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A New Force Awakens?

The Formation of the European Spallation Source as an
Organisational Greenfield Project and the Influences of Identity

by

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Abstract

This qualitative study examines the interrelation of corporate, organisational and social identity within the European Spallation Source, a big research facility under construction. The greenfield project is characterised by ongoing change, in which we explored the influences of identity layers on the diverse and rapidly growing workforce. As future scientific breakthroughs are uncertain, the individual impact of work efforts is highly ambiguous and depicts a significant factor for the sensemaking of organisational reality and identities. From a symbolic interactionist perspective, we examined how employees perceived legitimacy efforts of the knowledge-intensive firm. By adhering to the hermeneutic circle, we analysed our empirical material consisting of eleven semi-structured interviews, observations and document studies. Our findings show the intertwined nature of identity layers and that the weakness of one layer may lead to dysfunctional outcomes, such as collaboration issues, in the early organisational stage. Further, verbal and non-verbal strategies to gain legitimacy, indicated as rhetoric and isomorphism are influencing and shaped by the employees' perception. Additionally, we suggest that the orientation on a shared big picture could serve as an anchor for stability and alignment in uncertain environments. Our study encourages organisational researchers to engage more with non-mainstream organisations, in particular those with ambiguous purposes and objectives, like big research facilities.

Keywords: Corporate Identity, Organisational Identity, Social Identity, Legitimacy, Isomorphism, Knowledge-Intensive Firms, Big Research Facilities, Organisational Transition

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May the force be with you!

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List of Abbreviations

| | |
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| CERN | Conseil Européen pour la Recherche Nucléaire |
| ESS | European Spallation Source |
| KIF | Knowledge-intensive firm |
| MAX IV | Microtron Accelerator for X-rays |

*A long time ago,
in a galaxy
far, far away ...*

... a newly assembled crew prepared for its mission to explore the endless vastness of space. It was not just any kind of mission, but one that allegedly would change the destiny of mankind for good. The vision was that the results would not only help to overcome challenges and improve the lives of any human being, but moreover to eventually ensure its very existence. For this, the target was set to consolidate all the expertise one could find on the home planet to guarantee the success of the mission. This mission was understood to be unparalleled in the history of mankind to this point of time and promoted accordingly to leading decision-makers and society. Therefore, large support was gathered from different groups that ensured the feasibility of the ambitious project and to create a new force that would be able to discover the unexplored in unforeseen ways.

In order to start the mission, the crew needed to act determinately as time was a scarce resource. During the preparations, an increasing need was identified to expand the crew and bring in more knowledge that would be necessary to fulfil the mission. Fortunately, many new crew members could be convinced of the unique mission and got on board. Thus, the crew rapidly grew in a short period of time and nearly quintupled within a few years. Being highly focused on reaching the target of its mission, the personnel worked zealously to ensure the functionality of every required aspect.

Nevertheless, as the project progressed it also seemed to take its toll on the crew. The visionary mission appeared to create a highly uncertain environment as some members of the crew had difficulties to see the advancement of their hard-fought efforts. Some began to doubt the direction the mission was taking, some had troubles to see how and when it actually will achieve its mission and the perception amongst the crew about rising questions seemed to be dispersed. Thus, more fundamental questions arose, such as 'How much influence will my actions actually have on the mission?' 'Are we all even focusing on the same

mission?' 'Who are we anyway?'. However, the progress of the mission was understood to be essential and no time could be wasted to deal with such disturbances.

Eventually, the long-desired day finally came when the groundwork was done, and the crew was boarding the spaceship to start its mission. The ground crew set the countdown 3 ... 2 ... 1 ... GO! And there it was, all the hours of hard work seemed to pay off in this moment as the spaceship blasted-off into a state of zero gravity. After settling into its new and unfamiliar environment, the spaceship was floating calmly in the cosmos just like a boat sailing on a still sea. While meeting with the crew for the first time on the navigating bridge, Jack, an engineer who fulfilled his dreams to come on this prestigious mission, could not help but gazing out of the window to admire the beauty of space which he was longing for all his life. In the meanwhile, his fellow crew members were debating on which direction they should take in order to make the mission a success. He knew that all of them were inherently different and had the most diverse imagination about the priorities and how to achieve this undertaking. As the mission took years to take-off, he recognised that the vision appeared unclear and orientations amongst the crew were drifting apart. Whilst looking out of the window he followed the discussion and could perceive that his fellows argued that their individual approach is the one to take and there was no common alignment. He thought for himself:

"We are sailing without looking at the stars."

(Note: We do not claim to portray reality with this fictional story, but rather to provide a comprehensible, easy accessible and enthusing entry into our study. Therefore, the story contains parts of our observations and empirical material but is intentionally portrayed in an exaggerated manner.)

1. Introduction

Following the introductory story, we provide an explanation of the research background and the object of our study, the European Spallation Source. Furthermore, we elucidate the aim of our research and its significance. Eventually, an outline of the following chapters with the respective content is given.

1.1 Background

At first sight, the presented introductory story describes the beginning of a science-fiction novel. However, when taking a closer look this can also be interpreted as an exaggerated snapshot of the organisational life at the object of our study: The European Spallation Source (ESS). Whilst explaining the complex organisational conditions in an understandable manner, the empirical material inspired us to draw the comparison between ESS and a fictional spaceship. Therefore, despite fulfilling the purpose of guiding into our study, we provided the story to exemplify how exceptional the situation at ESS is and to shed light on the surprising contradictions within the organisation.

Accordingly, we identified several extraordinary characteristics at ESS that caught our attention and we perceived it as interesting to examine its implications from an organisational science perspective. One feature differentiating ESS from many other companies is its greenfield approach, which means according to the website: “a greenfield project, built from the ground up not only physically, but organisationally and philosophically” (ESS, n.d.a). This implies that ESS did not exist as a research laboratory beforehand, but rather that the organisation starts from scratch. Due to the fact that processes and structures are set up from the bottom, it allows to construct unprecedented scientific instruments that enable research to understand the composition of the world around us (Berggren & Hallonsten, 2012). As a publicly funded multilateral project, with contributions from various member states, the organisation relies on their support and needs to act upon the political requirements (Hallonsten, 2016). This dependency along with the early stage of the organisation affects its self-perception and consequently how it is presenting itself to be perceived as legitimate. As ESS has to address multiple stakeholders with diverse requirements, its appropriate portrayal depicts a challenge.

Furthermore, the extensive scope of the project is accompanied by a substantial focus on the time schedule and meeting the project deadlines. This results in a constantly changing nature of the organisation, as ESS is undergoing various phases in an unconventionally rapid way. The fast-paced progress of the project causes time to be a scarce resource within ESS, which may influence the organisation internally. Additionally, this aspect displays itself in the soaring expansion of the workforce, which grew from 100 employees in 2012 (ESS, n.d.b) to nearly 500 by the end of 2017 (ESS, n.d.c). Consequently, the required expertise spans across many different national and professional borders, which results in a heterogeneous workforce. Thus, the integration of the employees into the organisation illustrates an interesting aspect to research. Nonetheless, the most significant aspect that differs ESS from other organisations, depicts the uncertainty about the achievement of the visionary future purpose of the facility. Due to the uncertain notion about if and when scientific breakthroughs will happen (Hallonsten, 2016), the long lead time represents a challenge for employees as the results of their work efforts cannot directly be linked with outcomes. Consequently, the complex nature of ESS coupled with the unpredictable contribution to the project and its vague status of future achievements, raises a question how organisational members develop commitment towards the undertaking? Congruently with this elucidation and the situation in the introductory story, we thus question how organisational members are making sense of common reference points to navigate in reality?

Given these points, we got interested in the internal ramifications of the abovementioned characteristics. In particular, we perceived the ambiguous nature surrounding the organisation along with its salient workforce characteristics as potentially having impacts on the efforts to gain legitimacy and eventually its identity¹ construction. This provoked our interest in how the legitimacy strategies of the young and growing organisation affects its members internally. Accordingly, it appears valuable to examine how employees are making sense of the organisational reality and specifically the construction of identities. Several organisational studies have identified the significance of identity work in knowledge-intensive contexts before (Alvesson, 2004; Newell, Robertson, Scarbrough & Swan, 2009; Robertson & Swan, 2003), and perceive it as an aspect to achieve stability in an uncertain environment. However, few studies appeared to thematise the construction of identities in big research facilities in an early organisational stage. Moreover, we perceive the current phase of the organisation, which is

¹ When not specifying the identity layer, we do not refer to a specific one but rather connote an encompassing notion that includes all layers.

characterised by constant change and rapid transitions, as a valuable feature that offers the possibility of analysing identity constructions in the making.

To conclude, our study is focusing on the sensemaking of organisational reality from the employees' perspective. This is characterised by a highly knowledge-intensive workforce and a continuous transition that implies an unstable state of the organisation. As a result, our study centres around how to manage people, knowledge and change.

1.2 The European Spallation Source

Due to its ostensibly unusual characteristics from an organisational perspective, it is important to elaborate more on the features of the organisation we studied and provide background information that are relevant to our study.

As mentioned before, our study centres around the European Spallation Source, which is a neutron-based science facility currently under construction at its site in Lund, Sweden and a data management and software centre based in Copenhagen, Denmark (ESS, n.d.d). The big science facility is understood to represent the “next generation neutron source for European science” (Hallonsten, 2012, p. 11). Within the science facility, neutrons are used for making structures “and function of matter from the microscopic down to the atomic scale” (ESS, n.d.e) visible, enabling yet inconceivable research. Therefore, protons will be forwarded with the help of electromagnetic fields in a linear accelerator where they almost reach the speed of light before hitting the rotating target wheel. The collision leads to the emission of neutrons which is also known as spallation. Further, the neutrons are directed to various instruments where researchers do tests and analyses (ESS, n.d.f). It primarily serves the research area of material science by allowing more precise experiments and measurements of diverse materials that could have major impacts on scientific breakthroughs. Nevertheless, its applicability ranges over many different research fields such as life sciences, physics, biotechnology or medicine (Berggren & Hallonsten, 2012).

After scientific groups started to reason for a more powerful neutron source in the mid-1990s and subsequent years of negotiation, the decision was finally made to build a new multidisciplinary user facility as a collaborative European project in 2009. At this point, twelve European member states agreed to fund this project and decided on the location in southern Sweden (Kaiserfeld & O'Dell, 2013). Throughout our thesis we refer to this phase of extensive

negotiation before the founding as ‘negotiation phase’. Subsequently, a ‘campaigning phase’ started that aimed to explain public audiences what ESS is and to gain public and political support for the project (Liljefors, 2013). Currently, the organisation finds itself in a ‘project phase’ that includes the construction of the facility connected with the ongoing planning and constant changes that characterise organisational life. Therefore, one of our aims is to analyse how these phases and in particular the current state is influencing the organisation and the construction of identity on different layers.

ESS became a European Research Infrastructure Consortium (ERIC) in 2015, which assigned the facility the status of a joint European operation and facilitates its establishment of the research infrastructure. For this target, the organisation relies on the financial contribution from its partners for the estimated construction costs of 1.843 € billion (2013), which include around 35% in-kind contributions in material condition (ESS, n.d.d). The workforce grew rapidly to nearly 500 employees to date from almost 50 different nations, to bundle the expertise necessary for this project (ESS, n.d.c). However, as the organisation will change to a user facility that serves researchers from all around the world once ready to operate in 2023 (ESS, n.d.g), the nature of the organisation will change once again which leads to an adaption in the workforce structure. Thus, the far-reaching scope of the big science facility in terms of its financial investment, global outreach and potential scientific breakthroughs provides an interesting setting for our study that entails significant research aspects that are discussed in the next section.

1.3 Research Aims and Objectives

In this section, we outline our comprehensive research aim and objectives, which are articulated in four parts. First, we present the research gaps we could identify from the literature. Subsequently, we are narrowing the scope of the study by elaborating on its delimitations. This creates the basis for the concise presentation of the research purpose of this study, before arriving at our research questions.

Research Gaps

While familiarising with the organisational research on big research facilities, we obtained a general impression that there are only few studies being done that illuminate the organisational reality rather than technical oriented studies. Specifically, we perceived a general lack of the thematisation of identity constructions that could give enlightenment to phenomena within

organisational life. Moreover, the examination from the organisational members' perspective is hardly existent in the literature. Therefore, we perceive our study as contribution to the field of organisational science, by revealing significant empirical insights that could indicate valuable considerations for academic audiences but also science organisations with a similar setup as our case study. Hence, our contribution sheds light on existing concepts from a new perspective due to a rather untypical choice of organisational sector and circumstances that have been neglected heretofore.

Furthermore, while studying the wide variety of identity literature we detected a general need to analyse the interrelation between the concepts and how they influence each other in a specific organisational setup. This is in coherence with organisational scholars such as Albert, Ashforth and Dutton (2000) who argue that there is a need for more integration of the concepts and the evaluation of their cross-fertilisation. On the one hand, Hatch and Schultz (1997, p. 364) suggest that organisational researchers should aim to study "how organizational members interpret, enact and respond to the deliberate creation of a corporate identity", but also how they make sense of their identity isolated of conscious managerial attempts. On the other hand, Cornelissen, Haslam and Balmer (2007) advocate that rather than prioritising one layer of identity, it is essential to particularly study the synthesis of social, organisational and corporate identity layers to understand their impact on organisational life. Therefore, we are interested to study the relationship of either identity layer to another as well as in the context of a big research facility and are convinced to contribute new insights to this rather unexplored state of research. Moreover, Tomenendal and Goldkamp (2013) argue for further exploration of the conversion processes of identity constructions within young and growing organisations. This depicts another significant research gap we aim to contribute new insights to, as ESS fulfils these requirements and it is interesting to see if the early evolutionary stage has influences on the interrelation of various identity layers.

Additionally, Glynn (2008) highlights the need to combine the two concepts of identity and institutionalism, as only few scholars were exploring a connection thus far. Although, both perspectives centre around meaning, they are mistakenly treated as antithetical. Identity is perceived as polymorphic and focuses on the intra-organisational level, whereas institutionalism is characterised by its isomorphic nature and the inter-organisational level (Pedersen & Dobbin, 2006). Consequently, we are interested in how the strategy to gain legitimacy on an organisational level, which include isomorphic activities, influences the

organisation internally during the setup phase. Additionally, Suddaby (2010) argues for the necessity to focus on internal effects of neo-institutionalism in order to fully understand how organisational members make sense of these meaning systems. This includes that we are not only interested in the effects of isomorphism on structures and processes, but also on the identity constructions amongst the workforce. Therefore, we take the relation of neo-institutional theory with identity concepts into consideration to understand organisational life.

Research Delimitations

In order to delimitate our study, we focus on selected theoretical concepts to explore these in-depth. When analysing corporate identity efforts, we purposefully take over an internal focus to analyse the implications on organisational members and thus the effects on organisational and social identity theories. Hence, we are neglecting externally oriented concepts, e.g. branding, as these would not add value to our research approach. Moreover, our aim is not to evaluate whether ESS is perceived as legitimate by external audiences, but rather to investigate the consequential internal effects of corresponding strategies.

Furthermore, we examine the different identity layers on a rather holistic level to understand their mutual influences. We do not aim to analyse specific identity constructions in detail or question the concepts as such to specify our research aim. Given the extensive research in the tradition of neo-institutional theory, especially isomorphism, we are not developing these concepts, but perceive it as a useful contribution in this organisational setup phase and to identity concepts. Further, it is important to take the specific cultural implications of a knowledge-intensive firm like ESS into account as this substantially differentiates it from other organisational fields. We elaborate more on the specific implications in the theoretical background (see chapter 2.3: The knowledge-intensive context) as we use this limitation factor as an important lens that has impacts on our interpretations.

Statement of Purpose

The relevance of this study is based on its extraordinary organisational situation which provides the opportunity to extend existing theoretical assumptions about identity concepts and to examine their interrelation. The ongoing change coupled with the unstable legitimisation status of ESS and that outcomes might be several years ahead depicts the possibility to investigate how identities are constructed on several levels in an uncertain environment. Further, the unexplored cross-fertilisation of identity layers influenced by strategies to gain legitimacy

depicts an interesting study area that could indicate practicable implications for organisations in resembling phases and with similar workforce characteristics. Accordingly, this means that we explore and interpret how employees are making sense of identity constructions on various layers. Moreover, we aim to identify what implications these considerations could have on organisational life and its members in particular. Therefore, we arrive at the following research questions which provide the overarching guidance to our study.

Research Questions

How are different layers of identity influencing each other in an early organisational stage of a knowledge-intensive firm and what implications could it have on the workforce?

- a. How does the company present itself to be perceived as legitimate as part of the corporate identity construction?
- b. How does the organisational identity influence the employees?
- c. How do employees construct a social identity within the organisation?

1.4 Outline of the Thesis

This first chapter introduced the subject of our research, the organisation ESS, the purpose of our research and why the chosen topics are of relevance for academic and organisational audiences. Moreover, we presented our objectives with this research and the related research questions. The second chapter is providing a more detailed overview about theoretical backgrounds concerning different identity layers and legitimacy connected to verbal and non-verbal strategies. Furthermore, we present relevant cultural characteristics of knowledge-intensive firms as a limitation factor and show the connection between the elucidated concepts. The following chapter describes the philosophical underpinnings to our research, how we collected and analysed our qualitative data and the credibility of our methodological approach. The fourth chapter is a narrative in which we provide a rich analysis of our empirical data, including interviews, observations and document studies. This analysis of the organisational life at ESS builds the foundation for the following chapter five in which we discuss our findings and compare them to previous theoretical assumptions. Next to the confirmation for theoretical concepts, we present possible explanations for contradictions. Finally, the last chapter summarises our thesis, answers the research questions and provides potential theoretical and practical implications as well as an outlook for future research and a concluding reflection.

2 Theoretical Background

After explaining the motivation for our research, it is necessary to provide the underlying theoretical background. Therefore, we elaborate on the concept of identity with a distinction on macro- and micro-oriented levels, before leading over to legitimacy with its assumptions and definitions, followed by related strategic approaches. Eventually, we describe the knowledge-intensive context used as a specific lens in our study before summarising this chapter.

2.1 Identity

Identity construction is perceived as an essential factor for contemporary organisations which is specifically claimed valid in complex and uncertain environments, where “a sense of identity serves as a rudder for navigating difficult waters” (Albert, Ashforth & Dutton, 2000, p. 13). Due to its potentially stabilising nature, it is worthwhile to focus on identity concepts within our research at ESS. It signifies a comprehensive research domain that has led scholars to various interpretations, which resulted in a multi-disciplinary proliferation of theories, but also some degree of confusion due to overlapping or ambiguous concepts (Cornelissen, Haslam & Balmer, 2007). Hence, in this chapter we aim to shed light on the diverse scholarly conceptions by examining identity frameworks on different layers, from a macro-oriented level consisting of corporate and organisational layers to a micro-oriented level including social and individual layers.

2.1.1 Macro Level of Identity

On a macro level, one can on the one hand, distinguish between the notion of organisational identity from an organisational science perspective, which is concerned with the relation and identification of employees to their organisation. On the other hand, the concept of corporate identity that originated within marketing scholarship focuses on the management of external reputation and image (Balmer & Wilson, 1998; Cornelissen, Haslam & Balmer, 2007; Hatch & Schultz, 1997). For our study, we thus use the concepts to interpret the construction of a public image, but primarily to make sense of perceived internal characteristics about the organisation. Subsequently, we elucidate the concepts and their implications for our research.

Organisational Identity

Albert and Whetten (1985) are a salient reference point for defining organisational identity as the assertions of an organisation that are *central*, *enduring* and *distinctive* about it. Thus, to be understood as identity claims by the organisation, they argue that these factors need to be applicable. Further, the scholars suggest that the time of foundation and start-up illustrates an essential period for an organisation, as strategically important decisions concerning the purpose and direction are being made which have implications for identity construction. Subsequently, the identity origin represents an orientation point for future expectations of a firm by its audience and employees alike. While Tomenendal and Goldkamp (2013) conform with Albert and Whetten's (1985) theory about the relevance of the early phase for organisational identity, they emphasise that an adaptive capability is crucial for advancement in growing organisations. Whereas specified knowledge claims and a shared vision about future were often found to initially justify an organisational right to exist, a balancing act often emerges from changing conditions that influences organisational identity. In accordance with these perceptions, Boers and Brunninge (2010) argue that apart from the founding-identity, also the pre-identity is of significant importance which takes the historical roots such as considerations of the organisational setup before the foundation into account, when organisational key characteristics are designed and negotiated. Further they suggest that organisational members are interpreting these historical conditions with questions like "who have we been?" with future oriented identity considerations "who do we want to be?" (Boers & Brunninge, 2010, p. 7). Consequently, these ideas seem worthwhile to consider in our study as ESS not only comprises a long pre-historical period of negotiations but is also still in an early phase of construction and planning. Hence, it is interesting to examine whether such aspects influence the organisation and its members in their identity construction from a temporal perspective.

Whilst being highly influential in providing a benchmark definition of organisational identity, many organisational researchers predominantly contradict Albert and Whetten's (1985) temporal stability of *enduring* identity characteristics (e.g. Bouchikhi & Kimberley, 2003; Dutton & Dukerich, 1991; Gioia, Schultz & Corley, 2000). They contend that organisational identities are fluid and adaptable over time rather than steady and cast in stone. Moreover, Bouchikhi and Kimberley (2003) see a general need for identities to remain versatile to changes in the organisational environment, as rigid identities can illustrate a major limitation in the ability to transform. Additionally, Dutton and Dukerich (1991) suggest that the image of an organisation, which they elucidate as the way organisational members think that outsiders are

perceiving and assessing their organisation, plays a crucial role in making sense of the organisation's identity. This is a central definition, as it differs from the actual reputation of an organisation, held by external audiences. They argue that the cognitive activity to reciprocally align identity and image, triggers the adjustment of thought processes and could influence behavioural patterns. Many scholars agree with this standpoint and claim that due to rapidly changing external conditions and perceptions, this process represents a necessity to remain flexible in order to support a continuous identity construction without destabilising it (e.g. Gioia, Schultz & Corley, 2000; Hatch & Schultz, 1997; Tomenendal & Goldkamp, 2013). Moreover, Scott and Lane (2000) use a stakeholder approach to propose that the nature of organisational identity is continuously negotiated between employees, managers and public audiences. They perceive organisational identities as emerging from and being enabled by complex and interactive processes. This indicates, that identity construction is not an isolated process, but that organisations and their members are dependent on feedback and responses from their environment, which eventually guides their self-perception.

Corporate Identity

The awareness of the interrelated connection between identity and image construction contains significant implications for the management of identity. Dutton, Dukerich and Harquail (1994) assign the construed organisational image by its members an essential role for how they define themselves and identify with their organisation. They introduce a model which suggests that employees constantly compare the construed image of the organisation with the actual shared conception of the organisational identity. If these perceptions are seen as attractive and there is a high degree of overlap between those convictions, they suggest that members feel more attached to the organisation which influences motivational as well as behavioural patterns. Accordingly, Alvesson (1990) argues that particularly in ambiguous environments there is scope for managerial attempts to influence these images. He explains that these efforts are of defensive character that aim to compensate for the often-absent purpose or meaning in organisational life and should ensure a socially integrated workforce. Nevertheless, he also acknowledges the positive impact such active influence by management could have, by creating and making sense of organisational members' reality. Thus, he links such efforts to the *social engineering* of a corporate identity through public communication which in turn also targets the employees and their interpretations. This implies that the construction of a corporate identity could serve as stabilising factor for organisational members in ambiguous environments.

Van Riel and Balmer (1997), elucidate corporate identity as an integrated concept that encompasses aspects of coherent symbolic illustration of an organisation, cohesive corporate communication, as well as targeting the behaviour of its members. Balmer and Wilson (1998) outline the prevailing Strathclyde Statement which was composed by a consortium of academics and consultants, referred to as International Corporate Identity Group. It emphasises the multidisciplinary nature of corporate identity and the strong ties of marketing and organisational behaviour, by stating that if it is effectively managed “an organization can build an understanding and commitment among its diverse stakeholders” (Balmer & Wilson, 1998, p. 16). Hence, it describes the active construction of a favourable image and reputation that is not only communicated to external audiences but also organisational members. Christensen (1997) supports this claim by arguing that organisations also interact with their environment in order to communicate with themselves. This concept of *auto-communication* helps to foster the company’s values and images, thus their own identity. Especially in our study, where a long-term orientation plays a crucial role, managers may try to tell themselves and their employees who they are and how their organisation should look like. Eventually, Christensen highlights that *auto-communication* does not only tell the organisation itself how it should look like, but also to comply with the expectations and norms of the environment (see also chapter 2.2.2: *rationalised myths*). This suggests that an organisation is striving for legitimacy by communicating a desirable identity to both, external and internal audiences.

2.1.2 Micro Level of Identity

Despite the wide variety of conceptions on the macro level, there is a basic assumption of identity, being a phenomenon, which is highly dependent on the sense and meaning making of organisational members (Christensen, 1997; Hatch & Schultz, 1997). Thus, it is important to not only take the organisational level with managerial or external influences into account, but also social structures and cultural circumstances within an organisation to understand socially constructed identities.

Due to the presented overarching theories on the organisational level, Hatch and Schultz (1997) along with Albert, Ashforth and Dutton (2000) argue that there is a need to bridge the concepts in order to study the intertwined nature and mutual implications between different identity concepts. Cornelissen, Haslam and Balmer (2007) consent with this perspective and provide a useful framework that adds Tajfel’s (1974) psychological concept of social identity theory to organisational and corporate identity. With this, they suggest that the academic literature of

those concepts should essentially be integrated to study the cross-fertilisation of the theories, rather than prioritising either the social, organisational or corporate level. Contrary to corporate identity, which is primarily external and symbolically oriented, social identity derives from internal and cognitive parameters of individuals (Cornelissen, Haslam & Balmer, 2007). Tajfel (1974) suggests that individuals are shaping their identity convictions in relation to and from the contributions of a specific group, which is therefore linked to internalised perceptions of organisational identity.

Further, Tajfel and Turner (1985) reason that individuals are trying to acquire or sustain a positive sense of self-worth by striving for distinguishing features of the group they feel connected to and in comparison to others. This means that if organisational members are defining their identity in relation to a group rather than solely on a personal level, they aspire to highlight the positive distinctions in order to feel confident about what they do and who they are as a group. Hence, social identity can be understood to shape the values and norms of a group and is thus the fundament for a series of critical behavioural forms that include communication, leadership or motivational patterns. Subsequently, Ashforth and Mael (1989) further elaborate on the effects of social identity by suggesting that it supports the identification with organisations that embody the perceived distinctive identity characteristics and lead to activities within a group that are compatible with this identity. They argue that on the one hand, it fosters commitment and integration of specific beliefs and value systems, but on the other hand, as organisational actors inhabit several identities that can be subject to competition, it indicates a hazard of internal conflict. This may further escalate to a risk of *intergroup conflict* between organisational subunits, due to mutual comparison. Consequently, according to Dutton, Dukerich and Harquail (1994), the more prominent the social identity of an organisation is, the greater the identification of its members will be.

While Alvesson (2004, p. 88) acknowledges the perspective that individuals “form identities through social groups”, he emphasises the uncertainty associated with identity construction. Thus, he explains that *identity work* on the individual as well as on the social level is often volatile and contextual, which leads to multiple identity processes. Finally, Hogg and Terry (2000) provide a valuable extension to social identity theory by outlining the *self-categorisation* theory. This describes the notion of organisational members to categorise within a specific group and enacting its identity as a prototype. As this process is often accompanied by a depersonalisation of the self, it is understood to be motivated by a need to reduce subjective

uncertainty and to find meaning within a group or organisation. For our study this indicates a special focus on how individuals are making sense of their identity related to specific groups and the organisation as a whole, as ESS is characterised by a highly diverse workforce and an uncertain environment.

2.1.3 Summary

Following, we are illustrating the elaborated concepts in order to facilitate a better understanding of the literature and how we are using them in our study. Figure 1 visualises the externally oriented nature of corporate identity, which should ideally also serve as an encompassing and uniting function internally. Organisational identity refers to a more internal perception of how organisational members are identifying with their employer and thus refers to shared meanings about how things are done internally. Contrary to these macro-oriented levels, social identity derives from the notion of forming an identity in relation to a specific work group or department. For simplification reasons, we incorporate individual identity constructions in this micro level segment. In our study, we aim to find out in what ways these levels could influence each other in the early stage of the organisation. However, based on the elucidated theory, the scale of the identity levels is not representative for any specific strength of either dimension. Moreover, we do not aim to contribute to knowledge creation with this visualisation, but rather perceive it as a meaningful support for better comprehension.



Figure 1: The layers of identity

2.2 Legitimacy

While organisational identity creates the basis for the external appearance of an organisation (Lamertz, Heugens & Calmet, 2005), it has also an influence on the process of gaining legitimacy. Especially for newly founded organisations legitimacy is a critical issue, as they “are guilty until proven innocent” (Berkery, 2007, p. 1). This describes that stakeholders evaluate new organisations against others which underlines the need to be perceived as legitimate. As ESS finds itself in an early organisational stage it is interesting to see which strategies are pursued in order to be perceived as legitimate and if this has internal consequences. Subsequently, a definition of legitimacy will be given, its importance and consequences highlighted as well as strategic approaches outlined. This chapter extends the explained concepts of the macro-oriented level of identity.

2.2.1 Legitimacy – Definition and Assumptions

Deephouse, Bundy, Tost and Suchman (2017) acknowledge that there are various partially overlapping definitions of legitimacy, but in the last two decades most scholars adopted the following:

Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions ... thus, legitimacy is possessed objectively, yet created subjectively (Suchman, 1995, p. 574).

On the one hand, this definition implies that legitimacy is a perception on the other hand, it is depending on subjective judgement. It suggests a degree of dependency on public perception while the members of the organisation are the main architects in this process. Therefore, its social construction mirrors the shared beliefs of an organisation which can be connected to the notion of organisational identity. In a similar manner Fisher, Kotha and Lahiri (2016) conclude that corporate identity claims help to provide understanding of the new business to external stakeholders. Suchman (1995) states that organisations aim to be legitimate for various reasons. On the one hand, legitimacy helps to better comprehend organisational activities, which is especially important when studying an organisation that is difficult to grasp for the majority of people, such as ESS. On the other hand, how people understand and act towards organisations, are affected by legitimacy. Therefore, Suchman concludes that legitimate organisations are perceived as more meaningful, predictable and trustworthy. This is an aspect worth to consider,

as ESS is funded by countries' tax contributions and dependent on their financial engagement in the long run (Hallonsten, 2016). Given these points, the management of organisational legitimacy depends to a great extent on the communication of a coherent corporate identity which includes meaningful verbal and nonverbal activities between the organisation and its audiences (Suchman, 1995).

Legitimacy is not only important for newly founded enterprises but requires continuous work and has an impact on various organisational activities, such as its survival and independent strategic choices (Deephouse et al., 2017). For instance, the stakeholders have an impact on the organisational financial performance, as they only engage with legitimate organisations (see also Fisher, Kotha & Lahiri, 2016; Ruef & Scott, 1998). According to Deephouse et al. (2017), a legitimate organisation faces fewer restrictions, as the public does not question their activities. Furthermore, the scholars argue that legitimacy is conferred by external and internal stakeholders, such as the state, media and individuals, who assess the organisation, evaluate it and compare its appropriateness within a broader context. Although their knowledge and influence may vary, Ruef and Scott (1998) show that all stakeholders evaluate the organisation. This could imply a difficulty for ESS to address the different stakeholders in an appropriate way, which takes diverse levels of comprehension into account. Another finding by Fisher, Kotha and Lahiri (2016) suggests that legitimacy is something that requires continuous adaptation and cannot be taken as constant or given once obtained. This assumption is coherent with the continuous adaptation of identity constructions (see chapter 2.1.1: Macro level of identity) and indicates the relation of the concepts. The lack of legitimacy is particularly prevalent among newly founded enterprises, as both, the founder(s) and the external environment, might not only struggle to fully understand the enterprise's nature, but also question their conformity within the organisational field (Aldrich & Fiol, 1994; Fisher, Kotha & Lahiri, 2016). Consequently, it is worth to study how ESS as a greenfield project characterised by its complex nature is coping with these issues internally.

Pedersen and Dobbin (2006) analyse the perceived paradoxical nature between identity and legitimacy. On the one hand, organisations try to differ from each other in order to shape unique identities. On the other hand, organisations actively try to implement others' policies and practices, thus behaving isomorphic, for gaining legitimacy. The scholars highlight that these two processes, uniqueness versus uniformity, do not exclude each other, but are rather two sides of the same coin. Although theorists claim that cultures, as products of identities, are

characterised by their unique nature (Albert & Whetten, 1985; Albert, Ashforth & Dutton, 2000), researchers show through empirical studies that cultures possess common features (Glynn & Abzug, 2002). The mentioned phenomenon is also described as the “Uniqueness Paradox” by Martin, Feldman, Hatch and Sitkin (1983); essentially it means, while organisations claim to be unique, they are unique in a similar way. Pedersen and Dobbin (2006) conclude that firstly, companies must show that they belong to an organisational field (e.g. ‘because we belong to the group, we are accepted’) and secondly, that the company is a unique member (e.g. ‘we are a special, distinct group member’). This illustrates the necessity to consider legitimacy, when studying identity constructions at ESS.

2.2.2 Legitimacy – Strategies

Verbal Strategies: Rhetoric

Due to their often-ambiguous nature, knowledge-intensive organisations engage in rhetorical strategies to communicate a desired perception to the external environment (Alvesson, 2004). Consequently, various rhetorical approaches of organisations are outlined in order to achieve legitimacy.

The strategy of rhetoric refers to Berger and Luckmann’s (1966, p. 82) statement that legitimacy is “built upon language and uses language as its principal instrumentality”. Particularly new businesses can make use of rhetorical strategies in order to provide comprehensibility, as the basis for legitimacy, or communicate the link between the organisation and existing institutional logics (Suddaby & Greenwood, 2005). As previously mentioned, one example how organisations make use of language is also discussed by Martin et al. (1983) and can be transferred to the attempt of gaining legitimacy. On the one hand, organisations highlight their distinctiveness from others, thus claiming that they possess a unique culture. On the other hand, the businesses base their cultures on manifestations, such as common values that are in fact not unique. This contradiction is known as the “Uniqueness Paradox”.

Hobsbawm and Ranger (1983) discuss another possible rhetorical strategy, called the “Invention of Tradition”, which can ease the legitimation process for organisations. The concept describes a ritualised process in which the past and its traditions is referenced as they imply specific values or norms which shall be brought up. According to the scholars, in an ambiguous and changing world the invention of traditions seems to be a stable anchor, which gives guidance in some parts of our lives. Although, the organisational project might be disconnected

from a certain historical context, the organisation connects it to a tradition in order to facilitate societal support (Hobsbawm & Ranger, 1983). Therefore, these concepts are taken into consideration when analysing how ESS is rhetorically presenting itself.

Non-Verbal Strategies: Neo-Institutional Theory and Isomorphism

As most studies concerning legitimacy draw upon the origins of isomorphism and neo-institutional theory, this section will shed light on the organisation's structure and processes. This factor is of peculiar interest when studying a greenfield project like ESS as the setup may influence organisational life and internal perceptions.

Meyer and Rowan (1977) as well as DiMaggio and Powell (1983) are amongst the most influential scholars founding neo-institutional theory. Neo-institutional theory has its roots in the institutional theory, which seeks to clarify why organisations become similar (isomorphic) and implement organisational activities in a certain sector (Greenwood & Hinings, 1996). The institutional theory can be divided into old and new institutionalism (neo-institutionalism). Whereas the first concept emphasises issues such as influence, and contrasting values connected to power and informal structures, the latter focuses on legitimacy and embeddedness of organisational sectors coupled with the significance of categorisation, routines and schema (Greenwood & Hinings, 1996).

Legitimacy cannot only be achieved by directly communicating a desirable image, but also through implementing similar policies as other organisations (Meyer & Rowan, 1977). The scholars argue that organisational structures emerge in highly institutionalised contexts, leading next to the rational production of goods and services to the creation of professions, policies and programs. Therefore, all organisations with complex networks and relations are required to adapt to new practices and procedures determined by rational concepts of work and institutionalised in society. Notwithstanding, Meyer and Rowan (1977) suggest that the effectiveness of such processes is not relevant, the organisation's legitimacy will still be increased. They conclude that organisations implement these institutionalised services, methods and guidelines ceremonially because they are powerful or *rationalised myths*.

DiMaggio and Powell (1983) show that organisations prove their legitimacy by becoming increasingly homogenous and are thus developing group solidarity. They divide the institutional isomorphic concept into three parts: a) *coercive* isomorphism: Political influence and the issue

of legitimacy, b) *mimetic* isomorphism: Standard responses to uncertainty, c) *normative* isomorphism: Connected to professionalisation. Due to the fact that rational organisations become more dominant, their structures increasingly mirror rules, established and legitimated by and within their field (see Meyer & Rowan, 1977: *rationalised myths*). Consequently, as formal and informal pressures, the ambiguous status and the struggle to implement professionalised structures seem to be particularly prevalent at ESS in its current state, those factors could have a significant impact on how identity is constructed.

However, there are scholars (e.g. Lieberman & Asaba, 2006; Mizruchi & Fein, 1999; Suddaby, 2010) who question the overall positive notion concerning isomorphism. Lieberman and Asaba (2006) highlight that especially in uncertain environments, isomorphism can have drawbacks as it might lead to dysfunctional outcomes. Herd behaviour can lead to a mindless adaption of others' practices and may lead to negative consequences. Mizruchi and Fein (1999) criticise the selective use of DiMaggio and Powell's (1983) study by other scholars as most mainly focused on *mimetic* isomorphism while neglecting *coercive* and *normative* forms. Moreover, DiMaggio and Powell's (1983) distinction between competitive and institutional isomorphism is mainly left out. Whereas the first arises due to market competition, the latter evolves because of political and institutional legitimacy ambitions. However, as we are aiming to analyse which efforts the organisation takes, the focus of our study will lie on institutional isomorphism.

Ultimately, Suddaby (2010) criticises that the concept of isomorphism has not been developed over the years. Until then, researchers mainly aim to study the external organisational outcomes of institutionalism. The scholar argues that an internal view should be adopted in order to fully understand how organisations work and consequently which implications this has for the organisation. Moreover, Suddaby (2010) questions the extensive use of the isomorphic concept as it is used as the only possible answer to any phenomenon within an organisation. Nevertheless, as ESS is a greenfield project, we perceive the concepts as a valuable extension to explain the internal effects and how the organisation perceives itself.

2.2.3 Summary

Legitimacy is characterised by a continuously changing nature and is conferred by various stakeholders. Being perceived as legitimate, offers benefits such as financial survival and fewer restrictions. Verbal strategies, such as rhetoric and non-verbal strategies, e.g. isomorphism are two techniques used by organisations to show that they belong to the organisational field but

are still distinctive. As we aim to understand how ESS is trying to gain legitimacy, these efforts are understood to reciprocally influence the portrayal of the organisation and thus also the construction of a corporate identity. Consequently, rhetorical and isomorphic elements provide us with cues about how legitimacy could be achieved and how it influences the organisation internally.

2.3 The Knowledge-Intensive Context

Due to the aforementioned idiosyncrasies of ESS as an organisation, special attention needs to be paid to its characteristics as a knowledge-intensive firm (KIF) which we perceive as cultural implications that bear inferences to identity constructions. In the following section we therefore elaborate on the concept of culture as well as selected attributes of KIFs and elucidate how we consider these when studying identity.

Organisational culture defined by Schein (2010) as a multi-layered system, can reveal important implications to the related concept of identity. He explains it as a complex system of shared visible and invisible actions, belief systems and underlying assumptions that shape organisational life. Whilst Alvesson and Sveningsson (2016) consent with Schein about the unifying notion of culture in large sections of an organisation, they remain a sceptical stance by emphasising the aspect of segmentation in diverse cultural entities. Especially due to different societal backgrounds or different professional units, they contend that often numerous cultures are co-existing in many organisations which was later acknowledged by Schein (2017). This can directly be linked to multiple existing identities as previously mentioned. Additionally, Hatch and Schultz (1997) propose that there is an inherent link between the culture of an organisation and the development of its identities. They argue, that the concept of organisational culture plays an integral part of providing a “symbolic context within which interpretations of organizational identity are formed and intentions to influence organizational image are formulated” (Hatch & Schultz, 1997, p. 360). This indicates an interdependency between various levels of identity construction that is interpreted within a given cultural context. Therefore, we perceive cultural implications and patterns as indications for identity construction and use this concept as a limitation factor to make sense of social constructions in the knowledge-intensive context at ESS.

KIFs are generally understood to be organisations whose workforce primarily consists of knowledge workers (Alvesson, 1993; Deetz, 1994; Newell et al., 2009). These are on the one

hand, denoted as having acquired extensive education and are thus specialised within a certain expertise that allows them to create or apply new knowledge (Deetz, 1994; Newell et al., 2009). On the other hand, Alvesson (1993) emphasises that their work is often characterised by a high degree of ambiguity, which acknowledges an increased scope of complexity and creates space for knowledge workers to cope with it. Hence, he argues that KIFs are trying to overcome this uncertain nature, encompassed in organisational life and practices, by applying what Meyer and Rowan (1977) framed *institutionalised* or *rationalised myths*. These *myths* can be perceived as the mere implementation of practices to gain legitimacy, whilst potentially decoupling it from efficient or productive organisational functions. Thus, the adoption of such *myths* is aimed at bringing confidence and stability into uncertain environments and therefore affects identity constructions of knowledge workers. Cunningham and Williams (1993) illustrate another interesting aspect related to a wider spectrum of science and thus touching upon the uncertain nature of science organisations as KIFs. In order to create meaning and identity, they argue that specialised research is classifying itself by referring to a big picture as part of science history. They are convinced that this big picture is both essential and worthwhile and needs to be adequate to the cultural circumstances to be credible for external and internal audiences. This indicates an interesting aspect to consider in our study, as the construction of big pictures seems to be highly influential in KIFs and could serve to legitimise a positive impression that has impacts on organisational identity structures.

Furthermore, the interrelation of a perceived image and identity conceptions in accordance with rhetorical strategies plays a substantial role in KIFs that needs to be considered (Alvesson, 2001). Given the ambiguities concerning the nature of knowledge work, Alvesson (1993, p. 1008) suggests that knowledge itself “has considerable prestige and symbolic value” and is therefore used as identity as well as an image enhancing instrument. This rhetorical strategy is triggered by the notion of uncertainty surrounding KIFs. Consequently, Alvesson (2001, p. 878) advocates that corporate identity efforts are substantial in KIFs “as a bastion against perceptions of ambiguity and as a resource for employees”. However, due to the high personal attachment to knowledge as a salient identity characteristic, knowledge workers are often more sensitive to absent confirmation, compared to organisational members who are not perceived as knowledge-intensive (Alvesson, 2004). This lack of confirmation is particularly noticeable when work tasks are of an ad-hoc nature or performance parameters are difficult to define, which are distinctive attributes of KIFs (Alvesson, 2001). Due to the lack of confirmation, this can on the one hand, be perceived as an attempt to reinforce and stabilise the own status as a knowledge worker. On

the other hand, it may rather serve as a defensive and protective identity function in a highly uncertain environment. This means that knowledge workers perceive their knowledge as a superior factor that distinguishes them from other organisational members. Therefore, it can be questioned to what extent knowledge workers are adopting managerial attempts to construct a social identity or how these are influencing them, especially within a highly diverse workforce such as ESS.

Another aspect that is important to consider in our study, is the extended scope of autonomy of knowledge workers which has significant implications for identity constructions. Organisational researchers agree that due to the extensive education and specialised knowledge, knowledge workers possess greater scope of self-determination in contrast to less educated staff towards their employer (Alvesson, 2004; Newell et al., 2009; Robertson & Swan, 2003). In the absence of hierarchical or practical influence, the activation of an identity which is positively attached to the organisation is understood to be an important instrument to acquire commitment amongst knowledge workers. However, this is a difficult endeavour as knowledge workers can be also prone to multiple, sometimes conflicting identities, most significantly by identifying more with their profession than their workplace (Alvesson, 2000; Deetz, 1994; see also chapter 2.1.2: Micro level of identity). Moreover, we question the assumption that identities can be easily activated or deactivated. Further, Robertson and Swan (2003) suggest that particularly in knowledge-intensive organisations, the majority of staff may be highly individualistic and have strong personal, as well as professional value systems and is therefore less dependent on their employer. Thus, they argue that ambiguity may be the “natural state of affairs”, which could result in an enhanced level of susceptibility in KIFs (Robertson & Swan, 2003, p. 838). This can therefore have direct influences on KIFs, as knowledge workers may restrict to integrate themselves into the organisation’s direction.

Nevertheless, Alvesson (1993) argues that knowledge itself can also create a basis for social identity by constituting a shared system of meaning and enhanced self-confidence within a group. Thus, the way how organisational members are thinking and acting towards an organisation is dependent on social processes that determine the affiliation to specific groups. Whilst the identification to a whole organisation, referred to as *holographic* organisation (Albert & Whetten, 1985) is often rather abstract and unrealistic, Alvesson (2000) argues that social identities which are formed within organisational subunits or *ideographic* organisations appear more appropriate to create commitment amongst knowledge workers. Consequently,

this comprehension represents both, obstacle and opportunity, to achieve commitment and alignment in KIFs such as ESS.

Accordingly, the cultural context based on the elucidated idiosyncrasies of KIFs and knowledge workers in particular, imposes specific restrictions to identity constructions that need to be considered in our study. Therefore, we analyse our empirical material through the lens of these characteristics. Consequently, we perceive this as narrowing our research focus but also providing a cultural context that cannot be neglected.

2.4 Summary

To conclude the theoretical background of our study, we provide a comprehensive figure that combines the elucidated concepts and exemplifies how we approach reality within ESS. The social identity layer represents individual and cognitive constructions based on group affiliation. Thus, they can be understood as a part of organisational identity, which encompasses a broader identification with the organisation. Ideally, this creates the foundation for an externally oriented corporate identity portrayal. In our case, the pursuit of legitimacy, which comprises verbal and non-verbal strategies in forms of rhetorical and isomorphic concepts, is taken into consideration when analysing the corporate identity. Furthermore, the cultural frame of specific characteristics concerning KIFs and knowledge workers is of substantial importance and directs our research into a concrete organisational field.

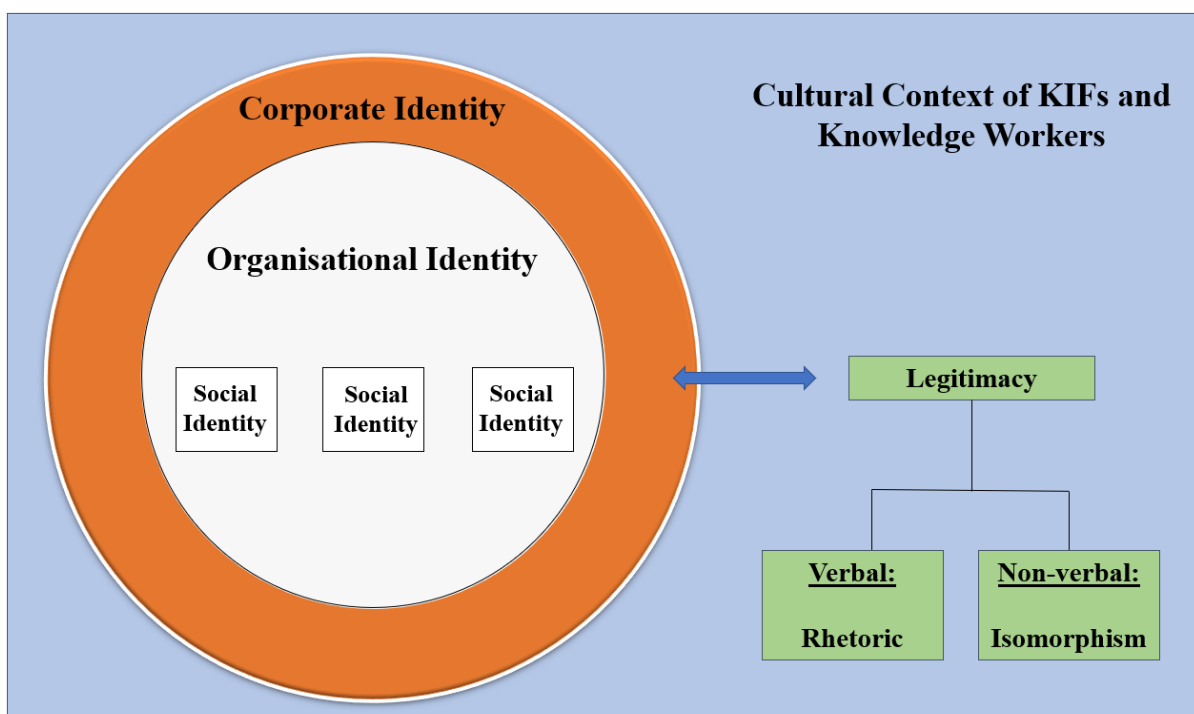


Figure 2: The theoretical background model

3 Methodology

The following section serves the purpose of providing a thorough overview about the methodological approach of our thesis. Initially we present our research approach, which includes fundamental philosophical groundings. Subsequently, we explain how the data was collected and analysed, before elaborating on the credibility of this study and summarising the chapter.

3.1 Research Approach

Our study is based on previously acquired knowledge about identity and legitimacy related theory. We further got familiar with the organisation itself in order to better comprehend how the specific setting influences organisational life and its members. Thus, our approach is grounded on a qualitative and abductive approach which is based on assumptions that influence our understanding (Swedberg, 2014). Qualitative methods focus on “open, equivocal empirical material” (Alvesson & Sköldberg, 2018, p. 8), where the interpretation of the researcher plays a crucial role (Denzin & Lincoln, 2005). Nevertheless, as Styhre (2013, p. 64) argues, it is important “to be aware of one’s preferences” in order to remain a critical stance towards our data. Therefore, it stands in contrast to positivist or quantitative methods that aim to produce objective and measurable facts detached from the researchers own assumptions, rather than acknowledging the construction of a subjective reality (Prasad, 2018). Further, the abductive researcher uses one case, in which the theoretical background is adjusted to the continuously refined empirical data. Abduction uses elements of induction and deduction, adding characteristics like understanding and aiming to detect overarching patterns (Alvesson & Sköldberg, 2018). Hence, particularly when attempting to analyse identity constructions, further philosophical grounding that is essential to our research needs to be presented.

Since our study involves the exploration of how organisational members are making sense of reality, we approach it within the interpretative research traditions to unveil underlying assumptions. Thus, the adoption of a symbolic interactionist approach, including the use of interviews and observations, seems fruitful due to the notion of socially constructed and negotiated orders, which is necessary when aiming to uncover identity implications (Prasad, 2018). Berger and Luckmann’s concept of “The Social Construction of Reality” (1966) implies that there is no ‘neutral’ knowledge because knowledge and reality are socially constructed.

Furthermore, they argue that identity is also influenced by social processes and legitimacy helps to make sense through telling ‘how’ to perform and ‘why’ things are in a certain way. These thoughts are crucial in our case because it implies that one’s identity can be affected by others and that assigned legitimacy justifies organisational activities. However, Alvesson and Sköldböck (2018) criticise that Berger and Luckmann fail to define or explain what they mean with their central concept of ‘construction’. Nevertheless, we perceive ‘construction’ in the sense of identity as the overarching cognitive pattern that guides mindset and behaviour of organisational actors due to who they are and whom they belong to.

Following Weick (1995), we thus aim to uncover identity characteristics by drawing conclusions from retrospective sensemaking attempts of different actors. However, despite attempting to unmask cognitive and motivational patterns concerning identity constructions within the organisation, we are aware of wider underlying socio-cultural assumptions that could influence these processes outside of the organisational context (Hacking, 1999). Nevertheless, we consent with Albert, Ashforth and Dutton (2000, p. 3) who argue that identity theories provide “powerful lenses for explaining change, action and inaction by individuals and collectives”. To make sense of the phenomena, it is crucial to move back and forth between empirical material and its wider cultural context; consequently, the hermeneutic circle appears like an appropriate perspective (Prasad, 2018). Essential to hermeneutics is that “the meaning of a part can only be understood if it is related to the whole” (Alvesson & Sköldböck, 2018, p. 116). This indicates in our case on the one hand, that when we intend to understand how the organisation achieves legitimacy through corporate identity efforts, we need to relate it to the organisational and social identity constructions amongst the workforce. On the other hand, when aiming to study how organisational members are constructing an identity, we need to consider how they are orienting themselves on the whole organisation and the influence of a comprehensive corporate identity.

3.2 Data Collection Method

Case Study

ESS first caught our attention when we attended a guest lecture with one of their delegates within our master’s programme. It became obvious that due to its complex nature and the ongoing transition and development phase, there is a certain ambiguity surrounding the organisation which affects efforts to gain legitimacy and eventually its self-conception. Additionally, the specific organisational setting which comprises a rapidly growing workforce

from various professional, educational and cultural backgrounds intensified our curiosity. This provoked our interest in how they are perceiving and presenting themselves, how organisational members are making sense of their identity and how this is affecting the organisation and the workforce internally. We argue that the salient characteristics of the organisation along with its current phase of ongoing change and development may provide new insights to fields such as corporate, organisational and social identity, by taking conceptions of legitimacy, neo-institutionalism and characteristics of KIFs into account. Therefore, it is our aim to contribute generally practicable interpretations for organisations in resembling phases and workforce characteristics.

Data Collection

In order to get a better understanding of our findings we follow the triangulating approach, which helps us to compare sources from different qualitative techniques to study the same research object (Denzin, 1970). By conducting interviews, doing observations, and analysing documents, we are able to reduce bias and establish credibility (Bowen, 2009). Thus, our study is shaped by a multi-method qualitative process, with the aim of comparing and complementing our findings from different sources to each other. As most of our data stems from semi-structured interviews, which each lasted roughly an hour, they can be seen as our primary source. Documents were used to provide a background as to how the organisation presents itself and observations to provide contextual and underlining perspectives. Both are therefore seen as secondary sources (Saunders, Lewis & Thornhill, 2007).

As we approached our study from the symbolic interactionist perspective, rich interview material was of fundamental importance in order to interpret the world from the perception of organisational members (Kvale, 1996; Prasad, 2018). In order to capture the diversity of different standpoints we were thus conducting eleven interviews, ranging over all organisational units, hierarchies, cultural and professional backgrounds. This was of specific importance as the way interviewees make sense of the organisational reality is influenced by how they see themselves in different circumstances and social situations, which holds significant implications for identity constructions (Prasad, 2018).

Nonetheless, we are aware that interviews can be manipulated in various ways, for instance through language. Alvesson and Sköldböck (2018) point out that what one says and what one thinks can diverge. Language is not only context-dependent, but it is also doubtful if individuals

have the ability to truly express how they feel. Apart from questioning the interviewee's ability, Alvesson (2003) adds that the interviewee should not necessarily be seen as a moral truth teller. He outlines that the interviewee might use the interview as a promotional activity in order to leave a good impression. Furthermore, the scholar highlights the complex relational character of the interview which might be influenced by one's gender, age or the professional background. This insight is of particular importance within our study, as various questions circulated around the self-perception and identity construction, which could trigger underlying motivations to elaborate on exaggerated or insincere answers. However, as emphasised before, the socially constructed reality of participants leaves us with the scope to identify such attempts and classify them accordingly to our research objectives.

Furthermore, we experienced obstacles that were also observed by Dutton and Dukerich (2006) such as getting access to interviewees. Our interview participants were initially selected by our contact person from the organisation according to our aforementioned requirements. On the one hand, this ensured that we could speak with employees who were accessible for organisational research. On the other hand, this bore the danger that the organisation's representative may have selected favoured employees who were illustrating an exaggerated positive view. However, we managed to gain access to different interviewees by using a "purposive or snowball sampling" (Saunders, Lewis & Thornhill, 2007, p. 169). This means we approached other organisational members through interview participants and were less dependent on the selection of one contact person. Therefore, we are convinced that our findings refuted this concern in the process.

In contrast to interviews, documents are neither obtrusive nor reactive, which means that they cannot be directly influenced by us (Bowen, 2009). The documents we analysed contain previous journal articles, homepage content as well as campaigning videos. These reflect how the organisation presents itself and are therefore understood to give hints and information about the previous and ongoing presentation of their corporate identity. Bowen (2009) stresses the importance of evaluating the document material objectively and sensitively, which means selecting it fairly, but also being attentive to underlying indications that could expose relevant findings. Therefore, it was necessary to take issues such as the original purpose of the documents into account and be aware that the material only covers some biased aspects of our topic. Consequently, this method served as a supportive background perspective that grounds our research into a context and was provoking interview questions. During the interviews we were using selected findings to analyse how the participants were making sense of it and how

it was affecting them. Hence, the document studies depict a valuable and augmenting perspective that helped us to synthesise salient themes and content.

Participative observations are another viable method within the symbolic interactionist tradition, in order to come closer to a comprehension of sensemaking process of organisational members (Prasad, 2018). Contrary to the usual proximity to a cultural ethnographic approach that includes long periods of close observations of employees, the limited time frame of our research project prohibited such considerations. Hence, we used observations at the organisation's facility and construction site only to complement our findings and search for confirmation or inconsistencies. This served as a control mechanism for potential biases or missing data and provided us with supplementary contextual aspects when analysing our data as described in the next section.

3.3 Data Analysis

Intentions

As previously mentioned, we consider the hermeneutic circle within our research which has also implications when analysing our data. On the one hand, we use it as a perspective in order to shed light on the ambiguity surrounding ESS in different ways (Prasad, 2018). This implies understanding how a research facility like ESS works and organises itself especially in the setup phase. Another aspect is how employees see themselves as part of the organisation, their department and team. Furthermore, we want to uncover the different layers of identity and their implications on organisational life. On the other hand, hermeneutic approaches do not only aim to follow each topic in depth and understand the different layers, but also to set everything into its context (Prasad, 2018). Therefore, we analyse for instance how strategies to gain legitimacy might influence layers of identities and vice versa. Consequently, in our case it seems appropriate to follow hermeneutics because it acknowledges the complex and potentially intertwined nature of the presented theories that influence our interpretation (Prasad, 2018).

In order to uncover how different parts are connected with each other, the recognition of subjective realities and sensemaking helps us in our research. As we do not aim to uncover 'one' objective truth, we follow up on salient patterns, but also contradictory meanings and connect it back to the context. As a consequence, we need to find a balance that takes into account how differently organisational members perceive situations or actions. Accordingly, we present various voices to show that reality is subjective. We were able to gather rich data by

intentionally interviewing employees with diverse backgrounds in the sense of nationality, gender, age, profession and hierarchy.

Process

To make sure that we analyse our gathered data in a comprehensible manner, we followed certain steps which are described hereafter. First of all, we recorded every interview and transcribed it afterwards, to ensure that we do not manipulate the data and follow the actual wording of the interviewees. Secondly, our aim was to detect patterns between the interviews and thus we followed Ryan and Bernard's (2003) techniques in order to identify key themes when analysing textual data, both the transcripts and documents. Accordingly, in the texts we looked for repetitions, indigenous typologies, metaphors and analogies, similarities and differences. These techniques provoked our awareness of topics that seemed to arise in various interviews and which were relevant to our topic.

Initially we brainstormed about what we perceived as salient themes from the interviews and came up with the most relevant topics for our research. In a next step we compared our findings with the data from the transcripts. Subsequently, we created an excel sheet with the key themes and classified exemplary quotes of every interviewee. Ryan and Bernard (2003) name this step cutting and sorting which helped us to detect patterns between interviews, observations and documents. We had to omit some topics because they were not directly relevant to our research questions. Subsequently, we clustered supporting and contradicting quotes around the key themes and verified the ones that would be most suitable to summarise all the different statements in order to ensure readability. However, sometimes various quotes are presented in the analysis in order to refine or support one argument. Eventually, we constructed a narrative around the quotes from the interviews, added our observations and material from the documents. The narrative should help to connect the dots between the different themes. Moreover, we slightly adjusted the language and corrected the grammar in the quotes to provide a better understanding and readability as all interviewees were non-native English speakers.

The elaborated processing of our data depicts the basis for the subsequent discussion (chapter 5), in which we relate our findings to the literature. This supports our approach to create our own theoretical stance by comparing our interpretation to established concepts of organisational science (Rennstam & Wästerfors, 2015). Therefore, we adhere to the hermeneutic approach by discussing each research sub-question in detail and relate these findings back to the overall

research question. This ensures a thorough exploration of our empirical material in the context of the literature, which supports our interpretation. Further, we adjust the figure 2 which we used to explain the theoretical background (chapter 2.4: Summary), to illustrate our interpretation of the perceived situation at ESS in the theoretical context.

3.4 Credibility

In order to establish a credible research design around our case study, we follow the hermeneutic technique of *source criticism* which can be described as a “careful evaluation, reflection, questioning, rejection, and probing of interview accounts (and other empirical material)” (Schaefer & Alvesson, 2017, p. 1). Organisational scholars argue that qualitative research would benefit from an increased focus on this method, as especially interview narratives are often taken for granted in an uncritical manner (Alvesson & Sköldberg, 2018; Schaefer & Alvesson, 2017). Thus, criteria such as the authenticity of a source, possible interpretation biases, distance between observation and interview or dependence of interviewees that may influence narratives, were considered within our data collection and analysis (Alvesson & Sköldberg, 2018).

One concern that demanded considerations of aforementioned criteria, was that the interview setting at the organisation may have influenced our participants’ responses. We were alert, that they may not have been as critical or reflective when we were at the facility. However, we were able to mitigate such doubts, as the interviews took place in separated meeting rooms where we could discuss our questions undisturbed of any external factors. Furthermore, we stressed the importance of our semi-structured interview approach to ask for further explanations or specific examples of testimonials whenever there was a case of doubt to superficial responses that left us sceptical. This is a viable method of *intrasource critique* which reflects our incremental learning about the topic and helped us to ask revealing questions (Schaefer & Alvesson, 2017). Furthermore, this approach was strengthened, due to the fact that one researcher always led the interview and the other was the vigilant counterpart. Moreover, this gave us the opportunity to make observations that were valuable for our interpretations.

In terms of analysing and interpreting interview material we orientated ourselves on Schaefer and Alvesson’s (2017, p. 2) fundamental question:

How far and with what justification may [we] move from noting that this is what a person told in an interview to claims about behavior, episodes, cognitions, emotions or even *narrative identity* and experiences? (emphasis added)

This implies a critical and reflective stance towards gathered material that guided our approach to substantiate our empirical claims about identity constructions and its implications. However, Ryan and Bernard (2003, p. 103) note “there is no ultimate demonstration of validity, but we can maximise clarity and agreement and make validity more, rather than less, likely”. Therefore, it was our aim to unequivocally and clearly point out our judgement when interpreting our data. Further, we initially coded and categorised the material separately to compare it afterwards and thus establishing *intercoder reliability* and confidence in the findings (Ryan & Bernard, 2003). This process was also valuable to make sense of our material in a systematic way to identify the overarching themes in our study.

With the permission of the interviewee we recorded all conversations and transcribed them afterwards, in order to ease the comparison of our empirical material with theoretical concepts. The anonymity and confidentiality of all participants was ensured and communicated to foster a truthful representation of the interviewees’ perspectives (Alvesson & Sköldbberg, 2018). Therefore, we made sure to change the names of participants and covered up detectable information, such as specific positions.

3.5 Summary

This chapter highlights that our research is based on a symbolic interactionist approach, by which we analyse how the interviewees see and make sense of the world and how they perceive themselves in the organisation. We conducted eleven semi-structured interviews at ESS with employees from different hierarchical levels, departments and backgrounds. Our findings from the interviews were complemented by observations and document studies, such as the organisation’s website. We were looking for patterns throughout our data in order to get a full understanding of how they understand ESS and themselves. However, we practised *source criticism* and focused on a reflexive interpretation that ensured a critical stance towards the data. With the help of the hermeneutic approach we related parts of our findings to the overall concept and vice versa.

4 Empirical Analysis

In the following chapter, we provide a narrative that analyses and draws patterns between the interviews. In order to secure our interviewees' anonymity, we changed their names and categorised them into administration, engineers and scientists. Furthermore, we labelled interviewees as managers if they possess a highly influential position and substantial responsibility for subordinates. However, it is important to mention that these are not fully distinct categories but overlapping. For instance, some interviewees have a scientific background, but are working now with administrative tasks or are administrative employees in an engineering department. The floating nature of this categorisation shows that it is highly difficult to draw lines and make clear cuts within ESS. Consequently, there is a need to explore how employees perceive organisational reality and themselves within the organisation.

4.1 An Exaggerated Portrayal

Mystical Science-Fiction Display

When visiting the ESS facility for the first time, one of the striking features we observed was the mystical notion of science-fiction presentation which is represented in the introductory story. Alongside the lettering "*There is more to discover!*", the lobby is surrounded by pictures of the universe and an artificial accelerator beam. This indicates a connotation of the research facility as objectivised spaceship, which is set to go on an adventurous journey to explore the unforeseen. Our observation is congruent with the examination of Liljefors (2013, p. 201) who argues that the display of science-fiction confers a contradictory image of ESS between "*adventurously exploring the unknown and harmoniously merging the unknown with the ordinary*". A promotion video, portraying the renowned science-fiction actor Sir Patrick Stewart as ambassador for ESS, and the website confirms this impression:

*"ESS is sure to lead to discoveries that will take us **completely by surprise**, discoveries that will offer benefits, opportunities and challenges that **we can't yet imagine**, discoveries that **will change the way we see our world!**" (OpticVerveMedia, 2011)*

"The Hubble Telescope, Voyager 2, and the Very Large Array allow us to directly and indirectly investigate the distant places and hidden elements of our universe." (ESS, n.d.g)

Therefore, it appears peculiar to be certain about ground-breaking research being done at ESS, when arguing that it is widely unknown, just as a remote galaxy that will be discovered.

Despite being a remnant of the campaigning phase, in which ESS tried to mobilise support for itself in the wider public, we could perceive that this representation is still prevalent when trying to understand how ESS is presenting itself. Some of the interviewees exemplified the difficulty of telling the public what ESS is:

“You need to be aware of not telling too much ... at the same time you cannot be open too much ... because they [the public] simply would not understand.” (Emma, administration, manager)

This suggests that there is a complexity to explain public audiences what ESS is and how it distinguishes itself, which may explain the mystical notion of science-fiction that is used to make people interested and gain support. Whilst one needs to be aware that this illustration is primarily aimed at external audiences, it was interesting for us to see how the employees made sense of this portrayal when being confronted with the video sequence, as mentioned above. On the one hand, we could see that some employees perceived this “*sense of mystery*” (Jack, engineer) positively:

“That is really cool that he [Sir Patrick Stewart] is in it. It shows what science will offer. Absolutely. I did not know that we have such an actor. And there are so many things that were fiction in the past that are reality now and I believe that’s what we might not even imagine what’s coming.” (Denise, administration)

“I mean, of course, it sounds a bit ... exaggerated. But also, I think that it is what it is. I mean, it is something that we don’t know today what actually will be discovered here.” (Stefanie, administration)

It was striking that primarily employees in administrative functions agreed with the message, as they may not have a clear understanding of the outcomes that ESS is aiming for. On the other hand, we could detect that employees who worked for similar organisations before and came from a scientific background, were rather sceptical about it:

*“It is a bit of an exaggeration when you call an actor, **you’re already sending a message – this is an act.** I know that it is probably very fascinating for many people. To me it is not, maybe because I come from a scientific organisation, this is not rocket science. And I know it is presented in that way, but it is not.” (Alice, administration, emphasis added)*

*“My immediate reaction is no, that’s not ESS he’s talking about, something else like CERN² or those facilities that do fundamental discoveries. **That’s not what we do here.** This is more applied.” (Carl, engineer, manager, emphasis added)*

² The European organisation for nuclear research based in Switzerland (CERN, 2018).

This suggests that, while some employees perceived the depiction as appropriate, others perceived it as rather unrealistic and exaggerated. Furthermore, it could indicate that for parts of the workforce who are rather inexperienced within big research facilities, this illustration is more appealing than for science experienced members who may feel disconnected with it. Subsequently, one could argue that the contradictory notion of the science-fiction illustration does not add to a shared understanding as to how organisational members perceive ESS.

Science for Society

One of the salient descriptions that ESS uses as a grand narrative since the campaigning phase to illustrate the beneficial nature of its research to the wider society is the slogan “*Science for Society*” (European Spallation Source, 2013; ESS, 2018). On the contrary to the mystical science-fiction portrayal of ESS, this theme is used to illustrate the organisation as being beneficial by depicting “*not just a source of abstract scientific data, but of important new knowledge with practical implications in fields like energy, climate, environment, chemical products for everyday life, materials and health*” (Agrell, 2012, p. 433). Despite the uncertainty if and when scientific breakthroughs will happen, the outstanding role of ESS in improving lives of humanity at large is underlined on a regular basis. This paradoxical exaggeration of potential future outcomes is also resembled in the introductory story.

When we presented the slogan, it was striking how many of the participants we interviewed could connect to this message and use it as an aspect that makes them feel proud and motivates them to work for ESS:

“If you believe that a project like this will have a positive impact on the world, then you’re proud of working at the place that will have a positive impact on the world, even if it takes a while for them to realise and it takes quite a while to explain that.” (Gustav, administration)

“They [scientific efforts] are going back to society and give back so many applications, medical applications or technological ... It’s clearly going to be helpful for everybody.” (Denise, administration)

“It shows what matters in the end, to the point! Of course, it is also one of the reasons why I wanted to work here.” (Jack, engineer)

Therefore, this message which connects the purpose of the facility to a meaningful cause cannot only be perceived to influence external audiences, but also affects how employees think of their

job and their organisational role. They appeared to be convinced that ESS will have a major impact on the world.

Nevertheless, also here we can perceive a divide within the workforce, as not everybody fully agrees with this message. Alice and Helen, for example, noted:

“This is a mistake in terms of positioning because science is part of society. Every time you say science, a preposition and society, you are separating them ... it’s like saying I am having an impact on myself ... it is conservative, conventional and it is fundamentally wrong in my opinion.” (Alice, administration, emphasis added)

“As a scientist, I go crazy when people think that science is all about delivering cures or IT materials because science is actually about understanding nature ... now there’s this political idea ... and that is just going to give more and more and more and more into society and this is very short-sighted.” (Helen, scientist)

The divided perception within the workforce also becomes visible in this issue, as employees with a scientific background are sceptical and see it as a misinterpretation of science. Whereas the majority of administrative staff and employees without scientific background use it as an aspect to justify meaningful employment at ESS. Moreover, from an internal perspective, Alice stressed that *“it [the slogan] doesn’t add anything ... it doesn’t resonate with people”* (Alice, administration). This indicates that the different perceptions of this illustration are based on a diverging degree of appropriateness, which implies a dissociated notion of the workforce.

Despite being generally positive towards the slogan, also Carl raised doubts about the internal impact of the attempt to influence the image of the organisation:

“That has very little to do with what we’re doing now but it’s more connected to the long-term vision of what it will be in the future ... I have a hard time seeing that is necessary now ... So, for me, it doesn’t help me do my work, which I think an interest should be. We should report or talk about what we’re doing in order to create ESS.” (Carl, engineer, manager, emphasis added)

Accordingly, Emma (administration, manager) believes that ESS *“needs to make a transition of how to describe”* themselves. In her opinion it is vital to tell both, external and internal audiences what ESS stands for. Thus, she argued that ESS needs to create a storyline to explain the *“things that are relevant for the ordinary person – we need to make that connection”*. To Emma it seems important to show which concrete benefits people can expect from ESS to solve social challenges. This opinion is congruent with Alice’s perspective, who suggested:

*“Internally, there’s a lot of work to do, in the sense that there are many great stories to tell, but **we are still looking for the narrative** ... It’s not just a PR exercise. It’s very much how people work in the organisation, you need to find something to look at.”*
(Alice, administration, emphasis added)

Consequently, it appears that despite being widely used as explanatory feature to tell external audiences what ESS stands for, internally the meaning remains on a rather abstract level. Therefore, some employees see it more as an intangible vision or indeed as misleading for current organisational practices. Thus, some interviewees reason that the organisation needs to be more precise in this illustration and present a more concrete picture based on what happens internally.

Collaborative Peace Project

ESS is often connoted as a collaborative effort which is only possible through the cooperation of many European countries that agreed to finance the project together. The personal email signature of one employee gives exposure to this notion:

*“The European Spallation Source is a **Partnership** of 15 European Nations committed to the goal of **collectively** building and operating the world’s leading user facility for research using neutrons by the second quarter of the 21st Century.”* (Emma’s email signature, emphasis added)

Thus, the cooperative nature is perceived as an important aspect that is often emphasised in marketing material, which was also ascertained by Granberg (2012) in an early campaigning phase. Another example on that account, depicts a video within the aforementioned theme of “science for society” that includes a song in the closing with the following lyrics:

*“We are **joining our forces** to build a source **for all mankind** ... science for society.”*
(Manurung, 2011, emphasis added)

Therefore, we could perceive a major interest in illustrating the ESS project as the amalgamation of forces, encompassing knowledge, manpower and resources to create the ESS facility, which would not have been possible on an individual level.

Paul confirmed this notion when he connected it to the fundamental purpose of ESS and what it stands for in his opinion:

“Then comes my biggest passion and that is, ESS and CERN are peace projects. That’s why they were launched.” (Paul, scientist, manager)

From his perspective, the aspect of collaboration is not only a necessity to construct and accomplish the research organisation, but additionally serves the noble cause of uniting nations and supporting peaceful arrangements. Hence, he elucidated that this aspect should be used even more to illustrate what characterises ESS:

*“We should be clear that this is something we want to contribute to and that is how we see ourselves, also as an **example of collaboration**.” (Paul, scientist, manager)*

Uniqueness

Another prevalent theme is the notion of uniqueness when illustrating ESS, which is connected to several factors. While Agrell (2012) focuses on the exaggerated illustration of the ESS location in the Öresund region, ESS itself is focusing on its mandate by highlighting the superlatives:

“The next great Big Science facility, based on the world’s most powerful neutron source, will make possible ‘the new science’.” (ESS, n.d.a)

“ESS is a totally new project, where greenfield thinking enables a vision of a 21st century research infrastructure.”; “ESS is a state of the art scientific tool.” (ESS, 2013)

The representation appears to centre around the notion of an organisational greenfield approach and the technical advancement which is unprecedented heretofore. Thus, when presenting itself to external audiences, there is a remarkable focus on unique organisational features of ESS.

This also seems to affect how the employees are making sense of ESS as an organisation, when asked about what makes them proud to work for ESS:

*“We want to build a machine that has never been built. It will do things that have never been done before on a **level that has never been reached before**.” (Emma, administration, manager, emphasis added)*

“It’s going to be the leading facility for the future like 30 to 40 years. It gives ... meaning!” (Denise, administration)

*“It’s in particular this **uniqueness** that makes me proud to work here.” (Tony, engineer, emphasis added)*

The statements suggest that particularly the scope and technical advancement of the ESS project provides them with the prestige to positively distinguish themselves from other companies. However, Carl raised some doubts about the positioning compared to other organisations:

“The grass is always greener on the other side of the fence and that’s also true for ESS. We are just human beings here like in any other organisation. I don’t think that here

are much smarter people than in other organisations, such as the pharmaceutical or medical device industry.” (Carl, engineer, manager)

He seems to be sceptical about the proposed unique character of ESS, as he stressed that the expertise within ESS might not be higher than for example in research and development organisations. In a similar vein, Oscar does not perceive ESS as unique from an organisational perspective, as a lot of processes are similar to the private sector, where he worked before:

“It’s not that different. People tend to think it’s very different, but it’s not. Usually it’s very much the same.” (Oscar, engineer, manager)

Moreover, Alice is sceptical about the previously mentioned beneficial character of ESS and relativises this perception by stressing that this cannot only be ascribed to science organisations like ESS:

“I think that also Tetra Pak or IKEA make the world a better place. So yes, definitely every scientific organisation makes the world a better place. But I don’t think that it is only the scientific sector.” (Alice, administration)

However, it can be questioned what it means to make the world a better place and who will profit in her point of view. On these grounds, it appears reasonable at first glance to assume that organisational members are positively attached to ESS, due to its unique characteristics. Nevertheless, when taking a closer investigation this does not seem to be a general perception as some find it difficult to connect to these claims. Specifically, organisational members who worked in research facilities before have a rather sceptical stance towards uniqueness.

4.2 Uniqueness Vs. Homogeneity

The Greenfield Project

As initially elaborated one of the distinguishing factors of ESS depicts its claimed greenfield approach which is characterised by setting structures and processes from the bottom up. From an organisational point of view this bears a unique possibility to do things differently. A point that was also recognised by Carl:

“Because you can build it up from scratch it’s not an excuse for not changing anything.” (Carl, engineer, manager)

Carl sees the possibility to challenge the status quo and do things in a new way, which is in accordance with the website’s statement. Consequently, one could assume that ESS had the pure freedom to build up the organisation as they desired. This raises the question whether ESS is really pursuing its goal of doing things differently. One limitation towards ESS’ approach was brought up by Gustav who stated:

“The other day, I spoke to a guy that said that half of the people in the world that can do this kind of thing are working on this project at the moment.” (Gustav, administration)

Gustav’s statement shows that there are only a few people worldwide who have the skills to perform such a job. This limitation might pose a barrier when wanting to do something in an unprecedented way. These people might only replicate what they saw and experienced at other facilities.

The Orientation

The replication of structures and processes is not only limited to certain parts of the organisation, but also occurs throughout ESS. Various interviewees confirmed that they clearly orient themselves on other research facilities by exchanging ideas and employees:

“We orient ourselves very much. Looking forward towards that scientific community, but we’re also building on a lot of the knowledge coming from other big science facilities throughout Europe.” (Gustav, administration)

“There’s an intense cooperation with other facilities, the community and researchers from other research facilities.” (Jack, engineer)

These statements seem to contradict the website’s claim where one can get the impression that ESS needs to do things differently. As the organisation seems to rely heavily on the scientific community, it seems unavoidable to do things in a similar way. This is also influenced by the fact that many ESS employees worked at other research facilities, such as CERN beforehand.

Furthermore, amongst others, the scientist Helen pointed out that ESS should work closely with the scientific community, because they will use the facility in the end. Additionally, we encountered that other research facilities are not the only party influencing ESS. Various employees described how they need to satisfy member states and authorities in order to continue their work:

“They’ve [member states] got the power to impact this project. It can happen that if the project loses the political good will and funding, then it will be stopped. So there’s not a given that it will continue. So I think, they do influence us.” (Gustav, administration)

“If they [member states] get tired, we are off the hook.” (Emma, administration, manager)

“We are 100% influenced by the authorities.” (Alice, administration)

Gustav's and Emma's statements emphasise that ESS is dependent on various member states as they are funding ESS. Consequently, it seems like ESS needs to content them in order to secure support which leads to an immense influential power on the greenfield approach. Furthermore, as Alice explained, ESS has to comply to authorities' requirements to be able to operate in Sweden. These restrictions seem to limit the organisation's freedom, to find their own way of setting up structures and processes.

The Causes of Orientation

Could there be any other reason why ESS voluntarily relies on the scientific community? According to Emma, it secures that ESS will not be a failure:

*“But we haven't seen that [a flop] in any other large-scale facility ... we have never seen really the total flop. I mean looking at the experience from other facilities and also looking at the people we have here to actually do this. It **would be strange if we fail totally.**” (Emma, administration, manager, emphasis added)*

Emma seemed to be convinced that the cooperation with other research facilities will prevent ESS to fail, because it did not happen within any other big research facility. However, her assumption appears rather naïve and short-sighted, considering the claimed greenfield approach of ESS.

Moreover, Paul referred to similar projects and highlighted that everyone has to work hard and engage with the environment to make ESS successful. According to him, it would be a mistake to take ESS' success for granted:

*“It becomes a little bubble, its own world and it doesn't interact with the society around, so all sorts of reasons. **You can clearly fail, but you can also have a huge impact.**” (Paul, scientist, manager, emphasis added)*

In contrast to Emma, Paul acknowledges that ESS could possibly fail if it becomes too isolated. Similar to Paul, some employees were rather sceptical. Oscar, for example, questioned the utility of orientation and the close collaboration with other research facilities:

“And personally, it sounds great, but my experience so far, it doesn't help much actually. I don't know why. We have made a lot of beginner's mistakes.” (Oscar, engineer, manager)

Although ESS orients itself on others, Oscar could not explain why ESS committed mistakes that seemed avoidable. Consequently, he was not convinced that the collaboration is very useful. Another suggestion why this could have happened was brought up by Stefanie. She

seemed to point at another direction, as she thought that ESS committed these errors, because the collaboration was not close enough:

“I would like that to be much more developed that we have much more collaboration. I think that we are making unnecessary errors by not asking people who have already done this.” (Stefanie, administration)

Given these points, ESS commits avoidable mistakes either because they collaborate at all, or because they do not work closely enough with others.

The Effects on Employees

As ESS is striving to be part of the scientific community and becoming highly similar to other big research facilities, it also seems to affect the way ESS’ employees perceive their organisation. As Oscar, a manager in the engineering department, said: *“most people referred to this [ESS] as a mini CERN”*, although ESS works differently. Oscar also mentioned in that sense that CERN is the most popular research facility and people have a certain notion about it. Especially the administrative staff does not think that ESS differs that much or at all from other facilities. For example, Emma said:

“We are not so different if you compare to other large-scale facilities in Europe for instance. Even MAX IV³, we are quite alike.” (Emma, administration, manager)

Moreover, Alice (administration) even responded that *“nothing”* differentiates ESS from other organisations. This perception could either arise because they do not fully understand what differentiates ESS from other research facilities, or because they perceive ESS as highly similar to other research facilities. The notion of ESS as not being unique, but rather conventional compared to other research facilities also differs from what is communicated on the website:

“The facility’s unique capabilities will both greatly exceed and complement those of today’s leading neutron sources.” (ESS, n.d.g)

This contradiction of presenting ESS as unique but perceiving it as rather conventional could lead to confusion or a clash amongst employees. It does not seem clear, what ESS really stands for or what differentiates it from others. If there was a strong sense of belonging the employees would not refer to the more famous and established CERN nor perceive it as rather normal. As Stefanie summarised it:

*“We are something that **no one really knows what we are.**” (Stefanie, administration, emphasis added)*

³ A Swedish national laboratory based on the technology of X-rays located next to ESS (Quitmann, n.d.).

4.3 Turbulent Times

The Unstable State

ESS might also orient itself on other research facilities due to other circumstances. As the organisation finds itself in a phase of ongoing change and development, the current state appears to be unstable. As described in the introduction, although ESS is not yet being setup it faced major transitions that are also affecting its employees. Due to this ongoing transition, Oscar recognised one major difficulty concerning the workforce:

“It’s not like everyone moves from one phase to another at the same time. To me the big difference is working in an office on paper and working on real things. And we are in that transition now. And a lot of people have never left the paper office phase and they have a real hard time making their transition to the real phase. And some never do actually.” (Oscar, engineer, manager, emphasis added)

Oscar’s explanation shows the difficulty of having a unified perception or goal when everyone is moving in a different pace and some might be unable to go from one phase to another. Furthermore, he highlighted that the phases differ a lot from each other.

These described phases trigger various internal effects which were described by Gustav who pointed out another aspect:

“I think it’s a little bit horses for courses. We needed a person like that [former Director General focusing on schedule] because ... if our schedule isn’t up to date, it’ll be too expensive. Now the new Director General is, I think ... a speaker in the scientific community and it’s more about culture building and trying to put us on the map for the scientific community in Europe.” (Gustav, administration, emphasis added)

Gustav’s statement implies that different Director Generals at ESS pursued different goals which always seemed suitable to the phase ESS found itself in. In the past the focus was on the schedule, whereas now there seems to be a need to build a unified culture, as well as raising the awareness what distinguishes ESS. Further, Gustav argued that the lack of focusing on ESS’ culture was due to its young age and more important issues were present, as he underlined the start-up character of ESS:

“The company was also extremely young, so you just haven’t had time to build that culture.” (Gustav, administration)

Alice agreed with Gustav, as she compared ESS’ culture to a little child that still needs time to grow:

*“I think we are building the ESS culture ... but it is still a baby. **It is something that needs to mature.**” (Alice, administration, emphasis added)*

The previous phases that ESS went through led to a neglect of building a culture, as ESS is still very young and, according to the interviewees, a culture needs time to mature. Nevertheless, it is questionable whether a culture can be constructed and who could be the main architect?

The Effects of Uncertainty

The ongoing changes do not only have effects on the overall organisation, but also on the employees themselves. As some interviewees reported:

*“I’m not at all in the situation or position right now where I can care about the future ... because I have so much things to do right now. **I couldn’t care less.**” (Stefanie, administration, emphasis added)*

“At the moment we’re so focused on our construction that it’s difficult to think about something else.” (Jack, engineer)

Due to the unstable environment, some employees can only think about what is happening right now and do not have the time to worry about future implications. Stefanie was also aware that this mindset could have drawbacks for ESS as a whole:

“When you’re under stress, you don’t always think about what’s best for the project or best for the long term.” (Stefanie, administration)

It seems as if employees should devote more time to consider the long-term effects of their decisions and actions. However, in the state of uncertainty employees seem to lack the time for reflection as only the current results count.

How employees within ESS perceived this state of uncertainty varied a lot. Some of our interviewees valued uncertainty rather positively:

“At the place where you work if you know what’s going to happen, then it’s probably just boring. I’m curious about what ESS is going to be like in 2023. I think one values uncertainty, if you also feel that you’ve got sort of an amount of agency to actually change it.” (Gustav, administration)

Gustav perceived it as rather stimulating and exciting to not know exactly what is going to happen. But he also underlined that it is important to have some control over it and not be completely lost. Alice thinks along similar lines:

“It makes me want to be more daring in doing things. Because I think, in uncertainty I tend to have more of a make it or break it approach. Try and see what happens, rather than doing this limbo.” (Alice, administration)

She clearly valued uncertainty as a motivational aspect and a positive challenge because she felt that she could actively shape and contribute to developments. Alice even recognised that she is acting more courageous.

However, not all the employees valued the state of uncertainty in such a positive and optimistic way. More interviewees shed light on the negative side, various admitted that it added stress and pressure, amongst them also Gustav and Alice who previously valued uncertainty positively:

“It [uncertainty] affects the pressure, the pressure that we have to try to do it faster because we are already delayed. There have been cases at ESS of people, that had to go on sick leave because they have not been able to cope.” (Denise, administration).

Opposing to the aforementioned statements, Denise clearly pointed out the downside and that it might have severe effects on the employees' health. Why some employees seem to cope better with the state of uncertainty than others, is difficult to interpret. Nevertheless, Denise mentioned one technique that she considered as useful:

“I think it's a mindset thing. You just have to realise that you cannot do everything. So, prioritising, is how I cope personally.” (Denise, administration)

Even though employees might accept that they are unable to do everything, it also seems to depend on the nature of the person itself. As Oscar mentioned:

*“**Most people are afraid of change** as well. That's also very evident.” (Oscar, engineer, manager, emphasis added)*

The fear of change seems to hold these people back and therefore, they evaluate uncertainty as rather negative. Consequently, one could say that people who are afraid of change cannot cope with uncertainty or might find it highly difficult to work in such an environment. Paul summarised this assumption as follows:

*“**Uncertainty creates insecurity** and then people are not happy.” (Paul, scientist, manager, emphasis added)*

Given these points, the ongoing change and transition of one phase to another has various effects. On the one hand, it affects the whole organisation as employees do not think ahead and are just worried about short-term implications. On the other hand, it affects the employees personally. Based on personal features, some seem to cope with the uncertainty well, found it

rather motivating and stimulating, whereas others mainly saw negative effects such as increased stress and pressure.

4.4 A Blurred Big Picture

The continuous change process at ESS influenced the workforce and organisational life in a general way. While the degree of impact varied according to the professional background and personal experiences, many employees expressed the difficulty of coping with this precarious organisational condition. Emma (administration, manager), for example, used a rather controversial typology by saying it requires “*half religion, half facts*” as an orientation. This is not only paradoxical concerning the oppositional notion of religion and science, but also signifies the complexity of employees to cope with the unstable organisational state. However, there was a consensus, about what factor is perceived as partly diverting or missing:

*“We need to understand what we are doing, of course this is not always the case because it’s a complex project. That’s why sometimes you’re missing the **big picture** and, also that we attribute the same meaning to this understanding.” (Alice, administration)*

This underlines that the recurring theme about the aspect of uncertainty in the ESS project was related to the alignment to a big picture. Thus, the participants seemed convinced that it is on the one hand, a factor that diverts organisational entities, as employees allocate different meanings to the ultimate purpose of their tasks.

On the other hand, interviewees thought that there is currently no coherent big picture existing, which could support a collective alignment of the workforce. This created specifically internal problems:

“If I am the person in charge of that task, then I get frustrated. You have to fight with different teams ... but not everybody has the same problems, and everybody has a lot of things to do. Then you have to show them the reason, why that is a priority, as it will affect them as well.” (Denise, administration)

*“It creates more than conflicts, I think it might affect the project itself. Because **if you don’t share the same meaning, then you might not truly align.**” (Alice, administration, emphasis added)*

Accordingly, the lack of a common understanding to a big picture created frustrations and conflict between different functions that affects the project operation. Thus, organisational members often seem to create their own meaning of a big picture that helps them to prioritise work and give sense to organisational role:

“I always try to lift my eyes and see that ... okay, there is something bigger that we are doing this for and that is for the research community.” (Stefanie, administration)

*“I would like to think that I am a person with a holistic perspective, I try to see the big picture. And I can also drive it down for me, **it’s really important that the big picture fits together, it needs to be consistent.** It’s like if you make a big puzzle.” (Carl, engineer, manager, emphasis added)*

This indicated that the construction of a big picture seems to be something that is done on an individual level and thus differs from other organisational members. For instance, some perceived the progress of the construction site as one reference point, such as Gustav, with whom we went on one of his regular tours around the construction site to keep himself updated:

“That is why I am trying to come on these tours, to get more of an idea what is really happening, because then you speak about things in a different way.” (Gustav, administration)

Thus, he tries to construct a big picture for himself by orientating on a tangible and visual illustration of the research facility in progress. However, it can be questioned if this visualised orientation on a building can adequately reproduce a credible vision in this complex project.

Nevertheless, the research facility under construction, depicts a symbolic feature for many employees to grow together as an organisation, as all employees will be moving their offices to the facility in June 2018:

“That will make people tighten up together. It will make it easier because you cannot avoid each other anymore. It forces them to go out in reality and to have more practical discussions.” (Oscar, engineer, manager)

“We will move to the ESS site, so we will be altogether and close to what I call ‘the real thing’. I think it will have a huge impact because then you need to converge ... also because the project will be in a phase where you need to connect the dots.” (Alice, administration)

*“It’ll **remove these artificial separations** on the back of people’s minds, over time.” (Gustav, administration, emphasis added)*

This indicates that employees hope that the physical unification at site will also align the workforce to work towards a coherent big picture. However, it seems questionable if the physical unity will also trigger psychological unity in the same vein or if this helps the organisation holistically, as Jack noted:

*“We didn’t develop any common view ... **We are sailing without looking at the stars.**”*

(Jack, engineer, emphasis added)

His statement signifies that everyone at ESS is already in the same boat, but this physical unification does not equal a common orientation to go in the same direction, which is also described in the introductory story.

Nevertheless, this seems to be an issue that became also visible to some managers, as Paul remarked when being asked why some employees are missing the overall purpose of the ESS project:

“Because people are confused, it gets too much and it’s clear that we’re working hard, but there is confusion about priorities and where we are going ... so in my newsletter and my blog I keep repeating: ‘These are our seven goals for this year ... this is what we are going to achieve.’ And now we are trying to get on the same page with this.”

(Paul, scientist, manager)

Hence, he tries to communicate a big picture by explaining the direction in his newsletters and blogs. Although this can be perceived as a positive attempt, it still only reaches the staff within his division and it can be questioned whether it has an impact on them in the end considering their relatively autonomous way of organising work. Accordingly, the specifics of the ESS project appear to complicate the alignment to a coherent big picture.

4.5 A Scattered Puzzle

The Distinctive Backgrounds

The scope of international collaboration at ESS creates a highly diverse workforce, as the organisation includes staff from almost 50 nations (ESS, n.d.c). This also influences employees when talking about ESS and what they think distinguishes their employer from other organisations:

“Not even the export industry is so international. Only very, very few organisations. I met someone here the other week and they were surprised because they had staff from 22 countries and I said we have 50 countries.” (Emma, administration, manager)

It depicts an obvious characteristic of ESS which organisational members observe as something unique that makes them feel proud of the organisation.

Nevertheless, they acknowledged that this also represents a challenge within the organisation:

*“We have people from 50 different nationalities, which means that you have ... more than 50 ways of doing things as **we all are products of our cultures.**” (Stefanie, administration, emphasis added)*

“In a place like ESS where we have over 40 different nationalities people coming from all over the world, from many different places, research institutes, universities, private sector. Everybody has luggage in their backpack.” (Carl, engineer, manager)

The statements indicate the awareness of having different understandings based on cultural backgrounds, but also based on other factors like the industry that people worked before, education or differences between public and private sector. Moreover, it signifies that the diverse backgrounds shape different perspectives, as Alice mentioned *“we all have a legacy from our previous work and tend to replicate things”*. Consequently, the employees work in different ways based on their experiences. Oscar explained that *“it’s harder here”*, compared to his previous job in a private organisation. In his opinion:

“If all the ESS employees came from the private sector, they would probably have the same brain configuration as I do ... but so many of them don’t understand the hurry to be honest. I mean there is always a day tomorrow, basically if it takes five and a half years, who cares?” (Oscar, engineer, manager)

Thus, he expressed a certain kind of frustration because the mindsets between employees with experience from public and private sector differ, which leads to different prioritising. This also becomes visible between different professions:

“I would say there are cultural differences between the international science staff and the administrative Swedes.” (Helen, scientist)

Helen highlighted that there might be cultural difficulties because the administrative staff is quite national, whereas other departments are far more international staffed.

Next to the cultural background, the professional one seemed to have a far bigger influence on the collaboration within ESS. Most interviewees described that the collaboration between administrative and technical-oriented employees can cause difficulties due to different mindsets and working structures:

“Administration can create very bureaucratic systems and standards ... because you have to have order in certain things and follow procedures. But for a project organisation [technical departments], this can sometimes mean ‘Why do I have to fill

in all of this, can't we just solve the problem?' and that kind of friction can sometimes happen." (Emma, administration, manager)

"Sometimes engineers and scientists perceive that administration is ... putting some barriers when they could make the process easier for them. And on the other hand, I also see that administration is putting those barriers, because there has to be some kind of control otherwise it gets crazy and they cannot just give everybody what they want." (Denise, administration)

Both, Emma and Denise, admitted that the employees working in the administration department sometimes seem to make the life of the technical-oriented departments more complicated. However, both explained the necessity to do so, in order to maintain control. Furthermore, Alice illustrated the alleged superiority of technical functions:

*"It is really the way you work, what you prioritise for example. There are cultures, which feel very strongly about documentation and cultures, like the scientific ones, who really resist documentation. They don't see the point, right? It is **an identity issue** as well ... the scientist has a very strong image of himself or herself and you tend to replicate that image." (Alice, administration, emphasis added)*

Alice indicates that scientists have a strong perception of themselves and resist to take others' perspectives. Subsequently, it became visible that some employees working in administration seem not to feel valued and reproached other colleagues:

*"It's quite tricky to work for one of the support functions of ESS. There are people that are claimed scientists and engineers and that causes a certain view on their own ability and own intellect. I think there definitely is a perception that the rest of admin, as we are just called, the people from around here aren't at the same level that they are at, while **we will all play different parts of this bigger puzzle.**" (Gustav, administration, emphasis added)*

Gustav recognised that there are more and less important functions within an organisation like ESS. Nevertheless, there are various pieces of a puzzle, some bigger, some smaller, but only all pieces together make the puzzle work. As recognised by Carl earlier, this also exemplifies that the big picture cannot emerge if the various pieces do not fit into each other and are scattered, despite having all the necessary parts in place.

Moreover, Helen acknowledged that it is more difficult for administrative employees to work within ESS because they lack a profound scientific understanding:

“It is a little bit tricky and also just keeping minutes of the standard meeting here kind of requires a PhD in engineering to get it right ... I think the administrative staff that we have and that choose to stay are flexible personalities. They like challenges, they are not afraid of things being a little bit above their head ... I think it requires nerves of steel.” (Helen, scientist)

Helen recognised that for administrative employees it is far more difficult to understand topics being discussed in meetings and that they need to have special personality traits in order to manage their work within ESS. However, there is an underlying assumption of the scientists’ superiority detectable which confirms Gustav’s impression. Moreover, not everybody in the administrative functions seems to accept a subordinate position which causes frictions.

Further, we realised that collaboration was not only an issue between administration and technicians, but also between technicians themselves, the engineers versus the scientists. As Paul exemplified:

*“I think we also have the divide between engineers and scientists and this creates tensions. The core engineers can find scientists far too superficial, thinking they know everything, can do anything ... and you should really know in depth before you claim to be an expert and should know every detail to it. Those kind of **mindset differences**, they do exist.” (Paul, scientist, manager, emphasis added)*

Consequently, the differences appear mutually between all the present professional categories. There seems to be a lack of understanding as everyone considers their way as the correct one based on personal background and experiences. For Oscar this is not a surprising feature, as he noted:

“I mean you can’t expect taking a lot of people from different countries, different backgrounds, vague rules, put them in one place and hope that they will excel. That’s not going to happen by itself. It takes a long time to get a team to work together.” (Oscar, engineer, manager)

He argues that the organisational leaders may have underestimated this aspect, but that it generally needs time to shape a coherent organisation. While Jack (engineer) elaborated that his colleagues need to practice “*flexibility*” to be open for different perspectives, Paul seems clueless about the issue:

“I find it very, very difficult to assure that we have a good working environment. I think I’m people-oriented, so I feel disappointed that it is so hard, but it is the combination of cultural differences ... the mindset of people from different backgrounds, training backgrounds and so on.” (Paul, scientist, manager)

Commitment to the own Group

While the diverse workforce appears to represent a challenge for the organisation, the organisational members often seem to be comparatively more committed to their own department or team. This becomes visible when interviewees talked about what motivates them at the workplace:

“My colleagues, it’s a really a nice group of people, of course also because there are very different kinds of personalities.” (Denise, administration)

Denise statement resembles a generic notion of employees from all division within ESS. Moreover, it was striking that they often made a clear distinction of their department or work group compared to others, when positively elevating themselves:

“I’m very lucky because I’m working in what I consider the best sector within ESS. So, what I would recognise as key traits is that there are extremely competent people.” (Alice, administration)

“Me and my colleagues, we are a really great team ... I think that on a departmental level, things are always, for me at least, working really smoothly.” (Stefanie, administration)

This exemplifies that employees appear to identify more with their specific work group rather than the organisation on a whole. Accordingly, they seem to glorify the team spirit in their own department, which creates a feeling of superiority.

However, this distinction leads to difficulties on a larger organisational scale. Most interviewees are aware of this characteristic and highlighted the subsequent challenges for ESS:

*“I think it’s given in the nature of the project with so many moving pieces and that people are put together in teams you end up having sort of **many cultures and rivalries** ... they’ve had a hard time or it’s been a journey to bowl that kind of collective culture and we’re all working for the same place, and it’s something that I found really hard to understand why it is so hard.” (Gustav, administration, emphasis added)*

Gustav’s assumption shows a tendency within ESS that employees connect more to their teams than to the organisation, which causes departments to work against one other. Furthermore,

Alice agrees with this notion that it is difficult for employees to “*find common ground*”, as she elaborated:

*“And maybe internally in each division, there is a certain collaborative spirit that **probably is not yet diffused at the organisational level**, but I think it is because it’s in our history. You need to have a need for bridging this gap.” (Alice, administration, emphasis added)*

Thus, it appears that the commitment within divisions and departments is stronger and trumps the cohesion on the organisational level. The interviewees perceive this as problematic and argue that there needs to be a shared understanding on an organisational level:

*“We need to have some kind of model for ourselves ... because if we have ten different ways of labelling technical documentation, it will be just confusing for us ... thus, we have to come up with an **ESS way of doing things** and of course that will be a challenge for people that come from different organisations where they called it differently. But I think that’s a must-have ... an **ESS way to do things**.” (Carl, engineer, manager, emphasis added)*

As many employees seem to identify this issue, it was striking to detect that some of them perceive themselves as playing a crucial part in solving this problem:

“In my integrative horizontal role, I am probably one of the people who speaks to other departments most ... and I think it’s quite important to try and build bridges with people in that way.” (Gustav, administration)

“I want to think that this is the reason why I come to work. It’s very much to build this unified approach to ESS ... it should really help people getting the same understanding of what we are doing.” (Alice, administration)

Both, Gustav and Alice see themselves as ‘bridge builder’ in the organisation, who are trying to overcome the different perceptions by uniting the division. This illustrates the awareness of organisational members about the diversion amongst organisational entities, but also that some believe they can play an active part in resolving this divide.

4.6 The Dysfunctional Outcome

All the previously elaborated topics appear to intertwine and influence organisational life by hampering collaboration. It was striking that the metaphor of “silos” was mentioned by interviewees across all divisions, which mirrors that employees primarily tend to think within their box:

*“I think that collaboration on an organisational level is a bit problematic here because we tend to think in our silos ... people are not always thinking what implications your work could have on other departments ... For sure there is a problem in this organisation that **people are silo-minded**.” (Stefanie, administration, emphasis added)*
“You could argue that the organisational structure doesn’t make it [collaboration] easier.” (Oscar, engineer, manager)

Both, Stefanie and Oscar, perceived ESS’ organisational structure as rather restrictive instead of enabling collaboration across departments. The employees’ responsibility only seems to be towards their own department, they refuse to think about bigger impacts. Whilst seeing the necessity to structure processes, organisational members problematised the development of silo mentalities, which causes frictions.

Another factor influencing the collaboration within ESS is the aforementioned ongoing change. One aspect depicts the time pressure experienced by employees, as Stefanie highlighted:

“One factor why we are silo-minded is that the project is moving really fast. But things must be done and then it’s either ‘Okay, we’ll do it’ or ‘It’s not ours’.” (Stefanie, administration)

Accordingly, she argued that employees tend to decide individually, rather than collaborating with other affected teams about responsibilities. The current state of ESS is again portrayed in its immature notion, as Alice stated:

“I think it’s [collaboration] something that has to blossom because as I said you really only see silos inside the organisation ... and again, I think, it’s perfectly normal.” (Alice, administration)

Alice seemed convinced that the collaboration issue will disappear once time passes by and the organisation gets more mature. Like her, various interviewees also thought that the problem with collaboration is not unusual within organisations and that there will never be a perfect world.

Nevertheless, others emphasised that it is important to work actively on the issue of collaboration and “*have a reminder of the big picture all the time, to get over that small daily irritations*” (Emma, administration, manager). Hence, some interviewees suggested on how to overcome these silos:

*“We need to find a common vocabulary and try to have the same bigger picture of how things fit together so that people don’t end up **just looking inside of their own pockets and develop silos**, cause that is a big thing at ESS – silos – we love them! The more silos we have, the better.”* (Gustav, administration, emphasis added)

Gustav advocates that it is of substantial importance to find a common language and contribute to improve the collaboration by aligning communication. Paul is convinced that he has an influence and sets an example:

“I decided to blog every week ... this is to practice openness. I think the only way we can overcome our differences in culture and background is by openness. So then, at least they understand the background of the decision.” (Paul, scientist, manager)

Paul perceived communication as key to better understand each other, which will foster the collaboration eventually. Using communication in order to make people understand better is also pursued by Helen:

*“Information, internal communication – even though they [employees] don’t necessarily agree with everything that’s going on – at least they feel informed and that they **understand** the justification of decisions that have been made. I think that’s really important and also that people feel **empowered and respected** for their **competences**.”* (Helen, scientist)

Helen acknowledged that not everyone must agree on certain decisions, but information should be provided in order to help employees understand why certain decisions were taken. Furthermore, she highlighted that the respect of competences is crucial in order to have everybody on board, and practice tolerance towards others’ personal characteristics.

The awareness to respect one another and consequently improve collaboration is understood to be fostered by communicating what is desirable internally, through core values. Thus, ESS (n.d.h) defines collaboration as follows:

*“In our everyday work and all our interactions, we seek to build and maintain relationships that create a shared sense of ownership among our stakeholders. Internally and externally we are committed to act and speak **with one voice, as one ESS**.”* (emphasis added)

Accordingly, Gustav and further interviewees perceive the introduction of collaboration as a core value positively:

“Just the fact that we’ve got those values, it means other people also realised the problem with the silo kind of business. So, it’s something that people are actively trying to combat.” (Gustav, administration)

Gustav thought that it was important to raise the awareness on an organisational level that collaboration is an issue within ESS. Consequently, the core value symbolises that this issue was identified, and everybody should work on it. However, not all employees seem to have such a positive notion of the core values. Helen, for example, took a critical stance towards having organisational values at all:

“I also feel a little bit insulted. To me working is, I supply my competence and you give me money. And then suddenly you tell me what values I have? That’s stupid. It’s not their job. That’s like the church kind of thing.” (Helen, scientist)

Helen thought that it is not the company’s task to tell the employees which values should be seen as desirable. She feels constrained in her personal freedom and compared this organisational influence to moral preaching of a church. However, only few interviewees actively tried to have a bigger influence on changing this issue, whereas others thought that it will eventually solve itself, for instance by moving to the site. Nonetheless, the collaboration issue represents an overarching conception, as the scientist Helen described that *“a lot of walls have been put up”* and it seems questionable if they collapse by themselves. The issue of collaboration could therefore expose the underlying challenge of ESS, summed up by Carl:

“It’s ESS as an organisation we need to learn.” (Carl, engineer, manager)

4.7 Summary

To conclude, we could perceive a general divide within the ESS workforce as elucidated by the illustrated themes. The portrayal of ESS has internal implications, as employees in administrative functions or those who do not have lots of experience in research facilities perceive it as more appropriate and may require these portrayals to make sense of ESS. Whereas for scientists or science organisation experienced employees, the aspects seem mostly unrealistic and could thus result in disconnectedness. However, we could observe that ESS now aims to control the perceived fragmented external display, as some organisational members had preconceptions that others will mention things that have not been agreed upon beforehand. This implies that the organisation is focusing on illustrating a desired picture of itself, but it could also indicate that the presentations until now were not perceived as adequate. The portrayal of

ESS is also influenced by its orientation on other research facilities and the scientific community. Nevertheless, this affects next to the internal perception, also structures and processes.

In this greenfield approach, ongoing change appears to have mainly negative effects on the employees as they do not consider future implications of their actions. Furthermore, the state of uncertainty seems to impact employees as the orientation on a common big picture appears to be difficult. Subsequently, frictions arise due to the perceived misalignment within the organisation. The elucidated diversity, stemming from different cultural, professional, educational backgrounds and experiences also appear to divide the ESS staff. The empirical findings depict that many interviewees perceive this factor as substantial and creating a gap of different meanings and understandings. Given these points, collaboration between the departments seems to be an issue within ESS that is created by perceived silos. Consequently, our empirical findings prompt questions that will be further explored by relating it to theoretical assumptions in the next chapter.

5 Discussion

This chapter links the findings from the previous chapter to the theoretical assumptions from chapter two. Consequently, we explore if our findings support theoretical assumptions or why contradictions may arise. Each subchapter focuses on one research sub-question from the introduction and aims to provide a thorough answer. The last subchapter summarises this analysis and relates it to the overall research question.

5.1 Sending Contradictory Signals

This section analyses the first research sub-question concerning corporate identity, in which we elaborate on how ESS is presenting itself in order to be perceived as legitimate. As seen from the analysis, we generally experienced that ESS is presenting itself in a rather fragmented way, with the mystical science-fiction display on the one hand and the slogan “science for society” on the other hand. This contradiction exemplifies the difficulty to address different stakeholders in an appropriate way which is pointed out by Ruef and Scott (1998) and leads to a rather confused portrayal. The fragmented image does not correspond to Suchman’s (1995) advice that organisations should aim to communicate a coherent corporate identity through verbal and non-verbal activities to be perceived as legitimate, which we categorised in this analysis as rhetorical and isomorphic attempts. Although ESS does not present itself in a coherent way, it does not affect its survival as the financial stability is assured by the commitment of member states. Due to the fact that ESS is perceived as a political prestige project of whose future success the member states are convinced, the contradiction to Suchman’s (1995) and Deephouse et al.’s (2017) assumption may arise. Consequently, one could argue that ESS may be perceived as legitimate, although it is presenting itself in a fragmented way.

However, ESS cannot pursue independent strategic choices as the interviewees reported that they need to content various governments and authorities. This finding contradicts with another theoretical line of thought by Deephouse et al. (2017) who state that legitimate organisations are independent. This may arise due to the nature of the organisation as ESS must follow the authorities’ requirements to be allowed to operate in Sweden because ultimately it will become a service organisation that is used by researchers from the member states, amongst others. Given these points, the fragmented portrayal has also internal effects on the employees as our

empirical material illustrates. Subsequently, we examine the implications of verbal and non-verbal activities on identity constructions.

Verbal Strategies: Rhetoric

As previously mentioned, ESS is presenting uncertain visions of what its future outcomes might be through the communication via videos and its website. The focus on unforeseen results which could be explored with the help of ESS leads to a neglect of the current organisational situation. Consequently, this results in a disconnectedness of various employees and an internal divide because only parts of the organisation can identify themselves with the exaggerated illustration. This discovery corresponds to the theory of various scholars (e.g. Alvesson, 1990; Christensen, 1997; Dutton, Dukerich & Harquail, 1994) that an overlap between the communicated image and the employee's perception of the organisation is needed to feel more attached and strengthen the organisational identity. As this is not the case for all employees, some feel detached. One could question, why ESS' management does not devote more time to communicate a credible big picture as a reference point, as suggested by Alvesson (1990). It could create a unified workforce but might seem misplaced where other issues are more important, and time and money are scarce. The move to the construction site in June 2018 is perceived by many interviewees as the solution to problems such as the missing big picture and the collaboration issue. This aspect touches upon van Riel and Balmer's (1997) concept of corporate identity that also encompasses symbolic illustration. However, it is questionable whether the move to the construction site facilitates a psychological big picture and thus an orientation point for employees that will unite them, as it depicts only one aspect of corporate identity.

Further, some employees highlighted that ESS does not differ that much compared to other research facilities, whereas ESS is portraying itself as unique. This contradiction is congruent with the Uniqueness Paradox by Martin et al. (1983) and poses one strategy to gain legitimacy. Moreover, ESS makes a connection to famous science projects, such as the Hubble Telescope to justify its existence which can be perceived as trying to invoke a big picture according to Cunningham and Williams (1993). However, this connection seems odd as ESS will not engage in space science, but material science. When companies attempt to connect to previous inventions in the past that do not belong to their field, one can speak of an invention of tradition (Hobsbawm & Ranger, 1983). Consequently, ESS tries to gain legitimacy by stating its unique position within the organisational field as well as associating itself as an important addition for

future innovations. However, internally this does not appear to be appropriate for many employees.

Non-Verbal Strategies: Isomorphism

As seen from the analysis, various employees described ESS as highly similar to other research facilities, with whom they exchange ideas and people. This influence leads to a similar setup of processes and structures, although ESS is a claimed greenfield project. However, the 15 member states require ESS to progress as agreed and according to the schedule, thus compliant with the authorities' requirements. This observation conforms with Meyer and Rowan's (1977) theory of *rationalised myths* which emerge especially in complex networks. Nevertheless, ESS finds itself in an ongoing change that leads to uncertainty amongst employees, which most of them evaluate rather negatively. On the contrary Alvesson (1993) argues that these *myths* bring stability in times of uncertainty. This paradox could arise as we only observed a snapshot within ESS and we cannot predict how the situation would be without the implementation of these *myths*. Nonetheless, the implausible corporate identity of ESS in times of constant change and ambiguity could lead to an intensified feeling of uncertainty.

As stated, ESS has to implement certain requirements by Swedish authorities in order to be allowed to operate which leads to similar structures and process as seen in other organisations. This similarity is defined as *coercive* isomorphism by DiMaggio and Powell (1983). Furthermore, as a greenfield approach ESS is facing uncertainty and has thus, an intense collaboration with other research facilities and the scientific community where they exchange people and ideas. Consequently, ESS copies other research facilities' actions which is known as *mimetic* isomorphism (DiMaggio & Powell, 1983). Moreover, we observed that employees of the same professional background approached tasks in a similar way and categorised themselves, according to their education and their previous occupation. Working according to predefined professional methods is labelled as *normative* isomorphism by DiMaggio and Powell (1983). Given these points, we were able to observe all three kinds of isomorphism within ESS, which is contradictory to their claim that they need to do things differently as a greenfield approach. Consequently, we question the assertion of an organisational greenfield approach due to ESS' isomorphic behaviour. Although ESS is behaving isomorphic, it did not prevent them from failure, such as committing beginner's mistakes. The potential drawbacks of isomorphism are pointed out by Lieberman and Asaba (2006) who warn against herd

behaviour. This could also lead to a dysfunctional outcome concerning the identity construction, as employees are unable to ascribe unique features to ESS, which also influences themselves.

5.2 The Absence of Organisational Unity

As elucidated in chapter two, we differentiate the construction of identity on the macro level in corporate and organisational identity, whereby the latter will be thematised in this section. Therefore, it confers the second research sub-question, which centres around how the organisational identity influences the employees.

From a temporal perspective, the different phases ESS has been passing through in setting up the organisation had severe implications on the development of an organisational identity. In order to gain support for the research facility, our findings illustrate that the organisation primarily focused on promoting itself to external audiences in the campaigning phase. However, the internal focus to create a coherent understanding of what the organisation stands for and how its members relate to it appear to have been largely neglected. Thus, we could observe a diverted notion across all hierarchies and divisions of how employees make sense of ESS and that there is a lack of common understanding that results in a nebulous organisational identity. In relation to Albert and Whetten's (1985) conviction that the initial phase of an organisation depicts an essential point to define an organisational identity, we could observe that the *central* and *distinctive* aspects about ESS were primarily of an external advertising nature and failed to create a basis for a coherent internal effect. Moreover, as the interviewees confirmed the priority of focusing on the time schedule, it seems as if the need to develop a conclusive identity orientation has not been identified as necessary.

Nevertheless, considering the rapid transitions and continuously changing environment within the organisation, coherent with Bouchikhi and Kimberley (2003) we argue that a constant organisational identity seems unrealistic and could even hamper the ability to transform. Therefore, we consent with organisational scholars (e.g. Bouchikhi & Kimberley, 2003; Dutton & Dukerich, 1991; Gioia, Schultz & Corley, 2000) who question Albert and Whetten's (1985) assertion about an enduring and stable nature of organisational identity. The contradictory and dispersed presentation of ESS poses a challenge for the organisation to adapt its self-perception to the changing conditions, as it did not serve a purpose of gaining a foothold amongst the workforce yet. Therefore, we agree with Tomenendal and Goldkamp (2013) that the initial knowledge claims and visions about the future at ESS served to justify its existence initially,

but it requires adaptive capability to manage the balancing act of an organisational identity construction. Moreover, we can analyse that the presented key characteristics about ESS were also part of the extensive negotiation phase to gain political and public support, which could have influenced the presentation around the setup of the organisation. Congruently with Boers and Brunninge (2010) this would imply that this pre-identity constructions influenced the founding-identity, which has not been adjusted accordingly and remains unclear and without an internal impact since then. Consequently, we argue that the neglect of organisational identity questions from an early phase of ESS, depicts an aspect of confusion for organisational members and does not support a shared meaning. In addition, as identity constructions on the organisational level centre around a future oriented vision of ESS, it becomes visible that the workforce faces the difficulty of relating the blurred pictures of past and present to a potentially shiny future.

Additionally, the blurred picture of organisational identity appears to lead the workforce to disorientation. The difficulty of perceiving what ESS stands for from the outside, is affecting the employees in how they make sense of it themselves. As elucidated, this is influencing organisational members to a greater or lesser extent, which drives a divide amongst the workforce and affects their self-perception as well as the perception of the organisation. Thus, the image creation as a way how employees are making sense of ESS' perception in public, seems to mirror the difficulty of defining salient organisational characteristics. According to this clarification by Dutton and Dukerich (1991), it could be interpreted as complicating the process of mutually aligning the image with an identity construction, as both seem to be dispersed and remain on partly incomprehensible levels. Hence, it becomes increasingly difficult for organisational members to define coherent reference points and shared understandings.

From another angle, one could argue that the nature of ESS and its work tasks as knowledge-intensive is posing a constant ambiguous state on the organisational members as Alvesson (1993) suggests. However, this seems to depict a major influencing factor as one of our overarching findings was that interviewees stressed that the often vague or missing big picture within ESS creates misalignment. Thus, they reasoned that the unstable state of the organisation and the continuous changes pose a challenge to attribute the same meanings and have a shared understanding by orienting on the same big picture. Conforming with Cunningham and Williams (1993), we thus advocate for the significance of actively shaping the big picture to

construct a credible basis for both, external and internal audiences. Moreover, apart from the upcoming physical unification at the construction site as a measure for creating alignment, we argue that a plausible and desirable big picture could be a major aspect for psychological unity amongst staff and thus strengthen an organisational identity.

5.3 The Creation of Silo Identities

Following the analysis of identity constructions on the macro level, we now turn to the thematisation of the micro level of identity. Therefore, we explore how employees construct a social identity within an organisation.

Our findings illustrate that the diverse backgrounds and previous experiences of employees have impacts on how they perceive organisational reality and themselves within ESS. Specifically, there are manifold preconceptions existing based on cultural, educational or professional experiences. Thus, our interview participants could observe that the highly diverse workforce bears the challenge of overcoming barriers in assigning the same meaning to certain topics. In the context of Tajfel's concept of social identity (1974) we can thus observe that the organisational members cognitively inherit specific norms and values of a previous group and shape their social identity accordingly. As they start to work for ESS, many of those features are still present in their self-conception, which influences how they make sense of organisational matters. This pre-existing divide appears to have influenced the construction of social identities within ESS and is most salient within the different professional categories of administration, engineers and scientists. Our findings illustrate that the employees are distinguishing themselves primarily in these overarching categories and are stressing the differences and cultural understandings that appear to trigger frictions between the parties. This supports Alvesson and Svingsson's (2016) as well as Schein's (2017) assertion that there are often many different cultures co-existing in organisations, due to various societal or professional backgrounds. Consequently, we argue that the formation of divergent cultures at ESS is based on the already existing identity constructions from previous experiences and fostered by the reconfirmed social identity that emerges when clustering oneself into the professional landscape at ESS. Whilst conforming with Hatch and Schultz (1997) about the integral interrelation of organisational culture and identity constructions, we argue that one also needs to take the former preconceptions into account when studying social identity constructions in the context of different coexisting cultures.

The fragmentation of the organisation is further enlarged by the strength of social identity constructions that lead to the classification into perceived silo mentalities. Accordingly, another striking feature we could detect from our analysis was the commitment of individuals to their department or specific work group, which can be understood to be partly based on the elucidated backgrounds. Thus, the interviewees emphasised the superiority of the group they feel committed to and distinguished themselves from others. This corresponds to the definition of social identity theory by Tajfel and Turner (1985) as this behaviour can be interpreted as positively delineating the own group in comparison to others in order to foster the self-confidence and a positive self-perception. They also reasoned that the group distinction leads to the adoption of the specific value orientation and mentality, which can further influence behavioural forms such as communication or motivation. We could detect this notion when organisational members were problematising the internal collaboration at ESS, which is conspicuously characterised as strained and hampered by silo mentalities. It became obvious that many employees were referring back to this topic when highlighting differences in understanding, particularly between departments and the aforementioned professional categories. Therefore, we argue that we observe a form of what Ashforth and Mael (1989) declare *intergroup conflict*, which arises out of the comparison of diverse identities in an organisation. Contrary to a positive identification with large parts of the organisation, the fragmentation into multiple social identities thus appears to generate isolated belief systems that create problems when collaborating with each other. While the identification to social groups could also be perceived as positive, extensive focus on it appears to propel the development of silos within ESS and thus expands a psychological gap.

However, in the context the knowledge-intensive nature of ESS, the uncertainty in the organisation due to constant change may also trigger the orientation of employees to specific sub-groups in need for stability. This would conform Alvesson's (2004) contention that *identity work* is often contextualised in uncertainty, as organisational members are trying to overcome it by striving for social stability. Nevertheless, the act of integrating oneself into sub-groups of organisations can be explained by Hogg and Terry's (2000) concept of *self-categorisation*. They argue this process triggers the mimesis of the group prototype, which seems to be applicable in the case of silo mentalities as the employees mirror a certain role with specific group norms and values. As this can be understood as a way to acquire meaning within an organisation, we argue that the relatively strong social identity silos are being reinforced by the ambiguity of the organisational life within ESS. While Dutton and Dukerich (1994) argue that

the prominence of a social identity of an organisation defines the strength of identification of its members, we add that the stronger diverse social identities within an organisation are, the lesser the degree of identification with the whole organisation will be.

As a consequence, the saliently existing silos within ESS appear to create a fragmented organisation. Thus, it can be observed that the identification to the *holographic* organisation, as Albert and Whetten (1985) term it, seems both unrealistic and unfeasible at ESS. Contrary, Alvesson (2000) argues that an *ideographic* organisation, in which knowledge workers are committed by their social identity in different sub-groups appear more appropriate. Whilst we agree with this notion, based on our findings we problematise the neglect of a collaborative spirit that is fostered across the boundaries of silo mentalities. As ESS appears to be highly *ideographic* there is an obvious need to bridge gaps between different silos and balance the social identities with an increased commitment to the whole organisation. However, we acknowledge that this is a difficult undertaking as the high proportion of knowledge workers at ESS may never fully detach from their way of working as assumed by various scholars (e.g. Alvesson, 2004; Newell et al., 2009). Therefore, it may never be possible to unite the workforce completely in a common organisational identity, but in order to improve collaboration across silos it is necessary to improve understanding between the silos.

5.4 Summary

Following our hermeneutic approach, we relate the findings from each sub-question to the overall research question and thus, set our interpretations into the entire context.

The first subchapter analyses which attempts are taken to gain legitimacy and how this affects the organisation internally. Rhetorically, ESS is presenting a futuristic and contradictory portrayal that results in confusion and an internal divide among employees as only parts can connect to the image. Furthermore, we observed that all three forms of isomorphism are prevalent within ESS which is not only contradictory to its greenfield approach, but also has dysfunctional outcomes. On the one hand, it does not seem to prevent failure and on the other hand, employees do not perceive ESS as unique and thus cannot feel attached to the organisation as a whole. We could observe that the exaggerated external portrayal compared with isomorphic attempts results in a uniqueness paradox that does not resonate internally.

In the second section of this chapter we examined the question of how the organisational identity influences the workforce. We ascertained that the prime focus on the external portrayal of a corporate identity came along with the neglect of the internal perspective of what the organisation distinguishes. Hence, the difficulty of portraying an identity to external audiences mirrors itself in how the employees make sense of it. This results in a dispersed understanding amongst organisational members and a rather nebulous organisational identity. Furthermore, the rapidly changing environment depicts a challenge for ESS as it intensifies the need to adapt its self-perception, which has not been established yet. Thus, the remnants from an early organisational phase that were aimed to tell public audiences what ESS stands for, have never been adjusted to the progress. Subsequently, no shared meaning could be created amongst the workforce, as it appears difficult to relate the currently blurred pictures to visions about the future. Furthermore, this becomes visible in the missing big picture that underlines the misalignment amongst the workforce to a common reference point.

The third subchapter aims to answer the question how employees are constructing a social identity within ESS. Due to the highly diverse workforce, the possession of specific value systems and experiences depicts a challenge for the organisation to overcome barriers and create a shared understanding. The existing preconceptions appear to be most salient within the overarching categories of administrative staff, engineers and scientists who foster the divide of social identities. It became visible that employees stress the cultural differences within these categories that leads to frictions in collaboration. Furthermore, the relative strength of the established social identity formations, enlarges the fragmentation between staff and leads to silo mentalities. Thus, the dissociation with other groups at ESS appears as a mechanism to facilitate a positive self-perception in relation to its own group, which also emphasises differences rather than common features amongst the workforce. Consequently, we argued that we perceive a form of *intergroup conflict* within ESS that is fostered by the *self-categorisation* of employees, who are clustering themselves into silos and largely remain inflexible to adopt different perspectives by enacting a prototypical role of their silos. This leads to diverse isolated belief systems, which eventually results in collaboration problems. We contended that the state of uncertainty within ESS facilitates the substantial focus on silo mentalities to find stability in the organisation, which has adverse effects on the construction of shared understandings and the orientation on the needs of the whole organisation.

Accordingly, all preceding elaborations are coalescing into the overall research question, in which we aim to uncover how the different layers of identity are influencing each other in an early organisational stage of a knowledge-intensive firm and which implications it has for organisational reality. Following our analysis, we can perceive that the three levels of identity are inherently intertwined with each other as our research depicts that they cause reciprocal influences. The contradictory and fragmented corporate identity illustration influences the organisational and social identity construction as employees do not have a shared understanding of what ESS stands for. Further, the organisational and social identity also impact each other. One could argue that either the organisational identity appears fragile because the social identities are of a relatively strong nature or the social identities are perceived as strong because the organisational identity appears rather nebulous. These influences between the different layers of identity result in disconnectedness and a lack of common understanding or orientation amongst the employees which becomes visible through the creation of silo mentalities. As a result, we argue that the dysfunctionality of one identity layer and the combined imbalance could lead to negative consequences that manifest itself in the case of ESS in frictions and the problematic collaboration between silos. While the research facility aims to portray itself as an example of collaboration, it seems paradoxical that internally the collaboration appears far from ideal. Therefore, we advocate that it is of substantial importance to take all layers into consideration when aiming to study identity constructions in order to detect their mutual effects and understand the overall situation in an organisation.

To conclude, we illustrate how we interpret the interrelation between identity layers in the case of ESS with the following figure 3. As mentioned before, we perceive the social identities as comparably powerful, which is thus reflected by the bold borders. The consequentially emerging silo mentalities lead to the disconnectedness of social identities. Furthermore, the arrows depict a mutual influence between different concepts. Subsequently, the relative strength of social identities comes with a cost on a rather weak organisational identity, highlighted by a dotted line and is in turn also influenced by the fragmented corporate identity. Legitimacy encompasses verbal and non-verbal strategies that shape the construction but also the perception of corporate identity. Furthermore, we use the cultural characteristics of KIFs and knowledge workers as the contextual frame which has implications on our findings.

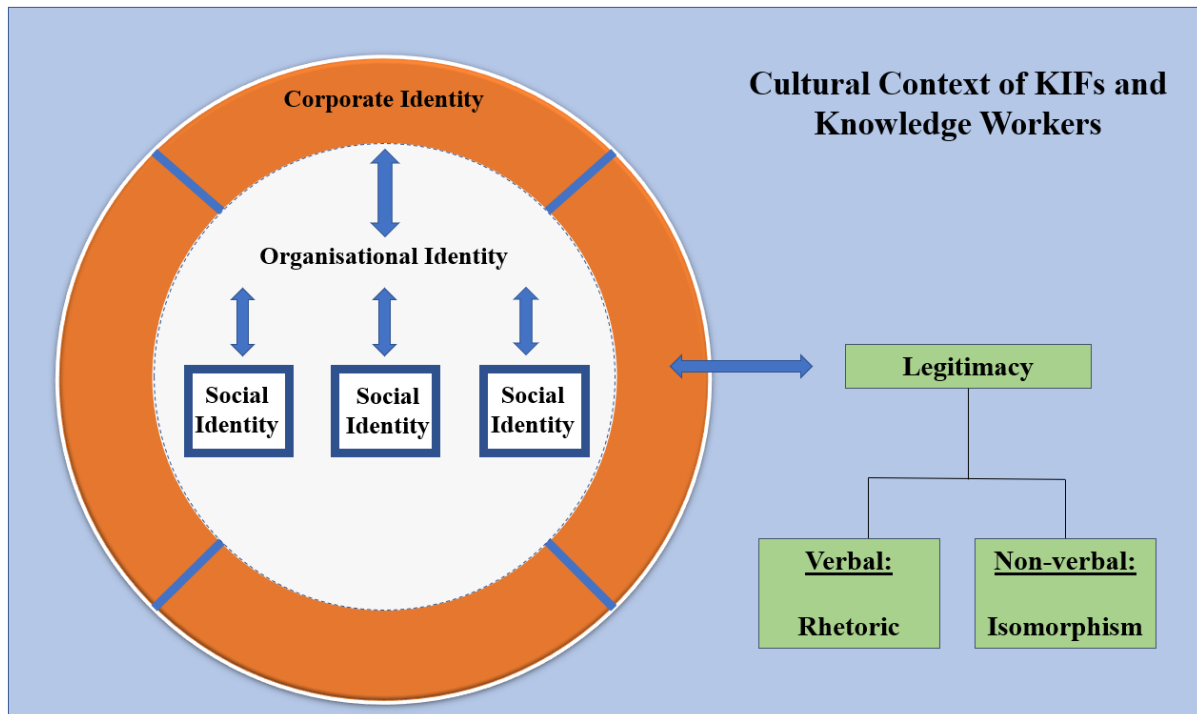


Figure 3: The reality model

6 Conclusion

To conclude our thesis, we elaborate on the initially outlined research aims and objectives and to what extent we were able to answer them. Consequently, we present theoretical implications of our research, but also provide potential indications for organisations. Furthermore, we suggest possible areas for future research that could draw on our study and conclude with some reflections.

6.1 Review of the Research Objectives

In this section, we reiterate the main topics from the initially presented research objectives, our formulated statement of purpose and the resulting research questions. Therefore, we clearly state our intentions, how we pursued them and what our concluding reflections are.

As the organisational research within non-mainstream organisations, such as big research facilities appeared to be rather unexplored, our objective was to shed light on this sector from a non-technical perspective. Therefore, we examined the specific situation at ESS and observed the vast opportunities of conducting research in corresponding organisations that have been rather neglected thus far. Consequently, by adopting an internal perspective, we were able to understand how employees are making sense of specific aspects of organisational life at the big research facility. Instead of developing new concepts, we extended existing theoretical assumptions within organisational science which are influenced by the highly ambiguous and constantly changing environment at ESS. Thus, we are able to suggest contributions to academia and provide practical considerations, which are explained in more detail in the following sections.

Another objective was the examination of the extraordinary organisational situation at ESS, encompassing its complex nature, the ongoing change, the vague status of future achievements as well as the employees' unpredictable contribution to the project. Hence, we were interested in how organisational members develop commitment towards the undertaking, despite this uncertain situation. Moreover, we aimed to study how employees are making sense of common reference points to navigate in reality. Accordingly, we could identify that this situation has major influences on employees, as they argued that it is difficult to find a shared orientation on a credible big picture that would provide a stabilising factor for the whole workforce.

Furthermore, as this reference point appears rather blurred, it does not serve as an aligning aspect for a common organisational direction.

The abovementioned objectives led to the significance of studying identity constructions and their implications for organisational life in the knowledge-intensive and complex environment of ESS. Due to the ambiguous nature of the organisation, we not only anticipated an effect on the organisation itself but also its members. Therefore, we took various identity layers into account to facilitate the analysis of their interrelation and implications on organisational life, which was supported by theoretical assumptions. Consequently, we set out the following research questions:

How are different layers of identity influencing each other in an early organisational stage of a knowledge-intensive firm and what implications could it have on the workforce?

- a. How does the company present itself to be perceived as legitimate as part of the corporate identity construction?
- b. How does the organisational identity influence the employees?
- c. How do employees construct a social identity within the organisation?

By taking various identity layers into account, we analysed that their interrelation is particularly prevalent in this organisational setup and stage. This entails concrete implications on organisational life that indicate important considerations for researchers and practitioners alike, which are discussed in more depth in the following sections.

6.2 Theoretical Contribution

As stated, our study contributed with an insight into the unexplored organisational field of big research facilities and provided a thorough analysis from an organisational science perspective. In particular, we addressed the construction of identity on various layers in an early evolutionary stage of a knowledge-intensive organisation. As elucidated in the introduction, the long lead time of the complex project in association with the unpredictable proportion of contribution by organisational members represents a challenge at ESS. Thus, we analysed that the uncertain situation and the missing confirmation for work efforts causes a lack of reference points for employees to develop the commitment to a common direction. We identified that organisational members in this stage of the science facility are trying to orientate themselves on a big picture that creates alignment and meaning for their work actions. However, this

appears to be rather blurred and consequently inhibits the development of an organisational identity as an anchor for stability. Hence, we argue that particularly in such an organisational environment this aspect needs to be taken into consideration as a credible big picture could be a unifying factor to create a common direction as part of an organisational identity. Thus, as a contribution to the substantiality of pre- and founding-identity for an organisational identity (Boers & Brunninge, 2010) in a knowledge-intensive context, we suggest that the construction of common reference points in form of big pictures are of significant importance in these stages. Particularly in *ideographic* organisations such as ESS, Alvesson's (2000) assumption that social identities could be more appropriate to create commitment amongst knowledge workers would be strengthened by invoking a credible big picture that could function as a glue between sub-groups and thus creating alignment instead of frictions.

In accordance with our overarching research question, we identified that especially during the setup phase of the organisation, the layers of corporate, organisational and social identity have major impacts on each other. It became obvious that if incoherencies arise on either level, it leads to spillover effects to other layers and potentially negative consequences on organisational life, as the frictions in collaboration illustrate. This can be understood to be reinforced by the young and growing stage of the organisation, in which the organisational setup and positioning is not yet established. Consequently, as the organisation aims to gain legitimacy amongst stakeholders, this bears considerations of how to present itself in accordance with identity constructions, which could also depict a reference point for organisational members. However, as the presentation appears rather dispersed thus far, this effect could not be generated. Moreover, the internal fragmentation further displays the lack of orientation amongst organisational members on a coherent direction that is understood to be rather present in silo mentalities. Therefore, we perceived that the lack of overlap between the perception of identity layers as a major aspect that leads to disconnectedness of the employees to the organisation and within the workforce in general. Based on the assumptions of Hatch and Schultz (1997) as well as Albert, Ashforth and Dutton (2000) to bridge identity concepts and examine their intertwined nature, we suggest that this is of particular relevance when studying the ambiguous nature of KIFs in an early organisational stage in which rapid changes cause instabilities on organisational life. Further, extending Cornelissen, Haslam and Balmer's (2007) cross-fertilised conception of corporate, organisational and social identity, we contributed to explore this association and recommend that it supports the explanation of phenomena in complex organisational settings, such as KIFs.

To conclude, the relevance of our study can be highlighted with our acquired assertion that we perceive the isolated consideration of specific identity layers as problematic and argue for a more coherent examination when attempting to analyse its effects on organisational reality. Therefore, we embraced the extraordinary organisational situation at ESS, which provided us with the opportunity to conduct our research within the growing evolutionary stage that bore concrete theoretical implications. Due to this, we observed that rapid change and transition depict a key indicator that should not be neglected within identity considerations. This poses a general applicability for all organisations finding themselves in a similar situation in an ever faster transforming world.

6.3 Practical Implications

Next to offering new insights for academia, we also provide valuable aspects to consider for big research facilities or organisations in a similar situation. Among these are rapidly growing companies, organisations with a similar amount of different professions or project-based businesses. Our study showed the importance to reflect on identity concepts within organisational life as not only different layers of identity influence each other, but this also might lead to negative outcomes for the organisation as a whole. An exemplary of a dysfunctional outcome is the collaboration issue which highlights that identity considerations are of significant importance in these kinds of organisations to explain specific phenomena.

Moreover, due to a diverse workforce in terms of nationalities and multidisciplinary an extra effort is needed to unite the employees as they might feel more attached to their profession for instance, which could result in further undesired outcomes such as neglecting others' perspectives. However, we do not argue that identity is the only explanation to these problems and we encourage to take other perspectives into account, such as leadership attempts to communicate a coherent big picture.

The concept of identity is characterised by its rather complex nature, as illustrated in the necessary balancing act of the corporate identity. One needs to address different stakeholders in an appropriate way, as they have different needs and requirements. We illustrated that this issue is especially prevalent in KIFs as one also needs to establish internal credibility in accordance with the social and organisational identity. Consequently, we believe that one has to take a reflexive stance towards the strategies to gain legitimacy as they also affect the

organisation internally. For instance, isomorphic attempts might lead to a positive external outcome, but can lead to internal difficulties.

6.4 Suggestions for Future Research

Due to the findings in our study, we discovered four different fields for future research.

- I) First of all, we argue for more organisational science projects in non-mainstream organisations, like big research facilities as they offer new insights to existing theoretical assumptions. In this sense it would be interesting to see if there are similar divisions in other science facilities within the workforce, e.g. administration, engineers and scientists. If that is not the case one could investigate what the organisation does differently or how such a divide can be overcome. Furthermore, as ESS will change drastically once the facility starts operating as a service organisation, many current employees will leave the organisation and move to the next project. In our opinion, a study about the effects of a nomadic lifestyle on organisational identity would be of value.
- II) Moreover, we suggest a longer time frame of study to examine how the interplay of the identity layers develop over a longer period. How do the employees or the management cope with the collaboration issue and can identity work be a counteraction? Further, to what extent is it even possible to influence identity in organisational environments, such as KIFs? These questions concerning identity are a second field for future research.
- III) Thirdly, we suggest further research around the concept of legitimacy with the following thought-provoking questions. How do external perceptions influence the workforce internally? Is there any difference in legitimacy attempts between public and private organisations or newly founded and established ones? What are the effects of other verbal or non-verbal strategies and is it possible to observe which one of these two has a bigger influence in certain contexts?
- IV) Lastly, we propose conducting additional research about how the ongoing change in an early evolutionary stage of the organisation affects the employees. It would be interesting to see where they orient themselves on and how they specifically cope with uncertainty. Our research showed that employees perceive uncertainty as either motivating or an aspect for anxiety. A closer examination seems fruitful as nowadays organisations face change more frequently. Moreover, it seems valuable

to research how the ongoing change affects other concepts, such as leadership or creativity for instance.

6.5 Concluding Reflections

Our initial interest in studying a big research facility like ESS was based on the unique possibility of conducting research in an unusual environment of an organisational greenfield project, which is characterised by unstable conditions and constant changes. Moreover, we were curious how the aspect of a rapidly growing and highly diverse workforce in the knowledge-intensive context influences organisational life. In this vein, we perceived that identity concepts hold significant considerations that could uncover and explain internal phenomena. Despite an initial notion of science-fiction that described the unusual nature of our study, we demonstrated the connection to reality by analysing the big research facility as a KIF. Therefore, we conclude that our research has been an exciting journey to obtain a glimpse of the universe that has been largely unexplored thus far.

Only united can the Force rise

... as the mission progressed, the daily frictions within the crew about a common direction did not seem to ease and Jack perceived that more and more sub-crews emerged that appear to invoke conflicting mindsets. While realising that the extensive focus on starting the mission led only to the physical unification of crew members in the spaceship, the personnel never truly aligned mentally. In addition to recognising each other's perspectives, Jack thought if he could only create a credible big picture that illustrates a meaningful reference point for the whole crew, it would help to guide them through the uncertain times and overcome the collaboration issues. Therefore, he was convinced that the orientation on a visible constellation would represent one important milestone to create a united force on the way to fulfil its mission.

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Appendix: Overview Interviewees

| Given Name | Professional Category | Managerial Position (= highly influential and responsibility) |
|-----------------|-----------------------|---|
| Alice | Administration | No |
| Carl | Engineer | Yes |
| Denise | Administration | No |
| Emma | Administration | Yes |
| Gustav | Administration | No |
| Helen | Scientist | No |
| Jack | Engineer | No |
| Oscar | Engineer | Yes |
| Paul | Scientist | Yes |
| Stefanie | Administration | No |
| Tony | Engineer | No |