



Surviving relatives as stakeholders for corporate social responsibility and as leaders for meaningful safety improvement. A case study from the Netherlands

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ABSTRACT

Fatal accidents are a life changing event for surviving relatives. As secondary victims, their life is suddenly disrupted and becomes filled with mourning, sorrow, pain and uncertainty. A case study from the Netherlands shows that a range of organizations and institutions have a social responsibility to contribute to mitigating the suffering of surviving relatives. A responsibility which is up till now often neglected. From a corporate social responsibility point of view the alleviation and prevention of suffering of surviving relatives should be important for any organisation involved in the aftermath of fatal accidents. The case study shows that surviving relatives, as secondary victims, can contribute in a unique way to the initiation, implementation and realization of a successful corporate program to promote prevention and the development of a proactive safety culture. Finally, the case study shows that surviving relatives can contribute actively to the development of more proactive inspection strategies and new legislation. It is suggested that within safety science and practice more attention should be given to the agency and potential positive contributions of surviving relatives and survivors of serious accidents to prevention and safety promotion. By speaking from their heart and out of their dramatic personal experience, they can impact the behaviour of corporate leaders, policy makers as well as operational workers in a unique way. Simultaneously, such activities help them to develop new purpose and meaning in their disrupted lives.

1. General introduction

Fatal accidents are a life changing event for surviving relatives. Suddenly their life is disrupted and becomes filled with mourning, sorrow, pain and uncertainty. They are the secondary victims of a fatality. The reduction of their suffering is important from a social responsibility point of view for organisations involved in the aftermath of fatal accidents. The surviving relatives are then important stakeholders of the organizations and institutions.

In safety science the main focus is understandably on the prevention of accidents and the promotion of safety. The focus is thereby usually on (preventive) activities before dramatic events occur, though this also includes emergency preparedness as well as effective actions to mitigate the impact of accidents after their occurrence. Dekker (2017a) suggests that “alleviation of suffering after all best efforts to prevent it” is important for organizations that have adopted Vision Zero. Dekker thereby suggests that “compassion, humanity and social justice may open up a complementary avenue” for improving safety. These values are also underlying the Sustainable Development Goals 3 (Good Health) and 8 (Decent work and economic growth), which are closely related to

safety and health at work (ILO, 2022). Already in 2007, the international labour conference stated that human dignity, environmental sustainability and decent work are necessary elements of sustainable enterprises (ILO, 2007). Social justice, or a just culture, is also directly relevant for a positive safety culture (Reason, 1998; Dekker, 2017b). These values are not only important for organizations were (serious) accidents may occur, but also for a range of organizations and institutions that play a (key) role in the aftermath of fatalities and disasters. The UNESCO mentions the related value of ‘kindness’ as important for achieving the Sustainable Development Goals (UNESCO, 2022). Jilcha and Kitaw (2017) also underline the close relationship of occupational safety and health as well as workplace innovation with sustainable development and corporate social responsibility (CSR). In their overview of responsible business practices and health safety and wellbeing at work, Jain, Leka and Zwetsloot (2018) state that CSR is based on the integration of economic, social, ethical and environmental concerns in business operations.

The European Union defines CSR as the responsibility of organizations for their impact on society (EC, 2011). CSR refers to the impact of organizational decisions and activities on society and the environment

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(ISO, 2010). The interaction with the organization's stakeholders is regarded as essential in managing CSR (Branco and Rodrigues, 2007) and respect for stakeholder interests is a key issue in CSR (ISO, 2010). A recent definition of stakeholder is an individual or group that has an interest in any decision or activity of an organization (ISO, 2010). Victims of occupational accidents and their families clearly have an interest in decisions and activities of a range of organizations involved in the aftermath of fatal or serious accidents.

In this paper we systematically describe and analyse a case wherein two surviving relatives, widow and close friend/brother in law, undertook rather unique efforts to alleviate their suffering while promoting safety. From the beginning their intention was not to stay in their roles as victims, to stop the suffering, and to develop something positive out of their personal disaster. In the first year after the fatality, they were confronted with many actions of institutional and non-institutional organizations that impacted their suffering, often unintentionally increasing it. They perceived this as a call for action. Important basic issues were, of course, the reaction of the company, settling a reasonable compensation, and closing of the legal procedures. When the basics were more or less settled, the surviving relatives and the company agreed on an improvement programme. The programme became quite successful, inspired several other companies as well as the labour inspection, and it received a lot of media attention. The secondary victims succeeded in generating proactive change in the national legislation and in the policies of the labour inspection. The case is inspiring and interesting to analyse from several points of view: corporate social responsibilities of institutions and organizations in the aftermath of fatalities, the potential of (secondary) victims as agents for change and safety improvement, safety improvement programmes after serious accidents as alternatives for fines.

Perhaps surprisingly the literature on the role of secondary victims is focusing either at violence (e.g., Kristensen et al., 2012), bullying (e.g., Jeffrey et al., 2001), or patient safety (e.g., Vincent and Davis, 2012). The authors were not able to identify scientific literature that describes and analyses the role of secondary victims in occupational safety. Scheerer and Brandt (2001) interviewed widows after fatal accidents in the agricultural sector, but with a focus on the challenges associated with continuation of the farm. We identified also several papers involving relatives whereby the focus was the identification of lessons learned from fatalities, e.g. Spielholz et al. (2007) analyse lessons learned from the Fatality Assessment and Control Evaluation (FACE) programme from the Washington State, funded by NIOSH; Higgins et al. (2001) and HSA (2021) analysed the same programme a few years earlier; Beavers et al. (2006) analysed crane-related fatal accidents in the construction industry; Bunn et al. (2008) analysed fatal tractor accidents in Kentucky, etc. Kingston-Howlett and Mertens (2007) state "it is the responsibility of every-one in a position influencing the welfare of victims of traumatic events, ..., to decrease the extra ordinary emotional ordeal in the wake of these events". They also state that "Indeed, catastrophe affect individuals, so do they affect the families of the victims – they are the families of catastrophe". Kingston-Howlett and Mertens also concluded that "Victims' representatives, especially support groups, indicate that most individuals are primarily seeking justice and acknowledgement of the situation and their experiences." However, in this paper our focus is not on identifying lessons learned through accident investigations. We did not focus on the traumatic impact of accidents and disasters on families either (e.g., Yun et al., 2018).

We were not able to identify scientific literature wherein surviving relatives of occupational accidents are regarded as stakeholders of organizations and institutions, nor literature wherein they are regarded as key agents for safety improvement.

The research questions of the case study are:

1. What is the social responsibility of organizations and institutions in the aftermath of a fatal accident regarding surviving relatives? And what were their impacts in this case?
2. In what way did the involvement of the surviving relatives contribute to the success of the safety improvement programme at the company (Xycarb)?
3. What was the role of the surviving relatives in the development of new national legislation and the development of more proactive strategies of the labour inspection?

2. Materials and method

2.1. Data gathering

Data for the case study were gathered in several ways: As the case gained national fame many articles and interviews appeared in the media, both written and audio-visual. An important source of information was a book about the aftermath of the fatality written by the widow and brother in law of Toon van der Loo, one of the two victims. They kept independently a diary after the accident. In this way they documented each relevant event and also the impact it had on their mood and understanding of what had happened and what was going on. In 2017 these diaries were integrated into a book which describes the events during the first three years after the accident Van der Loo-van de Sande and van de Sande, 2017). The book combines their personal narratives, and aims to share their experiences, feelings, emotions and reflections, but also to provoke identification and dialogue (compare with Maréchal, 2010). The relatives also created a dedicated website (Van der Loo-van de Sande and van de Sande, 2021). The website documents all notable events and activities, and mentions (often with links) all media outings in the period April 2015 (the publication of the official accident investigation report) up till the moment of finalising this paper (early 2022). The website gives easy access to many relevant publications, but also serves to promote their book. These publicly available sources were complemented with dedicated interviews with the CEO and Global QESH Manager of Xycarb and with the surviving relatives.

2.1.1. Participant observations

In the second part of the case study, the safety improvement programme at Xycarb, we used also participant-observations. The widow and her brother are no safety experts. In the contact with the management and experts of Xycarb, they felt a need to involve a few independent experts to give a second opinion on the plans and activities of the company, and also to come up with suggestions for further improvements. They invited three people to voluntary support them, the two authors of this paper as experts in occupational safety and health, and a befriended expert in engagement in quality management. Though the actual contributions of the authors to the safety improvement programme were limited to a few meetings with Xycarb's CEO and HSE manager it also implied several meetings and email communications with the surviving relatives and Xycarb representatives. Thereby the progress in the safety improvement programme, the backgrounds thereof and the expectations and ideas of the surviving relatives were discussed. In this way we were able to get some first-hand insights into the development of the safety programme at the Xycarb company, and the role therein of the relatives. The first author was also invited by Xycarb to contribute to the Xycarb's third safety day, which implied the opportunity to participate as observer in several workshops, and to discuss the changes in safety management and culture – in a casual way – with a range of Xycarb people.

According to Yin (2003, p. 94), participant observation in case studies implies both opportunities and problems. The most distinctive opportunity is the ability to gain access to events or groups that are otherwise inaccessible to scientific observation; the major challenge is to prevent the potential bias of becoming a supporter of the group or organization studied, in our case of the surviving relatives. To ensure maximum objectivity we used multiple sources of evidence and approached the case in the second part (where we were involved) also from the perspective of the company. I.e., we explicitly asked the

company representatives in a dedicated interview what they (probably) would have done anyway, without involvement of the surviving relatives and what proposals of the relatives were not accepted or adapted by the company.

For data gathering for the third part of the case study with its focus on the national impact, including the development of changes in legislation and ways of working of the labour inspection, we made use of several available documents, including documents from the labour inspection and the Dutch parliament, externally published interviews, as well as the dedicated interview with the relatives.

2.2. Verified case description.

In a revelatory case study, a well-structured case description gives the readers insight into processes or circumstances hitherto not described in scientific studies, brings several perspectives together, and is in-itself an important result. It may inspire readers to reflect on the case, to explore the case from additional perspectives, etc. (Yin, 2003). The case description is split in three parts for the respective research questions. It gives an overview of the most important data and developments, and -as suggested by Yin (2003, p. 105) includes references to the main sources of evidence. To ensure a maximum objectivity we asked key agents to verify the description. The surviving relatives verified all three parts of the case description. Xycarb representatives verified the first and second part of the description also from their side.

2.3. Further analysis

The three parts of the verified case description already imply a first exploration of the three research questions. According to Yin, (2003, p. 114) developing a case description is a useful analytical strategy when the alternatives of relying on theoretical propositions or on analysing rival explanations do not seem adequate.

Each of the three parts of the case description are structured in chronological order. In this way changes over time and the processes that play a role therein can be followed closely; this implies an explanatory potential. By assessing relationships between activities, circumstances and events, key concepts and their possible relationships were analysed.

Regarding the first research question (about the social responsibility or institutions and organizations involved) four perspectives were used: transparency and adequate and honest communication, moral aspects (doing justice and taking responsibility), financial impacts on the relatives, and the psychosocial impact on their activities. The social responsibilities were analysed distinguishing four clusters of institutions and organizations: (1) the company, (2) the institutions and organizations involved in the legal consequences of the fatality (labour inspection, national forensic institute), (3) those involved in the legal system (court, prosecutor, lawyers, the legal framework), and (4) in the financial settlements (the company, personal injury lawyers, insurance companies, pension fund, the tax office, and the employers of the widow and her son).

Regarding the second research question (about the contributions of the relatives to the success of the improvement programme at Xycarb) we analysed the activities of the relatives and the company and especially the processes of interaction.

Regarding the third research question (about the contributions of the surviving relatives to the development of new legislation and new inspections strategies), we analysed the factors and circumstances that played role in these processes.

Though the case is unique, the idea behind the analysis is to identify relevant actors, patterns and factors that can to some extent be generalised (of course, needing confirmation in future research). In this way the research contributes to new insights, explanation building and theory forming.

2.4. Ethical issues

Schunk Xycarb Ceramics as well as the surviving relatives gave their consent to use their names, and the information they shared with us. Xycarb also verified the case description (sections 3.1, 3.2 and 3.3) while the surviving relatives verified all parts of section 3.

3. Case description

3.1. The origin of the case: The fatal accident

On August 13, 2014 a fatal accident took place at Xycarb Ceramics in Helmond. Xycarb Ceramics, now Schunk Xycarb Technology, is a globally operating producer of specialised quartz, graphite and advanced technical ceramics, especially for the semi-conductor industry; they also deliver refurbishments and repair services. With production facilities in Europe, Asia and the Americas Xycarb operates globally; the site in Helmond (Netherlands) is its global headquarter. Xycarb is part of the Schunk holding which has its head quarter in Germany. In this paper we will use the shorter name 'Xycarb'. Helmond is located in the Eindhoven area, in the South East of the Netherlands, a region well-known as one of the most innovative regions of the world (ICF, 2021). The fatality took place during maintenance work in a reactor which was filled earlier with argon; a typical example of a confined space accident. Toon van der Loo became unwell. His colleague Tonny Visser entered the confined space with the intention to save Toon, unfortunately only to double the dramatic impact of the accident. Other colleagues got the two men out of the confined space and a trauma helicopter brought them to hospitals nearby. The physicians did their utmost best to save them, but the lack of oxygen had irreversibly damaged their brains. Toon died on August 14, his colleague Tonny one day later. Multiple deaths are a well-known phenomenon of accidents in confined spaces, though these fatalities are 100 percent preventable through proper precautions, including measurements of toxic substances and oxygen prior to the work, dedicated training and adequate preparations for possible emergencies (see ILO, 2011). The case study focuses on the roles and activities of Toon's widow and brother in law/good friend in the aftermath of this fatal accident. The relatives of the other victim valued their activities but were not personally involved.

3.2. Social responsibilities in the aftermath of the fatal accident

3.2.1. The social responsibility of the company

Within 24 h after the death of Toon, the relatives (including the son and another brother in law of Toon) visited Xycarb. They were received in a large meeting room by twelve direct colleagues of Toon, the CEO, and the head Human Resources (the only female on Xycarb's side). The colleague who found Toon and his colleague in the reactor was one of them. Another colleague had suddenly lost his wife just a month ago. There was a shared feeling of sorrow, pain and compassion; everybody felt a terrible human loss. Everybody was deeply impressed and had difficulties to find the right words to express their feelings, everybody was in tears. Nevertheless, a conversation took place. The atmosphere was very compassionate (Van der Loo - van de Sande & van de Sande, 2017, p. 29). It was probably implicitly and gradually realised that these direct colleagues of Toon could have been victim as well, and that safety improvements at Xycarb would be important for everybody. To share feelings at such a moment was extremely important for the surviving relatives and somehow it helped them to generate some strengths for the further process. From the 800–900 people who visited Toon's funeral, about 400 were Xycarb colleagues (Van der Loo - van de Sande & van de Sande, 2017, p. 58). Again, this was an impressive expression of compassion which was greatly appreciated by the relatives.

The relationship of the relatives with Xycarb was complex and there was a conflict of interest related to the issues of liability and compensation. The company acknowledged to have a responsibility but

defended it-self with a view on possible consequences for the company and the managing director. It was supported in this respect by its company lawyers. The company's insurance tried to minimise the compensation (ibid. p 111). All this was perceived by the relatives as unjust and lack of integrity. It forced them to fight back and also involve lawyers.

Directly after the fatal event, the relatives were, of course, almost overwhelmed by sorrow. But gradually they became aware that the struggle with the company (about accepting their responsibility and giving a fair financial compensation) was associated with negative mental energy. They felt a need to rethink the situation and realised that the conflict with Xycarb contributed to their sorrows. At the same time, they also felt compassion with Xycarb and the Xycarb people. This made them realise that cooperation with Xycarb, though difficult to start with, should be preferred. As the widow later said in an interview: *"In the end, you only want one thing: that the suffering stops. The suffering can only stop by letting things go. I do not see the company as the murderer of my husband"* (Heerma, 2020).

When the struggle for a decent compensation lasted and lasted, the relatives made (March 2016, one and a half year after the fatality) an appointment in Germany with the CEO of the Schunk holding (owner of Xycarb), and the president of the Ludwig Schunk Stiftung (the foundation that holds all shares of the Schunk group). The relatives were received well, and the executives demonstrated their compassion without making any promise to solve the issues with Xycarb. At this occasion, the relatives proposed a safety promotion plan, which they called Safety 2020. The plan comprised five elements: (1) Xycarb's own safety plan should be the basis; (2) Xycarb should start an investigation on the question: What seduces employees to consciously deviate from known procedures? (Inspired by De Bruin, 2012); (3) The organisation of annual safety days in the period 2016–2020 for all of Xycarb's personnel; (4) An investment of 100,000 € in the five years safety plan; (5) The surviving relatives van der Loo will be involved in the planning and realisation of the safety days. The relatives also formulated three preconditions: (1) Xycarb apologises to the widow for the statements made at the court; (2) Xycarb withdraws their case for the court of appeal and (3), the surviving relatives ask the prosecutor to withdraw the case for the court of appeal as well (Van der Loo-van de Sande and van de Sande, pp. 142–143). The relatives saw their alternative as: *"To do something good for somebody else, to accept that errors are made, and to have the courage to make steps without knowing the final result"* (ibid. pp. 9–10). Their aim was to create something positive out of the horrible fatality, and to show their compassion with Xycarb and Xycarb people.

Though the Schunk executives did not immediately accept the plan, they promised to discuss it with Xycarb. As a result, Xycarb involved a mediator to come to an agreement with the relatives (Vaststellingsovereenkomst, 2016). The plan and the meeting with Schunk executives turned out to be the tipping point. Two months later an agreement with Xycarb was settled, not fully to the satisfaction of the relatives, but they judged it was better to accept the offer, and to close the struggle for a just compensation so that they could put energy in more positive aspects of life. Xycarb also agreed with the relatives' proposal for a joint safety programme (ibid. p 164). The relatives and Xycarb signed a formal agreement to cooperate in the promotion of safety in a five year safety program. The joint aim was to greatly improve Xycarb's safety policy and culture, and also to strengthen the available safety expertise at Xycarb.

3.2.2. Legal consequences

Directly after Toon had passed away, the Netherlands Forensic Institute (NFI) was involved to carry out a post-mortem autopsy, to determine the cause of death. To this end Toon's corps was transferred to the NFI. That procedure was difficult to understand for the relatives. There was no adequate information (e.g., on the NFI's website) about the procedure and the rights of the relatives. The relatives felt a strong need to see the corps as soon and intact as possible. But they had to wait several days before they were allowed to see the corps, and upon return

the body was no longer intact Van der Loo- van de Sande & van de Sande, 2017, p.35). Two years later (November 2016) the relatives made an appointment at the NFI to discuss their experience. During the appointment they discovered that they had only received a draft report of NFI's findings; the final report was shared only with the lawyers of the company who had used some of the elements therein to try to reduce the compensation for the widow and her son Van der Loo-van de Sande, et al., 2017, p. 205). That appointment triggered the NFI to improve the information for surviving relatives on their website, and also to apologise for the inadequate communication. In retrospect the relatives did, however, appreciate the autopsy by the NFI (which is not mandatory in case of a fatal occupational accident) because the NFI report made it very clear that lack of oxygen was the cause of death. To underline their view that autopsy by the NFI should be mandatory in case of occupational fatalities, the relatives participated March 2017 in a meeting of the national taskforce Autopsy and Legal Post-mortem Examination (private mail from Van de Sande, 2017).

The labour inspection was prominently involved to determine if, and to what degree legal requirements had been violated. To this end the place of the fatality was 'frozen' for investigation. For the surviving relatives it was from the very beginning important to know that Toon van der Loo and his colleague were not to blame for the fatality; they wanted a confirmation of Toon's innocence as soon as possible. The inspection regarded it essential to first have a detailed analysis of the fatal event. The official inspection report which confirmed Toon's innocence was published eight months after the fatality and counted 1,041 pages Van der Loo- van de Sande & van de Sande, 2017, p. 76). It was qualified by the surviving relatives as 'nauseatingly detailed'. The report described in full detail how the fatality occurred, but – to the disappointment of the relatives – not why it occurred. This is exactly what Kingston- Howlett and Mertens (2007) concluded: "investigations ... produce explanations in the form that the accident happened because the duty holder did not comply with the law. This fulfils the expectation of victims' families for justice but it does not necessarily fulfil the other desires commonly expressed by families: to understand the full story of how their loved one came to die and to see actions to prevent recurrences". The investigation report also clarified that eighteen years earlier another confined space accident (fortunately not with fatal impact) had occurred in the company. The Inspection's investigation report was also important for the prosecution of Xycarb.

In court, the prosecutor accused the company of being guilty and demanded a fine of 180,000 € plus closure of the company in case of a new fatal accident within 2 years. In court, the company lawyers stated that Toon had a weak heart and died because of a heart attack and they pleaded the company innocent. The court decided guilty and ordered a fine of 75,000 € and another 75,000 € in case of reoccurrence within two years (Rechtbank Oost Brabant, 2015). The relatives, who were formally not involved in this legal procedure, perceived the fine as extremely low. They could hardly believe that the life of two people seemed to be valued by the court at only 37,500 € each.

The prosecutor went to the court of appeal. There, the widow made use of her right to be heard (even though the secondary victims were no party in the appeal). In a courageous speech, she presented the impact the fatality had had on her life and that of her son, explained that a fine of 75,000 € and 75,000 conditionally, seemed a very miserable fine compared to their great loss. However, in the end she pleaded not for a higher fine, but for no fine, as the money would be spend much better when invested in a programme to promote safety Van der Loo-van de Sande, et al., 2017, pp. 175–193). In a way they thereby choose the side of the suspect (Xycarb).

3.2.3. Financial consequences

Besides criminal law there is also the issue of civil law and compensation. The company as well as the relatives involved personal injury lawyers to support their case. The relatives noticed that the world of personal injury lawyers is limited; they know each other, and meet

regularly in different roles. They surmised that this prevented their lawyer to play it hard. They also noticed that for the lawyers it was no problem at all to discuss at length the possible reimbursement of the costs of flowers at the funeral (75€), while charging their hourly rates of around 200€ per hour (van der Loo-van de Sande & van de Sande, 2017, p. 96). Unintendedly showing that they cared more for their own finances than for the finances of their customers.

Gradually, it became clear that there were more institutions and organizations involved in the financial impact of the fatality. To begin with Toon's life insurance. Though a private arrangement, it turned out that the compensation that the company insurance had to pay was lowered by the amount of the payment from Toon's private life insurance. That felt quite odd for the relatives. Xycarb's insurer, which was involved in all kinds of communication about the compensation also blundered a year after the fatality by sending a letter saying that Toon was no longer insured for work disability: a very painful letter for the widow. About another year later (November 2016) the relatives visited Xycarb's insurance company; Thanks to their persistence, they finally got an appointment with the director who had electronically signed the letter. They told him they were people, not numbers. They got sincere excuses and a bunch of flowers, but left with some doubt whether their visit would change anything (Van der Loo-van de Sande et al., 2017, p. 204).

Another financial institution involved was the Dutch Tax office. They regarded the compensation received as a regular income. As it was a relatively high amount, the Tax office claimed 52 % of the compensation (ibid. pp. 151–152). This was not only perceived as bizarre, but also as unjust. The pension fund was involved as well, because they were responsible for the legally mandatory insurance for widows and orphans. The fund initially forgot half of their financial rights. Later, November 2016 the relatives had a meeting with executives of the pension fund to discuss this 'error', and how it was possible that this error was not noticed by the organisation, and, of course, the impact it had on the relatives (ibid. pp. 210–215).

3.3. The safety improvement programme at Xycarb

Shortly after the agreement the first safety day at Xycarb, for all of its personnel, was held. Xycarb had already prepared this after the suggestion of the surviving relatives; it meant a quick-start for the cooperation between Xycarb and the relatives. In the meantime, Xycarb had identified lessons learned from other companies, prepared for the safety day, and developed a safety plan 2016–2020 with five pillars: (1) creating a good safety culture, (2) implementation and certification of the safety management system, (3) optimum safety of technical installations, (4) joining safety networks to exchange knowledge, and (5) promoting safety in the chain (Xycarb Ceramics, 2016). From then on, the relationship with Xycarb was one of good cooperation. For Xycarb the offer of the relatives for five years of cooperation formed a valuable framework to learn from the fatal event and to strengthen safety. The relatives contributed to each Xycarb safety day in the period 2016–2021.

The fatality also triggered Xycarb to reflect on its essence. They work with metals, electronics, and coatings. They realised that they were not only a manufacturing company, but increasingly also a chemical company. That was a switch in thinking about safety. It implied significantly higher safety standards.

Two years after the fatality, Xycarb held a commemoration of the fatal event in the presence of the surviving relatives and the CEO and COO of Schunk, with two minutes of silence for all of its personnel, and the unveiling of a memorial monument (ibid. p. 105). The monument fulfils three functions: (1) it is a signal to all employees, (2) it is a recognition and acknowledgement to the victims and their relatives, (3) it is a point of reference for the company: we never want this again!

The enthusiasm of the company for the joint safety improvement programme, was increasing steadily. When the plan worked-out positively and received broader recognition this was encouraging both the

surviving relatives and Xycarb to continue their cooperation with even greater enthusiasm. For the relatives it was important to hear that Xycarb openly discussed the fatality in the process of hiring new employees. They clearly communicated that a fatality had regrettably taken place in August 2014, showed the memorial, explained that they were doing their best to never have such an experience again, and that they expected new employees not only to pay attention to safety but also to contribute to Xycarb's efforts to further increase safety and to improve the safety culture.

Though in the first years some incidents did occur, the number of reported dangerous situations and near misses increased sharply, showing that the workforce was convinced that safety was now taken seriously by Xycarb.

End of 2017 the Widow received the Pieter van Vollenhoven award from the Dutch foundation for society and safety for her initiatives for safety improvement. End of 2019 Willem Alexander, King of the Netherlands, visited Xycarb and the surviving relatives jointly with the Inspector General of the Labour Inspection and the inspectors involved in the case (Het Koninklijk Huis, 2019) to express his interest and appreciation for the efforts of the relatives and for Xycarb's safety transformation. For Xycarb, its personnel, the relatives, as well as Xycarb's neighbours and business environment, the visit of the king highlighted the value of the joint safety improvement programme.

Initially the plan was to end the five year programme in 2020. Due to the covid-19 pandemic this was delayed till the safety day in 2021. The end of the cooperation with the surviving relatives, will certainly not be the end of Xycarb's safety programme.

3.4. The national impact; new legislation and inspection strategies

The safety improvement programme, and especially the active contribution of the surviving relatives, received a lot of media attention (newspapers -local, regional, national; social media). Quite a few other companies were inspired by the Xycarb case and the support of the relatives. They invited the relatives to present their experiences, their programme and vision on the importance of safety. In this way they reached companies in several sectors including manufacturing, refineries, food, construction, and consultancies (Van der Loo-van de Sande & van de Sande, 2021).

The relatives also contributed to national activities on the annual Worker Memorial Day, wrote their book and developed their own website disseminating the Xycarb case, and their programme and vision on the value of safety improvement programmes. They became active in the Occupational Accidents Foundation, founded by the widow of a victim of a fatal accident in the Rotterdam harbour. The foundation supports victims of occupational accidents, their families and other stakeholders in their communication with institutions; the foundation also aims to improve the understanding of the situation of victims and surviving relatives in society (Stichting Arbeidsongevallen, 2022).

When the safety improvement plan at Xycarb worked-out positively and received broader recognition, the aim of the relatives became more ambitious: to realise a legal foundation for a safety improvement plan in case of fatal or serious accidents in the OSH legislation.

In October 2016 the relatives supported by the second author gave an invited lecture at the 'safety culture day' of the Dutch labour inspection. It was the start of a unique collaboration between the inspection and the relatives. The lecture was followed-up by several work sessions with the inspection in 2017 (without involvement of the authors). The Inspector General gave a very laudatory speech at the occasion of the book presentation in November 2017 (Kuipers, 2017). The inspection ordered several hundreds of copies to be disseminated and discussed among the labour inspectors. The labour inspection was already searching for opportunities to act more proactively. The inspection realised that about half of its capacity was absorbed by doing accident investigations. They asked themselves whether the work on accident investigations could be reduced and replaced by activities with

a greater societal impact. The safety improvement programme at Xycarb was regarded as very interesting in this respect.

"Your experience has also been an source of inspiration for us as inspection to jointly with the Ministry of Social Affairs and Employment start a project that has run throughout the year, and that we will continue." (M. Kuipers, Inspector General of the Dutch Labour Inspection).

The labour inspection initiated a pilot programme (2018 – 2019) called 'the differentiated approach' comprising 60 cases of severe (but not fatal) accidents. The companies were given the opportunity to choose for the development of a programme to improve safety and safety culture. By way of experiment, the companies were asked to carry out the accident investigation themselves and to share the results with the labour inspection. When the investigation was carried out seriously, that was understood as an indication that the company was ready for a safety improvement plan as alternative for the traditional fine. It was acknowledged that it was important to create conditions wherein the intrinsic motivation of the companies was triggered, and that the safety improvement was not being realised 'because the inspection required it'. For the labour inspection the pilot implied differentiation between cases of severe accidents, which is always tricky for inspections because of possible legal consequences. All sixty companies that were given this opportunity, chose for the improvement plan option. Perhaps unsurprisingly, as the Widow van der Loo said:

"A company has something to explain to their personnel when they prefer a fine instead of safety improvement plan" (Karien van der Loo -van de Sande; in [Heerma, 2020](#)).

The pilot projects were evaluated positively and the inspection decided to have an internal policy guideline to allow such improvement programmes in case non-fatal severe accidents.

More or less in parallel with the developments in the inspection, efforts to change the relevant legislation took place. January 2017 one of the relatives met a member of parliament of the Dutch Christen Democratic party, member of the parliamentary commission for Employment and Social Affairs. The MP was interested in the Xycarb case and the philosophy behind it and they made an appointment to discuss this further. At that occasion the relatives proposed an 8 step plan, to create optimum conditions for the proliferation of safety improvement programmes and the involvement of surviving relatives.

The eight policy issues of the surviving relatives

1. Focus less on fines, and introduce mandatory improvement projects after serious accidents
 2. Increase the number of labour inspectors on the shop floor for investigation and inspection
 3. Make autopsy by the National Forensic Institute mandatory in case of a fatal accidents
 4. Involve surviving relatives in the processes of investigation and prosecution
 5. Maintain the right to speak for surviving relatives of occupational accidents in legal courts
 6. Simplify the process of settlement of compensation
 7. De-taxation of the compensation from insurances in case of occupational accidents
 8. Make human control of the settlements with surviving relatives by pension funds mandatory (to treat surviving relatives as people, not numbers)
-

As a follow-up, the book of the relatives was then discussed in the parliamentary commission for Employment and Social Affairs. Within a month thereafter, the PM submitted together with a colleague PM a motion in parliament to legally create the option for the labour inspection to allow to organizations where serious accidents had occurred a safety improvement programme simultaneously reducing or even eliminating fines ([Tweede Kamer, 2017](#)). The motion was supported by 130 of the 150 members of parliament. In 2020 this led to new legislation: an improvement programme became a regular option in case of non-fatal accidents.

4. Further findings and discussion

4.1. The social responsibility of organizations and institutions

In this section we present additional findings regarding the first research question, elaborating on the case description presented in section 3. Besides the obvious involvement of the company Schunk Xycarb, organizations and institutions were involved in the legal and financial consequences. Four aspects of social responsibility were relevant: (a) transparency and adequate and honest communication, (b) moral aspects (doing justice and taking responsibility), (c) financial impact on the relatives, and (d) the psychosocial impact of their activities.

Xycarb was responsible for the fatal event, and so had a clear social responsibility towards the relatives. Shortly after the fatality they reacted ambiguously. At a personal level Xycarb representatives and the (direct) colleagues of the two victims sincerely expressed their condolences. They were dismayed and the event also had a strong impact on their mood too. Together they realised how important the lost lives were. For the surviving relatives this was important social support. The company found that the legal framework was not helpful for their social responsibilities. As Xycarb's CEO said: *"The legal framework was not helpful to maintain or improve a good relationship with the affected families"*. After being accused of violating the law top management's natural response is to defend themselves. The CEO: *"As a company you have to defend yourself, which may imply that you may hurt people unintendedly"*. This was confirmed by the widow: *"When punishment is the goal it makes no sense to talk with each other"*.

The fact that a severe accident took place does not imply that there was any intention to let it happen. In most cases organizations are taken by surprise by the event. They have overlooked a risk which should have been identified and controlled. In such cases it is rather 'organizational error' (compare [Reason, 1995, 1998](#); [Goodman et al., 2011](#)) than a wilful violation of the law. Being prosecuted as an individual can result in mental paralysis, trigger a defensive mode, and leave little room for individual and organizational learning. [Dekker \(2017a\)](#) points out that a too strong focus on human error can trigger 'criminalisation' of human error, and shows a restorative justice approach is to be preferred over a retributive justice approach. The case study (and some other cases known to the authors) suggest that for fatalities caused by organizational error, the present legal system in the Netherlands can be characterised as retributive. The new legal option for a safety improvement programme instead of a fine does not only trigger safety improvements in the organization, but also contributes to restoring trust combined with accountability.

In the legal setting Xycarb's lawyers communicated several scenarios considered in the labour inspection's report, including the scenario that Toon died due to a heart attack. The Schunk holding, owner of Xycarb at first remained quiet at a distance. Only after the relatives directly addressed Schunk executives, Xycarb changed their positioning and involved a mediator. Soon thereafter the agreement between Xycarb and the relatives was settled.

The institutions and organizations involved in the legal consequences comprised the national forensic institute (NFI), the labour inspection (LI), the (criminal law) lawyers of Xycarb, the prosecutor, the court and the court of appeal. In terms of social responsibility, the surviving relatives were potentially important stakeholders for all of them, but initially this was not the realised. In terms of transparency and communication neither LI nor NFI were transparent about the process which was emotionally so important for the relatives. In their investigation processes the social impact on the surviving relatives was neglected. They focused on their core activity: objective fact finding. As a consequence, the relatives had to wait several days before the NFI allowed the relatives to see Toon's corps which was no longer intact upon return and it took eight months before the labour inspection was able to confirm Toon's innocence in their investigation report.

The criminal law lawyers of Xycarb never acknowledged any social responsibility towards the surviving relatives. The prosecutor accused Xycarb of its responsibility for the fatality. This was also in the interest of the relatives. But the prosecutor was also eager to get the company convicted by the court of justice, and later the court of appeal. In the court of justice and the court of appeal, as institutions of criminal law, the surviving relatives were not formally involved. The decision of the court of justice and the low fine was a blow for the relatives. In the court of appeal, after the remarkable and courageous speech of the widow the prosecutor indirectly supported the settlement and the court accepted their proposal for a safety improvement programme instead of a fine.

Organizations directly involved in the financial consequences and compensation were: civil lawyers of the company and the relatives, the private life insurance of the victim, the company insurance, the pension fund, the tax office and the employers of the widow and her son. With the exception of the private insurance and the employers of the widow and son, these institutions and organizations had a negative impact on the financial settlements. According to the relatives, even their civil lawyer did not fully support their case. The company insurance reduced its payment with the amount covered by the victim's private life insurance. The pension fund 'forgot' part of their rights for compensation, the tax office regarded the compensation as an income of one year (instead of a lifelong compensation). A surprising finding is the financial involvement of the employers of the widow and her son: they not only supported their personnel as good employers, but also took the loss of a significant amount of absence (which in the Netherlands is a cost for the employer).

4.2. *The contributions of the surviving relatives to the success of Xycarb's safety improvement programme*

In this section we present the findings of our analysis of the contribution of the surviving relatives to the successes of the Xycarb safety improvement programme. It builds on the case description as presented in Section 3.3.

When the compensation issues were settled, this gave the relatives finally some peace of mind. It was an important mental turning point. Ultimately, Xycarb also withdrew their case for the court of appeal and signed a formal agreement to cooperate with the relatives in a five year safety program. Xycarb also started their safety improvement plan and the preparations for the first 'safety day' already before the agreement with the relatives. The involvement of the surviving relatives on the first safety day – speaking from their dramatic experience and right from their heart about the importance of safety, made a great impression on the Xycarb community.

Xycarb from their side not only organized a good follow-up, but went beyond the more traditional responses to fatality. A memorial monument was divulged at the company site, showing sustained respect for the two victims, as well as a remembrance of the fatal event. In the process of hiring new employees the fatality was addressed, and potential new employees were invited to contribute to safety even before they got a job. These activities of Xycarb in its turn strengthened the enthusiasm of the surviving relatives for the joint safety programme. In this way a win-win situation occurred for Xycarb and the relatives. Leading to a virtuous process wherein the commitment to safety improvement and consequent actions were strengthening each other.

A fatal accident can be a decisive event in the life of people and in the development of organizations. For organizations it affects the self-image of the organization as a responsible and good entity. It is widely known that a crisis also implies an opportunity for leadership (Braden et al., 2005). Directly after a crisis the leader "has the attention and urgency to solve the underlying issue that caused the crisis in the first place" (Braden et al., 2005). It may also trigger the feeling 'this may never happen again in our organization'. This may, but not necessarily, trigger increased attention to safety promotion and the prevention of accidents. In this respect it is not unique that the fatal accident at Xycarb triggered

a safety improvement programme.

What makes the case unique is the close cooperation with the surviving relatives. By signing the agreement of cooperation, Xycarb committed itself to a five year safety improvement programme (not to taking a few measures and moving to the order of the day). The relatives were in a position to communicate their dramatic experiences with the personnel, strengthening feelings of connectedness and belonging to a community which was hit by the fatality. Their experience touched the hearts and souls of many colleagues of the victims, and the explicit commitment of the relatives to safety improvement resonated in the organization. This triggered and supported commitment and ownership of safety at all levels in the organization, and had a significant impact on the safety culture.

According to Xycarb's CEO, at the end of the cooperation with the family, significant improvements of safety are noticeable in the management system (e.g., for every non-standard activity a job safety analysis is made, and much more notifications of dangerous situations are reported). There is a higher maturity level of the safety culture, (e.g., there is more attention for safety, a higher alertness, there are no longer any hesitations to report dangerous situations, while in case of discussions it is much easier to convince people to work safely).

4.3. *The contributions of the surviving relatives in the innovation of OSH legislation and inspection strategies*

The high level of credibility, authenticity, integrity and the absence of hidden agendas gave the relatives a moral authority which contributed to the success of their initiative. In all phases, this played a role in the contacts with organizations and institutions. They inspired many people, including the Inspector General of the Dutch Labour Inspection. The example of starting a safety improvement programme after the fatality, resonated with an already existing discussion in the labour inspection.

The surviving relatives also took an opportunity to discuss their ideas about safety improvement programmes as alternative or complementary to fines with a member of parliament, Mr Heerma. Again, their story resonated resulting in a broad acceptance by the Dutch parliament of a motion to make this legally possible.

The relatives in this case are proud that in the Netherlands there is now the option for the labour inspection to allow companies to choose for accident prevention after serious accidents; but they are disappointed that it is not (yet?) allowed in case of fatal accidents.

Of course, the dilemma for OSH policy makers and the inspection is that they do want to encourage prevention, but do not want to reward organizations that have (perhaps consciously) acted irresponsible. The idea of a promotion programme as an alternative for a fine, is somewhat similar to a programme of the US Environmental Protection Agency in the early nineteen nineties to promote pollution prevention whereby the EPA in case of non-criminal environmental violations negotiated with the companies to reduce the fines when the companies invested in pollution prevention, i.e., prevention at source (Becker and Ashford, 1995).

5. Discussion

5.1. *Limitations and strengths*

This paper is based on the analysis of a single but interesting and revelatory case, consisting of three complementary parts. Each of the three parts of the case study has its own merits and analysis. According to Yin (2004) a single case can be revelatory when an investigator has the opportunity to observe and analyse a phenomenon not previously subject to scientific investigation (Yin, 2004, p.42). Then the descriptive information alone can already be revelatory. Applying Yin's criteria reveals that especially the first and third part of the case study should be regarded as revelatory: The corporate social responsibility of institutions

and organizations regarding surviving relatives has, to our knowledge, not been subject to scientific investigation before (first part of the case); the same holds for the contributions of surviving relatives to legal change and more proactive inspection strategies of labour inspections.

To ensure the rigour of the case study, the case description refers to a variety of types of evidence, while safety and organizational change theories were used for the three parts (triangulation principle). To minimise the potential bias which may occur due to the phenomenon that a participant observer is likely to become a supporter of the group or organization being studied (Yin, 1994, p. 94) we included verification of the case description by Xycarb and the surviving relatives, while in the interview we asked the CEO and head SHE of Xycarb explicitly, what would likely have happened without the involvement of the surviving relatives.

Of course, the case has several specific characteristics. The legal backgrounds and the roles of several institutions are to some extent specific for the Netherlands; in the Netherlands there is no national social accident insurance, as is the case in most countries. Nevertheless, we are of the opinion that many of the findings are recognisable and relevant for other jurisdictions. The impact of family, friends and acquaintances on the wellbeing of the surviving relatives was regarded as not relevant for this paper.

5.2. The responsibility for 'aftercare'

Safety management and research focuses on the prevention of accidents, and to a lesser extent on the mitigation of the effects of accidents, as well as accident investigations aiming to identify lessons learned. Aftercare seems to be the responsibility of others. The direct impact on primary and secondary victims is regarded as an issue for experts and institutions focusing on rehabilitation, physical and mental health, and for the financial aspects we have lawyers and private or social insurance. From a corporate social responsibility perspective, the care for safety should not stop after an accident. Institutions, organizations as well as employers and safety professionals have a social responsibility to take care of victims. It implies that they cannot fully transfer their responsibility to contracted organizations (e.g., insurers, health care), and that they should not forget that the victims are people, who deserve attention, support and careful communication.

5.3. A complementary avenue for improving safety?

In the introduction we referred to Dekker (2017a) who suggested that "compassion, humanity and social justice may open up a complementary avenue for Vision Zero", i.e., for safety excellence. In the presented case study compassion, humanity and social justice regarding the surviving relatives is regarded as a social responsibility. Unfortunately, our findings show it is often not yet a reality: many organizations treated the surviving relatives as numbers or cases instead of human beings that are treated with compassion. In this way several organizations and institutions unintentionally increased the suffering of the surviving relatives, instead of being a supporting partner. Communication with surviving relatives is often painful and difficult for all parties concerned, which may explain that the majority of organizations and institutions chose to communicate in business-like manner. Of course, fatalities happen rarely and many organizations have never anticipated such a human disaster could take place their organization. But institutions like the labour inspection, the national forensic institute, (company and personal injury) lawyers, insurances, and pension funds are confronted with such events more frequently. They should be prepared well, and be able to respond with compassion and adequate information. The Dutch labour inspection now directly informs bereaved families in case of fatal work accidents. Another good example of adequate information for surviving relatives is the dedicated leaflet of the Irish authorities (HSA, year unknown).

5.4. Surviving relatives and the role of families in corporate social responsibility

In corporate social responsibility it is important to have a good relationship with the civil society including representatives of the local communities they are based in. Community involvement is important for safety and health at work (WHO 2010; Kawakami et al., 2005; Schulte et al, 2005) and vice versa (ILO, 2013). Most scientific attention about the role of families and local communities is given to rural areas and safety in agriculture or informal work. It goes beyond the scope of this paper to review that literature. Families and local communities play an important role in dealing with misery after a serious or fatal accident. But it is also clear that the case study shows that family members and surviving relatives can play a more active role in promoting prevention than is often assumed.

There is also quite some literature about relatives and family members as important stakeholders in accident investigation (e.g., van Vollenhove, 2001; Figley, 1985), as well as in patient safety (e.g., Vincent and Davis, 2012, Graedon and Graedon, 2006).

5.5. The potential contribution of (primary and secondary) victims to safety: A missed opportunity?

Primary and secondary victims form potentially an important stakeholder group for organizations and institutions involved in safety or the aftermath of serious accidents. Nevertheless, there is usually limited attention for them. Contributing to the reduction of their suffering is an important issue both from a safety as well as a corporate social responsibility point of view. The research shows that organizations and institutions can contribute substantially to the reduction of suffering of the surviving relatives. This starts with the acknowledgment of their suffering and the acceptance of the (shared) responsibility for these stakeholders. And the realization that these are vulnerable people who need to be treated with empathy.

Primary and secondary victims are usually seen as piteous. This is likely to confirm their problems and weaknesses, and neglect their potential strengths. The case shows that surviving relatives (and probably also primary victims) are authentic and credible when they commit themselves to safety improvement. Different from top managers and safety experts, they have no other agendas or conflicts of interest. The case demonstrates they can be important change agents. To generate change in attitudes, behaviour and culture, they can share their pain, and speak from their heart. This can be much more powerful than the rational argumentation about the importance of safety from safety experts. Indeed, to generate genuine commitment to safety it is usually more important to appeal to the heart and soul of people than to be rational. Victims (primary or secondary) who promote safety are therefore in the optimum position to generate a significant positive impact on safety. Organizations and institutions, including inspectorates, could make better use of this potential, by creating the conditions wherein primary and secondary victims can decide easier to commit themselves to safety improvement.

Though there are no examples of studies published on similar cases known to the authors, the transformation of secondary victims after a fatality towards leaders in safety is not unique. In the Netherlands we had Laura Brugmans who also documented her experiences in a book (Brugmans, 2015); she was also one of the founders of the Occupational Accidents Foundation. We are also aware of the activities of Tiny Hughes in the UK, who is promoting rail safety since she lost her fourteen year old daughter in 2005 at an unsafe level crossing (Hughes, 2021). Another well-known example is that of English ex-pilot and Human Factor specialist, Martin Bromiley whose wife died during a routine operation in a hospital (Bromiley, 2015) and is now an advocate of patient safety and a promotor of safety leadership. There are also cases in the somewhat related areas of death after public violence. Probably there are even more cases where primary victims who survived serious

accidents play a positive role in promoting safety and health. The authors know several safety consultants who became committed to promote safety this way. A globally well-known example is Wolfgang Zimmermann who became disabled after an industrial accident in 1977, and who is now Executive Director of the National Institute of Disability Management and Research (NIDMAR) in Canada and President of the Pacific Coast University for Workplace Health Sciences (PCU-WHS).

5.6. Implications for safety science and practice

The case study also raises the question why in safety science literature there has been so little attention to the experiences of primary and secondary victims of (serious) accidents and their potential to foster accident prevention and the promotion of safety in general. A possible explanation is that there is practically no funding available for such studies. This suggests that there is greater interest in the causes of accidents and their financial consequences than in the human impact thereof.

The potential contributions of primary and secondary victims to accident prevention and the promotion of health and safety are so far clearly under-used and under-researched. For researchers this may imply that interdisciplinary projects are necessary to reduce the suffering due to accidents, including cooperative projects with (mental) health and rehab experts.

In safety science, like most of the organizations and institutions involved in the aftermath of the fatality in this case study, the tendency is to deal 'objectively' with accidents and victims. This implies that the victims are regarded as 'cases' or 'numbers in the statistic', not as individual people. We have consciously broken with this implicit rule because the focus in our paper is on the suffering and contributions of victims which is highly personal. We felt it more appropriate to use their names, with their consent, as an expression of their individuality. The scientific quest for objectivity may also explain why values that support safety (other than justice), e.g., compassion, are all too often neglected: they are difficult to describe and analyse objectively. However, values are certainly relevant as they underlie the business ethics aspect of corporate social responsibility (Zwetsloot, 2003), as well as for safety and health at work (Zwetsloot et al., 2013).

6. Conclusion

Primary and secondary victims form potentially an important stakeholder group for organizations and institutions involved in safety especially in the aftermath of fatal or serious accidents. Contributing to the reduction of their suffering is an important issue both from a safety as well as a corporate social responsibility point of view. Nevertheless, there is usually limited attention for their needs. The research shows that organizations and institutions can contribute substantially to the reduction of suffering of surviving relatives. This starts with the acknowledgment of their suffering and the acceptance of the (shared) responsibility for these stakeholders. It is thereby important not to treat them as numbers or cases, but as human beings - and to show compassion.

The case shows that surviving relatives (and probably also primary victims) are authentic and credible when they commit themselves to safety improvement. Victims (primary or secondary) who promote safety are able to generate a significant positive impact on safety by speaking directly to the heart and soul of managers and employees. Organizations and institutions, including inspectorates and policy makers, could make better use of this potential, by creating the conditions wherein primary and secondary victims can decide easier to commit themselves to safety improvement. In the case study the activities of the surviving relatives have led to new proactive national legislation and to successful experiments with more proactive (preventive and innovative) policies of the Dutch labour inspection. Both with a focus on greater ownership and commitment to safety (culture)

improvement by organisations involved in serious accidents.

CRedit authorship contribution statement

Gerard I.J.M. Zwetsloot: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Theo de Bruin:** Writing – review & editing, Validation, Investigation, Formal analysis.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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