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Bridging the Divide:
Employees' Stigma Management
in the Dutch Nuclear Industry

by

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Abstract

Title:	Bridging the Divide: Employees' stigma management in the Dutch nuclear industry
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Supervisor:	Dan Kärreman
Course:	BUSN49 Degree Project in Managing People, Knowledge and Change
Keywords:	Nuclear Industry, Stigmatization, Stigma management, Identity Work, Boundary Work
Purpose:	The purpose of this research is to investigate the perception and management of stigma in the Dutch nuclear industry. To investigate this, the following research questions have been developed:
	How do employees of the Dutch nuclear industry perceive the stigmatization of the industry and its effects on the industry?
	How do employees manage the stigma in order to bridge the divide between the nuclear industry and outsiders of the industry?
Theoretical Perspective:	The different areas of literature as a basis for this research are stigma, dirty work, stigma management, identity and boundary work. As our analytical framework we present the SMC strategies developed by Meisenbach (2010)
Methodology:	The data set consists of 14 interviews with employees working in the nuclear industry. The data was analyzed following an interpretative tradition, through a qualitative method and abductive approach.
Contribution:	This study contributes to the existing literature on stigma by strengthening what has been researched on the influence of stigma on the identity of employees in core stigmatized organizations. Furthermore, we enhance literature on stigma management, as we are adding an extension to the SMC framework called *Opening up*.

Acknowledgements

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List of Abbreviations

ANVS	Authoriteit Nucleaire Veiligheid en Stralingsbescherming
CEO	Chief Executive Officer
SMC	Stigma Management Communication

1. Introduction

1.1. Background

"Well, you don't want to be a cult. You don't want to be really this: we are right and they're wrong."

-Casper (employee of the Dutch nuclear industry)

Since the war in Ukraine, Russia has closed the gas supplies to Europe, creating a European energy deficit. Through gas and oil shortages prices have been rising rapidly, which has had significant economic consequences on a global level (Mbah & Wasum, 2022). This has increased the pressure on governments to create energy security (Sulich & Sołoducho-Pelc, 2022). The Dutch government aspires to decrease vulnerability to energy shortages and lessen its dependence on imported energy from abroad (Rijksoverheid, 2023). Aside from that, they are determined to be carbon dioxide-neutral by 2040 (BNR, 2023; Rijksoverheid, 2023). Therefore, it has recently been announced that there will be large investments into the Dutch nuclear industry in order to build two new nuclear power plants (Koenis, 2023; Rijksoverheid, 2023).

The Netherlands offers an established and diversified nuclear industry, with a nuclear power plant in Borsselle, a nuclear reactor for production of medical isotopes in Petten and a retired nuclear reactor in Dodewaard (ANVS, 2018). There is a specialized nuclear waste management company, COVRA (ANVS, 2021), and several companies are developing new nuclear reactors for the extraction of medical isotopes, PALLAS (ANVS, 2018) and Thorizon (Thorizon, 2023). Furthermore, there is a specialized research center located in Delft, where research on various topics related to the nuclear industry is being performed (TU Delft, 2023). Safety and security are regulated and closely monitored by the governmental organization Authoriteit Nucleaire Veiligheid en Stralingsbescherming (or ANVS) (ANVS, 2018).

The growth of the nuclear industry means there will be a steep increase in employees needed. Callum Thomas (Interview,13 January 2023), CEO of Thomas Thor Associates, a recruitment agency specialized in nuclear employees, predicts this will be an issue, especially considering current Dutch labor market shortages and the specialized skill set and knowledge needed for many positions in the nuclear industry. In September 2022 the Dutch government published research announcing a lack of employees in all professional categories and revealing that 75% percent of the professional categories are even faced with an extreme shortage of employees (AD, 2022; NOS, 2022). In light of this shortage and the aspired growth, retaining current employees and attracting new employees becomes pivotal.

Despite the current developments in the Dutch nuclear industry, still to this day the public opinion remains ambivalent about nuclear energy (Jong, de, 2022; Koenis, 2023; Nijenhuis, 2023). While Hacquin et al. (2022) proposes that the public focusses on exaggerated negative effects on health and the environment, by overestimating the risks of accidents compared to other types of disasters, Scherb, Voigt and Kusmierz (2014, p.1) state that "Nuclear weapons, atomic bomb tests, and nuclear accidents are considered a danger for the environment and a human cancer risk".

This aforementioned perception of risk and danger associated with the nuclear industry can be described as a form of stigma towards the industry (Horlick-Jones, Prades & Espluga, 2012). Recent research has shown that the nuclear industry is afflicted with stigma due to the public's perception on nuclear technologies and power plants being affiliated with for example nuclear accidents, radiation and risk (Horlick-Jones, Prades & Espluga, 2012; Yang et al., 2022). Especially, nuclear accidents like in Chernobyl and Fukushima have caused emotional responses from the general public towards the nuclear industry (Müller & Thurner, 2017).

1.2. Research Problem

The given circumstances of the nuclear industry in the Netherlands have inspired us to conduct our research on the stigmatization of the Dutch nuclear industry. We are particularly interested in how the stigma is managed by employees of the Dutch nuclear industry. Therefore, this research focusses on the impact of perceived stigma on employees, by researching how identity work and boundary work are used to manage this perceived stigma.

Stigma research acknowledges that stigmas exist to a wide range of degrees that vary in communication and that stigma's can be of a highly contextual nature (Kreiner, Hollensbe & Sheep, 2006; Link et al., 2002). Kreiner and colleagues (2006) have looked into broadening the range of occupations that are seen as stigmatized, by considering the breadth and the depth of the stigma. The breadth refers to how much of the work is considered to be "dirty" (this is explained as an element that is stigmatized and will be explained further in the literature review), while the depth refers to the intensity of the dirt and how directly the dirt is associated to the work (Kreiner et al, 2006). This theory overlaps with research regarding the centrality of stigmatization, by Goffman (1963). The more central the stigma, or dirt, is to the occupation, the more intensely the employee experiences the stigmatization. Kreiner and colleagues (2006) propose through this classification that most occupations are stigmatized to an extent, which is different from the stereotypical research on stigmatization which focuses only on a limited number of occupations.

We support Kreiner and colleagues' (2006) arguments for researching stigma in more than just the intensely stigmatized occupations, and therefor propose that stigma research can be done in the Dutch nuclear industry, whether the stigma is currently prevalent or not. Banerjee and Greene (2006) and Kreiner and colleagues (2006) have begun conceptualizing the range of stigma degrees in occupational, AIDS and cancer stigma contexts, but call for conceptualization and application in other contexts. Based on this, we do not focus on analyzing whether the nuclear industry is stigmatized, or to what extent this is happening. Rather, we presume it is stigmatized to some extent, based on negative media communication, protest groups (LAKA, 2022) and personal experiences. We will also refrain from investigating the level of stigmatization.

Our research will focus on the experienced stigma from the perspective of the employees of the nuclear industry. In order to better understand their experience and subsequential responses, we will describe their perception of stigmatization based on theoretical research. This will allow the reader to understand the individual level emotional response to the stigma.

Goffman (1963) argues that individual stigmatization can be experienced as damaging on personal, existential and emotional level. External social evaluation can prompt strong, negative emotional experiences such as embarrassment, shame and disgrace (Dutton, Dukerich & Harquail, 1994; Goffman, 1963; Helms-Mills, 2002). These experiences are connected to the identity threat that stigmatization possesses (Ashforth & Kreiner, 1999; Ashforth & Mael, 1989) and could provoke individual- and organizational level problems, like decreasing job satisfaction, lowering job commitment and an intensified intention to leave (Petriglieri, 2011). Through researching the individual level emotional experience and response to stigma within the nuclear industry we can increase understanding of this phenomenon and help prevent possible negative effects of the stigmatization. Employers, recruiters or employees wishing to increase job satisfaction, job commitment and decrease intention to leave, could use our insights for those purposes.

1.3. Research Purpose

The aim of this research is to contribute to the understanding of how perceived stigma has an impact on employees of the Dutch nuclear industry and how they manage this stigma in order to maintain their identity. The primary objective is to provide a unique perspective on the stigmatized nuclear industry by examining how its employees manage the stigma. Although stigma, identity work and stigma management are heavily researched subjects, looking at a combination of the constructs from an individual perspective, especially within the idiosyncratic industry of nuclear practices, allows for important and relevant new research.

Our research seeks to examine the consequences for the nuclear industry and its employees, that the stigma has caused. Therefore, while other studies on the stigmatization of employees of the nuclear industry focus on for example the mental health of those employees (Bromet, 2014; Longmuir & Agyapong, 2021), we aim at identifying how employees do identity work, boundary work and manage the stigma in order to remove stigma from themselves and the nuclear industry.

This study is intended to add to the existing literature on stigma management with specific reference to the nuclear industry, by furthering theoretical knowledge on the interplay of identity and boundary work. Additionally, with our research we seek to generally contribute to the framework of stigma management communication by Meisenbach (2010). By applying this framework to our findings within the nuclear industry we are aiming at supplying insights that include practical as well as theoretical aspects concerning this subject matter.

In line with this research purpose, the following research questions will be addressed:

- How do employees of the Dutch nuclear industry perceive the stigmatization of the industry and its effects on the industry?
- How do employees manage the stigma in order to bridge the divide between the nuclear industry and outsiders of the industry?

In order to achieve the aims of our research and to answer our research questions, we will conduct interviews with a sample of employees belonging to the Dutch nuclear industry. Therefore, we will question them on their perception of stigma and how they personally deal with it. Furthermore, a focus will be put on their strategies to overcome the stigma and convince outsiders of the industry. Although previous studies have examined stigmatization of the nuclear industry, there has been limited research that has focused on how employees of the industry perceive and overcome the stigma. We are aiming at closing this gap of research to provide strategies that can help to manage the stigma.

Through this research we are hoping to gain a deeper understanding of how the stigma towards the nuclear industry and its employees can be better handled. Moreover, it is our goal to provide the nuclear industry as well as other stigmatized fields, with additional strategies to cope with stigmatization, as well as giving insights on how to overcome the stigma.

1.4. Outline of the Thesis

The following section presents an outline of this thesis by describing the layout of the different chapters.

We started with the introduction, **Chapter 1**, where we explained the background of the research in which we explained the context where the research is taking place and why the research is relevant. After this we continued the first chapter by explaining the problem that the research brings to the surface and the purpose that the research serves. This outline of the thesis concludes the primary chapter. We continue by moving into **Chapter 2,** which offers a literature review of theoretical concepts relevant for our study. After this, we discuss our analytical framework, as proposed by Meisenbach (2010), and explain the practical implications of the framework as well as its literary founding and overlaps with several other frameworks and theories. This forms the basis for the Discussion, which is presented in Chapter 5. **Chapter 3** will explain the methodology of the study including the philosophical grounding by which the research takes place. We then continue by presenting the approach to the research and the data collection, by explaining the research context and the approach taken in the semi-structured interviews. After this the method of analyzing the data is explained. We conclude this chapter with an overview of the reflexivity and limitations, where we critically look at the choices that were made in order to create the research and the positive or negative consequences linked to those choices. In **Chapter 4** we showcase an analysis of the empirical findings, by sharing the themes and subthemes that have been revealed through the interviews and interpretations of these outcomes. In **Chapter 5** we continue exploring the outcomes of the interviews through a discussion where the empirical findings are interpreted and connected through the theoretical concepts and the theoretical framework. In **Chapter 6** we conclude the thesis by presenting the main findings and by explaining the contribution of these findings to the already available research. We then continue by reflexively discussing the limitations of the research and the findings. We conclude this chapter by presenting the suggestions for further research. In **Chapter 7** there is an overview of the references used in the research and **Chapter 8** offers an overview of the appendices.

2. Theoretical and Literary Background

2.1. Identity

The concept of identity is about how people and social groups define and understand themselves. Identity theory is based on the idea that individuals have a need to belong and identify with certain social groups (Stets & Burke, 2000). The social identity theory, introduced by Tajfel in 1972, builds the basis for most identity theories. It explains how individuals categorize themselves and others into certain groups (Miscenko & Day, 2016). Those social groups can be described as "individuals who hold a common social identification or view themselves as members of the same category" (Stets & Burke, 2000, p.225). Moreover, employees identifying with the organization are strongly connected to the organization and are more likely to be motivated, engaged and committed to the organization (Stuart, 2002).

Employees with a strong sense of identity towards the organization can become so-called *ambassadors* of that organization. Therefore, when employees strongly identify with their organization they act as an ambassador by representing the organization and its brand to customers, stakeholders and to the outside world (Andersson, 2019). This way they help to build a positive organizational identity by promoting the mission, culture and values of the organization. Ambassadors help to build brand awareness by creating a personal connection between the organization and its stakeholders (Schmidt & Baumgarth, 2018).

The identity of an organization is also a collective image of what distinguishes it from competitors in the industry (Albert & Whetten, 2006). A strong organizational identity is a shaping factor for creating a sense of unity and a shared purpose among employees, which consequently fosters loyalty and a sense of pride for the organization (Stuart, 2002). *Organizational identification* occurs when an individual classifies themselves within the social group of an organization. Hence, organizational identification research aims at understanding how individuals identify with the organization they belong to and therefore how it influences their behavior and attitudes. According to Ashforth & Mael (1989) organizational identification occurs when members of an organization adopt key attributes of the organization as defining characteristics of themselves. This emphasizes that it is a crucial factor for the long-term success and survival of any organization to ensure identification of employees. Therefore, research stipulates that a high level of identification creates enhanced employee commitment, a strong organizational culture, motivation and citizenship behavior (Ashforth & Mael, 1989; Stuart, 2002).

Another literary concept interesting for this research is *industry identity*. Literature on this broader type of identity is scarce, but Dhalla & Oliver (2013) conceptualize industry identity as "a collective understanding or shared set of beliefs widely held by members of an industry about what constitutes the central, enduring, and distinctive characteristics of the industry as a whole and its members" (Dhalla & Oliver, 2013, p.1804). They propose that when the conformity of mutual values about central industry characteristics of members within the industry is elevated the industry identification will not be weak (Dhalla & Oliver, 2013). For our research this means that if there is a clear set of mutual values about central nuclear industry characteristics, this will most likely ensure strong employee identification in the industry.

2.1.1. Identity Work

A concept in line with the theory of identity is identity work. It refers to a process within organizations that entails analyzing the particular procedures and factors involved in constructing an individual's identity (Alvesson, Ashcraft & Thomas, 2008) Furthermore, identity work "denotes the many ways in which people create, adapt, signify, claim and reject identities from available resources" (Brown, 2017, p.7). Moreover, (Alvesson, Ashcraft & Thomas, 2008) refer to identity work as a continuous process in which negatively connotated incidents or engagements play a factor in intensifying an individual's process towards constructing their identity.

2.1.2. Boundary Work

A concept that can be closely related to identity work is boundary work (Knapp et al, 2013). Gieryn (1983) originally introduced the concept of boundary work in order to explain approaches that are employed by scientists to differentiate scientific knowledge from non-scientific knowledge. In general, boundary work is a concept that can be used for individuals and organizations to negotiate, define or maintain barriers existing between others and themselves (Langley et al., 2019). Langley et al (2019, p.732) elaborate and explain that "specifically, it focuses on the sayings and doings of purposeful individuals and collectives as they invest in work to influence the social, symbolic, material, or temporal boundaries, demarcations, and distinctions shaping their context and activities."

Concerning the for our research relevant connection of identity and boundary work Knapp et al. (2013) explain that identity work of individuals and organizations gives those working on their identity the option to actively regulate and manage boundaries in various contingencies. Furthermore, they identify that individuals use strategies to handle the connection between their own and their organizations identity as they state that: "Through identity work, individuals integrated or segmented themselves and

others by negotiating boundaries through personal and organizational identities simultaneously" (Knapp et al., 2013, p.19).

2.2. Stigma

Stigma is described by Goffman (1963) as an attribute characterized as widespread social disapproval which discredits social difference and creates a spoiled social identity or image. Devers et al. (2009, p.155) build upon Goffman's definition, stating stigma reflects "a label that evokes a collective stakeholder group-specific perception that an entity possesses a fundamental, deep-seated flaw that deindividuates and discredits the entity".

From an organizational perspective, stigma is either *action based* such as through bankruptcies, scandals or an organizational failure, or an organizational form of *tribal stigma*, based on the membership of a group deemed undesirable (Devers et al., 2009). Organizational stigma exists in different forms, in some cases less central to an organization making it possible to be hidden or avoided, in which case organizations or its members, can disidentify or avoid emphasizing the stigma (Zhang, Wang, Toubiana & Greenwood, 2021). Furthermore, the impact of organizational stigma extends to individuals within the organization. Tracey and Phillips (2016) therefore state that employees who belong to stigmatized groups inherently experience the effects of this stigmatization on their personal identity. This process is referred to as stigma transfer, wherein the stigma of the organization is automatically attributed to each individual associated with it (Tracey & Phillips, 2016).

Most organizational stigma research focuses on *core stigma*, arising from something fundamental in the nature of the organization, or *event stigma*, occurring as the result of an episodic event or specific action considered undesirable (Hudson, 2008a). For companies suffering from core stigma, stigma is not optional or avoidable (Hudson, 2008b; Piazza & Jourdan, 2018). This research will focus on core-stigma, as it will look at the influence that working in the stigmatized nuclear industry has on employees.

Research thus far has focused on what core stigma does to what the organization is, what it does and whom it serves (Coslor, Crawford & Brents, 2020; Hudson, 2008a). Organizational stigma literature has mostly explored tribal stigma from an industry perspective, looking at an organization's membership from a stigmatized group, such as their association with an industry like cannabis (Lashley & Pollock, 2020), sex (Piazza &ePerretti, 2015), or the arms industry (Vergne, 2012). In this area research has focused on how organizations can destigmatize their industry (Lashley & Pollock, 2020) and how organizations could disengage from their categorical stigma (Piazza & Perretti, 2015). Although this could be interesting as an expansion on our research, this current research focusses on

gaining an understanding of the current situation, by looking into how the core-stigmatization of the nuclear industry is perceived and how the employees deal with this stigma.

Stigmatization of a group could lead to members disidentifying from the group, to avoid negative associations with that part of the group membership (Elsbach, 1999; Murrell, Frieze & Olson, 1996; Pratt, 2000). Correspondingly, Sutton and Callahan (1987) state that organizational stigma has been shown to negatively affect both an organizational outcome and key actors associated with the company. Similarly, Dutton, Dukerich and Harquail (1994, p.240) state that "If members interpret the external organizational image as unfavorable, they may experience negative personal outcomes". However, research about dirty work indicates that "people performing dirty work retain a relatively high occupational esteem and pride" Ashforth and Kreiner (1999, p.413). Therefore, existing literature is divided on the topic and shows both that organizational identity is able to include a negative as well as a positive connotation for employees (Dutton, Dukerich & Harquail, 1994; Stuart, 2002).

2.3. Dirty Work

The expression 'Dirty work' was originally created by Everett Hughes in 1958. Hughes refers to occupational activities that are physically disgusting, symbolize degradation, wound a person's dignity or that "run counter to the more heroic of our moral conceptions" (Hughes, 1958, p.50). In other words, besides physically dirty, dirty work can also be symbolically dirty, by going against social -, moral - or ethical values of the employee or outsiders. Dirty work can refer to a specific occupation that transgresses the boundaries of morality of a society, such as a funeral direction, where dealing with deceased persons makes it dirty (Cahill, 1999), or police work, since in their natural course of duties policemen inflict harm onto others, even if it is deserved (Bittner, 1970).

Ashforth & Kreiner (1999) note that the concept *dirty work* raises the issue of how to maintain a positive sense of self when doing dirty work. They look at this issue from the perspective of the social identity theory, which proposes that people strive to see themselves in a positive light. According to Ashforth & Kreiner (1999), when a dirty occupation is morally tainted, this taint can carry over to the identity of the employee, which has cognitive implications, that shows in the level to which the employee appears motivated to prove the opposite. They identify three ideological techniques to protect or defend employee identities in the face of the stigma posed by dirty work, namely, reframing, recalibrating and refocusing (Ashforth & Kreiner, 1999). With reframing, the meaning attached to an occupation is transformed, with recalibrating, the combined tasks that constitute the role are recategorized to emphasize the more acceptable or agreeable tasks, and with refocusing, an attempt is made to shift the attention to the non-stigmatized aspects of the role (Ashforth & Kreiner, 1999).

Ashforth & Kreiner (1999) underpin that the strength of a work-group culture as a buffer and strong occupational identification as an ideology, determines the individual level of motivation to deploy these ideological techniques of dealing with the dirty aspects of their roles. This way employees can make sense of their work in ways that enhance their self-esteem.

Managers of dirty workers have a role in countering "societal perceptions of dirtiness through the practices of symbolic management" (Ashforth & Kreiner, 1999, p. 431), for instance through framing dirty work in a positive manner.

2.4. Stigma Management

The current body of research on organizational stigma focusses on organizational strategies that allow an organization to manage, diminish, or eliminate organizational stigma (Devers et al., 2009; Helms-Mills, 2002; Hudson, 2008a, 2008b). Aside from this, the literature on organizational scandals has emphasized identifying organizational strategies that repair an impaired organizational image (Sutton & Callahan, 1987) and restore its legitimacy for the outside world (Elsbach, 1999).

On a smaller scale and sometimes individual level, stigma management research, sometimes referred to as taint management research (Ashforth et al., 2007; Martinez, 2007; Tracy & Scott, 2006), proposes ways of dealing with identity threats from stigma. There are various ways of cognitive and behavioral strategies to manage stigma, or taint, mentioned in current literature (Cowden et al., 2022; Sutton & Callahan, 1987; Vergne, 2012; Zhang, R., Wang, M. S., Toubiana, M. and Greenwood, R., 2021) .

An interesting example is the 2022 research by Frandsen and Morsing. Frandsen and Morsing (2022) assert that stigma is managed through either identity protection or identity restructuring responses. Identity protection responses include *derogation,* where individuals condemn others, or *concealment,* where they hide or downplay the threatened identity toward the opposing party (Petriglieri, 2011). Another response is *positive distinctiveness,* such as when individuals reframe their identity to emphasize the positive aspects (Frandsen & Morsing, 2022). Frandsen and Morsing (2022) propose an identity can also be altered through identity restructuring, in response to *change the importance* of the identity, *alter the meaning* or *abandon* it. Identity protection strategies have been repeatedly discussed in literature (Ashforth et al., 2007; Ashforth & Kreiner, 1999; Tracy & Scott, 2006), while identity restructuring has been covered by Dutton, Dukerich and Harquail's (1994) study, which has been cited and used by many other researchers (Dennis, Marr & Bartol, 2019; Fraher, 2017; Frandsen & Morsing, 2022).

While identity threat research is valuable for advancing applicable knowledge, it comes with limitations. Since it focusses on individual responses at work, the social interactions outside work are

excluded from most researchers. Secondly, the research focuses on cognitive and behavioral strategies, yet in most research it overlooks emotional experiences and strategies for managing stigma. In our research we will focus on the spill-over of the stigma and identity work to social interactions outside work, thereby bridging that gap.

As earlier discussed, Frandsen and Morsing (2022) look into the emotional experience and strategies for managing stigma at home. This research investigates the impact event stigma of a bank scandal on its employees and concludes that the stigma caused stigma spill-over to the personal identity of employees and has instigated the use of a stigma shield as identity protection strategy. The research underpins this is a coping strategy that causes emotional exhaustion in the last phase, as it takes energy to constantly maintain the stigma shield (Frandsen and Morsing, 2022). They emphasize that the employee's coping strategies vary per employee and from time to time, and responses are different in the workplace and at home. The researchers look at the role of managers and construct that they may fail to recognize the harmful emotional responses and stressful social interactions they endure, through an emphasized employee loyalty.

Although the theorization of Frandsen and Morsing (2022) is well structured through the identity protection and identity restructuring, we have chosen to use a broader framework, namely the stigma management communication strategies framework by Meisenbach (2010). We explain this framework in detail in the chapter 'Analytical Framework'.

2.5. Analytical Framework

The following chapter will reflect an explanation of the analytical framework that will be used for the analysis of the nuclear employee's communication strategies, as they are used to manage the stigma. The chapter will firstly explain why this framework is suitable for the research, after which it will show the framework in form of a table, which is explained in further detail in the subsequential paragraphs. The explanation is based on a 2010 article published in the Journal of Applied Communicationss Research, by Meisenbach.

Meisenbach (2010) proposes an extensive and encompassing framework for stigma management communication strategies. This framework encompasses, or overlaps with, research of various researchers and is based on the stigma management related research by Ashforth et al., (2007) which is proposed in different variations by various researchers (Ashforth & Kreiner, 1999; Drew, Mills & Gassaway, 2007; Helms-Mills, 2002; Sotirin, 2007). Meisenbach (2010) proposes a reorganization and expansion of their frameworks through the Stigma Management Communication framework (hereafter referred to as SMC framework). Meisenbach (2010) explains that through the SMC framework the

issues of category overlap are addressed, and new strategy options can be included in the future, making it applicable to a wide range of stigma studies. This broad applicability makes it an all-encompassing framework thoroughly suitable for our research. The following illustration is an overview based on the explanation of Meisenbach's (2010, p.277-285) framework of stigma management communication strategies (or SMC strategies) as shown in Table 1 (Meisenbach, 2010).

Table 1: Stigma Management Communication Strategies

	Accept that stigma applies to self	**Challenge that stigma applies to self**
Accept public understanding of stigma (status quo)	I. Accepting - Passive acceptance (silence) - Display/Disclose stigma - Apologize - Use humor - Blame stigma for negative outcome - Isolate self - Bond with stigmatized	II. Avoiding - Hide/Deny stigma attribute - Avoid stigma situations - Stop stigma behavior - Distance self from stigma - Make favorable social comparison

Challenge public understanding of stigma (change)	III. Evading responsibility for
	
	- Provocation
	- Defeasibility
	- Unintentional
		V. Denying
		
		- Simply
		- Logically
		    - Discredit discreditor
		    - Provide evidence/info
		    - Highlight logical fallacies

	IV. Reducing offensiveness of - Bolster/refocus - Minimize - Transcend/Frame	VI. Ignoring/Displaying

Source: Meisenbach, 2010, p.278

The SMC strategies propose that the response to stigma is defined based on two criterions; The acceptance of whether the stigma is applicable to themselves and the acceptance of the public understanding of the stigma. If the public understanding is accepted, the status quo will remain, but if the public understanding of the stigma is challenged, the stigmatized individual will attempt one or a multitude of various methods of changing the situation (Meisenbach, 2010).

2.5.1. Acceptance

In this case, the individual accepts the stigma as a part of their identity, either occupational, personal or both, and creates defensive tactics, as described by Ashforth and colleagues (2007) or creates message effects as described by Smith (2007). This could mean *passive acceptance,* which means not addressing a comment to verbally (dis)agree with the stigmatization. They could also *display/disclose stigma* attributes, which means actively showing the stigmatized behavior or discursive activities, which is described by Goffman (1963) as a coping mechanism to show they are at ease with the stigma.

Furthermore, they could *apologize* for the stigma, which is sometimes described as a sinner asking for forgiveness (Benoit, 1994). Moreover, the individual could *use humor* to indicate acceptance of the stigma, as described by Goffman (1963), and this would help reduce tension and allow for easier interaction between the parties. This indicates it is acceptable to stigmatize the individual, and once that agreement is out of the way, everyone can focus on other things. Then, they could *blame the stigma for negative outcomes*, as Major and O'Brien (2005) describe. By placing the blame on the stigma, the individual can deflect blame for the negative outcome. Another option the individual has is to *isolate themselves* from society. This means limiting communication with others, as individuals who have internalized the stigma may blame themselves and find this the easiest way to deal with it (Goffman's, 1963). Finally, the individual can focus on *bonding* or socializing only with other stigmatized individuals, which is described by Goffman (1963) as well as Roschelle and Kaufman (2004).

2.5.2. Accepting but Challenging

The following category explains the strategies when accepting the stigma but denying it applies to the individual, thus avoiding the stigma. Goffman (1963) would explain this as the individual being discreditable, but not yet discredited. The subcategories include hiding the specific stigma attribute, avoiding stigmatizing situations, self-distancing from the stigma, eliminating stigma behavior or attribute and creating favorable social comparison.

Hiding the stigma attribute has also been called restricting the display (Goffman, 1963) or secrecy (Link et al., 2002). Examples of this can be that the individual is hiding the stigmatizing attribute, renaming it or is fully hiding to avoid stigmatization. An individual could also deny membership of a stigmatized group.

When avoiding stigmatizing situations, someone avoids the stigma and does not publicly accept that it applies to them, making it different from self-isolating. Another option for the individual is to stop or eliminate the stigma attribute, which means stopping the behavior (e.g., smoking), ending the communication (e.g., public speaking), or quitting the job (e.g., garbage collector) that is associated with the stigma. Eliminating the stigma attribute allows the individual to proclaim being ex-stigmatized, so he does not challenge the stigma, but the individual relationship. Alternatively, the individual could distance the self from the stigma, which is also described as depersonalizing or going on autopilot in dirty work (Ashforth et al., 2007). This allows the identity to be distanced from the tainted activity.

Finally, the individual has the option to make favorable comparisons between themselves and others, in order to deny the stigma applies to them. These comparisons can be made between organizations,

subgroups, individuals or one's past and this requires a meaningful connection between the two parties. By discrediting the other party, the individual decreases their own stigma (Meisenbach, 2010).

2.5.3. Challenging while accepting

The following category describes accepting of the stigma application while challenging the public understanding, thus creating change of the status quo, through subcategories; *Evading responsibility* and *reducing offensiveness*.

Evading responsibility is done by acknowledging the stigma's applicability to an individual but changing the public understanding of the stigma through deferring agency or control. This can involve *claiming provocation, defeasibility* and, or *lack of intention*. When *claiming provocation,* the stigmatized behavior happened because of an external force (e.g., child molester not claiming responsibility because of having been molested in the past). The individual could also claim to not have the information or the ability to avoid the stigma, thereby claiming *defeasibility*. Or the individual could claim he tried to avoid the stigma, thus making it *unintentional*. This strategy focuses on changing the public opinion on the characteristics of the stigma, based on the control the stigmatized has over it, while accepting the individual is marked by the stigma (Meisenbach, 2010).

Reducing offensiveness is explained as an attempt to change how the stigma is perceived by others and can be done in three different ways; *Bolstering or refocusing, minimizing and transcending*. Whereby, *Bolstering* or *refocusing* is done by refocusing from the stigmatized identity attribute to a non-stigmatized identity attribute. Refocusing is for instance, when firefighters highlight the manly aspects of their work, while their work with the homeless is seldom mentioned, as described by Scott and Tracy in Dirty Work (Drew, Mills & Gassaway, 2007). Bolstering can be accomplished by developing a non-stigmatized attribute, such as overweight people developing excellent people skills (Major & O'Brien, 2005). In the *minimization* sub-strategy, the stigma's offensiveness is reduced. This is done by highlighting that the stigmatized attribute does not harm or inconvenience others. An example is a disabled person showing how capable they are. Finally, *transcendence* aims to reduce the stigma's offensiveness by focusing on how the stigma attribute can be a means to a valuable end, thus reducing its sting by identifying it with a higher purpose. This incorporates (Drew, Mills & Gassaway, 2007) reframing and confronting strategies of infusing the work with a positive value and their recalibrating strategy, where the standards by which the occupation is judged are changed or put in a new hierarchy. This all falls under *transcending* the focus on the stigma (Meisenbach, 2010).

2.5.4. Denying

The final strategic category describes individuals who challenge the public opinion and deny the stigma applies to them. One way of responding is a *denial,* where the individual states there is no stigma (Benoit, 1994). This response challenges the existence and its applicability and can be called a *simple denial*. Another type of denial could be *logical,* where the individual could *discredit the discreditor,* or attack the accuser. They could also provide e*vidence or information* that refutes the stigma, or assumptions associated with the stigma, making it a more discursive format. This form can focus on re-education, although it is not always feasible to focus on articulating the reason. Another way to deny the stigma is to highlight the faults in the logic of the stigma assumptions, by articulating a non-valid argumentation in order to refute the stigma. Finally, stigmatized individuals may deny or challenge the perception of stigma by ignoring stigma communication and continuing to display the stigma. This may seem similar to passive acceptance or display strategies but is meant to challenge rather than accept the stigma (Meisenbach, 2010).

This framework, as proposed and explained by Meisenbach (2010), will be used as the theoretical framework to structurally the discussion of the stigma management communication strategies that the employees of the nuclear industry propose and explain to use, when dealing with the industry stigma. This will aid in the understanding of the stigma by giving a deeper insight into how the stigma is perceived and dealt with by the employees.

3. Methodology

This chapter presents the methodological foundation of our research and justifies the choices we made. We begin by discussing our philosophical grounding and our decision to work within the interpretive traditions of symbolic interactionism and dramaturgy. Additionally, we describe our research approach, including the reasons for choosing qualitative research and an abductive approach. Furthermore, we then provide a detailed explanation of our data collection and analysis process concerning our cross-case approach within the nuclear industry. This process included coding, sorting, and reflecting, which further led to the interpretations and results being presented in the empirical chapter. Finally, we reflect on possible limitations and drawbacks in our research design.

3.1.   Philosophical Grounding

For our research we acknowledge that our chosen philosophical tradition has an influence on our research approach (Prasad, 2018), and will therefore first determine which tradition our research has followed. Through this determination a basis for our research approach is provided and the reader's comprehension of our decision-making is enhanced.

The philosophical meta-tradition of interpretivism which is integrated in the post-positivism tradition (Prasad, 2018) was followed in this study as it comprises the understanding of the subjective nature of human experience and delves inside the person to understand them from the inside (Bryman & Bell, 2007). Interpretivism includes a collective set of ontological and epistemological views. Ontology refers to the study of existence and reality, while epistemology refers to the beliefs about ways to gain knowledge (Bryman & Bell, 2007). Interpretivism perceives ontology and epistemology as subjective in nature and therefore they "reject the existence of an objective knowable reality beyond the human mind. Instead, they stipulate that knowledge is constituted through lived experience of reality" (Sandberg, 2005, p.43f). The focus of this research therefore lies in understanding how individuals interpret and make meaning of their experiences and how these interpretations shape their own identity in the nuclear industry. As a result, our analysis places significant emphasis on identity work, while also recognizing the presence of multiple subjective realities. (Prasad, 2018).

Within interpretivism our study focuses on symbolic interactionism as well as dramaturgy. Symbolic interactionism is a tradition in which the role of symbols and subjective meanings which shape human behavior and social interactions are emphasized. Therefore, it aims at understanding how individuals create and negotiate their identities through interactions with others and the meanings and symbols attached to those interactions (Prasad, 2018).

The focus also lies on parts of the dramaturgy tradition as it puts emphasize on the performance and presentation of humans in the everyday life. It can therefore help to grasp the ways in which individuals present and manage their identities in the face of stigma (Prasad, 2018). Hence, the combination of these traditions provides a comprehensive perspective that helps deepen the understanding of our research topic.

To sum up, our research aligns with the interpretivist meta-tradition, which draws upon symbolic interactionist and dramaturgy perspectives to understand social reality and the production of knowledge (Prasad, 2018). This approach helps us to address our research questions and achieve our research objectives, which is to explore and comprehend the influence of stigmatization on the nuclear industry in relation to employee identity with the industry.

3.2.   Research Approach

We will now provide a more detailed account of our research approach. We highlight key aspects such as our decision to employ a qualitative study and an abductive approach. These choices serve as the foundation for our data collection and analysis, which will be elaborated on in subsequent chapters.

The research approach within our study depends on the philosophical assumptions we made. As previously stated, in our research we are taking an interpretivist approach when describing our worldview. Sandberg (2005) contextualizes interpretivism in qualitative research as it aims to understand fewer unique meanings and interpretations that individuals assign to their experiences, rather than a set of generalizations. Qualitative research focuses on understanding the subjective perspectives of individuals rather than solely relying on quantitative data (Prasad, 2018). Furthermore, it facilitates a more profound comprehension of a given situation by exploring how individuals engage with and experience their social environment, as well as the personal significance that it holds for them (Sandberg, 2005). In qualitative research guiding questions asking about the "how" and "why" are used in order to interpret social structures in empirical data (Rennstam & Wästerfors, 2018).

In line with the qualitative research approach, we have followed an abductive approach for this research. The abductive approach is a more contemporary and alternative approach to researching than the usual approaches of induction or deduction (Flick & Reichertz, 2014). An inductive approach involves attaining empirical data and deriving theoretical correlations from them. Conversely, in the deductive approach, hypotheses are formulated based on pre-existing theories and are afterwards tested through empirical explorations (Bryman & Bell, 2007). Abduction is not merely a simple amalgamation of both traditional approaches, but rather an advanced alternative. In the abductive approach elements of both inductive and deductive methods are integrated (Flick & Reichertz, 2014).

Hence, in our abductive research we started gaining an overview of theoretical concepts, such as stigma and identity, and subsequently acquired empirical data to thereafter adjust and realign the theoretical context. Consequently, our theory was subject to continuous development and refinement throughout the duration of our study (Flick & Reichertz, 2014).

3.3. Data Collection

In the following we will go into further detail about how we conducted our qualitative research. Firstly, the exemplifying case study will be described, which is followed by an explanation of how the research was conducted through semi-structured interviews and how data was collected. Lastly, we will explain how we analyzed our material.

3.3.1. Research Context

Since we were aiming at understanding how the stigmatization of the nuclear industry influences employees within this specific industry, we decided to conduct an exemplifying case analysis as it "exemplifies a broader category of which it is a member" (Bryman, 2016, p.62) and generally denotes to be a profound investigation of a single case, as for example one single industry (Bryman & Bell, 2007).

As we were interested in employee's identity in the nuclear industry, we do not concentrate on a single company but rather interview employees from a broader scope of companies, in order to represent employees of a variation of companies operating in the nuclear sector. We chose to concentrate on the nuclear industry in the Netherlands, since by focusing on one country we would gain a better and more nuanced understanding on the actual state of the industry in that specific country. This choice was made because the actual state of the industry can appear to be very different concerning different countries due to outside influences, like for example the media or politics. Our initial contact person is the CEO of a company in the nuclear industry based in the Netherlands, which has granted us access to employees of different companies in the nuclear industry in the Netherlands. In general, the Dutch Nuclear sector contains approximately 1500 employees (Nuclear Netherlands, 2023). We had two initial meetings with our contact person to discuss possible research topics. As soon as we had found a suitable topic, he agreed to help us in finding suitable participants working in the nuclear industry in the Netherlands. In order to produce evidence-based data answering our research question, it is significant to have an exemplary sample of appropriate interview participants (Bryman & Bell, 2007). Therefore, our initial six respondents were chosen by the use of the purposive sampling method as we specifically targeted respondents of interest in a strategic manner (Bryman & Bell, 2007). We therefore wrote up an email giving a short presentation of ourselves and a broad description of our research,

asking participants to be part of our project, which was then sent out to potential interviewees (see Appendix 1). However, in order to avoid biases and to not influence potential interviewees, we did not specify our purpose of the study (Saunders, Lewis & Thornhill, 2012). When looking for participants we wanted to ensure that we would talk to a variety of employees and had the criterion of mixed genders, mixed ages, variation of experience levels and a variation of employees in different positions in their respective company (starter, mid-level or higher-level positions). However, we had to keep in mind that the nuclear industry in the Netherlands is mainly male dominated (OECD, 2023). Hence, we had a bigger representation of male participants than female participants in our research. Once we had initiated contact with several employees of different companies within the Dutch nuclear industry, we continued by asking these employees for referrals to colleagues within their companies or within other companies operating in the Dutch nuclear industry. Bell, Bryman and Harley (2019) describe this method as snowball sampling, where the researchers first establish contact with a small group of people relevant for the topic and continue by contacting new interviewees through these initial contacts. A critique of this sampling method is that it is not random, since the first contact is the one deciding and establishing the new contacts (Bell, Bryman & Harley, 2019). In our situation this means that the CEO of the recruitment company does not choose the initial contacts randomly, since he makes a conscious choice, that allows us to focus on people that met our criteria. Hence, our contact has connected us with 33 people within the industry. Nevertheless, we ended up only interviewing 6 of the contacts that he has linked us with. The other interviewees were found through the snowball effect of referrals of the initial six participants. Even though these connections have been made through interviewees that were aware of our research and the topic of our research, when asking for referrals we have specified that we were not looking for someone that had a particular opinion or was working in a specific position, although we did specify our prior set of criteria. This allowed us to limit the influence that we had in finding our participants and thereby limit the sampling bias.

In total this exemplifying case study contained of 14 interviews with employees from eight different organizations within the nuclear industry in the Netherlands. In order to ensure anonymity of our participants and their respective companies we have given the companies the collective pseudonym "Atomic Company". Furthermore, we have given each participant a pseudonym and ensured that our research paper does not contain any information about products or locations of the respective companies. The following table presents the position and pseudo-names of our participants:

Table 2: Overview of participants

Employee Name (pseudonym)	Role within respective Company
Cornelis	Head of Department
Maarten	Project Manager
Joost	Consultant
Stijn	Technical Lead
Lotte	Researcher
Luuk	Managing Director
Anniek	Communication Specialist
Femke	Recruiting Consultant
Casper	Reactor Engineer
Hendrik	Consultant
Ruben	Director
Jasper	Consultant
Thijs	Consultant
Lars	Project Director

Source: own representation

3.3.2. Semi-structured Interviews

For collecting our data, we chose to use semi-structured interviews. Semi-structured interviews fit for our qualitative research as "the researcher will have a list of themes and possibly some key questions to be covered, although their use may vary from interview to interview" (Saunders, Lewis & Thornhill, 2012, p.374) Due to their great flexibility and as they allow unanticipated themes to emerge during discussions, semi-structured interviews give the participants room and opportunity for elaboration on topics they want to focus on and that seemed to be important to them (Bryman & Bell, 2011).

Furthermore, a higher level of quality can be assured, as the flexibility of a semi-structured interview allows for clarification or elaboration on answers (Saunders, Lewis & Thornhill, 2012).

In our constructed interview-guide we used open-ended questions, which helped respondents provide their own unique responses without being influenced by the interviewer (Fink, 2009 cited in Saunders, Lewis & Thornhill, 2012). By the use of an interview guide all thematic aspects of the research are addressed, while the dynamic aspects concerning the interpersonal relationship between the interviewer and the interviewee are also considered (Kvale & Brinkmann, 2009). Keeping our interpretivist meta-tradition in mind with the help of our interview guide we were able to stimulate an honest exchange in which we were able to not search for those answers that were obvious (Kvale & Brinkmann, 2009).

Our data collection for this research included online interviews we carried out over the course of three weeks through the platforms *Zoom and WebEx*. Since we were interviewing employees of the Dutch nuclear sector all our participants were situated in the Netherlands. Therefore, online interviews were the most efficient solution to conduct our research as it opened up the possibility to collect the data in a shorter time (Gray et al., 2020). Gray et al. (2020) further mention some of the advantages of online interviews to be the availability and accessibility of interviewees and the simple recording and storing of the data. Furthermore, they mention that the interviewees can be situated in their familiar surroundings and therefore be more comfortable during the interview, and at the same time feel connected to the interviewer through the video (Gray et al., 2020).

The duration of our interviews fluctuated between 45 and 75 minutes. During the interviews both researchers participated in order to ask questions and make notes on the most important and interesting aspects of the interviews. During our first interviews we realized that it enhances the quality of the interviews that we worked synergistically and therefore we continued to jointly participate in the interviews. In the beginning of the interview, we informed the participants about the interview being anonymous and asked them for permission to record the interview for research purposes. All our participants agreed to a recording.

We then started the conversation with a short introduction of ourselves and asked the participant to introduce themselves as well. This phase of the interview was anticipated to be a "warm-up" for the participant to get familiar with the situation and with us as their interviewers. After this phase we then continued the interview with questions from our interview guide. We adjusted those questions in the individual interviews according to what the interviewee answered before and according to which question we then saw fit for the conversation to continue to give us informative insights into the employee's perceptions. Those questions could also be follow-up questions. Towards the end of the

conversation, we gave the interviewee the opportunity to add additional thoughts that came into mind. By doing so we wanted to give the participant a chance to get back to something or to articulate something they thought could relate to what we talked about. As a last step we then informed the participant about our exact research topic and gave the chance to comment on it as well. After each interview we shortly talked about what we thought were interesting aspects of the interview and wrote those aspects down in order for us to know what we had in mind immediately after the interview. Furthermore, we transcribed each interview afterwards in order to not only have the recorded interview but also to have everything that was said in writing.

3.4. Data Analysis

In the following paragraph we will describe the analysis of our gathered data from the conducted semi-structured interviews. This is pivotal to the reader in order to understand how we constructed our arguments that are presented in the forthcoming chapters. Firstly, we will explain how we put the gathered and transcribed data into categories. Furthermore, we discuss how we reduced our findings into themes we wanted to further focus on. Lastly, we will explain how we use excerpt-commentary-units to support our arguments in the following chapter.

After collecting and transcribing the empirical material by using the transcribing tool of Word we looked over the generated transcripts and listened back to our recordings in order to correct minor mistakes that might have happened during the generating process in Word. After this process we followed Rennstam & Wästerfors (2018) suggested approach to analyzing qualitative data by sorting, reducing and arguing.

In order to grasp the information given in our collected data we first began to sort our data. We started the sorting process by making ourselves familiar with the material by reviewing our notes from the interviews, reading the transcripts again and watching the video recordings of the conducted interviews again. Afterwards, we individually identified keywords in which we then allocated respective quotes. Furthermore, we then synergized our keywords and had one more extensive discussion about our material again in order to seek out different angles to look at the material, to avoid a simplification of our findings and to find the best way of sorting our material. In a next step we then identified our categories (Rennstam & Wästerfors, 2018).

Due to the fact that we have gathered a large amount of data we then needed to reduce our material in order to be able to present the most interesting and surprising findings of our research in depth. We therefore had the task to reduce the material in a way that the remaining material was representative for the whole data that we had collected (Rennstam & Wästerfors, 2018). Our categories and keywords

gave us an overview of our research and we were then able to detect those aspects of the research that appeared to be the best illustration of our found phenomena. Consequently, by reducing our data we had to neglect some identified categories in order to put emphasis on the strongest categories. While reducing we not only reduced our categories, but we also reduced the number of quotes allocated to our categories. Therefore, we ended up with main quotes and supporting quotes that emphasize the message behind our chosen categories (Rennstam & Wästerfors, 2018).

In our process of analyzing our findings as a final step we made use of Emerson, Fretz and Shaw's (1995 cited in Rennstam & Wästerfors, 2018) method of building excerpt-commentary units. Those excerpt-commentary units are made up of four essential elements: the analytical point, the orientation, an empirical excerpt and the analytical comment. This method gives us the chance to put a focus on our quote and to outline our intended interpretation of the material by using it as a support for our analytical claim (Rennstam & Wästerfors, 2018).

As we are following the abductive approach after our analysis, we were able to go back to redefine which theories are important in order to discuss our empirical findings (Flick & Reichertz, 2014). Therefore, it was then proficient to combine our empirical findings with relevant theories and expressing our analysis and comparing it to existing theories and literature in our discussion (Rennstam & Wästerfors, 2018; Saunders, Lewis & Thornhill, 2012).

3.5. Reflexivity and Limitations

Even though as researchers we are striving for accuracy and are determined to conduct research that is trustworthy, we are only human and therefore need to reflect on the limitations of our research.

One way to do so is to show reflexivity towards our own research. According to Saunders, Lewis & Thornhill (2012, p.679) reflexivity is the "self-examination and evaluation of your attitudes and beliefs, reactions to data and findings, and interactions with those who take part in the research to overcome barriers to interpretation and gain greater insights." Therefore, we made use of reflexivity by analyzing and thinking about the influence that our own identities have had on our research and the biases and assumptions of us as researchers that come with it (Alvesson & Sköldberg, 2009).

As we are following the meta-tradition of interpretivism we have already explained that the outcome of our research relies on subjective interpretations of us as researchers and the participants of the research (Prasad, 2018). Therefore, a limitation of our research can be that it lacks objectivity.

Due to the fact that one of us has already worked in a company that operates within the nuclear industry we can identify a possibility for biased interpretations of our data as there have already been

experiences within the nuclear sector. However, in order to avoid one-sided interpretations of our data and to have two perspectives on our data that then could be combined, we as already explained first analyzed the interviews individually. This gave us the chance to make individual connections to the theory and gave us more variety moving on to our interpretation and discussion of the findings. Still, the limitation of our findings being the result of our own interpretation remains and therefore needs to be kept in mind.

Another limitation to our research can be the sample size, which was limited to 14 participants of the Dutch nuclear industry. It would be alluring to see how or if the data analysis would be different with more participants. However, the time available to analyze the research issue and assess the effect of this study was limited. The results of a long-term study would be interesting to analyze. Finally, due to a lack of time and abilities, this study solely focused on the perspective of employees in the nuclear industry. Nevertheless, another study focusing on for example the medias perspective on how much the nuclear sector in the Netherlands is stigmatized would raise the level of authenticity and significance, as the media is ultimately one of the most essential components contributing to the stigmatizing the nuclear industry. Furthermore, this research project is a study focusing on the perceptions of the participants, therefore the findings are extremely context and case-depending and may not be generalizable (Saunders, Lewis & Thornhill, 2012).

4. Empirical findings

In this chapter we will present the analysis of our empirical findings. We have classified our findings into two sections with respective sub-categories. In the first section we are going to look at the perception that employees of the nuclear industry have concerning the stigmatization of the Dutch nuclear industry. We will hence show an analysis of the stigma itself, the reasons for the stigmatization that our respondents have singled out and moreover, show which consequences have emerged from the stigmatization. In the second section our analysis focuses on how employees deal with and manage the stigmatization. Accordingly, this section looks at how employees approach identity work that helps to construct a self-image and also how they are doing boundary work. In this instance boundary work includes trying to bridge the divide between the industry and 'outsiders' through either persuasion or openness.

4.1. Employees' Perception of Stigma

One focus in our study was to find out whether employees of the Dutch nuclear industry perceived the industry to be stigmatized. During our 14 interviews we learned that the employees recognize that the industry and its employees are to this day affected by stigmatization. Our respondents have identified several determinants of which this stigmatization is perceived to stem from. Additionally, we were able to distinguish three consequences for the industry, which the employees pointed out to be a result of the stigmatization.

4.1.1. Recognition of Stigma

As already mentioned, our interviews have yielded that our respondents do perceive the industry to be stigmatized. However, even though this recognition of stigma can be identified some of our interviewees have mentioned that due to the energy crisis, resulting of the war against Ukraine and the movement towards fighting against global warming, the publics acceptance of the nuclear industry in the Netherlands has improved. Lars states:

So, in a relatively short period I think the general support for nuclear is quite ok in the Netherlands. And still there are people or parties that are principally against it. But I don't feel stigmatized and don't feel put in a corner where I don't feel happy. (Lars)

We want to acknowledge that a few of our interviewees had the notion to not have encountered stigma themselves. Nonetheless, during these interviews we were still clearly able to detect a sensitivity towards stigmatization by those interviewees. So, even though they have not directly encountered

stigmatization in form of negative encounters with anti-nuclear outsiders, they still show a sensitivity towards the stigmatization.

Still, the majority of our participants have recognized that stigmatization can be seen in a variety of encounters and situations. When talking about the view of the populace in the Netherlands Casper states:

Well, you know, I mean you probably know that the nuclear world in general public is seen as somewhat mysterious as well as dangerous I would say. (Casper)

In his statement Casper points out that he has the understanding of the outside world having a stigmatized view on the nuclear industry as they associate mystery and danger with the nuclear setting. This clearly shows that he is aware of the populace having a rather skeptical stance on nuclear. This perception can be backed up by Jasper as he elaborates on conversations he had with friends after joining the industry:

They make jokes about it like: "do you turn green or something?" [...] Green like, do you glow green? If you turn radioactive, that kind of jokes, you know, like: "You sure you're not getting like fluorescent and green when you get home?" (Jasper)

Even though Jasper does not take these jokes seriously and indicates that they do not hurt his feelings, the stigma does become apparent. By sharing that his friends made jokes about him turning luminous and green due to taking a job in the nuclear industry, he highlights the fact that just mentioning nuclear brings out a reaction that has a negative connotation towards the industry. Stijn shows concerns on how the stigmatization can influence employees of the industry as he explains:

Let's imagine you're in an industry that has a major impact. Then everybody thinks, oh, it's great that you work there. What does that mean? You become proud of what you do. And that has a positive impact on your self-confidence. And so, if that is not the case, it's the other way around. You're less proud, you feel underappreciated while you're doing a good job, but yeah, nobody really cares. Or there are a lot of people saying that nuclear is the worst thing on earth. That's, you know, that doesn't make you really happy. And for some people, it's also the reason not to enter nuclear or to leave it. So, it really has an impact. (Stijn)

In this statement it is to see that Stijn has the apprehension that parts of society have stigma towards the industry that goes as far as saying that 'nuclear is the worst thing on earth'. Due to this he is not only concerned with employees not being able to take pride in the work they do but this stigma also causing a barrier for prospective employees of the industry to enter it. Furthermore, it can be seen that

the stigmatization can additionally be the cause for current employees to entirely withdraw from working in the industry.

4.1.2. Reasons for Stigma

According to our respondents there can be several reasons for the nuclear industry still being stigmatized. One of the main reasons they speak of is nuclear waste. It is seen to be a trigger for stigmatization due to the long-lasting radiation and the damage it could cause when not being handled with absolute caution. Cornelis elaborates:

One of the stigmas is still there, to we are causing a lot of waste and pollution that cannot be handled by the world and that is something I think the whole nuclear industry still needs to work hard on that. (Cornelis)

Similar to Cornelis, our other participants have also mentioned the waste to be a major downside of the nuclear industry and have acknowledged the fact that a lot of problems concerning the waste still are to be solved. Even though our respondents recognize the problem of the produced waste and understand the stigma that comes with the waste they are certain that solutions will be found and hope that society will still see the benefits of nuclear practices.

Another reason that is apparent to be causing stigmatization is the accidents in the nuclear reactors of Fukushima and Chernobyl. Even though those accidents have not been as recent our participants have the perception that they are still one of the first things that come to mind when they talk to 'outsiders' about the nuclear industry. Hendrik elaborates and expresses:

It will always be this dilemma basically, and they will always refer back to Chernobyl or Fukushima. […] They think it's a ticking time bomb. (Hendrik)

His statement as well as others clearly show that especially the accidents in Chernobyl and Fukushima are still impacting the general public and are to this day causing stigmatization for the nuclear industry. Our interviewees have conveyed that they do understand this fear and recognize the validity of this fear. However, they criticize that people, who do not have very much knowledge about nuclear are mostly only referring to these events. Therefore, a few of our participants have voiced that this lack of educations is playing into the stigmatization as Hendrik states:

Again, I think it all comes down to the fact that people don't know what it is. And I think in that sense, we need to do a lot. We, as the nuclear industry, need to realize that we have maybe a job to do in the sense that we need to educate people. (Hendrik)

This leads to frustration amongst the interviewees as they think that the sustained stigma prevents the general public from unbiasedly educating themselves on nuclear. As a reason for the general public being aware of a lot of the downsides to nuclear our interviewees have mentioned to be the media. Maarten briefly outlines:

There is, the stigmatization is very strong, has been very strong in the nuclear industry. I mean the fact that you don't smell, don't see radiation has contributed to that very strongly, I think. And the press, the media did not do a good job in that sense. I think they did a bad job and that gave stigmatization. (Maarten)

When talking about the media's influence on how the nuclear industry is perceived by society, we have realized a sense of anger from our participants towards the media. They have the impression that the portrayal of the nuclear industry has been rather negative in all kinds of media and that this portrayal is therefore causing a stigmatization of the industry.

Negative emotions from 'outsiders' towards the nuclear industry are another perceived reason we could identify as in our conversations with the employees of the Dutch nuclear industry. Femke elaborates and states:

It's a little bit almost like a taboo topic, and somehow there is this irrational fear about nuclear. I mean, I don't want to say irrational in a negative sense I mean, it could be a scientific and a like an emotional reason. So, for some people it's an emotional response when they hear nuclear, associated with warfare or whatever or disasters. (Femke)

Femke mentions that the nuclear industry being a 'taboo topic' refers to people having disapproving responses when it comes to the nuclear industry as it is often being affiliated with 'warfare or disaster'. It was to witness that the employees of the industry know of the fact that emotions can play a factor in those negative responses towards the industry. However, it was also mentioned that for our respondents these feelings are very difficult and challenging to deal with as they have experienced that people with emotional responses mostly have valid fear or trauma and are therefore oftentimes not to be convinced with rational and more scientific arguments.

4.1.3. The Divide: Consequences for the Industry

As we were able to distinguish which determinants are causing the Dutch nuclear industry to be stigmatized it is also of interest to see what effects and consequences this stigmatization is perceived to have on the industry.

One interesting aspect of our findings is the connection our interviewees made between the stigma and its effect on the industry as being clearly separated from the 'outside world'. This consequence shows that the stigma has built a barrier that withholds employees of the industry to have a connection with other industries as well as society. It can be distinguished from our interviews that this is of concern as cooperation with other industries and communication with the 'outside world' are valuable factors for the industry to develop and to remove the stigma. One employee of the industry, Hendrik voices a concern:

I have been saying that myself here in the company that the nuclear industry is quite closed. I think we should, and could, be proud of what we do, but we never show. (Hendrik)

It is to see that Hendrik is alarmed of the industry being secluded due to the stigma. His unease stems from the stigma playing a factor in employees not wanting to show pride in their work. This indicates that he not only disagrees with the divide between the industry and outsiders but also that he is apprehensive of the fact that the industry does not communicate to the 'outside world' what they are working on and rather only share their success within the industry. Relating to that Casper explains:

So, when you join and… well, not a fraternity is not the right word, is too placed a bit. You have this, you will get a bit of a feeling of the outside world versus the insider knowledge. (Casper)

In this statement it becomes evident that even though Casper does not want to call the industry a fraternity he has a strong feeling of the industry being divided and excluded from the 'outside world'. He adds that the feeling of this divide especially becomes apparent once you enter the industry. Additionally, it is referred to as being a sharing of knowledge only within the industry. Another interviewee, Ruben agrees and adds that there is a barrier between the industry and other industries as he states:

I can only speak for us, for my people, and I see a lot of information exchange internationally with other regulatory bodies, with installations, very little with other industries. I would say almost none. (Ruben)

On the basis of Ruben's statement, it is to say that there is not only a division between the industry and the general public but also between the industry and other industries. Even though he has the impression that the exchange within the industry nationally and internationally is apparent he points out that there is a lack of exchange with other industries.

Binary Thinking

Another subject our participants touched upon was their frustration with outsiders having a too narrow opinion on the nuclear industry in the sense of many stigmatizers being very focused on the negative aspects of the nuclear industry. Our participants put emphasis on the fact that they sometimes do not feel heard because stigmatizers are not willing to have a constructive discussion on the topic and are rather persistent in firmly insisting on their standpoint against nuclear. Maarten details:

I recently had a discussion with some people and it's hard. It's always: How do you perceive the advantages in relation to the disadvantages. It's always so that you're pro or you're against. But sometimes it's only the weighing of the advantage and disadvantage, and the difference might be sometimes very small and the one says: "OK. I think it's not a good idea because of these disadvantages." But it never ends that someone says: "Oh, yeah now you convinced me." That's not the way it works. But you have…it's a balancing of the arguments and it's good to discuss it, of course, but I don't have the illusion that you convince people. (Maarten)

We can see that Maarten struggles with the stigmatization as he does not feel fairly treated when discussing nuclear with people that are 'anti-nuclear'. It becomes apparent that he is under the impression that the conflict between anti- and pro-nuclears will not be solved due to the fact that anti-nuclears will persist on their arguments and will not go into a compromise. Maarten also points out that those differences in opinion are sometimes very small and could be solved by having a fruitful discussion. Joost adds to this thought by saying:

And I think that's the main issue for talking to people about nuclear: People don't have an overview of the context and the whole society right now is all focused on polarization and seeing everything black and white. But the whole world is grey. I also don't like that people always force sort of like a choice on you. […] There always a side to being opposed and being against and there's useful stuff on both sides, and the truth is always somewhere in the middle. But the whole society is so focused: on you're either with us or against us, and it's always black, white. (Joost)

Joost also elaborates on this 'black and white' thinking of outsiders as he is under the impression that the outsiders sometimes lack background on knowledge about nuclear and are abiding by their standpoint without knowing all the facts. This has an influence on employees of the industry as they do not feel like they are given the chance to bring their arguments into a discussion, because opponents of the industry have already made up their mind.

However, during the course of our research we were also able to witness, that some of our interviewees were engaging in binary thinking themselves, as they were insisting on their point of view without trying to acknowledge the counter argument of the opposing person. As Casper explained:

There are some well-known counter organizations to nuclear in the Netherlands. I have met them. But that was not an uncomfortable [situation] that was just: 'This is my opinion. I want to try to convince you.' 'Thank you. This is my opinion. I'm not convinced.' (Casper)

This example shows us that this binary thinking can go both ways and that not only outsiders are persisting in their point of view but also employees of the nuclear industry are abiding by their beliefs. This pattern of behavior shows us the existence of strong convictions on both sides and the firm believe to vindicate those convictions.

Conservatism of industry

A third consequence of stigmatization we were able to identify is the conservatism of the Dutch nuclear industry. We are aware of the fact that the nuclear industry has many regulations and procedures that are important to be followed concerning the safety of its employees and society. Therefore, it does make sense that the nuclear industry in general is rather slow and not as dynamic as, for example, the tech industry. However, some of our participants pointed out that they are concerned about how conservative the industry is. As we interviewed Anniek she pointed out:

The conservativeness in the industry is very much about nuclear safety. And I think that's important, of course, for everyone to feel safe, and especially for the public to have faith in the industry. But it's also important to focus on the energy security, the dangers that come with shortage of energy and shortage of isotopes. And that is that people are not treated for their illness in time or that you know hospitals are without energy, or water filtration systems don't function. (Anniek)

Even though Anniek does not mention the stigma directly, she points at the fact that the nuclear industry is conservative not only because it needs to be safe but also because it wants society to have trust in the industry. This demonstrates that Anniek has observed conservative behavior within the industry, as it seems she has the impression that the industry seeks to escape the stigma, and endeavors to regain the trust of society through this conservative conduct. Her concern lies with the fact that she fears this conservatism might risk the supply of energy and isotopes for society and could therefore have a rather big negative impact on society. Another subject matter is voiced by Stijn as he expresses:

Innovation should come from the nuclear sector. Well, it doesn't. There is no innovation in nuclear sector because the nuclear sector doesn't know how to do it. They've been trying to survive for the last

decades. So, they have kept keeping things safe, trying to operate their plants as good as they can, adding procedure on procedure to make sure that nothing goes wrong. (Stijn)

Once again, his statement shows that employees of the Dutch nuclear industry have the perception that the industry is longing for safety. Stijn adds that it is an "industry pushed into the corner and only just tries to survive" which emphasizes that stigmatization is one factor playing a role in the industries conservatism. He also denounces the effect that this conservative conduct has on the industries innovation processes as he states that the conservative atmosphere makes it merely impossible for innovative nuclear processes. Hence, when criticizing the reserved and cautious course of action within the industry, Stijn stresses the input that stigma can have on the industries drive to innovate.

These findings show that the consequences we were able to identify can be categorized to have a common denominator: A Divide – either between the industry and outsiders, between arguments strongly leaning towards either pro-nuclear or anti-nuclear opinions and between the conservatism of the industry and innovative processes.

4.2. Employees' Stigma Management

We were also interested in knowing how our participants approach social situations in which their profession is a topic and how they prepare themselves for discussions about the industry they work in. Our findings show that in order to deal with the stigmatization and its consequences our participants have found ways to strengthen their self-image as a member of the industry. Moreover, it became apparent that they have developed strategies to break the barrier between the industry and outsiders.

4.2.1. Self-Construction

One way our respondents have dealt with the perceived stigma is by constructing an identity that helps them to approach situations in which they are confronted with stigmatizers.

Education

One aspect of how our participants constructed their identity within the industry was through educating themselves on how nuclear practices work, how they are used in their profession and what effects nuclear practices have. Joost describes the way education has helped him as follows:

And I think the difficulties were more on my own side, that I was not fully aware of all the benefits of the industry. So, by working in this industry, you continuously get to know more of the, not just the negatives, but also the benefits of the nuclear industry. So, that helps me to also express it towards

other people and to make it more easier to go in discussion with people and talk to people about the nuclear industry. (Joost)

This statement shows that in order to identify with the industry and to be able to go into conversation with outsiders on the subject of nuclear, our participants first are working towards educating themselves and becoming experts in their field. By gaining more knowledge and understanding more about the industry and its practices our participants show that they are working towards being a part of the industry that is able to portray a representative image of the industry towards outsiders.

Motivation as Driver

Another factor playing a role in how all our participants identify with the nuclear industry is having a motivation as a driver to work in the industry. The employees we have interviewed were either involved with energy production or medical isotope production. Regardless of their profession or field of expertise within the industry they were all very clear about working in the industry because they are passionate and see a purpose to what they are contributing. One aspect of his motivation Luuk describes as follows:

It's a combination of indeed helping people and being at the forefront of development of new medicine, right? So if it was only let's say production, I think from my background being a bit knowledge driven so to say and R&D driven, that wouldn't be enough for me, right? So, the combination of, on the one side produce for the current needs, as well as combined with the R&D portfolio in developing new medicines - for me, it's quite a driver, yes. (Luuk)

One motivation that was reoccurring over the course of our interviews was that our participants are able to be part of an industry that is contributing to treating cancer by producing nuclear isotopes that are used on a daily basis to treat cancer patients. This gives them the feeling that they are doing good in the world and thus it helps our interviewees to work towards the construction of a positive self-image.

Another motivation we were able to identify amongst our participants has been described by Thijs:

Yeah, what I like about it is that I am helping to solve the climate question and the energy question. So, that's really big motivation for me. [...] I mean you can get a lot of technical things everywhere you go but the main point for me is the motivation to help work towards the energy sufficiency and stuff like that. (Thijs)

The respondents have repeatedly mentioned that being a part of the solution for the energy crisis in Europe and contributing to stopping climate change is another important factor that makes them

passionate to be part of the nuclear industry in the Netherlands. Therefore, we are assuming that due to their motivation our respondents are able and willing to work and identify with the nuclear industry despite stigma being present.

Expressing Conviction

When our participants described what it is like to be working in the industry, they oftentimes expressed their gratitude and pride to be working in the industry. By expressing how convinced they are of the industry they also gave the impression of not wanting to be influenced by the stigmatization of the industry. Jasper expresses his conviction by saying:

I think we're all a bit more proud to be working here. We're very proud of what we do so, I'm very happy to have an open discussion with people and explain what we do and why we do it and yeah, just be like an ambassador, but just because you want to be it and not because I feel like it's my job. No, just am proud to do what I do. (Jasper)

By interacting with colleagues, being part of the company's culture and having curiosity about, and engagement with nuclear practices Jasper is able to identify with the industry. Like a few of our other interviewees the pride of working in the nuclear industry makes Jasper want to be an ambassador of the industry as he does not feel the obligation to do it but rather has the urge to act as an ambassador because of how convinced he is of the industry. This expressed pride oftentimes is the combination of liking their job in general, having the knowledge needed to understand nuclear processes, having a motivation to work in the industry and also having a company culture that resonates with them. When those aspects come together Anniek elucidates that:

I feel like my job is somewhat part of my identity. (Anniek)

This statement shows that working in this particular industry Anniek has found a passion that gives her the feeling of belonging to the industry in that sense that her job in the nuclear industry is a component of herself and how she presents herself in front of other individuals. Thijs gives another perspective on how he expresses his advocacy to others:

I'm not a spokesperson in the sense that I will go to places to talk about the thing, but I fairly clearly for example, like in my Instagram profile I put there that I work in nuclear industry. And not very often, but now and again I do post something, for example when I'm at a nice location I will make a picture and I'll add it and make it very clearly that I'm in nuclear because I do think we need to… it's important to send out the message that it's fine. (Thijs)

This paragraph shows that Thijs uses the platform Instagram to openly show that he is working in the nuclear industry. His intention is to post pictures and stories on Instagram to make the industry, and himself as being part of the industry, visible to outsiders. This openness shows his commitment to the industry and his pride to be working in the sector.

Staying in their 'Eco-Chamber'

When it comes to creating a positive self-image a few of our participants appeared to carry this out by staying in their 'echo-chamber' of the nuclear industry. This then appeared to give them affiliation and integration with the nuclear industry. Casper depicts it as follows:

There is a kind of a group feeling I would say to the field. Kind of a brotherhood, or sisterhood, excuse me. Yeah, there's…we are 'The Nuclears'. […] So, you get this, there's this group feeling. And also, internally you speak the same… that it's a rather specialized field in some sense, so, you speak a lot of the same languages, so there's rather tight bonds I would say. (Casper)

It is to see that Casper describes his relationship with his colleagues as a brother- and sisterhood in which he has the feeling of being understood and valued due to them having the same professional interests and outlook on the industry. Therefore, he mentions that the connection to his respective colleagues can be described as 'tight bonds'.

Furthermore, some of our interviewees described that in their professional and private life they feel that they are in a certain 'bubble'. While analyzing the interviews we realized that those respondents mentioning to be in a bubble are also those that have mentioned not having encountered a lot of stigma due to them working in the industry. However, when we further questioned them on the topic it became apparent that they were fully aware of the industry still being stigmatized. Hence, we discovered a link between not encountering stigma and the participants staying in their 'echo-chamber'.

Non-Identification

In one case it was noticeable that the interviewee was very aware of the existence of stigma towards the nuclear industry. This became visible when she was asked about how she approaches social situations in which she meets new people and is asked about her job, as she explains:

Usually, I say I'm a recruiter in the Energy Industry, and sometimes I specify it's more specifically in the Nuclear. (Femke)

The participant shares that she is careful when speaking with people she does not know well and often only mentions that she works in the energy industry, rather than specifying that she works in the nuclear

industry. When asked about why she only expresses to work in the energy industry and not specifically in the nuclear energy industry Femke explains:

I'm happy to have the discussion, but sometimes if I'm just meeting somebody, I don't want to start having a discussion on the topic, I'll just say what I do, which is, it is accurate. I work in the nuclear ENERGY Industry. And it can happen that we work in like other net zero energy industries, so it... but technically I'm not saying anything that's wrong, but it's more to avoid having some like, I don't know, negative reaction. (Femke)

Femke's statement shows that she is trying to avoid stigmatization when meeting new people as she knows that reactions towards the energy industry will not be connotated as negatively as those towards the nuclear industry. Therefore, we conclude that she does this to avoid confrontation with disapproving responses and therefore sometimes denies a connection to the nuclear industry.

4.2.2. Persuasion

The approach of bridging the divide through persuasion has been undertaken by several of our interviewees. We were able to identify a variety of methods and practices that our participants mentioned during the course of our interviews. Persuasion in this case can be seen as an act in which our participants are actively trying to convince outsiders of the industry by delivering arguments which they think would win over skeptical members of society.

Illustration of Examples

Many of our participants have reported that when they are in a situation where outsiders are engaging in a discussion on the topic of nuclear that they try to give real life examples that are tangible and easy to understand for a person that does not have the extent of knowledge about the industry as our interviewees do. Cornelis gave us an insight on why he thinks this approach can be helpful in conversations with laypersons:

But I think this right is simple little examples where you can educate people how you should look at nuclear. And I don't want to convince them if it is bad, or if it is right or… No, just put things into perspective. (Cornelis)

In this statement Cornelis emphasizes his perception that uncomplicated and concrete examples will play a role in showing his way of looking at nuclear practices. Even though he states that he does not want to convince anybody of what is right and what is wrong it can clearly be seen by his choice of the word 'should' that he has a precise and specific image of the industry that he wants to bring across in order for outsiders to be in favor of nuclear.

One example of such a tangible example is given by Luuk as he explains:

And if you tell people what they are exposed to, what radiation they are exposed to when they have a return flight to Los Angeles from Amsterdam. And how that compares to, let's say, the dose that people get when they work at the nuclear plants in *city*. You are better protected in the reactor in *city* than in the airplane. But it is… so the risk perception on radioactive materials is a nice topic to talk about. (Luuk)

This paragraph is only one example of how our respondents try to simplify a discussion by providing examples that are understandable for people not familiar with expert knowledge on nuclear. Other examples also have touched upon the radiation on flights, as well as examples of comparing how much waste nuclear produces.

Strategic Choice

During our research we have gained more insights into the nuclear industry and have realized that besides a power plant producing nuclear energy the Netherlands also run facilities producing medical isotopes for the treatment of cancer patients. As we discussed with our participants, how to deal with discussions on the nuclear industry, we got several responses that highlighted a strategic choice between talking about nuclear in the sense of energy production and in the sense of medical isotope production. Lars has elaborated on the difference this distinction makes in conversations:

But then as soon as you start explaining well, this is not to generate power, but this is to produce medical isotopes, then basically all the resistance or the hesitations were quite different so, there, if people realize that certain isotopes you can only produce in such type of reactor, then well in general people do support that these type of reactors exist and also need to be replaced at some time. (Lars)

His paragraph exemplifies that some employees of the nuclear industry in the Netherlands are strategically steering the conversation into the direction of talking about nuclear in the medical field rather than in the energy field as they realize that responses of outsiders are much more understanding and less resistant. The reason for this is given by Lotte:

Because there is no alternative. You cannot say to a person that is having their lungs diagnostic: I don't want you to have the medicine because it generates waste. And for nuclear power, of course, you can also use the gas, oil, Wind, Sun. (Lotte)

Lotte as well as several other respondents have explained that the main reason for the medical field in the nuclear sector being less stigmatized is due to the fact that it can help to treat cancer patients and

that there is no alternative for this. While on the other hand outsiders of the industry might counterargue against nuclear energy production because there are alternatives for producing energy.

Emphasizing Safety

The aspect of safety is a concern that our interviewees are confronted with in many conversations with outsiders. Hence, also in our interviews the aspect of safety was named by all of our respondents to be an aspect that they want to further discuss. It became evident that when talking to 'outsiders' they are trying to emphasize the safety aspect as often as they can. Joost specifies:

Add to that that also the design of nuclear installations continuously get improved and lessons get learned from past experiences. Not just Fukushima, not just Chernobyl, but there are a lot of smaller things also happening in nuclear plants. So, the designs get improved and improved and improved and the possibility of something going wrong get reduced every single time. That I dare to say that if you put a nuclear plant somewhere right now, it's probably the most safe energy producing facility there is. (Joost)

In his statement Joost highlights the fact that the industry is also developing further and consequently has taken many measures to make sure that their facilities are of the highest safety standards. Like Joost also Ruben is convinced of the safety of nuclear reactors as he states:

So compared to any other fields I would have gladly have a reactor in my backyard because I know there'll be a lot of people overseeing safety. Which they don't do in other industries. So, it's enormously safe. (Ruben)

It is to see that with those statements our interviewees are trying to gain back the trust of outsiders of the industry that are skeptical towards the industry due to accidents such as in Fukushima or Chernobyl.

Comparing Industries

Closely linked to the aspect of safety employees of the Dutch nuclear industry also try to compare the industry to other industries in order to present the nuclear industry in a more favorable way then the industries they compare it to. One example of contrasting it from other industries is given by Lotte:

And I also say, uh, when I was working at *company* I could compare the different energy sources: Solar power, wind power, nuclear power, gas power, coal power. And then I also say that solar energy that looks so clean, but the solar production in China is not so clean. So, I also say you are in favor of environment? For which environment are you in favor of? (Lotte)

Lotte's example shows that she is trying to put the nuclear industry into perspective by highlighting negative aspects of in this case other energy producing industries. Lars also weighs in and compares the amount of waste and produced in other industries:

But to give some context to that, if you then still compare nuclear and the amount of waste and the risk to that compared to the environmental impact of coal or the lignite production like in Germany or so. Then in the whole supply chain of that fuel and of that power there is way more risk and there's way more casualties and so it's good to give that context as well. (Lars)

In line with the aforementioned safety aspects Lars also weighs in on the waste production of other industries. He also confirms that he thinks that this information will give another perspective and more context to someone having a discussion on the topic with him.

4.2.3. Openness

Contrary to those approaches in which a more persuasive method was used to bridge the divide between 'outsiders' and 'nuclears', our participants have also given us examples of how they are more open and flexible in trying to bridge this divide.

Facilitating a Platform for Discussion

A more fruitful solution towards minimizing stigmatization and breaking the boundary between the nuclear industry and outsiders has been mentioned to be the facilitation of a platform for discussion. Luuk is probing beneath the surface and states:

It helps a lot to communicate about it. And also, to communicate about it and to provide a platform where they can raise and ask questions and where they raise concerns. That helps a lot. Really to get a better understanding and get a better alignment I would say between the industry and the outer world. (Luuk)

Luuks statement shows that he wants to work towards a better alignment of the industry and the general public by opening up the lines of communication by being open to answer questions about concerns that critiques of the industry might have. Hendrik voices an idea on how to open up the conversation:

In an ideal situation, we should organize colloquium, right? Where you can give presentations or have a generic discussion among people, not only people who are pro nuclear, of course, but also who are against, because again, you need to provide a platform for both teams, let's say. What we in the Netherlands tried to do is to enhance the communication over the different kind of research topics we

cover. I recently wrote a white paper on this small modular reactor thing, which I tried to educate let's say the generic public in the Netherlands. (Hendrik)

This paragraph shows Hendriks awareness of the need for communication. Therefore, he brings up the idea of having plenum talks and discussions with employees of the industry and outsiders that have a rather negative stance towards the industry. Another point he raises is to give the opportunity to educate outsiders by providing them with information about the status quo of innovations and changes within the industry through research articles made available to the public.

Transparency & Trust

The nuclear accidents in Fukushima and Chernobyl still have an impact on society's lack of trust towards nuclear reactors. Accordingly, the respondents have remarked that it is of utter importance to build up trust again. Luuk expresses:

Maybe I can summarize that under the word of having trust, right? [Trust] in the way the sector is organized, the sector is reviewed by authorities. […] So we need to explain to them that… we want to explain to them, we want to be transparent on the way the sector works and the steps we are taking to be as professional as you can think of in this field. It's also, I think it's a bit of a trust type of topic as well. (Luuk)

We can identify that the industry is trying to overcome the stigma by showing that the industry is highly controlled, and that professionalism and safety are factors that are put as a very high standard of the industry in order to build the trust for the general public to be accepting of nuclear practices. In order to build that trust our respondents mention that transparency plays a major role in achieving that trust. Joost explains it as follows:

As long as you are transparent and open about it and talk about it and inform people of what you're actually doing and showing that you have nothing to hide, you can convince people or at least ease their worries a little bit and convince people. And yeah, I think that's one of the ways to really approach is just to be open about it. (Joost)

In this statement Joost shows that in order to build trust it is of importance to be fully transparent in everything the sector does. This transparency leads to people seeing that the industry does not have anything bad to hide and gives the impression that the public is involved and informed when the industry for example has missteps, builds new reactors or innovates. Lotte touches on this as well and adds:

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They invited people local people to visit their facilities to have the local people see what they do, so also to exclude the impression that there's something to hide. (Lotte)

Lotte also mentions the fact that the industry is not only trying to build trust but also wants to be seen as an industry that has nothing to hide. She gives an example of a nuclear facility being open for visitors of the general public to see the facilities in order to take away their fear of nuclear and to be as transparent as they can be.

Listening

Another dimension that leads to building trust and that was given as a specific successful example to bridging the divide was given by Anniek as she has had an encounter with an outsider that is anti-nuclear:

Yeah, I think in this case I went more in the listening mode rather than the defense mode for nuclear, because I realized that when people have emotional arguments, rational arguments don't do anything. They don't work against emotional arguments. So, I just listened to his view on this. [...] And actually, in the end he turned around and said, maybe it's not that bad. So, in the beginning, and actually the connecting friend, the one that introduced me to this guy, she said: "wow, normally he's super against." That in the end, he said: "maybe it's not that bad" was super surprising to her. So, that was funny. (Anniek)

This example shows that due to the fact that Anniek has chosen to listen to the other person she was able to understand his emotional arguments and feel more empathetic towards him. This empathy in the end has led to her being able to give examples for nuclear energy as well. Anniek further explains why she thinks listening is a good strategy to be open and then being able to encourage others to consider the positive aspects of nuclear:

Just because when I consciously chose to not do this thing that I always unconsciously do, but consciously thought: Ok this time I'm just going to listen and I'm not going to go into an argument or... just going to make the guy feel heard. That really works, so I just felt the guy starting to I don't know not completely trust, because I didn't really know the guy that much, but more he started to listen to me as well. [..] So, I felt like him feeling listened to, made it easier for him to listen to me as well. (Anniek)

Due to Anniek respecting his emotional feelings of having had bad experiences living next to a nuclear plant she did not go into an argument with the person but rather listened. Since she gave him the respect of listening to her and validating his feelings, she opened the door and made him comfortable enough

in order to also listen to her arguments for nuclear energy. The difference she describes is that she usually is not as interested in what the opposing person has to say and therefore quickly goes into a defensive position. However, this experience has shown her that meeting one another with mutual respect she was able to acknowledge his emotions and he was able to understand and partly agree with her argumentation.

Innovation & Cooperation

As aforementioned, our interviewees have expressed the consequence of stigmatization is that the nuclear industry is conservative, and that the industry is confined to itself. During our interviews we came to the revelation that our participants not only try to bridge the divide between the industry and the general public but also to break a boundary between the nuclear industry and other industries. Moreover, our respondents have pointed out that cooperation and innovation can also break the barrier of conservatism in the industry. Joost has expressed:

And I think in order to be a more… to advance and to always be the state-of-the-art, you also have to be open and be able to not just communicate within the nuclear industry, but also with other industries as well. (Joost)

He remarks that the nuclear industry should try to cooperate more with other industries in order to have a 'state-of-the-art' mindset and being able to seek out for possible solutions of other industries to be implemented in the nuclear industry in order to advance. Stijn adds to this by referring to the conservatism in the industry:

Because any innovation is a new risk. It doesn't work like that. So, I think really the innovation should come from crazy people like myself. (Stijn)

Stijn has shown his advocacy towards innovation in the nuclear industry. He believes that nuclear science has so much to offer, and that innovation would help the nuclear industry to open up and be an industry that can accomplish significantly more than it is now. In order to implement this change Stijn has further suggested:

So, and now there is a time that nuclear is should you know, pick itself up. And that's very, very complex. If you have been in this situation for decades, and it's almost embedded in these organizations and if you want to change an organization maybe you should just set up new organizations. It's maybe the better way to change; start new. (Stijn)

In consequence of the conservatism that resulted out of the nuclear industry being stigmatized Stijn is envisioning for the industry to start new organizations. He states that a new start is necessary in order to, from the beginning, implement change and innovative processes, he thinks the industry needs to be more open for nuclear practices to reach their potential.

4.3. Chapter Summary

This chapter has presented the most interesting and striking empirical findings that derived from the 14 interviews conducted. The consensus among all participants was that they have either encountered stigma, directed towards them being employed in the nuclear industry, themselves or are at least aware of the stigma. The primary identified consequences of the stigma for the industry show the conservatism of the industry, a division between the industry and outsiders and binary thinking of outsiders as well as insiders. Furthermore, we were able to decipher in which ways our respondents manage the stigma they are confronted with. The first approach identified is that our participants have developed methods to construct their self-image in order to either gain confidence in the industry or in one case to also distance themselves from the nuclear industry. Secondly, we were able to discern a scheme of persuasion in which our respondents showed a particular dedication to convincing outsiders of the nuclear industry. Lastly, in their approach to having a dialogue on the nuclear industry we ascertained that another course of action our participants took to bridge the divide was openness. In this scheme the focus was more on openly presenting the industry rather than convincing.

5. Discussion

In the subsequent chapter, we contextualize our empirical findings. To achieve this objective, we provide a summary of our findings and compare them to the concepts and analytical framework outlined in our literature review. Additionally, we aim to extend the discussion by advocating for the implications we have identified in this study. To accomplish this, we revisit the previously introduced concepts of stigma, stigma management, identity work and boundary work in order to incorporate our findings. Drawing on these concepts, we argue that the employees' management of the stigma can be categorized into the SMC framework developed by Meisenbach (2010). Additionally, with our empirical findings we were able to compose an extension to the framework and an acquired additional strategy. Furthermore, we identified a connection between their identity work and boundary work and elucidated this connection. Ultimately, we summarize our main outcomes before progressing to the conclusion, where we link the arguments presented in this chapter to our research question and further enhance our argument by identifying potential inferences for future research.

5.1. Perceived Stigma

The results of our study indicate that our participants possess a comprehensive awareness of the stigma associated with the nuclear industry. Based on the results of our study, we were able to identify the attributes causing most of the stigma in the Dutch nuclear industry. These attributes are in direct association with the nuclear accidents in Chernobyl and Fukushima. This finding supports previous research on the stigmatization of the nuclear industry by Horlick-Jones, Prades & Espluga, (2012) and more recently Yang et al. (2022), who found out that the public connects the nuclear industry with nuclear accidents, radiation and risk. Therefore, we can confirm what has been said before and highlight the negative perception that external audiences have of the industry. Furthermore, we can add that the influence of the media, nuclear waste, outsider's emotions as well as outsiders lack of education are drivers for stigma towards the nuclear industry as well.

Drawing back on the reasons that our participants have accentuated to be the factors causing stigmatization of the nuclear industry it is visible that they all refer back to the quintessence of the nuclear industry, which is the practice of nuclear and using uranium itself. All reasons given have the critique point of nuclear practices themselves and can be traced back to that. Referring to Hudson (2008a) who state that core stigma can be described as stigma that refers to a fundamental aspect of the organization that is stigmatized, we can identify that the Dutch nuclear industry is experiencing a core stigmatization. Thus, we can conclude that due to the critique stemming from the quintessence of the uranium the stigma can be identified to be core stigma.

The interviewees have experienced stigmatization through comments or jokes about working in the nuclear industry. Moreover, they have had discussions and outsiders voicing a concern when the employees were specifically mentioning to be working in the nuclear industry. This finding also aligns with the research of Tracey and Phillips (2016), who have demonstrated in their study that organizational stigma extends to the individuals affiliated with the organization. Hence, our findings demonstrate the transfer of the core stigma addressed towards the nuclear industry onto the employees themselves. The transfer of stigma to the employee was evident as numerous employees have mentioned to be stigmatized only when mentioning their employer.

However, on the other hand our other interviewees have stated that even though they are aware of the perceived stigma they are proud to work in the nuclear industry and are open to having a discussion about nuclear practices due to the conviction they have for the industry. This behavior is in line with what Ashforth and Kreiner (1999) have found about individuals performing 'dirty work'. According to them despite performing dirty work employees of such an organization are still showing pride to be working for that particular organization. Consequently, our findings do align with the claims Ashforth and Kreiner (1999) have made during their research on dirty work.

5.2.   Bridging the Divide - Stigma Management Communication

Our findings have shown that the employees of the Dutch nuclear industry have developed certain approaches that help them to cope with the stigma they are confronted with. When conducting their research on dirty work Ashforth and Kreiner (1999) have identified three methods to deal with stigmatization. These are reframing, recalibrating and refocusing. While this is one suggestion of the literature on how to manage stigma, there is more literature to be found on the management of stigma by individuals. Therefore, we have chosen the Stigma Management Communication framework by Meisenbach (2010), which combines the solution provided by Ashforth and Kreiner as well as other solutions presented to manage stigmatization into one framework. We will therefore further use the SMC framework in order to discuss our findings on how the employees of the nuclear industry manage core stigma.

5.2.1. Accepting

Display Stigmatized Attributes: Expressing Conviction

Participants often described a social setting where there was lots of interaction with colleagues, that made them feel part of the company's culture. They also described being curious about the culture and

engaging with nuclear practices, in order to identify with the industry. Aside from liking their job and having gained industry specific knowledge, the participants clearly expressed pride regarding working in the nuclear industry and therefore expressed their conviction. In Meisenbach's framework she describes that Goffman (1963) has identified a coping mechanism that helps individuals to identify with a certain group and thus be at ease with stigma directed towards them. Those coping mechanisms are called *displaying and disclosing stigma* which refers to the stigmatized openly showing their attributes that are stigmatized. These outcomes describe a state of belonging, where the stigmatized employees of the nuclear industry describe feeling as a part of the company culture and social group, meaning they have categorized themselves into the same group as their colleagues. The identification becomes stronger through an increased understanding of the nuclear practices, as participants specifically describe engaging in the practices and gaining knowledge. The pride of the industry and their distinctive group membership show that they are accepting of the industry and happy to engage with that industry, thus showing an openness to expressing this stigmatized profession. This can be interpreted as expressing the conviction that displays overall acceptance of the stigma.

Blame Stigma: Consequences of Stigma

Our empirical findings show that through identifying consequences of the stigma towards the nuclear industry, the employees of the industry put blame on the stigma for being responsible for those consequences. The consequences for the industry that the stigma is has been identified to be a cause of are the division between the nuclear industry and outsiders, as well as binary thinking of outsiders and 'nuclears', and the conservatism of the industry. Meisenbach (2010) describes another communication strategy that is *blaming* the stigma for the negative outcomes that they experience. In this way the individual accepts the stigma but does not see the outcome as something that is within their control, so they can deflect the responsibility for the outcome through blaming the stigma. By specifically naming the consequences of stigma the stigmatized employees do not accept control over the outcomes. They assert the stigma as carrying responsibility, since in an industry that is so divided, binary or conservative, they claim it is not possible to create another outcome.

Isolate & Bond: Staying in their Echo-Chamber

Some participants were focused on staying in their echo-chamber, forming a community with tight bonds, they referred to as brother- or sisterhood while referring to themselves as 'The Nuclears'. They felt understood, valued, and shared the same interests and outlooks, similar to an echo-chamber. Others described their personal life as a bubble, where they did not face stigma and even denied its existence when asked it. However, they acknowledged that stigma exists for others and sought refuge in an echo-

chamber with like-minded individuals who shared their opinions, effectively isolating themselves from the stigma. Meisenbach (2010) describes that in some cases, stigmatized individuals can isolate themselves from society or only bond with other stigmatized people. Goffman (1963) proposes that this group limits communication with others in order to deal with the stigmatization and states this group has internalized the stigma. Identity theory proposes that sharing this common experience of being stigmatized and sharing the same opinion about this, thus having common values, will make the group grow even stronger and increase their feeling of being understood and identifying with the group (Stets and Burke, 2000; Tajfel, 1972). Through identity work the group membership aids in crafting the identity by socially rejecting others and their beliefs (Brown, 2017). The interesting part about the explanation of the group membership is the fact that some participants seem to have given conflicting answers. They deny the stigmatization, but later on explain that they do not encounter it, but that it is still a reality for others. It's just not happening in their brotherhood, or not within 'The Nuclears'. Thus, their echo-chamber creates a way to deal with the stigma that does not require them challenging it, but rather it strengthens their values and feeling of being understood, in order to create a strong and comforting identification with their group.

5.2.2. Avoiding

Hide & Avoid: Non-identification

One interviewee expressed another strategy of dealing with stigmatization. While aware of the stigmatization of nuclear, she explained often simply expressed working in the energy industry. 'Technically' it is not wrong, and it is 'accurate', as she frames it. But by emphasizing this, she acknowledges that she is doing this deliberately. She uses this non-identification to avoid negative reactions or negative connotations and being challenged to a discussion. Similarly, Elsbach, (1999) as well as other researchers (Dutton, Dukerich & Harquail, 1994; Murrell, Frieze & Olson, 1996; Pratt, 2000; Sutton & Callahan, 1987) describe that members of a group are more likely to disidentify themselves from a group to avoid negative associations. The SMC strategies show that some stigmatized individuals can hide, deny or avoid the stigma attribute, in order to challenge that the stigma applies to themselves. Goffman (1963) stipulates that restricting the display can also happen through renaming, in order to avoid publicly accepting it applies to them. The difference between isolating and avoiding stigmatizing situations is the lack of acceptance of the stigma applies to them, in this case. Clearly this communication strategy is helping the interviewee to avoid the difficult result of the stigmatization, such as negative emotions, negative connotations and discussions. She restricts the display of the stigmatized attribute, namely her association with the nuclear industry, through

technicalities in her choice of words. This way she effectively hides her stigma attribute and avoids the situation in which she is stigmatized.

Make favorable social Comparison: Comparing industries

In conversation about the stigmatization, several interviewees have explained comparing the nuclear industry to other industries, in order to put it into perspective and decrease the negativity. By highlighting negative aspects of other energy producing industries or comparing the waste management and risk of other industries to the nuclear industry, the context changes and this works in favor of the stigmatized in the discussion. Meisenbach (2010) describes that challenging the application of stigma can be done by changing the narrative. The comparison can be made between organizations, subgroups or individuals. By discrediting the other industry, the individual decreases their own stigma. Meisenbach (2010) also describes providing information that refutes the stigma, or the assumptions leading to the stigma, which can challenge argumentation of the stigmatizer. This way the stigma is not only denied but the whole argumentation around the stigmatization becomes invalid. Several interviewees have used the negative aspects of other industries or the waste management and risk of other industries to make a favorable comparison. This way two things can be done. On the one hand, the stigma could not apply to this industry, since it may be bad, but in comparison to other industries not as bad. On the other hand, it could also provide evidence and information in order to challenge the public understanding of the stigma as a whole. By comparing industries, the interviewees prove to challenge the validation of the stigma and its application.

5.2.3. Evading Responsibility

Unintentional: Emphasizing safety

When discussing the stigmatization with the respondents, all of the respondents discussed the safety aspects surrounding the nuclear industry. They expressed that when discussing the industry and stigmatization with outsiders, they emphasize the safety aspect as often as they can. They call it enormously safe, the safest energy producing facility there is and many other expressions with the same sentiment. Literature explains that in some cases the public opinion is changed by the individual through attempts to adapt the characteristics that the public attribute to the stigma (Meisenbach, 2010). By claiming the individual tried to avoid the stigma, they acknowledge that the stigma applies but try to change the public understanding of the stigma, by insinuating the result of the stigma behavior was unintentional. Through emphasizing the safety aspects related to the nuclear industry, the respondent attempts to evade responsibility for the negative aspects, by claiming any negative or wrongdoing,

such as Chernobyl or Fukushima, could not happen in the current time. This way by emphasizing safety, the responsibility is evaded, and the public understanding is challenged.

5.2.4. Reducing Offensiveness

Bolster: Strategic choice

Several respondents describe making strategic choices in discussions about nuclear. They describe all the resistance and hesitations changing when the subject is focusing on a different aspect of nuclear. Many participants explain the stigmatization being less prevalent in the medical nuclear field, compared to the nuclear energy sector. Making strategic choices is often done by refocusing the discussion onto talking about the medical use of isotopes, rather than the safety aspects of the nuclear reactor. Meisenbach (2010) describes that one of the SMC strategies focusses on reducing the offensiveness of the stigma, or rather changing how it is perceived by the stigmatizers, by refocusing. This means refocusing the conversational topic from the stigmatized identity attribute to a non-stigmatized identity attribute. This way the stigma is perceived as less offensive to the stigmatizer. The respondents describe making the strategic choice of refocusing in the discussions they have with opposers of nuclear. By refocusing the discussion on the medical use of isotopes, the offensiveness of the nuclear industry is reduced, and the public understanding of the stigma is changed.

Transcend: Motivation as driver

All participants describe having a strong motivation that drives them to work in the industry. Regardless of working in the nuclear energy or nuclear medicine field, they were all passionate and purposeful in what they felt they were contributing to their work. They feel like they are doing good in the world by helping to stop climate change, contribute in a meaningful way to battling cancer or are part of the solution to the European energy crisis. This motivation clearly drives a positive self-image, which we interpret as helping them to overlook the stigmatization in the industry. The SMC strategies describe transcendence as the reduction of the offensiveness of the stigma, by focusing on how the stigma attribute can be a means to a meaningful end. This does not remove stigma but it reduces its sting, by identifying it with a higher purpose and thereby challenges the stigma and its applicability (Meisenbach, 2010). All participants describe their motivation as working toward a higher goal, thereby reducing the offensiveness of the stigma attributed to the nuclear industry.

5.2.5. Denying

Discredit Discreditor: Outsiders Lack of Education & Media

In several cases, the respondents have voiced that there was a lack of knowledge or education by the stigmatizers. They claim that the stigma is a form of a lack of understanding, which stems from that lack of knowledge. Some respondents describe being frustrated by the general public being given information about the downsides of nuclear by the media and explain that the intangible characteristics of nuclear feed into that fear. They call the fear irrational and emotionally grounded, implying that if they knew better, they wouldn't think this way. The respondents claim it is not the situation, but it is the lack of knowledge that makes outsiders stigmatize. Meisenbach (2010) describes that when dealing with stigmatization, a communication strategy could be discrediting the discreditor. This is a way of denying that the stigma applies and challenging the assumptions of the stigmatizer. By attacking the accuser, they aim to discredit what this person is saying and try to successfully argue their case. In our study the evidence needed to substantiate the argument is implied in the lack of education that the stigmatizers are claimed to have. In this way the respondents deny both the stigma as well as the public understanding, by challenging their understanding of the subject through claiming a lack of education.

Provide Evidence: Education & illustration of examples

One of the aspects that helped the respondents in constructing their identity within the industry was their education. They describe how their knowledge has grown when working in the industry and how they felt increasingly connected to the industry. This expert knowledge is described to help during discussions about stigma, since it allows for more depth and validity in the argumentation. Through the use of illustrative examples in conversations with outsiders, we recognized persuasive behavior of participants. By giving real life examples that are tangible and understandable, they try to educate people in a convincing manner. The SMC framework describes evidence such as a strategy to refute the stigma and stigma association, through a discursive format (Meisenbach, 2010). Sometimes claiming this information exists can already put the individual at an advantage over the stigmatizer, since it implies an advantage in discussions. By discussing the broad knowledge, they gained by educating themselves, the participants are having an advantage over outsiders simply because they know more about the industry. This way they refute the stigma and stigma association by implying their education gives them an advantage.

Table 3: Applied SMC framework

	Accept that stigma applies to self	**Challenge that stigma applies to self**
Accept public understanding of stigma (status quo)	**I. Accepting** - Display/Disclose stigma → **Expressing conviction** - Blame stigma for negative outcome → **Consequences of Stigma** - Isolate self → **Staying in their echo-chamber** - Bond with stigmatized → **Staying in their echo-chamber** - Apologize - Use humor - Passive acceptance (silence)	**II. Avoiding** - Hide/Deny stigma attribute → **Non-identification** - Avoid stigma situations → **Non-Identification** - Make favorable social comparison → **Comparing Industries** - Stop stigma behavior - Distance self from stigma

Challenge public understanding of stigma (change)	**III. Evading responsibility for**
	
	- Unintentional
	→ **Emphasizing Safety**
	
	- Provocation
	- Defeasibility
		V. Denying
		
		- Logically
		   - Discredit discreditor
		→ **Outsiders lack of education**
		→ **Media**
		   - Provide evidence/info
		→ **Education**
		→ **Illustration of examples**
		
		   - Highlight logical fallacies
		- Simply

	IV. Reducing offensiveness of - Bolster/refocus → **Strategic choice** - Transcend/Frame → **Motivation as driver** - Minimize	**VI. Ignoring/Displaying** Displaying

Source: (Meisenbach, 2010) and own representation

5.2.6. New Stigma Management Communication Strategy: Opening up

When looking at how the employees bridge the divide between the nuclear industry and outsiders of the industry, we came to the realization that the employees of the industry did not only use the strategies of the SMC framework. Even though we were able to make those previously mentioned connections we ascertained that when applying our findings to the framework we could not allocate the approaches of *Openness* to a specific strategy proposed in Meisenbach's (2010) framework. With openness we mean those approaches of *facilitating a platform*, *advocacy and ambassadorship*, *transparency and trust*, *listening* and the approach to *innovation and cooperation*. Therefore, it became apparent that even though we could place those remaining findings in the category of *accepting that*

the stigma applies to self and the urge to *challenge the public understanding of stigma* they were neither clearly to be allocated in the strategy of evading responsibility nor in the strategy of reducing offensiveness.

Hence, we came up with an additional strategy that can be an expansion to Meisenbach's SMC framework: *Opening up*. The sub-categories belonging to this strategy are the aforementioned five approaches of 'Openness'. This additional strategy can be categorized as an option that puts the emphasis on the communication aspect in the SMC framework. Therefore, the aim of the five sub-categories is to openly communicate with the general public, in order to challenge the understanding of the stigma. The difference to the already existing strategies *evading responsibility* and *reducing offensiveness* clearly lies in the fact that the stigmatized individual is opposing the stigma in order to open up the conversation on the topic but with the intention to perform open-minded communication that puts emphasis on the equality of the stigmatized and the stigmatizer.

Table 4: Expansion of SMC framework

	Accept that stigma applies to self	**Challenge that stigma applies to self**
Accept public understanding of stigma (status quo)	I. Accepting - Passive acceptance (silence) - Display/Disclose stigma - Apologize - Use humor - Blame stigma for negative outcome - Isolate self - Bond with stigmatized	II. Avoiding - Hide/Deny stigma attribute - Avoid stigma situations - Stop stigma behavior - Distance self from stigma - Make favorable social comparison

Challenge public understanding of stigma (change)	III. Evading responsibility for
	
	- Provocation
	- Defeasibility
	- Unintentional
	
	IV. Reducing offensiveness of
	
	- Bolster/refocus
	- Minimize
	- Transcend/Frame
	
	V. Opening up
	
	- Facilitate platform for discussion
	
	- Advocacy & Ambassadorship
	
	- Transparency & building Trust
	
	- Listening
	
	- Innovation & Cooperation
		VI. Denying
		
		- Simply
		- Logically
		   - Discredit discreditor
		   - Provide evidence/info
		   - Highlight logical fallacies
		
		VII. Ignoring/Displaying

Source: (Meisenbach, 2010) and own representation

By *facilitating a platform for discussion*, the emphasis in our study lies on a suggested exchange of opinions, knowledge, concerns and arguments between the nuclear industry and outsiders. The accentuation should be a forum, panel or discussion round in which both parties can formulate their concerns and beliefs. Hence, by facilitating a platform for discussion the aim is to come to the middle ground and to respectfully communicate with the other party. These platforms for discussion therefore are an active move towards challenging the stigma while acknowledging it is present.

The communication strategy of *advocacy and ambassadorship* highlights communication in which stigmatized employees of the nuclear industry openly promote for the industry they are working in. This is done through being the voice of the industry by, for example, using social media as a platform to openly communicate their belonging to the industry. The difference to the strategy of *displaying the stigmatized attributes* lies in the fact that the stigmatized employee is aiming at challenging the outsider to remove the stigma through advocacy and ambassadorship. Additionally, they show an openness for communication and accept that currently the stigma applies to them.

The third sub-category implemented in the strategy of opening up is *transparency and building trust*. Through being transparent employees of the nuclear industry hope to build up the trust of stigmatizers. This transparency is displayed in our findings through opening up the nuclear facilities to outsiders of the industry in order to highlight that they have nothing to hide. Another way of building trust is through publicizing everything that is happening in the industry, such as, for example, the progress of new innovations, the building of new reactors or possible missteps.

Furthermore, *listening* is a finding of our study that is integrated as a sub-category of the strategy opening up. Listening proposes as a successful example of communication by an employee of the nuclear industry to manage stigma. This scheme has proven to be effective when wanting to challenge the outsider's understanding. Even though it might not seem challenging, since listening is a more passive than active form of communicating, we categorize it as challenging, since the effect of listening in this strategy is that the stigmatizer in return also listens to the stigmatized individual. Thus, the openness can lead to bridging the divide as the stigmatizers arguments and emotions are being validated and therefore conversely the stigmatizer is open for a debate as well.

Even though the sub-category of innovation and cooperation is mainly intended to be a strategy that helps employees of the nuclear industry to contest the conservatism of the nuclear industry, it still belongs to the added strategic expansion of the SMC, opening up. We justify this belonging since although it might not be a direct way of communication with stigmatizers themselves, it still conveys that the nuclear industry opens up through innovation and cooperation. Hence, through being open to

innovate and cooperate, employees are challenging the stigmatizers indirectly, as the dynamics of the industry can change through this strategy as well and the industry would be cast in another light.

We argue that this additional strategy adds value to the framework and to research on the nuclear industry, because it does not only portray another strategy to stigma management communication but also offers specific propositions to work towards reducing and combating the consequences for the nuclear industry which stigma has caused.

5.2.7. Interplay of identity work and boundary work

Based on our empirical findings, we have observed that our participants have performed identity work, while sometimes also simultaneously and subsequently executing boundary work. An example of this is through education. In order to increase their knowledge about the nuclear industry, employees are educating themselves. This education process is continuous; hence we can apprehend that it exists in a constant interplay with the employees doing boundary work and vice versa. These findings are consistent with what Knapp et al. (2013) have declared as they broach the subject matter and note that an individual is mediating boundaries in order to either unify or separate from the organization's identity. This congruence shows that in order to bridge the divide and to counter stigma, employees of the nuclear industry are not only constructing a self-image but simultaneously do boundary work, in order to manage the core stigma, they are confronted with when working in the nuclear industry.

6. Conclusion

The objective of this qualitative research aimed to acquire insights on the stigma perception and management of employees in the Dutch nuclear industry. To achieve this, our research questions were formulated as follows: *"How do employees of the Dutch nuclear industry perceive the stigmatization of the industry and its effects on the industry?"* as well as *"How do employees manage the stigma in order to bridge the divide between the nuclear industry and outsiders of the industry?"* In order to answer those questions, we have conducted 14 interviews with employees of the Dutch nuclear industry. Our empirical findings were presented and further related to literature in order to discuss our theoretical contribution, by also proposing an addition to the framework. In the ensuing concluding chapter, we are going to give an outline of our main empirical findings, as well as presenting our contributions to theory. Thereafter, we will give an insight into the research limitations. Finally, we will suggest possibilities for future research in this area.

6.1.   Main findings

Our research has shown that employees of the Dutch nuclear industry perceive that the industry is still stigmatized. Our participants have shown that they either have encountered core stigma themselves, or that they are aware of it, and therefore have developed a sensibility towards it. The perceived stigma is perceived to be a direct result of nuclear practices and the work with uranium itself. The employees therefore feel themselves confronted with stigma concerning fear of accidents as in Chernobyl or Fukushima, reservations and doubt towards nuclear waste, negative representation in the media and outsiders being emotional and not educated enough on the topic. Our respondents have pointed out that due to the stigmatization the Dutch nuclear industry has confined itself. This confinement becomes notable as the employees detail a division between the Dutch nuclear industry and other industries, as well as the general public. Furthermore, we were able to identify that both outsiders and some employees engage in binary thinking. This binary thinking shows that both parties persist on their standpoint and are not willing to make concessions. A third consequence perceived by employees of the Dutch nuclear industry is the conservatism of the industry. Even though safety is a very important matter in the industry, our respondents have still identified that stigma can be a reason for conservatism. This is caused by a fear of recurrence of safety issues, since this could cause an increase in negative image and growth of stigmatization.

Furthermore, we could ascertain how employees manage the stigma through identity and boundary work, in order to bridge the divide between the nuclear industry and skeptical outsiders. When engaging in identity work our interviewed employees have mentioned educating themselves on nuclear

practices, in order to increase their knowledge about the industry and become more confident in their work. Furthermore, having motivation as a driver has helped to construct a positive self-image while working in the nuclear industry. This motivation is either in the form of wanting to battle climate change, aiding in solving the European energy crisis, or helping in the treatment of cancer patients through the production of isotopes. Many interviewees have also mentioned that they do identity work by expressing their conviction and mentioning that they are proud of working in the industry. Another approach to maintaining a positive self-image is to stay in their 'echo-chamber'. By only surrounding themselves with individuals and groups that either have the same expertise or the same opinion on nuclear practices, employees of the nuclear industry seem to be able to construct a positive self-image. One respondent expressed that in order to protect her self-image, she sometimes disidentifies from the nuclear industry, by not specifically mentioning to be working in the nuclear industry in order to avoid stigma.

To be able to bridge the divide our participants have also engaged in boundary work. One strategy to do boundary was to persuade outsiders into being more favorable of the nuclear industry. This persuasion was conducted through showcasing understandable examples to outsiders, which are illustrations presented to enhance a positive perception of the nuclear industry. Another persuasive approach to bridging the divide is to make a conscious and strategic choice, to mention medical aspects of the nuclear industry when trying to convince the general public. This strategic choice is made since the acceptance of medical nuclear procedures is more accepted by outsiders, as medical isotopes form a solution when treating cancer. We also found out that employees of the Dutch nuclear industry are persistent about emphasizing that the nuclear industry is an incredibly safe industry. In line with mentioning the safety aspect to outsiders, several respondents have also mentioned trying to bridge the divide, and therefore engage in boundary work. They did so by comparing the nuclear industry to other energy producing industries, in order to make the nuclear industry appear in a more positive light.

Lastly, another main finding is an approach to boundary work through openness. This approach is more open-minded and gives outsiders the chance to interact and be understood. In order to portray openness, our respondents suggest interacting with outsiders by facilitating a platform for discussion, in order to have an exchange on a par. Furthermore, employees of the Dutch nuclear industry do not only express their pride as mentioned above but some even act as ambassadors to make the industry be seen and to engage outsiders in a conversation on the nuclear industry. Aside from this, transparency and the ability to build trust are factors that are important to bridge the divide. Our participants have shown that this works by opening up nuclear facilities to the general public and by being transparent

about possible missteps in the industry. Through transparency employees of the Dutch nuclear industry hope to build trust again. When engaging in conversations with skeptical outsiders it has been identified that one common form of communication seems to be helping to bridge the divide: listening. Through listening to concerns of outsiders, employees can make outsiders feel heard and validated. As a consequence, outsiders are willing to listen as well and both sides open up to breaking down the boundary and even reach a middle ground. The last solution to portray openness is innovation and cooperation. Our interviewees have shown that cooperation and innovation are two factors that could help open up the nuclear industry to other industries and outsiders.

6.2. Contributions

Within this research we have shown that the construction of employee identity also is influenced by the identity of the organization they are working in (Ashforth & Mael, 1989; Stuart, 2002). Therefore, we were able to identify that when an organization is core stigmatized (Hudson, 2008a) this also has an impact on the employee identity (Ashforth & Kreiner, 1999). The employee either disidentifies (Dutton, Dukerich & Harquail, 1994; Elsbach, 1999; Pratt, 2000; Sutton & Callahan, 1987) or uses the stigma in order to strengthen their identity (Ashforth & Kreiner, 1999). Several researchers have been studying this management of stigma and the influence on identity intensively (Ashforth & Kreiner, 1999; Drew, Mills & Gassaway, 2007; Meisenbach, 2010; Sotirin, 2007). However, our study has used an SMC framework by Meisenbach, that combines several stigma management communication strategies in order to analyze our findings (Meisenbach, 2010). Another aspect that plays into stigma management is the interconnection of identity work and boundary work, as it allows individuals to regulate their identity (Knapp et al., 2013).

When applying the aforementioned concepts to the nuclear industry, we were able to connect our findings to the literature and therefore strengthen the arguments given by previous research. However, our findings have shown another dimension that can be added to Meisenbachs (2010) SMC framework. When specifically looking at how employees of the Dutch nuclear industry conducted stigma management, we identified another strategy to manage stigma. Consequently, we have introduced the strategy of *opening up*, which elucidates how employees open-mindedly endeavor to manage stigma. By *opening up* our employees are accepting that they are stigmatized but are challenging this stigma with those strategies which previously explained to be bridging the divide by openness. This extension to the SMC framework can therefore be of use for academics studying other stigmatized fields.

Moreover, our research contributes to the Dutch nuclear industry, as well as generally to the nuclear field. We provide an overview of strategies that can be used by employees to strengthen their identity

and gain insights on approaches to bridging the divide between themselves and outsiders of the industry. Our research can also be a contribution to the industry when deciding how to approach recruiting new employees to the nuclear industry.

6.3. Limitations

Our thesis reveals how employees perceive and deal with the stigma of the nuclear industry, through multiple strategies. We find that it is necessary to consider the impact that the choice of interview candidates has had, or rather the methodology that led us to these candidates, since it was not our direct or individual selection. We had the starting point of one contact person in recruitment in the nuclear industry and were introduced (via email) to 30 different employees of the industry, after which our sample expanded through a snowball effect. The people that were interested in answering our email and spending an hour to give an interview were all very enthusiastic about their work and most were very open to talk about how they perceive the stigmatization. Most candidates were very open and shared information, their vision and some even talked about ambassadorship. When looking for participants it is logical that ambassadors and open people would jump at the chance of giving an interview, since that suits their characteristics. This could mean that there is a group of less open people, more hesitant to share their thoughts, that could add valuable information to our research. The fact that we did not reach those people means this is a limitation in the results.

Another limitation is the sample size of the research, especially since our findings are about the subjective opinions and perceptions of the employees. Based on this, their opinions might not be supported by other members of their organization or industry. Nevertheless, we found that responses were open and seemingly genuine, and we felt we gave the interviewees ample room to freely formulate their thoughts and share their visions. By indicating all interviews would be processed anonymously, we feel we also created the opportunity to discuss any more sensitive or difficult topics openly, without the possibility of judgement from peers or superiors. Hence, we believe that our smaller sample size does not impact the credibility of our empirical data.

Lastly, within the findings of our research we identified that both outsiders as well as employees of the industry conducted *binary thinking*. Even though we have discussed this consequence in our discussion, there are many social theories which can be used to analyze and discuss this phenomenon even further and in more depth. However, within the size of our study it was not possible to dive deeper into that subject. Therefore, we want to acknowledge that this is multifaceted research that shows many interesting angles. However, due to the scope of our research we have decided to merely focus on the perception and communication strategies through literature, as proposed in our literature review.

6.4. Suggestions for further research

Based on our limitations we suggest that future research focusses on mentioned constructs such as *binary thinking* or *ambassadorship* to zoom in on what the implications of those results are on the nuclear industry. Future research on binary thinking could look into what makes people see the world as black and white, and how this works in relatively secluded sectors where outsiders do not see or understand how the processes work. But this is just one of many opportunities for further research that arise from our results, since one could look into any of the proposed resulting communication strategies with more depth through intensive literature research and empirical studies specified on that phenomenon.

Furthermore, when conducting our research, we made the decision to focus on the perspective of the employee in order to define the perception of stigma. Future research could focus on the media's role in portraying the nuclear industry, since the media plays a large role in creating a certain image and the image of nuclear is not very positive. This could also be done from the perspective of protest groups, who may propose a very different perception of the nuclear industry.

In our findings we propose a new addition to the SMC framework, namely *opening up.* Opening up is mentioned often and in various strategic opportunities that many of our respondents have had a positive opinion about. Future research could investigate what forms of opening up are most effective in bridging the divide of the stigmatization in the nuclear industry. Aside from this, the framework could also be used in research of stigmatization in other industries.

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8. Appendix

8.1. Appendix 1: Introduction email

Subject: Participation in Research Interview (45-60mins)

Dear Sir/Madam,

We are Mijke Haselager and Linn Heitmann, students of the Master program **Managing People, Knowledge and Change** at Lund University School of Economics and Management in Sweden. In this program we have studied topics such as knowledge sharing, organizational development and strategic human resource management.

Currently we are conducting research for our **Master Thesis.** Therefore, we would like to invite you for an **online interview (45-60min) in the coming weeks**.

For our research we are interested in better understanding what it is like to work in the *nuclear sector* and would like to gain insights into **your personal experience** as an employee in this industry. Our aim is to conduct interviews as open-mindedly as possible, therefore we will elaborate on our research topic during the interview.

The interview does not require any preparation. Your **personal information**, details of your **company** and **position** within the company will be **anonymized** and will **not be shared** with anyone outside of the interview. For the purpose of the research and analysis we will **record** the interview. However, all responses will be kept **confidential** and will be used solely for **research purposes**. After the research is completed, we will delete all interview recordings.

As you are a suitable candidate for our research, we would love to invite you for an interview in the coming weeks.

Would you be so kind as to let us know if and when you would be available for a 45- to 60- minute online interview?

We are available to answer any questions you might have.

Thank you in advance. We are very much looking forward to meeting you!

Kindest regards,

Mijke and Linn

8.2. Appendix 2: Interview guide

Table 5: Interview guide

	Topic	Example questions

Introduction	o light conversation
	o Details interview
	    o 30 minutes
	    o Anonymous
	    o Descriptive is good
	    o Recording
	o Details of research
	o Demographics
	    o Name
	    o Gender
	    o Age
	    o Job description
	    o Location
	o Self-introduction
		• How are you feeling today?
		• Thank interviewee for taking the time for the interview, the interview will last for approximately 30 minutes.
		• Introduce ourselves, our study program and what kind of research we are conducting → looking into nuclear industry and how it is for people to work in it
		• Give information about how the interview will be used:
		  1. All material including name and name of organization will be anonymized in the thesis.
		  2. Due to anonymity, you can give answers openly and share your honest perceptions → There's no right or wrong.
		  3. Additionally, we would like to record this interview to simplify our analysis after the interview. We will be the only ones to look at the interview and after the analysis the video will be deleted.
		• Ask for: Demographics: Name, Gender, Age, Job Description, Location
		• Let the interviewee introduce him/herself → Could you introduce yourself briefly?

Background information	o History in company o History in industry o History in other industries o Experience / opinion	• Since when have you been working in this company? How long have you worked here? • Have you been working in the nuclear industry before starting this job? If so, for how long? • What do you like about working in this industry? Are there any dislikes? • Can you share what work experience has led up to your current position? • What industry did you work in before joining this company? Did you work in another industry before? • How would you explain your experience in this industry?
Topic	o Drivers for working in industry	• What made you decide to work for the organization/ within this industry? • What do you think about the industry you work in?
	o Feelings o Social environment o New people o Surprising responses	• How do you feel when talking to others about the industry you work in? • How does your social environment think about the industry you work in? • Does it impact your sense of belonging or your commitment to work? • What do you say to other people about the work that you do?

		o How do they respond?
		o How does that make you feel?
		o How does that affect what you say?
		• What do you tell new people about the industry you work in?
		    o Do you see a difference between how you responded to this social interaction 10 years ago?
		• How do your friends/family think about your job in this organization/industry?
		    o How do they describe your work?
		    o What comments do they make?
		    o How does that make you feel / affect you?
		• When telling people where you work geographically, do they immediately associate it with the nuclear plant? Or: What do people say when you work in this city?

End interview	Make it complete	• Is there anything else that I did not cover with my questions but that you consider relevant on this topic? • Is there anything you would like to come back to?
Follow up questions	What? How? Why? Can you expand on this? Can you define what/how? What do you mean by …?	• Could you define what you mean by this? • Would you say your colleagues would agree with what you just told me? Do you think you are more positive or more negative?