) mention that an event must be noticed, treated and evaluated against normality before the organisation perceives it as a crisis. Penrose (2000) later suggests that the individual perceptions of decision-makers affect an organisation's crisis strategy. Paraskevas & Altenay (2013) consider lessons learned from crises and suggest that individuals must share their perceptions for there to be successful signal detection and thus crisis perception. An organisation's effectiveness in its crisis perception depends on its capacity to analyse the environment and detect and share the relevant signals. Pieters & Eeckman (2015) stress the role of members of an organisation by presenting ways to increase the probability that an organization's personnel will perceive a crisis, such as by strategic communication, risk communication and organisational culture.

A person's perceptions are dynamic processes that lead to decisions and changes in behaviour based on individual and collective schemes or mental models (Barr & Huff, 1997). Weick's sense-making theory is the most cited in studies of individual information perception and interpretation. It suggests that people attribute meaning to their own situation based on previous experience and by creating a personal frame in which their actions make sense (Weick, 1969). The less adequate that sense-making in a crisis is, the higher the chance that the crisis will escalate. Actions taken during a crisis add sense to the situation, which will influence the crisis itself. That brings Weick (1969) to describe a delicate equilibrium between risky action leading to more sense on the one hand, and safe passivity that will probably lead to more confusion on the other. Donnellon, Gray & Bougon (1986) also examine aspects of individual perception and conclude that members of the same organisation perceive and interpret information in diverse ways. Research on individual risk perception (Marynissen, Ladkin, Denyer, Snoeijers & Van Achte, 2013) demonstrates the importance of individual profiles (training history, place in the organisation, etc.) in determining one's perception of risks. As this research shows that people who have experienced a crisis are more sensitive to risks, we assume that they are also more sensitive to emerging crises. Therefore, we can make a first hypothesis:

> Hypothesis 1: an organisation member with experience in communication-related crises will perceive an organisational crisis more quickly than members without such experience will.

To cope with a crisis, an organisation must be aware of its continuity. Fink (1986), Mitroff (2001), Richardson (1994) and Coombs (2014) propose different crisis stages. The pre-crisis phase, the stage on which this study focuses, consists of signal detection, prevention and crisis preparation. The initial stage of signal detection involves issues management, risk management and reputation management (Coombs, 2014). Successfully managing those functions implies communication skills and strategic decision-making. Such decisions usually come from managers, who rarely have a background in communication. Nevertheless, the place of

communication professionals and managers within an organisation seems to be determinative for successful (crisis) communication (e.g. Zerfass, Verčič, Verhoeven, Moreno & Tench, 2015). Smart & Vertinsky (1977) ascertain that, during a crisis, important decisions are taken by a small group of people, who must solve problems and mobilise means on very short notice, which induces elevated levels of emotional and physical stress. Stress, uncertainty, limited time, and threats to the organisational goals can aggravate a crisis, making the decision process during crises vulnerable. We can therefore ask ourselves whether decision-makers in strategic management are able to prioritize communication in such situations, and whether communication professionals find themselves at the right level to be able to put their skills to effective use, given the delicate equilibrium during crisis situations (Weick, 1969). Would communication professionals perceive a crisis more accurately than non-communication managers would?

The management and business literature contains some studies on the role of managers and experts during crises. Kiessler & Sproull (1982) analyse managers' perceptions and reveal that the mental image determining their decisions inhibits them from noticing recent changes and thus may cause them to miss important information. On top of that, they are not inclined to adjust their views. Smart & Vertinsky (1984) confirm this and show that during a crisis, managers create a reality for themselves and for their organisation, leading to differences not only in strategy among organisations but also among individuals. Additionally, organisations that are able to adapt and cope with a crisis, according to Dutton & Ashford (1993), are successful partly because they allow individuals to signal problems to higher management, to communicate about them and in this way to influence higher management's decisions. Tjosvold (1984) suggests that managers are not typically aware of the information needed to anticipate problems. The perception of a situation as a possible crisis affects a decision-maker's feelings, orientation and success, thus inhibiting decision-making. Pearson & Clair (1998) furthermore conclude that during a crisis, decisions are taken under the pressure of a sense of lack of time and are coloured by cognitive limitations. These findings lead to our hypothesis on managers' crisis perception:

> Hypothesis 2: an organisation member in a high-level function will perceive an organisational crisis less quickly than members in lower-level functions will.

Not only can the hierarchical level someone holds within an organisation influence one's perception of a situation, but the contents of the job can as well (e.g. Donnellon et al., 1986). Some functions have a more external orientation (e.g. public relations, marketing), which leads us to another hypothesis on communication-related functions:

> Hypothesis 3: an organisation member in a communication-related function will perceive an organisational crisis more quickly than members in another function will.

Slovic (2000) points out that the difference in perception between experts and non-experts is that experts assess risks based on knowledge of positive or negative connotations attached to a specific risk, whereas non-experts do not. Information or knowledge can change such connotations. Tversky & Kahneman (1973) call this phenomenon 'affect heuristics'. According to Marra (1999), the dominant coalition sets an organisation's strategy and determines how to communicate (or not) during a crisis. The right strategy leads to effective crisis management; the wrong strategy will worsen the situation. Excellent crisis communication cannot straighten out bad management. Therefore, Marra (1999) advises that public relations professionals shift their attention from crisis communication techniques to crisis strategy, implying a change of organisational culture and autonomy, an important condition for public relations professionals to access resources and information in a pre-crisis phase and thereafter. Guth (1995) suggests advancing a proactive public relations policy in public and private organisations to prevent and handle crises, which will be unsuccessful without a public relations head playing a key role in the decision process. Van Gorp & Pauwels (2009) recommend situating the communication function close to top management. Communication professionals need power and influence to be able to perform their job, and the head of communication should be a member of the board of directors or a senior

and high-ranking staff member. Grunig & Grunig (2000) recommend placing that person within the dominant coalition to steer strategic communication and stakeholder relations. Each year, Zerfass et al. (2015) publish the much-cited European Communication Monitor, which provides the state of affairs in communication studies and the profession. In their report, excellent communication departments have much autonomy and influence on organisational decisions and correspondingly add more to the success of their organisations than communication departments that do not. That contribution to success stands out during difficulties and crises, a reason Zerfass et al. (2015) emphasize the importance of communication management as a strategic organisational function.

Considering the above research, we can make an assumption about staff with communication-related degrees:

> Hypothesis 4: organisation members with a communication-related education will perceive an organisational crisis more quickly than members with another educational background will.

The focus of this study on organisational crisis communication is the brief time during the pre-crisis phase before anyone perceives a crisis, more particularly the stage of signal detection (Coombs, 2014). Management decisions involving communication are crucial in this stage. An organisation with the ability to perceive a crisis itself through its staff members (crisis perception) has a strategic advantage. Such an organization has additional time to gather information and, more importantly, to communicate proactively in order to gain control of communication. Therefore, an organisation must have the resources and people to be able to perceive a crisis more quickly than other stakeholders can. Research shows that individual perception depends on an individual's profile and experience.

3 METHOD

To meet the study's objective, we designed a scenario-based survey containing an unfolding crisis scenario and a measurement of crisis perception for different profiles. We administered this survey to members of a large governmental organisation, the Belgian National Defence department.

3.1 CASE SELECTION

Examples of organisations that have struggled with communication during crisis situations are British Petrol during the Deepwater Horizon environmental disaster (e.g. Coombs, 2014; Harlow, Brantley and Harlow, 2011) and, more recently, Volkswagen in regard to Dieselgate (e.g. Zhang, Marita, Veijalainen, Wang, & Kotkov, 2016). Similar communication challenges have been well studied and documented throughout the years, but often with the focus on for-profit organisations. The reason for this could be that the possible damage to a company's reputation involves direct economic loss. The body of research devoted to crisis communication rarely addresses one of the largest areas of public relations, the public sector (Sisco, 2012). For public organisations, however, it is important to handle a crisis professionally and thus adopt effective crisis communication (Horsley & Barker, 2002), as they are accountable to their main stakeholders, the public and political decision-makers. To avoid cuts in funding, personnel or other resources, it is in their interest to protect their reputation and safeguard the public's and politicians' confidence in them.

We performed our survey at Belgian National Defence, an organisation with a relatively important population (N=31,000) within the same organisational context, limiting the possible distracting variables. The organisation's policy and its members' profiles are well documented, allowing us to categorise participants precisely by educational background and function profile. The organisation has been recruiting academic and professional specialists for over 15 years, some of whom have a background in communication. The organisational hierarchy is strong, which makes it easier to determine an individual's position. Finally, the particularity of the military makes it likely that many individuals have experienced a crisis in their careers.

Moreover, for National Defence, communication during an organisational crisis is an important part of corporate communication. It has many stakeholders, each with their respective expectations, such as personnel, unions, politicians, other defence organisations such as NATO and Eurocorps, and most importantly public opinion, which influences every other stakeholder. The organisation is aware of this and includes crisis communication in its corporate policy documents. But communication during crises involves speed, clarity and empathy (Coombs, 2014). The image of the Belgian National Defence in the public opinion, that of *la grande muette*, the big mute, makes one suspect that the organisation has some issues with crisis communication. This not only makes this organisation an ideal case for studying crisis perception and communication; this study can also yield specific recommendations.

3.2 SCENARIO-BASED SURVEY

To measure crisis perception based on a person's profile, this study applies a scenario-based large-scale survey with repeated measures of crisis perception as the dependent variable; and with elements from respondents' personal and professional profiles as independent variables.

All users of the organisation's e-mail domain and those with access to the intranet received a link to the survey. The survey was programmed in Qualtrics in Dutch and in French, the native languages of the members of the organisation. There was an initial response rate of 18%, with a 60% dropout rate, which leaves 2179 respondents having completed the questionnaire, representing 7% of the total population. The respondents who completed the survey can be broken down into men (*N*=1909) and women (*N*=270); Dutch-speaking (*N*=1349) and French-speaking (*N*=916); and soldiers (*N*=239), non-commissioned officers (*N*=1015) and officers (*N*=925).

We presented the respondents with an initial situation, after which they would receive four updates (stages) of the situation, each time followed by a measure of their crisis perception. To increase validity, the order of questions on perception was varied through intra-subject randomisation. The gradual building up of the scenario in four chronological parts (see Table 1) is partly based on issues management (Van Wijk, 2008), which is a crucial element of the pre-crisis stage (Coombs, 2014). First an issue is introduced, then it grows and in the third stage it reaches maturity (Van Wijk, 2008). In the last stage, respondents are faced with the organisation's unwillingness to communicate on the matter. The multiple-stage scenario also simulates how information slowly becomes available. In the literature, some authors (Hermann, 1963; Tjosvold, 1984; Pearson & Clair, 1998; James et al., 2011; Ulmer et al., 2013) touch upon the potential for insecurity during a crisis, which we have interpreted as a lack of information, especially in the early stage of a crisis (Sayegh, Anthony & Perrewé, 2004). The scenario is loosely based on the fires in workshops in Lahore and Karachi on 11 September 2012 and the collapse of a workshop in Bangladesh on 24 April 2013. Brands such as Benetton, Mango, Walmart and Disney suffered reputation damage during these events. Wieland & Handfield (2013) conducted an analysis of these cases and concluded that companies should make the whole chain of suppliers as transparent as possible.

Initial stage	*Soon, the Belgian military will get new combat outfits. The first samples have been delivered and the Minister of Defence and the Chief of Defence will present those to the press and the public next week. For the new outfits, Defence has a contract with the foreign company Fibratex.*
Stage 1	*At home, you are watching the evening news and there is an item on a fire in a textile workshop in Pakistan in which many have died, especially children. Images show desperate parents, crying women and children's bodies being carried out of the ruins. The coverage mentions that the manager of the workshop has disappeared and that many big brands have had their clothing made in countries like Pakistan, where they are not very fussy about social rights and security.*

Stage 2	*Defence's Material Resources department has checked the contract with Fibratex and there seems to be nothing wrong. They do, however, contact the company to verify whether they subcontract abroad, specifically in Pakistan, which is not forbidden in the contract. Fibratex confirms that the Belgian uniforms are partly produced in Pakistan, but the firm has no direct connection with the afflicted workshop. This information is passed through to the military hierarchy. Apart from that, Fedustria (the Belgian Federation for the textile industry) announces in the media that the system of subcontracting in Pakistan is obscure and that there is no way to know who is producing what for whom.*
Stage 3	*A reporter for "De Morgen / Le Soir" (quality newspapers in Belgium) has been in Pakistan and investigated the workshop where the fire struck and so many were killed. In an interview with one of the employees, it turns out that the workshop was producing for the European market, with important orders from Belgium. The reporter announces on the paper's website that he will dig deeper and will write a complete story for the weekend edition, the day after tomorrow.*
Stage 4	*In a confidential internal communication, the Defence staff announce that there is absolutely no proof that the new outfits have been produced in the Pakistani workshop, that it is important that Defence show a positive image to the public and that they will carry on with the presentation of the uniforms next week. The chiefs of staff do not want to communicate rashly.*

Table 1: scenario stages

Since there is no validated measure for crisis perception, we composed our own scale for the purpose of this study. Billings et al. (1980) used a model to measure crisis perception, but in a very different context of emergency planning and the stakeholder's ability to cope. In their scale, they used crisis terminology, which was not compatible with measuring individual perception of crisis because we attempted to avoid unveiling the crisis aspect. Billings et al. (1980) and Jackson & Dutton (1988) base the attributes in their scale on previous research and their own experience. We applied the same approach. Our scale contains 12 items in four attributes to which a control item is added (see Table 2). The respondent must agree or disagree with statements that articulate each item on a 5-point scale (Dawes, 2008). The four dimensions were derived from the literature (see Theoretical Framework). The first dimension is *time* (Hermann, 1963; Tjosvold, 1984; Pearson et al., 1998; Coombs, 2014). One of the items relates to stealing thunder (Arpan et al., 2005), which is strongly based on sense of time but also of willingness to act. The second dimension is *media attention*, which Fink (1986), Benoit (1997) and Mitroff (2001) also mention. Media attention increases time pressure and the probability that stakeholders will take action. The third dimension refers to those stakeholders and their *expectations*, which nearly all authors mention. The fourth dimension of attributed responsibility, or *involvement*, is derived from Benoit (1997), who mentions it explicitly. Other authors also discuss it in the context of communication strategies.

time1	*Before communicating, Defence has to wait until the situation is totally clear.*
time2	*In this case, it is important to quickly bring out a minimum of information, rather than to wait to have more complete information.*
time3	*In this situation, Defence has little time to take action.*
time4	*Defence has to take the time to analyse the situation and should not be ruled by time pressure.*
media1	*Defence's spokesperson should be ready to make a statement to the press.*
media2	*The media will not pay any attention to Defence in this case.*

media3	*There will be political questions for Defence following this situation.*
expect1	*I expect my family and friends to ask me questions about this because I work for Defence.*
expect2	*As a Defence employee, I have a bad feeling about how the organisation is handling this case.*
expect3	*This situation is a threat to Defence's reputation.*
involve1	*This situation does not concern Defence.*
involve2	*It is possible that Defence is involved in this case.*

Table 2: crisis perception attributes and items

The final part of the survey comprised elements that make up the respondent's profile. Van Gorp & Pauwels (2009) scan the formal function title in their research on the communication function in organisations for explicit communication terminology. We applied the same method to recode the independent variables of area of study and organisational function, including communication-related terms from the social sciences, marketing and journalism. A similar interpretation of these variables is found in Tench, Zerfass, Verhoeven, Verčič, Moreno & Okay (2013). All respondents were asked to provide details on their personal profiles, an element that is found in most studies of this nature. Specific to Defence is that the respondents can be classified according to professional speciality (military, technical and operational) and additional competences (management skills).

To test the criterion validity (Field & Hole, 2003) of the crisis perception construct, we performed a pilot test on 30 subjects from within the Belgian Defence population, who were asked not to participate in the actual survey. The questionnaire was refined using the participants' comments. To test the factorial validity of the crisis perception construct, we performed a principal axis factor analysis with oblique rotation for each of the 12 crisis perception items and for each of the four stages of the crisis scenario. The Kaiser-Meyer-Olkin-measure for each stage in the scenario was 0.89 and three times 0.85, which Hutcheson & Sofroniou (1999) label as meritorious. Nearly all measures of sampling adequacy of individual items are higher than 0.8, well above the acceptable limit of 0.5 (Field, 2013). Although items *time1* and *time4* have values higher than 0.5, they are considerably lower than the others are. A factor analysis without these items shows no meaningful differences to the first measure, so they were kept in the model. The structure matrix of the factor analysis showed that the attribute *time* made up a different factor with limited correlation to other items, although still significant (> 0.3). *Time* also shows a lower reliability (Cronbach's α<0.7) in comparison to the other attributes. This could be the result of *time* being more subjective to each respondent than expected. The overall reliability of the crisis perception measure is high (Cronbach's α=0.80 for stage 1, 0.81 for stage 2 and 0.83 for stages 3 and 4). The reliability of the complete measure does not increase with or without the attribute *time*, so we kept it in. The measure used for this study thus seems to be valid and reliable.

3.3 RESULTS

Of the 2179 respondents, 124 (7%) had an academic communication studies background, 34 (1.6%) individuals had a communication-related professional function, 269 (12.3%) persons belonged to higher management, 963 (44.2%) indicated that they had experienced a crisis situation involving communication and 170 (7.8%) had attended more than 2 weeks' worth of courses on crisis management.

We verified the hypotheses by analysing the data with different repeated-measures ANOVAs with the independent variables as between-subjects factors and the various levels of the scenarios as within-subjects

factors. All tests were carried out with a confidence interval of 0.95. Because many subgroups based on profile were of unequal size, we used Cohen's *d* to measure for effect size (Field, 2013).

A test of within-subjects effects showed that the crisis scenario had an influence on the respondents' crisis perception, $F(1.88, 4254.54)=936.34$, $p<0.001$, $\eta_p^2=0.293$. When testing for the scenario's credibility with the respondents, the distribution seems favourable ($N=2179$, mean 3.06, median 4 on a scale of 5 (*very credible*)). However, the scenario's credibility score shows a significant connection with the score for crisis perception, but only for the first two stages, $p=0.013$, $d=0.11$ and $p<0.001$, $d=0.16$. An interaction analysis nevertheless gives proof of no significant influence on the analysis of the crisis perception model and the other independent variables.

overview independent variables	***F*-value**	**significance**	**effect size stage 1**	**effect size stage 2**	**effect size stage 3**	**effect size stage 4**
communication studies	$F(1, 2263)=11.72$	$p=0.001$	$d=0.20$	$d=0.30$	$d=0.29$	$d=0.35$
higher diploma	$F(1, 2175)=5.24$	$p=0.02$			$d=0,13$	$d=0,19$
communication course	$F(1, 2263)=1.36$	$p=0.243$	-	-	-	-
communication function	$F(1, 2263)=1.10$	$p=0.295$	-	-	-	-
crisis course	$F(1, 2263)=12.71$	$p<0.001$	$d=0.27$	$d=0.28$	$d=0.23$	$d=0.23$
crisis experience	$F(1,2177)=4.96$	$p=0.026$	$d=0.06$	$d=0.10$	$d=0.11$	$d=0.07$
higher management	$F(1, 2177)=7.95$	$p=0.005$	$d=0.17$	-	$d=0.13$	$d=0.20$
officer's rank	$F(1, 2177)=8.56$	$p=0.005$			$d=0.17$	$d=0.23$

Table 3: overview of main statistical outcome for hypotheses

As appears from the separate repeated-measures ANOVA's with different between-subjects factors, some independent variables are not significantly related to crisis perception (see Table 3). That is the case for *communication function* amongst other variables, posing a problem for our third hypothesis. In this study, no difference in crisis perception can be established between military and non-military personnel. A result that stands out is a significant and rather substantial relation between crisis perception and (higher) level of communication studies. Respondents who had academic training in a communication-related field had a higher score on crisis perception (M=2.55, SD=.65 in measure 4) compared to respondents without a background in communication studies (M=2.77, SD=.61)[1], which is a confirmation of our fourth hypothesis. Respondents indicating that they had additional crisis management training perceived a crisis more highly (M=2.74, SD=.66 in measure 2) and quickly than others did (M=2.92, SD=.63); and people who had previous experience with crises (within a communication context) also scored significantly higher on crisis perception (M=2.72, SD=.62 in measure 4 versus M=2.79, SD=.61), though the effect size is very small. That confirms our first hypothesis. The hierarchical level at which someone functions is a small but significant predictor of crisis perception. Especially respondents at a higher level tend to have higher crisis perception (M=2.65, SD=.65 in measure 4) compared to respondents at a lower level (M=2.77, SD=.61), which contradicts our second hypothesis. Related to that (medium correlation between *officer's rank* and *higher management*, $r=0.38$, $p<0.001$), there is a marginally

[1] Due to the setup of the research, a low numerical score indicates a high crisis perception and vice-versa.

significant relation between rank and crisis perception, which becomes clearer when the data are divided into officers and others: higher-ranked personnel perceive a crisis earlier and more highly (M=2.67, SD=.62 in measure 4) than others (M=2.82, SD=.61). In this respect, there are also correlations between rank and diploma (highly correlated when comparing officers and those holding at least an undergraduate degree, r=0.72, p<0.001) and between management position and diploma (medium correlation, r=0.32, p<0.001). Breaking down diploma in a communication degree or not, we find an extremely low correlation with higher management, r=0.06, p=0.003, which may indicate that, in this organisation, personnel members holding an academic communication degree rarely occupy high positions in management.

4 DISCUSSION

An organisation member's individual profile does have an influence on that person's perception of a situation as a crisis for that organisation.

The first hypothesis, that those with a crisis experience will perceive a crisis earlier than others, is confirmed in this study. In particular, additional crisis training has an effect on crisis perception. This confirms Weick's sense-making theory (Weick, 1969) and extends the findings of Marynissen et al. (2013) from risk to crisis perception. This finding is also in line with those of Baxter, Boet, Reid & Skidmore 2014), who conclude that yearly crisis simulations and exercises are effective in enhancing crisis recognition. Crisis experience did prove to be in relation with crisis perception, but it could be that the respondents assumed that "crises" included military operational crises, which most of the operational staff would have encountered. This may have influenced the results for that variable in a negative way, but it is in line with what we found in the literature.

The second hypothesis involving hierarchical position could not be confirmed: quite the contrary. The literature seemed to point out that managers are bad crisis predictors due to organisational culture (e.g. Kiessler & Sproull, 1982; Smart & Vertinsky, 1984; Tjosvold, 1984). In this study, however, members of higher management and officers had higher crisis perception scores than others. We have several possible explanations for this finding. First, there may be a difference between the managers described in the literature, who often work in for-profit organisations, and the military manager-officers in the current study. The fact that military are used to dealing with crises, although not in the corporate sense, could have made them more sensitive. The correlation between higher management and crisis experience is not remarkable, however (r=0.075, p<0.001). A second possible explanation is the fact that we asked the respondents to give their personal opinions when answering the questions. We may therefore have received their personal opinions as opposed to what they would actually do within the context of their professional position. A high-ranking member of the organisation would have access to more information and have a more strategic view of things, thus he or she might have a keen perception of the environment. Restrictions resulting from the organisational structure or culture could lead to behaviour that is more reticent in spotting a crisis and being willing to act. Additionally, Fowler, Kling & Larson (2007) show that managers have a stronger belief than other members of personnel that their organisation is well prepared for a crisis, and government organisation managers exhibit an even stronger belief than those in other organisations, which may have led them to have higher scores in our study.

The third hypothesis that personnel in communication-related functions show a higher crisis perception remains unconfirmed, although studies such as Donnellon et al. (1986) seem to point in the opposite direction. We can attribute this finding to the fact that organisational communication is not considered a strategic function for Defence, where communication is often discouraged instead of encouraged to the point that it is better for the career of the individual personnel member not to communicate. This may lead communication staff to apply self-censorship, which may be related to the psychological self-fulfilling prophecy, especially because the organisational communication policy has led to a heavily centralised communication structure with many levels of control and sanctions. We have found arguments for this from Weick & Sutcliffe (2011), who observe that no link exists between knowledge and hierarchy and that experts should have a decisive role

in particular decisions. They point out that early problem detection correlates with organisational culture, and they recommend a reporting culture and a just culture, in which members of the organisation share errors and are not sanctioned for doing so. They also argue for a flexible culture which opposes a heavy, slow hierarchy by creating room for initiative and variation, and for a learning culture which improves individual capabilities and the exchange of information. As for the centralisation of the communication function, Mishra (1996) points out that decentralised decisions, clear communication and cooperation within the organisation and outside can lead to a faster crisis solution, but that such policies require trust between higher management and the work floor. Molleda (2009) recommends a repartition of communication functions to centralised and decentralised levels, according to the contents and the audience. Seeger, Sellnow & Ulmer (2012) also point out the relationship between a centralised decision structure and the sensitivity of an organisation to a crisis. Additionally, and in relation to the first hypothesis, Van Gorp et al. (2009) mention that encroachment in Belgian organisations means that few communication managers carry a communication-related degree, resulting in less expertise at the decision-making level. Their findings seem to be confirmed by our sample, in which only 35% of respondents with a communication function had a communication-related degree (N=12). On the whole, only 10% of those with a communication degree (N=124) occupied a communication-related post. In this study, we found that the reluctance to perceive a crisis seems to occur with communication staff members rather than with managers, as we expected in our second hypothesis.

The fourth hypothesis that people with a communication-related study background will perceive a crisis more quickly than others was confirmed. Studies such as Guth (1995), Marra (1999), Grunig & Grunig (2000) and Zerfass et al. (2015) have already stressed the importance of trained specialists on strategic levels in an organisation. In addition to that, Morreale & Pearson (2008) point out the importance of a communication-related education to improve organisational processes and handle current issues. An additional communication course does not lead to the same observation, implying that an academic communication-related study is different from a communication course of at least two weeks, apart from the obvious difference in duration. These findings also seem to imply that, following insights from the literature (e.g. Slovic, 2000) crisis communication expertise is more related to academic training than to other types of training or experience on the job, at least in this organisation. Individual crisis perceptions may have consequences for an organisation's crisis management. A person's profile, based on experience but also on study and training, determines how he or she perceives a crisis. Therefore, an organisation should be open to the individual contributions of experts in communication so that it can attempt to be the first perceiver of a possible impending crisis before it erupts.

Practically, this research points to various issues in crisis communication management. Firstly, in the domain of strategic communication and crisis management, our findings can be applied when earmarking staff members with communication expertise. Specialists should be recruited based on their academic credentials and should be able to move to high-level management functions within their speciality. The Belgian National Defence's spokesperson and main communication advisor, for instance, is not a highly ranked officer and does not belong to the dominant coalition. The function of director-general of the communication department has never been filled by anyone with a communication degree or even professional experience in a communication-related field. An organisation that wants to train its members in-house should be aware that there is a difference between a communication degree and additional training. The organisation we studied educates most of its officers in the Royal Military Academy, but organisational and corporate communication did not figure in the academic master's curriculum until recently, when the results of this study became available. Reilly (2008) stresses the importance of communication as one of the most important aspects of personnel management and development. She advises to train organisation members in communication, crisis management and media management to increase personnel's and the organisation's resilience to stress and crises. Therefore, an organisation should also lift its communication function to a strategic level and fill it with communication specialists – a viewpoint shared by Grunig (2013) and Zerfass et al. (2015). Placing non-communication specialists in key communication functions should be avoided (Van Gorp et al., 2009).

Recruiting personnel based on crisis experience does not seem very realistic. However, an organisation like Belgian National Defence can perfectly incorporate crisis communication exercises in the exercises that are planned throughout the year. These exercises are excellent for putting theory into practice (Aertsen, Jaspaert & Van Gorp, 2013), and they influence personnel's perception of risk and undoubtedly also of crisis, as illustrated by the study of Baxter et al. (2014).

Additionally, there is the issue of the potential detriments to individuals responding as if a situation is a crisis when it is not, a concern uttered amongst others by managers when discussing the results of this study. In these times of fast and uncontrolled communication, it is very difficult to make out whether a situation will evolve into a crisis or not, especially when little information is available (e.g. Wendling, Radisch & Jacobzone, 2013). When an organisation communicates proactively before a crisis has been perceived by others, chances are that a crisis may never occur (e.g. Guth, 1995). No one will know whether the crisis would never have occurred or whether it was averted by the crisis communication.

From a theoretical point of view, this study provides an original approach to crisis communication research, namely that from within an organisation in the early stages of crisis development, individual members of an organisation have proven to have different perceptions of the situation depending on their professional and personal profiles. Placing individuals with higher crisis perception in the right positions may provide more time for an organisation to prepare and carry out its communication in case of a crisis, which is strategically important. This has implications for organisational policy in HR (recruitment and training) and in communication. New theoretical insights will come from future research ensuing from this study.

4.1 LIMITATIONS AND FURTHER RESEARCH

Every research has its limitations, and we did not take into account certain factors, either on purpose or with hindsight. Firstly, the conclusions of this research are valid for one particular organisation. It is an advantage to work within a homogeneous environment, but the results are difficult to generalise. The sample is very robust, however, and quantitatively, the results are large enough to allow more general conclusions. Benchmarking with other Defence departments, government or private organisations could support the data and our findings. Secondly, not all researchers are fond of scenario-based designs, in which we measure for intentions rather than actions. In this study, however, circumstances were optimised for a realistic estimate of people's perceptions, which was largely successful, based on the feedback. An even more realistic setting would be a real-time crisis management exercise incorporating communication aspects, an approach we will be implementing in the next step of our research. Thirdly, the crisis scenario contained an element of management not wishing to communicate, notably in stage 4. In a military context, that could constitute a confounding variable, as members of the military usually tend to do what they are told by their superiors. The measures did not seem to be affected, however, as the perception of an impending crisis did not increase in any other way than what would be expected from the gradual building up of the scenario.

Next, the crisis perception scale seemed to present some minor issues. For the concept of time, partial construct *time2* had an element of stealing thunder in it, and *time1* and *time4* showed lower validity and reliability values than the other measures within the crisis perception construct. In the overall reliability tests of the crisis perception construct, however, the measure of time did stand up. Yet in our next research study we will measure time in a direct way. Another element from the perception scale that came up during the pre-test, was a partial construct for stakeholder's expectations, *expect2*, which measured for how people felt about the organisation, but the factor analyses did not indicate any anomaly. The factor and reliability analysis showed positive results for the crisis perception scale. We composed the scale based on studies performed in different fields of research and in various organisations. Therefore, we think that it can be applied outside of this study. It may need refining and additions, which would benefit the research domain.

The profile elements in this study were chosen based on previous research, but the conclusion that personal profiles do have an influence on crisis perception indicates that the list of personality traits that may add to that effect may need to be extended, for example by applying measures of leadership style (e.g. Boin, Hart, McConnell, & Preston, 2010) and Myers-Briggs Type Indicator scores (e.g. Gardner & Martinko, 1996).

Finally, the difference between a communication degree and additional training needs to be established so that organisations can benefit from more effective training programmes.

4.2 CONCLUSION

The perception of an event as leading to a crisis, and the subsequent crisis communication from the viewpoint of an organisation and individual personnel profiles is a subject that has not often been studied. Previous research does provide a handle for grasping the domains that lead to coherent conclusions and further research. We studied the influence of individual organisation members' personal profiles on their perception of an imminent crisis for that organisation. We composed a comprehensive definition of a crisis and a crisis perception scale, which in a scenario-driven survey study helped to establish that one's study background, position within the hierarchy, and crisis training and experience have an influence on one's crisis perception. An organisation can put those findings to use in its personnel policy to improve its crisis communication by moving leading communication functions to a strategic level and decentralising others, and by recruiting, training and promoting personnel based on their communication competence as well. By doing so, an organisation can improve its crisis communication and thus safeguard its reputation or even improve it.

5 LITERATURE

Aertsen, T., Jaspaert, K., & Van Gorp, B. (2013). From theory to practice: A crisis simulation exercise. *Business Communication Quarterly*, *76*, 322–338.

Arpan, L. M., & Roskos-Ewoldsen, D. R. (2005). Stealing thunder: Analysis of the effects of proactive disclosure of crisis information. *Public Relations Review*, *31*, 425–433.

Barr, P. S., & Huff, A. S. (1997). Seeing isn't believing: Understanding diversity in the timing of strategic response. *Journal of Management Studies*, *34*, 337–370.

Baxter, A. D., Boet, S., Reid, D., & Skidmore, G. (2014). The aging anesthesiologist: A narrative review and suggested strategies. *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*, *61*, 865–875.

Benoit, W. (1997). Image repair discourse and crisis communication. *Public Relations Review, 23*, 177–186.

Billings, R. S., Milburn, T. W. & Schaalman, M. L. (1980). A model of crisis perception: A theoretical and empirical analysis. *Administrative Science Quarterly, 25*, 300–316.

Boin, A., Hart, P. T., McConnell, A., & Preston, T. (2010). Leadership style, crisis response and blame management: The case of Hurricane Katrina. *Public Administration*, *88*(3), 706–723.

Coombs, W. T. (2014). *Ongoing crisis communication: Planning, managing, and responding*. Thousand Oaks, CA: Sage.

Dawes, J. G. (2008). Do data characteristics change according to the number of scale points used? An experiment using 5 point, 7 point and 10 point scales. *International Journal of Market Research*, *51*, 61–77.

DeVellis, R. F. (2016). *Scale development: Theory and applications* (Vol. 26). Sage publications.

Donnellon, A., Gray, B., & Bougon, M. G. (1986). Communication, meaning, and organized action. *Administrative Science Quarterly, 31*, 43–55.

Dutton, J. E., & Ashford, S. J. (1993). Selling issues to top management. *Academy of Management Review*, *18*, 397–428.

Field, A., & Hole, G. (2003). *How to design and report experiments*. Thousand Oaks, CA: Sage.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Thousand Oaks, CA: Sage.

Fink, S. (1986). *Crisis management: Planning for the inevitable*. New York: American Management Association.

Fowler, K. L., Kling, N. D., & Larson, M. D. (2007). Organizational preparedness for coping with a major crisis or disaster. *Business & Society*, *46*, 88–103.

Gardner, W. L., & Martinko, M. J. (1996). Using the Myers-Briggs Type Indicator to study managers: A literature review and research agenda. *Journal of Management*, *22*(1), 45–83.

Grunig, J. E. (2013). *Excellence in public relations and communication management*. New York: Routledge.

Grunig, J. E., & Grunig, L. A. (2000). Public relations in strategic management and strategic management of public relations: Theory and evidence from the IABC Excellence project. *Journalism Studies*, *1*, 303–321.

Guth, D. W. (1995). Organizational crisis experience and public relations roles. *Public Relations Review*, *21*, 123–136.

Harlow, W. F., Brantley, B. C., & Harlow, R. M. (2011). BP initial image repair strategies after the Deepwater Horizon spill. *Public Relations Review*, *37*, 80–83.

Hermann, C. F. (1963). Some consequences of crisis which limit the viability of organizations. *Administrative Science Quarterly, 8*, 61–82.

Horsley, J. S., & Barker, R. T. (2002). Toward a synthesis model for crisis communication in the public sector: An initial investigation. *Journal of Business and Technical Communication*, *16*, 406–440.

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. Thousand Oaks, CA: Sage.

Jackson, S. E., & Dutton, J. E. (1988). Discerning threats and opportunities. *Administrative Science Quarterly, 33*, 370–387.

James, E. H., Wooten, L. P., & Dushek, K. (2011). Crisis management: Informing a new leadership research agenda. *The Academy of Management Annals*, *5*, 455–493.

Kiessler, S., & Sproull, L. (1982). Managerial response to change environments: Perspectives on problem sensing from social cognition. *Administrative Science Quarterly, 27,* 548–570.

Marra, F. J. (1999). Crisis communication plans: Poor predictors of excellent crisis public relations. *Public Relations Review*, *24*, 461–474.

Marynissen, H., Ladkin, D., Denyer, D., Snoeijers, E., & Van Achte, T. (2013). The role of individual risk perception in an organization managing high risks. *Conference paper for the Third International Conference on Engaged Management Scholarship*.

Marynissen, H., Pieters, S., Van Dorpe, S., van het Erve, A.-M., & Vergeer, F. (2010). *Geen commentaar! Communicatie in turbulente tijden.* Amsterdam: Business Contact.

Mishra, A. K. (1996). Organizational responses to crisis: The centrality of trust. In R. M. Kramer & T. Tyler (Eds.), *Trust in Organizations* (pp. 261–287). Location: Sage.

Mitroff, I. I., Shrivastava, P., & Udwadia, F. E. (1987). Effective crisis management. *The Academy of Management Executive*, *1*, 283–292.

Mitroff, I. (2001). *Managing crises before they happen: What every executive and manager needs to know about crisis management*. New York: AMACOM, American Management Association.

Molleda, J. C. (2009). Global public relations. *IPR (Institute for Public Relations) Essential Knowledge Project*.

Morreale, S. P., & Pearson, J. C. (2008). Why communication education is important: The centrality of the discipline in the 21st century. *Communication Education*, *57*, 224–240.

Paraskevas, A., & Altinay, L. (2013). Signal detection as the first line of defence in tourism crisis management. *Tourism Management*, *34*, 158–171.

Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of Management Review*, *23*, 59–76.

Pieters, S., & Eeckman, E. (2015). Crisiscommunicatie. In E. Eeckman, & P. Van San (Eds.), *Communicatie Troef. Doeltreffende communicatie in en door zorgorganisaties* (pp. 194–211). Leuven: Lannoo Campus.

Penrose, J. M. (2000). The role of perception in crisis planning. *Public Relations Review*, *26*, 155–171.

Reilly, A. H. (2008). The role of human resource development competencies in facilitating effective crisis communication. *Advances in Developing Human Resources*, *10*, 331–351.

Richardson, B. (1994). Socio-technical disasters: Profile and prevalence. *Disaster Prevention and Management: An International Journal*, *3*, 41–69.

Sayegh, L., Anthony, W. P., & Perrewé, P. L. (2004). Managerial decision-making under crisis: The role of emotion in an intuitive decision process. *Human Resources Management Review, 14,* 179–199.

Seeger, M. W., Sellnow, T. L., & Ulmer, R. R. (2012). Communication, organization, and crisis. In M. Roloff (Ed.), *Communication yearbook 21* (p. 231). New York: Routledge.

Sisco, H. F. (2012). Nonprofit in crisis: An examination of the applicability of situational crisis communication theory. *Journal of Public Relations Research, 24*, 1–17.

Slovic, P. E. (2000). *The perception of risk*. London: Earthscan publications.

Smart, C., & Vertinsky, I. (1977). Designs for crisis decision units. *Administrative Science Quarterly*, 640–657.

Smart, C., & Vertinsky, I. (1984). Strategy and the environment: A study of corporate responses to crises. *Strategic Management Journal*, *5*, 199–213.

Tench, R., Zerfass, A., Verhoeven, P., Verčič, D., Moreno, A., & Okay, A. (2013). *Competencies and role requirements of communication professionals in Europe. Insights from quantitative and qualitative studies.* ECOPSI Research Report. Leeds Metropolitan University.

Tjosvold, D. (1984). Effects of crisis orientation on managers' approach to controversy in decision making. *Academy of Management Journal, 27*, 130–138.

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive psychology*, *5*, 207–232.

Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2013). *Effective crisis communication: Moving from crisis to opportunity*. Thousand Oaks, CA: Sage.

Van Gorp, B., & Pauwels, L. (2009). De communicatiefunctie in Belgische organisaties. Hoe excellent is deze ingevuld? *Tijdschrift voor communicatiewetenschap*, *37*, 64.

Van Wijk, C. (2008). *De Media-Explosie. Trends en issues in massacommunicatie*. Den Haag: Academic Service.

Weick, K. E. (1969). *The social psychology of organizing*. Boston: Addison-Wesley.

Weick, K. E., & Sutcliffe, K. M. (2011). *Managing the unexpected: Resilient performance in an age of uncertainty* (Vol. 8). Hoboken, NJ: John Wiley & Sons.

Wendling, C., Radisch, J., & Jacobzone, S. (2013). The use of social media in risk and crisis communication. *OECD Working Papers on Public Governance* (No. 25). Paris: OECD Publishing.

Wieland, A., & Handfield, R. B. (2014). The challenge of ensuring human rights in the end-to-end supply chain. *Supply Chain Management Review*, *18*, 49–51.

Williams, K. D., Bourgeois, M. J., & Croyle, R. T. (1993). The effects of stealing thunder in criminal and civil trials. *Law and Human Behavior*, *17*, 597.

Zerfass, A., Verčič, D., Verhoeven, P., Moreno, A., & Tench, R. (2015). European Communication Monitor 2015. Creating communication value through listening, messaging and measurement. Results of a Survey in 41 Countries. Brussels: EACD/EUPRERA. *Helios Media*.

Zhang, B., Marita, V., Veijalainen, J., Wang, S., & Kotkov, D. (2016). The issue arena of a corporate social responsibility crisis—The Volkswagen case in Twitter. *Studies in Media and Communication*, *4*, 32–43.