

Master's Programme in Creative Sustainability

Meanings of a Sustainable Future and the Role of Technology: Critical Discourse Analysis of Sitra's Foresight

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In societal sustainability discussions, the role of technology is a central issue. Some actors approach sustainability solutions through the opportunities created by technological innovations, while others question their sufficiency in achieving sustainable societal change. Inspired by this debate, this critical discourse study focuses on the discursive construction of a sustainable future and the role of technology in the foresight of the Finnish expert organization Sitra. The study is a qualitative discourse analysis, utilizing Sitra's Megatrends 2023 report as research material. The methodology applied is Critical Discourse Analysis (CDA), drawing inspiration from organizational post-humanism. The study identifies four discourses: Preparedness for Difficulties, Hope from Action, Future in Human Cognitive Control, and Reformist Transformation.

The findings illustrate Sitra's expectations, goals, and values concerning future trajectories. The critical discourse analysis reveals that a sustainable future is filled with meanings of fear and crisis but also hope and opportunities. In these meanings, human cognitive abilities and technological development are portrayed as both inevitable opportunities and potential threats. The analysis shows how the meanings of sustainability relate to economic and political reforms, technical solutions, and changes in human behaviour — primarily within the boundaries of existing systems. The role of non-humans, including other species and non-technological solutions, plays only a minor role within the discourses. The findings reinforce the understanding of sustainable future meanings as a complex phenomenon, infused with organizational discourses.

The insights provided by these findings are invaluable for decision-makers aiming to enhance sustainability within societal institutions by heightening awareness of sustainable future trajectories. Consequently, this study serves public decision-makers and researchers who seek to critically examine technological inevitability and human agency in sustainability discourse, while offering perspectives on the relationship between humans and technology in the future.

Keywords CDA, sustainable future, technology, organizational sense-making, organizational sense-giving

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Kestävyyden diskursseissa teknologian rooli on keskeinen kiistakysymys yhteiskunnallisessa keskustelussa. Eri toimijat lähestyvät kestävyysratkaisuja teknologisten innovaatioiden luomien mahdollisuuksien kautta, kun taas toiset kyseenalaistavat niiden riittävyyden kestävässä yhteiskunnallisessa muutoksessa. Tästä keskustelusta inspiroituneena tässä kriittisessä diskurssitutkimuksessa keskitytään kestävän tulevaisuuden ja teknologian roolin diskursiiviseen rakentumiseen suomalaisen asiantuntijaorganisaation, Sitran, tulevaisuusennakkoinnissa. Tutkimus on laadullinen, ja siinä tarkastellaan organisaation merkityksenantoa kestävän tulevaisuuden ja teknologian osalta. Tutkimuksen aineistona hyödynnetään Sitran 2023 Megatrendit-julkaisua, ja analyysimenetelmänä toimii organisaatiotutkimukseen soveltuva kriittinen diskurssianalyysi, jota täydentää posthumanismin näkökulma.

Kriittisen diskurssianalyysin tuloksena tunnistettiin neljä diskurssia: Valmistautuminen vaikeuksiin, Toivoa toiminnasta, Tulevaisuus ihmisen kognitiivisessa kontrollissa ja Reformistinen transformaatio. Analyysimenetelmän mukainen tulkinta osoitti, kuinka Sitra ennakoi tulevaisuutta nykyhetkeen liitettyjen merkityksenantojen kautta, joihin liittyvät pelko ja epävarmuus sekä toiveikkuus ja mahdollisuudet. Lisäksi tuloksista ilmeni, kuinka tulevaisuutta pyritään merkityksellistämään ihmisen älykkyyden ja kyvykkyyden sekä teknologian tarjoamien väistämättömien mahdollisuuksien, mutta myös uhkakuvien kautta. Analyysi osoitti, että kestävyiden merkitykset liittyvät taloudellisiin ja poliittisiin uudistuksiin teknisten ratkaisujen ja ihmisen käyttäytymisen muutosten myötä, pääasiassa nykyisten järjestelmien rajojen sisällä. Ei-inhimillisten toimijoiden, kuten muiden lajien ja ei-teknologisten ratkaisujen, rooli jää vähäiseksi diskursseissa. Löydökset vahvistavat ymmärrystä kestävän tulevaisuuden merkityksistä monimutkaisena ilmiönä, johon organisaatiot osallistuvat diskursseillaan.

Tutkielman tulokset tarjoavat näkökulmia niille, jotka tekevät päätöksiä kestävyiden parantamiseksi yhteiskunnallisissa instituutioissa tutkimuksen lisäämisen tietoisuuden kautta. Tutkielma tarjoaa hyötyä päätöksentekijöille sekä tutkijoille, jotka haluavat tehdä jatkotutkimusta ja muovata kestävyiden diskursseja sekä tarkastella kriittisesti teknologian ja ihmisen toimijuiden välistä suhdetta yhteiskunnallisessa muutoksessa.

Avainsanat kriittinen diskurssianalyysi, kestävä tulevaisuus, teknologia, organisaatioiden merkityksenanto

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Abbreviations

CDA	Critical Discourse Analysis
EU	The European Union
SDG	Sustainable Development Goals
ST	Sustainable Transition
STS	Science and Technology Science

1 Introduction

1.1 Research Background

The meanings attributed to a sustainable future at the societal institutional level are crucial for envisioning a truly sustainable future for all living beings on the planet. Today, the survival of humanity and other species is at risk, as the critical life-support systems known as Earth system boundaries are threatened by human impact. These Earth system boundaries, such as atmosphere, biosphere, and hydrosphere, are essential for maintaining societal systems and ensuring the well-being of diverse species on the planet. Therefore, humanity, along with other species, must adapt to new ways of living to secure well-being and survival for the future. (Rockström et al., 2023.) In response to this challenge, societal institutions have embraced the sustainability discourse and established sustainable development agendas to encourage societal actors to innovate new solutions to mitigate the risks and align their actions with the planet's needs (Adloff & Neckel, 2019).

However, sustainability remains a contested concept and goal, with one key debate centered around economic growth and technological development. Some societal actors view economic growth and technological innovation as prerequisites for achieving sustainability, while others see them as barriers. (Adloff & Neckel, 2019; Ruggerio, 2021.) Also, scholars approach technological solutions from varying angles: some recognize their potential as primary enablers for sustainability through economic growth (e.g., Reis et al., 2021; Islam, 2023), whereas others question the dependence on a growing economy and technological advancement (e.g., Alexander & Rutherford, 2019). Scholars, who consider economic growth an obstacle, focus on transforming societal systems by emphasizing innovation for sustainability in other than just economic and technological terms. They advocate for a variety of solutions and knowledge types to initiate systemic change, encompassing ecological, social, and cultural dimensions of an innovation which are crucial for long-term sustainability. (Kivimaa, Laakso, Lonkila & Kaljonen, 2021; Alexander & Rutherford, 2019.)

These two perspectives on sustainability solutions are identified as weak and strong sustainability approaches. Weak sustainability involves gradual changes within the current system through technological substitution and improvement, whereas strong

sustainability focuses on structural changes in existing systems and considers changes in mindsets and behaviour on a collective level (Ruggerio, 2021). This contested nature of sustainability discourses may have a performative effect on the trajectories of sustainable change and decrease the effectiveness of implementing sustainability solutions (Hallin, Karrbom-Gustavsson, & Dobers, 2021).

Recently, organizational scholars have also criticized sustainability in institutionalized settings for being presented from a human-centered perspective, which remains silent about the roles of non-human entities in changes to the Earth system (Tallberg & Huopalainen, 2024). These overlooked agencies in sustainability discourse inspire this study of meanings. Therefore, the meanings of a sustainable future and the recognition of non-human agencies are significant in understanding how these meanings shape visions of the sustainable future and innovation development. They do so by legitimizing certain values, goals, and actions while marginalizing others in the process of creating sustainable futures (Miller, 2020; Fairclough et al., 2004).

To address this conceptual complexity related to sustainable futures, the power of discourses must not be underestimated, as these social acts become performative in both individual and institutional actions. Therefore, this study applies critical discourse methodology and organizational sense-making and sense-giving lens to uncover the meanings and the embedded values, goals, and ideas within them in institutionalized contexts of sustainability and the role of technological innovation. Given that conceptualizations of sustainability vary, understanding the current institutional paradigms that perform sustainability through discourse is essential (Hallin et al., 2021; Hajer, 1995).

Thus, the interest of this study focuses on institutional meaning-making practice in future-oriented settings. Therefore, the selected study context is organizations, particularly an expert organization Sitra, on its other name the Finnish Innovation Fund. Sitra is particularly interesting due to its future and innovation-oriented role in the Finnish landscape of future politics (see Sitra, 2025; Kettunen, 2015). Studying Sitra's discourse can enhance understanding of how a sustainable future is influenced in Finland by an expert-driven organization closely operating in the Finnish political landscape. Therefore, examining Sitra's anticipatory discourse offers valuable insights into

a less-explored topic regarding how an expert organization envisions the sustainable future and positions itself within the conceptual debate on sustainability and the role of technology. By studying the discursive variety related to sustainability and the role of technological innovation from a Critical Discourse Analysis (CDA) perspective, inspired by post-humanism, this thesis can offer valuable knowledge of sustainable future discourses and expectations for sustainability solutions in Finnish expert-driven community that possibly influences the future politics in Finland.

1.2 Research Objectives, Questions and Scope

This chapter outlines the research objectives, questions, and scope. The objective of this study is to examine how Sitra assigns meanings to a sustainable future and the role of technology through a critical discourse analysis inspired by concepts from post-humanism. The aim is to provide empirical analysis and generate empirical knowledge about sustainability discourses in Finland. Given the limited scope of this master's thesis, the focus is specifically on Sitra's external future anticipation as expressed in public written texts. Understanding the discourses in anticipatory communication is valuable for those interested in exploring how organizations strategically shape futures in the present moment through forecasting and assessment. By adopting this approach, the study aligns with the fields of organizational critical discourse studies, sense-making and sense-giving theory, as well as social sciences and sustainability studies. Nonetheless, insights from other relevant fields, such as science and technology studies (STS), innovation studies, and critical post-humanism theory are included, as my interest in the complexities of sustainability discourse spans interdisciplinary research interests. The research questions are presented next.

RQ1: How are meanings constructed to sustainable future in Sitra's anticipatory discourse?

The first research question examines how sustainable future discourse is constructed in Sitra's strategic foresight, by focusing on organizational meaning-making interpreted through the lens of sense-making and sense-giving. The aim is to analyse and build knowledge on how Sitra engages futures from sustainability point of view and how it positions in the contest of sustainability meanings. The broader aim is to

increase understanding on how expert organization is part of shaping sustainability discourses in Finland.

RQ2: What meanings does technological innovation gain from a sustainable future point of view?

The second question connects with the first one and it examines how technological innovation is given meanings in Sitra's strategic foresight discourse. The purpose is to understand how Sitra positions itself in the contest between weak and strong sustainability solutions. By asking this question together with the first one, the aim is to understand Sitra's views on sustainable future and technology. Thus, this question also seeks to offer insights into how organizational discourses reflect cultural and ideological assumptions regarding which futures and innovations are desired and for whom. The question has no pre-assumptions as the answer to the question could be that no meanings exist toward technological innovation.

The scope of this study is situated within Sitra's external communication. The focus is only on publicly available communication. This study does not aim to provide a comprehensive knowledge on how discourses change public policies and decision-making, but rather it aims to understand how meanings are constructed in the realities of sustainable transition and future politics in a case organization. The analysis scope is further explicated in the methodology section. Understanding how sustainability discourses are constructed by expert organizations is important for several reasons. It allows both the case organizations and other researchers to understand and examine the implication of these organizational discourses, and to identify the quality of their content. By examining how a case organization constructs reality, this study aims to contribute to the broader understanding of sustainable futures within the field of management and organizational studies.

This specified approach allows for a comprehensive examination of how discourses hold power while constructing meanings for specific sustainable futures in the present within public organization context, notably focusing on ideas, values and norms they embed through language (Fairclough, Graham, Lemke & Wodak, 2004). As scholars demonstrate, sustainable transitions become increasingly complex and harder to study (Köhler et al., 2019) but finding ways to explicate the direction of them can assign a

crucial role for discourse studies to show how the contested nature of sustainability is organised in actor speeches. Thus, this study contributes to the knowledge base of sustainability discourses as being a part of the academic discourse of sustainability itself.

1.3 The Structure of the Thesis

This thesis study consists of six chapters. The introduction chapter (1) discusses the background and introduces key concepts, objectives, context, and research questions, as well as defining the scope. Chapter two (2) reviews the theoretical underpinning of studying discourses on sustainable futures and technology in an organizational context, concluding with a summary and an interpretative framework created for this study. Chapter three (3) outlines the methodological choices, practices, and ethical principles followed in this study. Chapter four (4) presents the critical discourse analysis and key findings, recognizing discourses as acts of sense-making and sense-giving. Chapter five (5) discusses and examines the key findings in relation to the existing literature and the interpretative framework developed for this thesis study. Lastly, chapter six (6) concludes the thesis by summarizing the findings, contributions, theoretical and practical implications, limitations, and suggestions for future research.

2 Literature Review

This literature review section presents key theoretical concepts, and previous study approaches relevant to this study. The chapter is organized to directly support the guiding research questions presented in the introduction section. It begins by introducing the discussion on sustainable futures and examples of prior findings. Second, the chapter discusses about discursive approaches and explains how discourse and its ontology in this study are understood. Third, it introduces the lens of organizational sense-making and sense-giving and its relation to organizational anticipation discourse. Finally, the chapter returns to the discussion of sustainability discourse and the role of technology within it.

The reviewed literature is primarily in English, as it is the dominant language of modern scientific research (Englander, 2014). This study has made efforts to address the dominance of Western perspectives and culture by recognizing the need for diverse worldviews and knowledge in building sustainable futures (Veland et al., 2018). By incorporating perspectives from post-humanist organizational studies (Tallberg & Huopainen, 2024), the study challenges existing practices by focusing on assumptions and silenced roles in sustainable future meaning-making. However, the challenge of researcher bias is acknowledged, given that this thesis is conducted at a Western institution in Finland. While the focus of the study is to understand dominant discourses in Finnish organizations, the aim is not to devalue any culture, ideology, or values. Instead, it seeks to illustrate how dominant discourses may silence other valuable perspectives in the process of sustainable future-making (Riedy, 2020; Joosse et al., 2023).

Although this thesis is completed in the business management department, covering literature from multidisciplinary fields provides a comprehensive understanding of the research phenomenon closely related to the topic of expert organizations. Therefore, this thesis combines multi-disciplinary insights from social sciences, sustainability studies, science and technology studies, and innovation studies. Literature was selected based on its relevance, focusing on sustainability, technology and language-oriented approaches. The scope of the reviewed literature is limited to directly support the study of organizations and public institutions, sustainability discourses, and

technology communication. Thus, the literature is based on the key themes in this study to best understand the studied phenomenon. Additionally, based-on the analytical approach in this thesis, the literature is reviewed in dialogue with the analysis presented in Chapter 4. The limitations of the literature review are discussed in Chapter 6.

2.1 Meanings of a Sustainable Future

In this chapter, I introduce how sustainable future is explored from discursive perspectives in previous studies, before delving into the theoretical approaches of this study in Chapters 2.2 and 2.3. The studies in this chapter present sustainability discourses as being studied from diverse conceptual foundations, which is typical for research focused on meanings (e.g., Riedy, 2020). All the scholarly discussions presented in this chapter are relevant for understanding how sustainable future gains meaning within organizational and institutionalised contexts. The chapter begins by exploring the meanings of sustainability by discussing its conceptual foundations to understand the meanings of sustainable futures in organizational texts. By reviewing several qualitative studies on sustainable futures and meaning making through language, the exploration reveals how the meanings of a sustainable future can be studied from various perspectives. This observation was made throughout the reviewing process, which sometimes led to confusion. Relevant to this study, the focus is on sustainability and its meanings at the institutional level, thereby limiting the scope of the review.

As discussed in the introduction, meanings of sustainability vary depending on how it is understood. On global governance level, sustainability originates in Brundtland's 1987 report, "Our Common Future," which defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). This definition is further adopted in the United Nations Sustainable Development Goals (SDGs) (United Nations, n.d.). Sustainable development and the idea of sustainability in Brundtland's report have served institutions in helping them to adapt and govern the changes articulated in the SDGs. Another way to understand sustainability in society is its process related concept: sustainable transition. By transition scholars refer to the societal mission of systems change, aiming for transformative change across societal levels (Köhler et al., 2019). Thus, these concepts

describe the broader societal institutional landscape of sustainability which help in understanding the broader societal meaning making context related to sustainable futures.

Yet, despite of sustainability's wider use in society, sustainable future remains unambiguous and contested of its meanings and desired actions (Ruggerio, 2021). Therefore, understanding sustainability's diverse meanings is relevant for understanding what kind of a future is suggested by institutionalized actors. While reviewing studies I noticed, how scholars have initiated the idea of future in sustainable future by focusing on sustainability's inherent future aspects. According to these scholars the interplay of hope and fear defines the way how future's sustainability is perceived as the emotions relate to coping with future's inherent uncertainties. (Friedrichs & Hendriks, 2024; see Adloff & Neckel, 2019.) Social scientists have also emphasized the interplay between hopes and fears related to sustainable future visioning. Even though their study explored positive future visions, the results reveal fears of failing the achievement of sustainability. (Willow, 2022.) Thus, these studies highlight how the concept of sustainable future remains open to emotional adaptability and uncertainty. This interplay of hope and fear can significantly impact the meanings within sustainable future discourses, guiding actions toward a sustainable society.

Redclift (2005) points that sustainability is strategically established by political and economic actors who leverage it for various institutionalized purposes. Thus, studying the meanings of a sustainable future involves examining meanings derived from institutionally established frameworks as well as the temporal aspects of societal change. This said, sustainability discourses may arise from the flexible conceptualization and varied application of sustainability in different contexts (Redclift, 2005). In addition to this discussion, other scholars remained that sustainability still lacks a unified narrative to be told from diverse perspectives and suggests development of narrative diversity for sustainability (Veland et al., 2018). Therefore, understanding discourses on societal institutional level may help to spot the places for improvement.

To study sustainability discourses empirically in institutions, Melles' (2021) study in Australia's bioeconomy sector, reveals how sustainability meanings in institutionalized settings align often with economic and technical ideas while also competing with

reformist and transformative discourses that aim for broader systemic change. This logic is also demonstrated by Miller (2020), who examines discourses in smart city projects, focusing on sustainability imaginaries and how they prioritize technical and mechanistic discourses on sustainable futures while serving institutional interests. Thus, institutions may shape their discourses to align with variety of interests regarding their own position as well as others. To understand and examine the meanings of sustainable future constructed on organizational level, discourse studies recognize sustainability and sustainable development as part of the mainstream institutionalized societal discourse, yet it encompasses diverse discursive coalitions as demonstrated (Redclift, 2005; Riedy, 2020; Melles, 2021; Miller, 2020).

Therefore, a key debate on sustainability relates to the challenge in identifying what should be sustained within development agenda discussions that encompass diverse environmental, economic, social, and cultural domains (Redclift, 1992). As mentioned in the introduction, a key debate on the challenge relates to the contradictory goals of sustaining the ecological and social well-being while pursuing economic growth and expansion, as outlined in the SDGs (see U.N., n.d.). The challenging contradiction is located to ideologies of economy, which aim to improve the state of the planet with technological innovation while they are also seen causing the issues (Redclift, 2005).

Based on the previous discussions, scholars have named the challenges to weak and strong sustainability conceptualizations that create divisions among actors. Weak sustainability refers to gradual changes within the existing system that focus on economic and technological innovation as enablers of sustainability, while keeping changes minimal within the system (Ruggerio, 2021). However, these solutions have recently been deemed insufficient for achieving sustainability by scholars who study decoupling. These scholars argue that decoupling, the act of separating the economy's impact from environment impact through technological advancements has not resulted in a sufficient level of change, therefore increasing the tensions in sustainability debate (Vogel & Hickel, 2023; Alexander & Rutherford, 2019).

In contrast, strong sustainability solutions involve reforming societal systems with radical changes at the collective level by transforming systems of thought at both the individual and institutional levels. These paradigms shift focus to ideas such as economic

degrowth and *buen vivir* (the good life), which challenge dominant growth-oriented models of societal development (Ruggerio, 2021). In line with these discussions, scholars have advocated approaching sustainability from perspectives that go beyond human-centred solutions and suggest more inclusive development approaches to encompass the perspectives and roles of animals, plants, and trees, as well as marginalized groups in society (Tallberg & Huopainen, 2024). However, these suggestions have not recached the dominant discourse (Riedy, 2020).

This discursive battlefield is further explored in the context of sustainability transformation discourses by Riedy (2020), who investigates the discursive coalitions within transformative sustainability narratives in academic research. The study finds how market-driven sustainability discourse forms the dominant narrative according to prior research. While market-driven and technologically oriented discourses dominate the conversations on sustainability, they are challenged by emerging alternative narratives that emphasize planetary centrism, human dignity and well-being, social and economic justice, and new economic systems (Riedy, 2020).

Building on this discussion, Joosse et al. (2023) on sustainability storytelling in digital environments and finds how sustainability is constructed linguistically from agencies of responsibility. The study revealed how storytelling frames individuals as responsible agents to change and influence their everyday lives to sustainable based on expert and scientific knowledge. The sustainability storytelling is found to assign roles specifically for humans to act by making informed choices that create their desired sustainable futures. (Joosse et al., 2023.) This individualized responsibility was identified being part of the dominant sustainability discourses in which individuals are responsible for societal issues (see Riedy, 2020). Therefore, these studies may inform the interpretative framework by offering insights to pay attention to the dominant logics, ideas and agency positions while examining discourses in organizational texts.

Thus, this conceptual contest and complexity around sustainability may affect how societal actors perceive sustainability and the role of technology while developing solutions and actions for sustainable future. It is important to note that while this thesis does not directly investigate economic discourses, it recognizes them as crucial for understanding the contested nature of sustainable future meanings and the role of technology within them.

As earlier discussed, the empirical studies highlighted how institutional sustainability discourses may give meanings to ideas and values of institutions themselves rather than advocating solutions or innovation development that truly brings sustainability in society (e.g., Melles, 2021; Miller, 2020). Therefore, investigating organizational discourses from a critical discourse study perspective is highly relevant. Integrating insights from the scholarly discussions from this chapter enriches the interpretative framework of this study, enabling analysis of sustainable futures as phenomena of meaning making. However, in organizational future-oriented contexts discourse studies were limited as I had to examine the topic outside of the organizational strategic anticipation scope. Thus, with this study I aim to close the gap and offer other researchers a premise to continue discourse research on future-oriented agendas in organizations.

To conclude, the reviewed literature within this chapter reveals sustainability's contested nature. Sustainability's meanings reflect diverse conceptual roots with significant debate surrounding economic growth implications tied to technological advancement. While some approaches promote gradual technical fixes to existing systems adequate for sustaining current structures, others critique these methods as insufficient, instead advocating transformative systemic change. Additionally, scholars recognize the need for diverse sustainability narratives yet lacking in society. To deepen insight into these contested sustainable future narratives, the following section explores how discourse theory can enhance understanding the complexities of sustainable future and technology's position in these meanings.

2.2 Discursive Approaches

To understand discourses in organizational texts, this chapter explores discourses as significant forces of societal change, reflecting shifts in social relationships and institutional identities. Studying discourses in organizations can provide insights into how often taken-for-granted ideas, values, and knowledges are reproduced and redefined in social meaning-making processes (Fairclough et al., 2004; Fairclough, 1992, pp. 211–212). Discourse is recognized as a significant force in contemporary mediated life, where continuous flows of global exchange and production make discourse even more relevant for transferring societally significant meanings (Fairclough et al., 2004). Therefore, discursive approaches can provide valuable insights into the trajectories of

change toward a sustainable future, as these trajectories are discursively shaped by contested meanings of sustainability. This includes its temporal future-oriented meanings, where the interplay of hope, fear, and uncertainty may play a significant role (e.g., Friedrichs & Hendriks, 2024).

Discursive approaches encompass various terminologies, depending on the researcher's interest and focus (Wodak & Meyer, 2009). As this study is a critical discourse analysis, centred on the societal meanings of sustainable futures and technology, other discursive concepts and approaches may become relevant for understanding the literature beyond discourse terminology. Thus, the literature reviewed can incorporate other discursive concepts to provide a holistic understanding of the phenomenon explored in this study. These terminologies encompass discursive terms such as narrative, storytelling and imaginaries, often used interchangeably by scholars (e.g., Neckel, 2019; Miller, 2019; Joosse et al., 2023). Thus, this study anchors in discourse terminology but recognizes the relevance of the other concepts used by other researchers.

While this study could have anchored in other terminologies, it focuses on how the sustainable future is constructed and how the role of technology is given meaning at Sitra, a politically significant institutional actor in Finland (Kettunen, 2015). Therefore, it adopts the term "discourse" as an appropriate concept to capture given meanings from a critical perspective on a politically important topic (see Hajer, 1995). To clarify what critical discourse study means, it does not take a negative approach on problems rather, it critically evaluates what is presented as "given" or taken for granted (Wodak & Meyer, 2009). This said, I aim for a comprehensive use of discourse terminology.

Thus, being inspired by the powerful nature of discourse, this study adopts a critical discourse analysis perspective, understanding discourse as a powerful force in legitimizing and shaping future visions and guiding societal action (Fairclough, 1992). Discourses are seen as constitutive acts that socially shape reality within institutionalized processes. Through discourse, meaning, order, and position are continuously negotiated in institutionalized social life (Grant et al., 2004). As said, discourses can be understood as vehicles that convey socio-cultural meanings, transmitted through

narratives and embedded in specific societal orders, contexts, and temporalities (Smith, p. 136). Building on Fairclough et al. (2004), discourses are acts that are not just representational but performative, actively shaping power relations by legitimizing, sustaining, and challenging organizational actions. Thus, these conceptual foundations define how discourse is understood and examined in this study within the context of sustainable futures and technology in institutionalized settings.

The ontological premise in discourse studies is social constructionism, which holds that reality is socially constructed and shaped through language use. Social constructionism views society and its various practices and materialities as being constructed through social meaning-making processes and shaped by actors who use language (Berger & Luckmann, 1967; Niska, Venäläinen, Olakivi & Cañada, 2024). Social constructionism from environmental studies perspective is interested how particular regions, entities, and people are formed through interaction with one another, as well as how and why some ideas are regarded as natural while others are not. Thus in this study, the constructionist perspective helps to view sustainable future and technological innovation to be a socially constructed phenomenon. Additionally, socio-constructionist approaches often adopt a critical stance toward Western epistemologies that draw rigid distinctions between nature and culture, human and non-human, and the social and natural. (Karhunmaa, 2024, p. 317–318.) Therefore, social constructionism informs the interpretation processes of societal meaning-making and meaning-giving while assessing the organizational texts critically by paying attention to the marginalized roles and ideas in sustainable futures discourse.

Finally, I previously mentioned the perspective of post-humanism in the introduction section (Tallberg & Huopalaïnen, 2024), which can provide insights into the critical study of discourses from the perspective of others, specifically those considered as non-humans. This relatively new approach in organizational studies draws inspiration from understanding social reality by focusing on how nature or the natural is perceived in society and organizations. By defining 'others' in detail, this perspective aims to include the voices of dehumanized social groups, other species, technological artifacts, and non-human living organisms such as plants and trees. Moreover, post-humanism seeks to decentralize the human subject and challenge the dominance of anthropocentrism, which positions humans as superior to nature (Tallberg & Huopalaïnen, 2024).

Therefore, being inspired by the post-humanism lens, it supports the Critical Discourse Analysis (CDA) approach and its social constructionist premise of advocating silenced perspectives in social institutions (Fairclough, 1995). However, the major focus in this study is not comprehensively analyse non-human positions and roles but to recognize their missing positions and ideas to some extent on institutionalized practices.

In conclusion, this study adopts discourse as the central concept to analyse organizational meaning-making. Discourse is a suitable concept for exploring how societal meaning-making processes legitimize and sustain certain actions, values, and ideas surrounding sustainability in societal dialogue, as it reflects the ways institutions make sense of events and participate in societal negotiations. Viewing discourse as a powerful force offers insights into understanding the complex and contested nature of sustainable futures and technology, as these discussions are constructed from different perspectives (Redclift, 2005). Moreover, the discursive approach in this study is enriched by integrating insights from a post-humanist lens, offering tools to understand organizational realities from the perspective of marginalized others and what is considered normal and desired regarding future development visions and technology's role within them.

2.3 Sense-Making and Sense-Giving Perspective

As discourses are understood to convey and construct meanings (Kärreman, 2014), this chapter builds on the discourse theory from the previous chapter by illustrating how discourse operates as an organizational practice of sense-making and sense-giving (Gephart et al., 2010; Boyd, Nykvist, Borgström & Stacewicz, 2015; Whittle, Vaara & Maitlis, 2023). This theoretical lens helps in understanding organizational discourses from the perspective of meaning construction and distribution within institutionalized contexts (Whittle et al., 2023). By applying this lens, the approach allows for the interpretation of organizational discourse and positions organizations as powerful actors in both making sense of and giving sense to sustainable futures and technological innovation.

The foundation of organizational sense-making theory was introduced by Karl Weick (1995), who conceptualized sense-making as a retrospective process. In Weick's theory,

retrospective sense-making means that individuals understand events after they occur because this process requires attention to the past. Building on this, scholars have extended the concept to include future-oriented sense-making as a practice that constructs intersubjective projections of material future objects, incorporating imagined-based meanings. (Gephart et al., 2010, pp. 284–285.) However, future-oriented sense-making always involves a temporal layering of the past and present, as these elements provide context and continuity for making sense of plausible future trajectories (Gephart et al., 2010, pp. 284–285). In this way, conversations about the future are not only descriptive but also constitutive, as they shape what is considered probable, desirable, or acceptable. By understanding discourses being part of this constitutive nature of sense-making and sense-giving offers a lens to understand the meaning-making context in this study.

Especially, in this study's context, sense-giving emerges as a crucial extension of sense-making through organizational discourses. Sense-giving refers to how organizations attempt to influence others by centring their own interpretation of events and future directions. Through this discursive positioning, organizations seek legitimacy and authority in uncertain or complex societal environments. (Gephart et al., 2010, p. 278.) Sense-giving can be understood as an extension of sense-making because both relate to the processes of constructing meaning from the past, present, and future. In this sense-making, and particularly sense-giving, organizations position themselves relative to other institutional actors, which aligns with the ontological premise of critical discourse studies (Fairclough, 1995). To understand how organizational discourse becomes a powerful force in legitimizing sustainable futures and the role of technology, understanding discourse as a practice of sense-making and sense-giving building legitimacy in societal change provides a lens through which to review discourses in organizational contexts (Gephart et al., 2010; see Whittle et al., 2023).

As noted earlier, discourses construct power by legitimizing visions and societal actions (see Fairclough et al., 2004). Discursive legitimacy, an act of validation, is constructed through various rhetorical strategies rather than being inherently established. Scholars have identified several legitimation strategies in institutions that create persuasive power and institutional authority. These strategies combine emotionally appealing messages, moral guidance, and rational arguments to construct a compelling discourse

(see, e.g., Vaara & Aranda, 2024; Whittle et al., 2023.) Building on these insights, Boyce's reflection (1996) on Berger and Luckmann's social constructionist theory (1976, p. 78) shows how organizational discourse becomes a sense-making tool to integrate the present with the future, thereby gaining legitimacy for institutionalized existence and actions within society. This insight is reinforced by scholars connecting sense-making to guide problem-solving processes, decision-making, actions, and change in organizations (James & Minnis, 2004; Boyce, 1996; Flyverbom & Garsten, 2021). Additionally, other studies emphasize that organizations use discourse as a practice of sense-giving to persuade others and signal expected actions to organizational stakeholders (Gioia & Kumar, 1991).

Institutional sense-making has got significant research interest regarding how organizations navigate their positions in society. However, the perspective of sense-making and sense-giving in future-oriented contexts is relatively less examined (Gephart et al., 2010). While reviewing studies on the topic, Sakellariou and Vecchiato (2022) explore organizational sense-making as a collective social process that describes how organizations interpret and assign meaning to both past events and anticipated futures. Examples of these anticipations include strategic planning reports, capacity-building communications, and the mobilization of institutional stakeholders through various organizational practices (Muiderman et al., 2020). In organizational anticipation context, Sakellariou and Vecchiato (2022) highlight how anticipations involve developments that guide organizational processes such as innovation, strategy planning, and new product development. Therefore, organizational strategic foresight and scenario modelling for the future can be considered as sense-giving processes for expected future actions and events. Explorations into anticipation suggest that this practice of sense-giving helps humanity become conscious of the consequences and choices facing individuals and societies (Boyd et al., 2015).

Thus, using the lens of sense-making and sense-giving in anticipatory practices can provide a valuable perspective for understanding organizational discourse in this study. Sitra is a significant player in the Finnish context of future politics (Kettunen, 2015). And according to Sitra's website (2025), it publishes key forecasts, such as reports on megatrends and weak signals, to anticipate futures for its stakeholders. Therefore, incorporating the lens of sense-making and sense-giving into these anticipatory

processes is a relevant approach to understanding discourses in the context of this study.

To conclude, this chapter introduced how the practice of future-oriented sense-making and sense-giving is related to the theory of discourse and how this approach can be applied to organizational anticipation practices. Consequently, this section informs the interpretative framework of this study by considering Sitra as a sense-maker and sense-giver in the meaning-making and legitimation of sustainable futures and technology. Importantly, the meanings within sense-making and sense-giving processes communicate certain values while also excluding and marginalizing others. Therefore, the critical discourse study lens can help interpret the power-laden sense-giving process of organizations in the context of sustainable future politics.

2.4 Technological Innovation in Organizational Sustainability Discourse

Returning to the discussion on the sustainable future and its meanings, which I began in Chapter 2.1, this chapter explores the meanings of technology within the sustainability discourse. In this chapter, I draw insights from multidisciplinary perspectives, including studies from organizational studies, sociology, and science and technology studies. I discuss technology and innovation together to better understand the role of technology in the sustainability discourse. The discussion on innovation is included because the aim is to understand innovation more broadly, in order to understand the meanings of technology and beyond.

From a theoretical perspective that aligns with discursive approaches, STS scholars have approached technological innovations through the lens of performativity and expectations. In this approach, scholars understand technologies and innovation to be shaped by expectations that influence the outcomes of new innovations and technological development (Brown, 2003; Van Lente, 2012). These expectations for technological development may become performative through rhetoric and linguistic framings, as scholars see expectations as intrinsic to societal and technological visions of the future (Berkhout, 2006). Therefore, organizations may perform technological expectations in their future-oriented agendas, as Beckert (2021) theorizes how organizations

perform fictive expectations to shape future images by projecting technological expectations in organizational practices to legitimate action. This way expectations can be understood to have discursive features embedded in organizational rhetorics.

The topic has also been approached empirically. Scholars understand "promissory organizations" as influencing views on technological projects (Pollock & Williams, 2010). In their study, organizations have found to position themselves at centers of power by disseminating strategically constructed technology expectations to attract desired innovation outcomes. In doing so, organizations were found to shape knowledge, ideas, products, and visions in ways that favour certain technologies and influence the overall landscape of specific industries (Pollock & Williams, 2010). Also, innovation scholars Sergeeva & Trifilova (2018) empirically study how fictive expectations in innovation actor communities strategically communicate expectations to the future innovations to attract stakeholder interest and engagement to mobilize financial recourses in rhetorical ways. Therefore, by studying sustainable future discourse and the role of technology in organizations, like Sitra, discourses can be understood as rhetorical devices to communicate these expectations in "promissory organization" projects that project values, desires and goals that shape action.

To understand the performativity of expectations in a discourse, studies on Artificial Intelligence (AI) technologies were reviewed to understand the performative aspect of discourse in empirical contexts. Bareis & Kazenbach (2022) conduct a discourse study on Artificial Intelligence (AI) strategies of China, the United States, France and Germany and observe how policy narratives frame AI as both inevitable and necessary for national, economic and human progress. These narratives of AI, saturated with fear and hope, influence policy agendas. Thus, the study revealed how strategic documents may strategically perform expectations saturated by fear and hope for certain technologies that guide national policy planning. However, these technology expectations may potentially hide attention away from societal structure challenges related to technology governance. Also, recent studies on AI discourses in political communities, online platforms and consultancy firms and reveal similar discursive dynamics of hopes and fears around AI technologies by demonstrating how AI technologies are infused with ambivalence by balancing with contradictory ideas utopian visions of promising technologies

and dystopian visions of increasing anxiety and fear (Elmholdt, Nielsen, Florczak, Jurawetzki & Hain, 2025).

Returning to the discussion on the meanings of a sustainable future initiated earlier, the role of technology in achieving sustainability is a highly contested topic, partly due to its connection with the debated issue of economic growth (e.g., Ruggerio, 2021). Given that, the role of technology and technological innovation can be understood as a value-laden phenomenon encompassing various normative assumptions from its developers and designers and promoters that are related to various personal but also institutional interests in society (Miller, 2020; Berkhout, 2006). Thus, these values, and normativity of expectations (see Berkhout, 2006) can be studied from discursive perspectives.

In reviewing previous studies, I observed that scholars consider the maintenance of economic growth and the development of green technological innovation to be crucial drivers in achieving sustainability. These studies associate sustainability with economic reforms, such as circular economy solutions and decoupled green growth (e.g., Islam, 2023; Huang, 2021; Dwivedi et al., 2022). Circular economy and decoupling solutions are proposed to reduce the economic system's impact while keeping economic growth desirable. These ideas of economic adaptations and institutional reforms, along with technological change, tend to dominate current sustainability discourses (Riedy, 2020). Thus, technological solutions in sustainability discourse are presented as ways to sustain economic growth while aiming for a sustainable future.

However, scholars in the field of environmental governance argue that technologically oriented economic reforms alone are insufficient for achieving long-term sustainability solutions (Alexander & Rutherford, 2019). In response, transformative approaches are suggested to shift societal thinking, including concepts like degrowth and changes in mindset, by not relying solely on technological progress and economic growth (Alexander & Rutherford, 2019). Thus, the debate concerning technology and sustainability is strongly related to the relationship between these competing interests where some promote technology and economic growth as sustainability solutions, while others criticize and find them to be insufficient and not desirable in the long-term.

Other discussion relates to the concept of innovation in achieving sustainability. Sustainable Transition studies approach innovations' ability to initiate systems change by advancing broad socio-technical transitions toward sustainability (Köhler et al., 2019). The scholars have examined various system approaches and theories of other researchers to understand the potential of innovation in accelerating radical socio-technical system transitions. From this perspective, innovation is understood broadly, encompassing all types of innovations—not just technological ones—that aim for new forms of living and sustaining the planet and social well-being in the long term (Köhler et al., 2019).

As said, innovations can include various ideas, values, goals, and knowledge encompassing technical, political, economic, cultural, and social aspects (Loorbach, Wittmayer, Avelino, Von Wirth & Frantzeskaki, 2020). Scholars emphasize the role of technological innovations in shifting the societal energy systems, resource use, and infrastructure on sustainable path (Bach, Mäkitie, Hansen & Steen, 2021). On the other hand, other scholars argue that focusing mainly on the disruptive potential of technological innovations may hide attention away from looking for other forms of innovative solutions on different areas in society, potentially hindering the potential for long-term and inclusive sustainable change (Kivimaa et al., 2021).

From a radically transformative sustainable future point of view, narrowing innovation solely to technological terms can marginalize other forms of innovation and creativity by excluding alternative knowledge and goals (Lowery, Dagevos, Chuenpagdee, & Voddén, 2020). This view on developing and mobilizing action around innovations for sustainability is particularly relevant from the perspective and inclusivity of 'others' as non-humans, discussed earlier in this study (see Tallberg & Huopalaainen, 2024). The inclusive form of an innovation is also introduced by transformative innovation scholars who see innovation as transformative, inclusive, and open-ended processes, rather than merely economic or technological ends (Loorbach et al., 2020; Kivimaa et al., 2021). In this regard, technology or any other innovation should perhaps not be presented as the central solution to sustainability but rather as one of many potential solutions.

Lastly, an interesting finding related to temporality and sustainability were found in Üzelgün & Pereira's (2020) empirical discourse study that revealed how technology's role in sustainability shifts over time depending on the temporal framings in the discussions. According to the study short-term focused discussions tend to embed technological progress in institutional contexts and highlight its connection to policy tools, regulations, support systems, and incentives. Conversely, long-term oriented sustainability discourse represent technology in more abstract and autonomous terms: as an external, potentially disruptive force that drives societal transformation and change. (Üzelgün & Pereira, 2020.) This temporal aspect of discourse in future-oriented agendas is also revealed in institutional foresight context and how it linguistically realizes technology values through selective framings, evaluative language, and the repeated association of technology with inevitable and benefit approach. The scholars who conducted the study argue that specific features of techno-optimism and also propositional certainty were found as functions to legitimize anticipatory claims by reinforcing institutional authority, preparedness and control. (McKeown, 2017.)

Therefore, this chapter explored the role of technology in sustainability discourse within future-oriented contexts by incorporating discursive approaches to technology and sustainability. One of the key debates around technology and sustainability is whether economic growth and technological replacement will bring about a sufficient level of change. To that discussion transformative systems approach remains a suggested solution. Transformative approaches emphasize that innovations for sustainability should be inclusive, focusing not merely on technical fixes or economic reforms but on targeting society at large. The studies also highlighted issues related to the conceptualization of sustainability, as the discursive battle is between weak and strong forms of sustainability in these negotiations. In the next chapter, I will conclude this literature review section by summarizing the key insights from this review and presenting the interpretative framework of this study.

2.5 Summary and Framework Development

This section summarizes the key findings and theoretical approaches relevant to this study's understanding of the meanings of sustainable futures and the role of technology. Chapter 2.1, "Sustainable Future and Its Meanings," explored the debate

surrounding sustainable futures, examining the conceptual foundations (Redclift, 2005) and discursive coalitions within transformative discourses (Riedy, 2020). Despite its widespread use, sustainability remains contested, with tensions between ecological well-being and economic growth characterized as weak and strong approaches (Ruggerio, 2021). The emotional dynamics of hope and fear in this debate highlight the uncertainty about future outcomes (Friedrichs & Hendriks, 2024). This section investigated the discursive battle over different perspectives on sustainable futures, which informs the interpretative lens used in the study to understand meanings. Additionally, it addressed a gap in understanding sustainable futures from the perspective of discursive power (Joosse et al., 2023) by incorporating an interpretative lens that considers more than just a human-centered perspective (Tallberg & Huopalaenen, 2024).

Section 2.2, "Discursive Approaches," examined the role of discourse in shaping societal change, particularly within institutional contexts, and detailed its specific use in this study. Drawing on Norman Fairclough's work (e.g, Fairclough, 1992; Fairclough et al., 2004), the section introduced social constructionism (Karhunmaa, 2024; Niska et al., 2024) and connected post-humanism as an ontological foundation for critically interpreting discourses, focusing on missing actors or ideas (Tallberg & Huopalaenen, 2024). It concluded that discourses are powerful social acts, influenced by the values and ideas of their presenter and reproduced in various contexts, which are crucial for understanding trajectories toward a sustainable future.

In Chapter 2.3, "Sense-Making and Sense-Giving Perspective", I explored the lens of organizational sense-making and sense-giving to better understand the meanings of organizational discourse in societal life and sustainable future-making. Organizational sense-making theory suggests that organizations construct rhetorical meanings and assign meanings to specific events and anticipated actions (Gephart et al., 2010; see Whittle et al., 2023). It is viewed as a process that integrates past and future perspectives, with discourse both constituting and describing what is considered probable or desirable. Sense-giving, on the other hand, involves organizations persuading others by emphasizing their own interpretations, thereby seeking legitimacy and authority during societal uncertainties (Gephart et al., 2010). Building discursive legitimacy results from strategies that often employ emotional appeal, rational arguments, and moral guidance.

Lastly, in Chapter 2.4, “Technology and Innovation in Sustainability Discourse,” I reviewed the theory of expectations to gain insights to understand the effects of discourse in context of sustainability and technology and find research on expectations theorized to guide the technological progress and innovation development. The lens of expectations is integrated in this study to inform understanding of discourses and organizational rhetorics in context of technology and innovation development. In context of organizations and future visions, expectations are embedded in discourse through which organizations project future technological images and shape the desired outcomes (Berkhout, 2006; Beckert, 2021). This theoretical approach was further explored by reviewing studies on technology discourses and their performativity in national technology strategies which revealed emotionally resonating meanings both hopes and fears (Bareis & Katzenbach, 2023). The chapter also discussed the understanding of innovation for sustainability, revealing a diversity of approaches (e.g. Islam et al., 2023; Kivimaa et al., 2023). Furthermore, the section examined prior empirical studies on technology and sustainable futures, finding that the role of innovations in sustainable transitions is debated due to the distinction between weak and strong sustainability conceptualizations, as well as temporal framings (Üzelgün & Pereira, 2020).

The interpretative framework is presented below. It is developed specifically for this study, and it illustrates the theories, concepts, and findings discussed in this section. The interpretative framework outlines the approach taken in this study and is considered throughout the analysis and interpretation of the findings in Chapter 4 and 5. discourse, specific understanding adopted from Critical Discourse Analysis (CDA) theory, is the main concept in the framework. Additionally, the concept of sustainable future is included as an important object of interpretation. Organizational sense-making and sense-giving offer a lens that connects to discourse, helping to interpret organization’s position and role in articulating organizational future anticipations. Empirical insights are shown by illustrating the conceptual contestation between weak and strong sustainability discourses. The literature-based interpretative framework provides an analytical lens to interpret the data while remaining flexible to discover new and creative approaches to the phenomenon. Thus, the framework presented below serves as an interpretative tool, offering insights to guide the analytical process and interpretations of the findings. However, the framework was not a rigid interpretative tool; rather, it

provided a flexible lens to understand and develop insights throughout the research process. The framework was finalized at the end of the analysis.

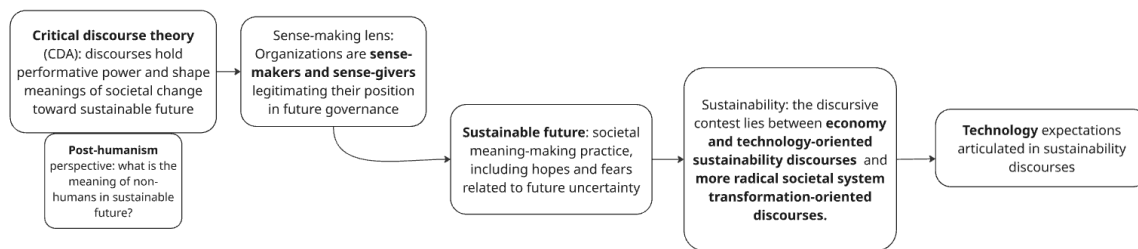


Figure 1: Interpretative Framework (read from left to right)

3 Research Design and Methods

In this section I introduce the methods how I examine sustainable future meanings and the role of technology in them. After presenting the research method, I outline the selection of the research data as well as the analytical framework used in conducting the analysis. Finally, I discuss the ethical foundations and considerations taken into account while conducting this study.

This study is a qualitative analysis on Sitra's foresight by using a critical discourse analysis (CDA) method. Central to the selection of a qualitative CDA methodology is its ability to appropriately address the research questions, as the focus is on examining how social actors construct and assign meanings (Pietikäinen & Mäntynen, 2009, p. 140). The scholars whose analytical framework is adopted in this study understand discourses as social acts that both shape and are shaped by reality (Pynnönen, 2013, p. 32). Thus, this understanding is central to this study, which aims to uncover how the societal act of anticipation assigns meanings to sustainable futures and gives roles for technology. Consequently, no pre-hypotheses were set, as this was not a goal for this study, and is rarely the case in qualitative research (Eriksson & Kovalainen, 2008). In conducting the discourse analysis, I follow an abductive reasoning approach, meaning that analysis and theory are developed in dialogue and flexibly throughout the research process (Tavory & Timmermans, 2014, p. 5). This approach allows for interpreting the data without a heavy theoretical lens, while still enabling analysis from a particular perspective. Thus, the literature review serves as a guiding interpretative framework that supports the analytical process while flexibly adding insights to it.

The choices made at the beginning of the process exclude the selection of a quantitative methods approach, as the research questions cannot be analysed quantitatively. Understanding that quantitative methods focus more on structured and standardized modes of analysing empirical data, qualitative methods provide better answers for understanding how the meanings of a phenomenon are produced in dynamic and linguistic social processes (Eriksson & Kovalainen, 2008). The qualitative study approach justifies the need to understand real-world organizational discourses in shaping future visions and trajectories of social change (Fairclough et al., 2004, p. 2). Therefore,

critical discourse analysis was selected as a suitable approach to examine organizational future-oriented discourse and its meanings from a critical perspective.

3.1 Critical Discourse Analysis (CDA)

In this section, I discuss critical discourse analysis (CDA) as my primary method to investigate how organizations construct meanings for the sustainable future and assign specific roles to technological innovation. CDA is a commonly used qualitative method in organizational and social sciences research (Fairclough, 1992; Pynnönen et al., 2013; Jokinen, Juhila, & Suoninen, 2016; Pietikäinen & Mäntynen, 2009). The application of discourse analysis varies depending on the research issue and context, requiring the researcher to define the specific approach and its relevance to their study (Pynnönen, 2013; Eskola & Suoranta, 1998, p. 202).

Informed by the literature review, I use the term "discourse" in this study in alignment with Fairclough et al.'s (2004) understanding of discourse as a powerful force in societal change. This definition includes the concept of discourse as a socially constructed linguistic act, predominantly in the form of written text, interpreted as more than a sentence within a specific context (Smith, 2010, p. 130; Pietikäinen & Mäntynen, 2009). Finally, I perceive discourse as a form of social practice that both shapes and is shaped by broader social, cultural, political, and institutional forces (Pietikäinen & Mäntynen, 2009, pp. 26–27).

A strength of CDA is its ability to provide insight into how organizational discourse legitimizes meanings and constructs certain ideas and visions as inevitable while marginalizing others. Additionally, CDA is suitable for examining the assigned role of technological innovation in the context of a sustainable future within organizational discourse, as it enables the identification and deconstruction of ideas, values, and ideologies in organizational strategic foresight. Next I discuss CDA more specifically to demonstrate its suitability for the examination I conduct in Section 4.

As mentioned earlier in the literature review section, the ontological premise in discourse analysis is social constructionism, which assumes the reality is not an objective entity rather it is made visible through social, linguistic and discursive socio-cultural

processes and practices. (Pynnönen, 2013; Jokinen et al., 2016; Smith, 2010). From this perspective, linguistic, written and spoken, communication influences the meaning making processes of everyday life and institutionalized social processes by constructing the social reality (Pynnönen, 2013; Berger & Luckman, 1967). Therefore, the meanings of a sustainable future and the role of technology as understood as socially constructed meaning-making processes. The social constructionist perspective serves as a suitable foundation in discourse analysis, as it is based on the understanding that reality is not fixed or objective but socially constructed and embedded in systems of meaning (Pynnönen, 2013). As CDA assumes and examines the world as actively shaped and reproduced through discourses by producing, sustaining, legitimizing, and challenging power structures. Thus, socio-constructionist approach serves a premise for the worldview in this study to understand how institutionalized perspectives are portrayed as natural or inevitable while excluding alternative viewpoints in organizations (Fairclough et al., 2004).

The tradition of discourse analysis includes several methodological approaches, such as critical discourse analysis (CDA), Foucauldian discourse analysis (FDA), and narrative analysis (Pietikäinen & Mäntynen, 2009). These approaches differ in their emphasis on aspects of language use, its functions, and meanings, including the governance of subjects, reproduction of power and ideology, and the structuring of meanings (Pietikäinen & Mäntynen, 2009, pp. 26, 104–114). This study is inspired by the critical tradition of CDA, pioneered by Norman Fairclough, which views discourses as a form of power exercised through institutionalized linguistic practices (Pietikäinen & Mäntynen, 2009, p. 19; Fairclough, 1992). Other traditions were considered but not selected for the primary methodological framework because the focus is less on subject positions or specific narrative structures. Thus, CDA was chosen as the methodological framework to best examine the meanings in institutionalized practices, specifically within organizations, and how they give sense to certain future trajectories and approaches in defining the role of technological innovation.

The specific discourse analytical method I take in this study is adapted from Pynnönen (2013), who developed a three-phase discourse analysis model based on Fairclough's work (Pynnönen, 2013, p. 32; Fairclough, 1993, pp. 136–137). The model is further

tailored to meet the needs of this study, and its specific application is discussed in the Section 3.3.

Finally, the researcher's position is important to consider when conducting discourse analysis. The critical perspective adopted in this study stems from my interest in sustainable societal systems. In this context, criticality means that I interpret the data through the critical interpretative lens introduced in Chapter 2.5. This lens is critically oriented, drawing insights from critically oriented sustainability transition studies, social sciences, and organizational studies. The critical perspective is, therefore, adopted from researchers who explore societal systems in transition and often understand sustainability from a normative standpoint. However, I aim not to interpret the data too critically without reasonable argumentation and evidence. Importantly, my background in social sciences and multidisciplinary sustainability studies may influence both the use of the method and the interpretations. This information is provided for the reader to understand the position of the researcher and the study, thereby enhancing the reliability and transparency of the study process.

Like other qualitative studies, CDA has limitations, as it cannot be completely free from researcher bias due to the inherently subjective nature of the research process (Jokinen et al., 2016). Additionally, limitations highlight discourse analytical methods to overly prioritize language, which may lead to over-interpretations. Furthermore, small case studies often do not represent generalizable truths, which is a limitation common across different methods in smaller research designs. (Pietikäinen & Mäntynen, 2009.)

Despite these challenges, discourse analysis endeavours to deconstruct the taken-for-granted aspects of language use, demonstrating its strengths. When researchers investigate how phenomena are constructed and legitimized through language, they contribute a new voice to societal debate within the world of discourses (Siltaoja & Sorsa, 2020, pp. 247–248). Thus, to avoid merely describing the discourses, the analytical focus is not only on making dominant ideas visible but also on reflecting them in relation to the existing body of knowledge and social logics within the context of the studied phenomenon.

3.2 Collection of the Data

As mentioned in the introduction of this study the focus in this study is on Sitra's external foresight communication. Therefore, the data collection focused on external digital content available on Sitra's website in Finnish and English. The choice to focus on external communication only was because investigating external communication helps to understand how organizations publicly construct different meanings using certain kind of language, in a specific context for targeted audiences, often known as organizational stakeholders. (Perales-Aguirre et al., 2024.) Thus, focusing on Sitra's public communication materials is relevant for this study because the theoretical focus is on how discourses construct expectations, actions, ideas and values in societal change that may become performative (e.g, Brown, 2003; Hallin, 2021).

The data collection of this study was limited to secondary data sources. Secondary data means the data material is publicly available and collected for other than this study or general research purposes (Eriksson & Kovalainen 2008). Organizational external communication as a secondary data is often directed to targeted stakeholders, such as businesses, public collaborators, and decisionmakers and clients (Perales-Aguirre et al., 2024). Internal communication materials were excluded for time reasons as inquiring them as research material requires permission from the organization itself, which may be a lengthy process or even impossible for regulative and organizational reasons. Also, the choice to examine external communication was convenient for the purposes of this study to understand how public communication positions the organization in relation to sustainable futures.

The data collection was done via Sitra's website search tool. The sampling strategy followed selective sampling by focusing on the communications that address the key themes of this study: futures, technology, innovation and sustainability. For the data search tool on the website, the words "future" and "sustainability", "tulevaisuus" and "kestävyys" were used to find suitable textual materials. Both materials in English and Finnish were included for the reviewing process. After reviewing different materials on Sitra's website such as articles, announcements and diverse reports, I paid attention to Megatrends reports and found them interesting and suitable for further investigation. Sitra has also published other types of anticipatory communication materials such weak signals report and futures barometers, which both focus on future trajectories from different angles. These data sources were also interesting, but due to limited time-

resource and aim for comprehensive analysis, the framing of the data collection was limited by leaving space for future research. Thus, studying Megatrends meets the objective of this study to understand how sustainable future is constructed in organizational foresight communication.

Sitra has published Megatrend reports throughout a decade between the years 2010-2025. Based on the scope of master's thesis, the Megatrends 2023 report was chosen as it was the most recent and available report by the time I started the analysis process. The megatrends 2023 is written in Finnish and English and I chose to include both in this study to understand the content in depth. Megatrends 2023 report as part of the research context is introduced at the beginning of the findings section.

During the data collection process my initial purpose in this study was to collect communication materials from two different organizations and compare them. However, after understanding the method of discourse analysis and the scope of master's thesis, I shifted my focus into one case organization, and specifically anticipatory documents. These changes occurred during the phase of the data collection and analysis which influenced the reviewed literature and theory.

3.3 Analytical Framework and Process

In this section, I discuss the specific method I use to analyse Sitra's Megatrends report after which I discuss about the analytical process. Some insights to the analytical process are added retrospectively to describe it transparently. The analytical framework is adopted from organizational scholars Pynnönen (2013) and Pynnönen et al. (2013), providing a structured, systematic, and transparent tool to critically analyse how organizational discourses construct meanings of sustainable future and the role of technological innovation. I apply the three-phase model proposed by Pynnönen (2013), as it aligns with the objectives of this study to interpret how discourses from CDA perspective.

Following the methodological tradition in discourse analysis, I conducted a systematic reading process to identify common themes and contents in Sitra's Megatrends 2023 report. I also revisited the original data whenever necessary to ensure appropriate interpretation in the organizational context. It was important to stay aware that the data

often displays intertextuality and multi-vocality and therefore does not represent only one possible interpretation (Pietikäinen & Mäntynen, 2009, pp. 123, 141). While examining the organizational discourses, the interpreted texts were always analysed from the perspective of their possible functions (Pynnönen et al., 2013). To illustrate the framework, Figure 1 below presents the analytical model, followed by an explanation of its specific application in the analytical process.

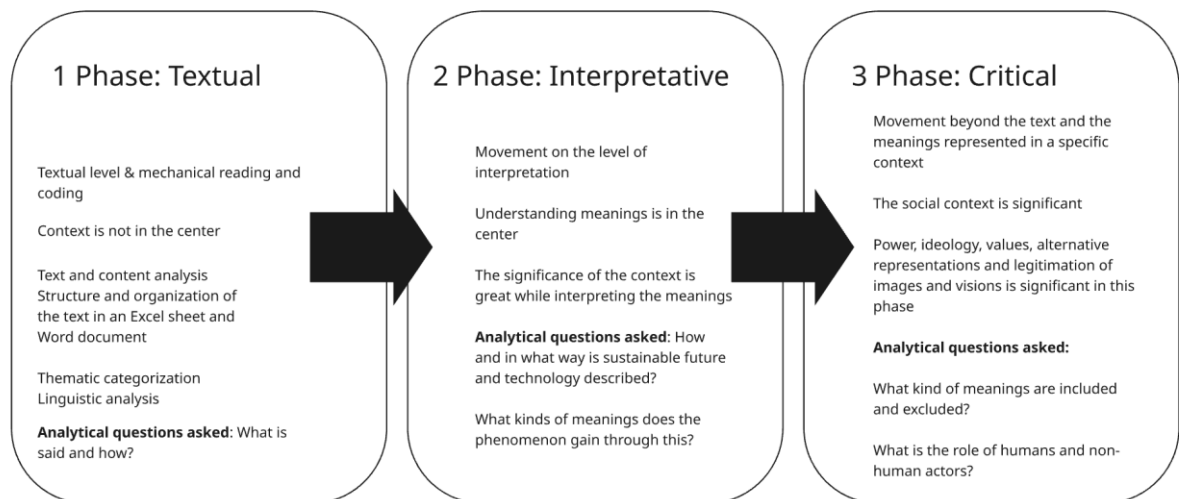


Figure 1: The analytical framework model for CDA. Modified from Pynnönen (2013, p. 32)

In the analytical framework Pynnönen (2013, p. 32) demonstrates how critical discourse analysis begins with systematic reading rounds, focusing first on the textual level, and then progressing to interpretative and critical interpretations. At the textual level, the analysis follows a mechanical reading style and concentrates on linguistic practices and semiotics, involving an understanding of words, sentences, and their combinations, without focusing on meanings or context (see Fairclough, 1992, p. 194). Understanding the key content and identifying thematic categorizations at this stage is crucial for appropriately answering the research questions. Additionally, specific analytical questions were posed during this phase, as presented in the framework model in Figure 1 (Pynnönen, 2013; see also Pynnönen et al., 2013).

In the framework model, the interpretative phase is prior to critical interpretation, as it focuses on the meanings and context of the research object. During this analytical phase, interpretations were made by concentrating on the meanings expressed in the coded text parts, taking into account the research context. The interpretative reading phase ensured the identification of the most salient discourses in the data, which are presented in the next section. The analytical questions relevant to this phase can be found in Figure 1 (Pynnönen, 2013).

Finally, the critical analysis extends beyond the meanings to a broader social context of sustainability transitions, following the tradition of CDA adopted from organizational scholars (Pynnönen, 2013; Fairclough, 1992; Fairclough et al., 2004). In this analytical phase, the critical interpretation process focuses on the inclusion and exclusion of ideas, values, and agencies (Fairclough et al., 2004). Additionally, in this study the critical interpretation also considers post-humanism, which inspires the CDA approach in this study (Tallberg & Huopalaainen, 2024). The analytical questions are available in Figure 1 on page 35. Next, I discuss the analytical process which is presented in the following steps below.

1. *Initial reading phase.* In this first step, the Finnish version of the Megatrends 2023 report was read multiple times. I collected interesting text excerpts into an Excel sheet to gain an overall understanding of the main themes, enabling me to answer and interpret the contents in relation to the research questions.
2. *Initial coding phase.* In this second step, I coded the data with a digital highlighter and identified discursive categories on a separate digital file. In this phase, I identified discursive features and collected excerpts into a separate sheet. The excerpts were later used in the findings section to demonstrate the findings.
3. *Analytical interpretation phase.* In this phase, interpretations were made in dialogue with the theories from the literature review. The interpretative phase included analytical reading, note-taking, and interpretative evaluation. During this phase, I documented the key observations and interpretations,

understanding them as meanings of the sustainable future and the role of technological innovation.

4. *Critical interpretation phase.* The final phase of the analysis critically assessed the meanings represented in the data to comprehensively answer the research questions in the discussion section. In this phase, the literature review was further developed through dialogue to understand the underlying social meanings and power relations. The interpretations focused on what is presented as inevitable or taken for granted, following the common methodological emphasis in CDA. The lens of post-humanism was applied during this phase, wherever relevant.
5. *Completion of the writing process.* Summarising the analysis and key findings.

In discourse analysis, the analytical process and research structure often involve a dynamic interaction between data and theory (Pynnönen et al., 2013; Siltaoja & Sorsa, 2020; Pietikäinen & Mäntynen, 2009), and in this study, the analytical process sometimes followed this dynamic pattern. By using an abductive interpretation logic, I developed the literature and theory chapters in dialogue with the analysis. The role of the literature was to support the analysis and discussion, and the development of the literature-based interpretative framework is discussed in Chapter 2. The flexibility that this approach provided, enabled me to enhance my theoretical understanding and find new and creative approaches to the phenomenon while examining empirical data and producing empirical knowledge (Tavory & Timmermans, 2014, p. 5).

While examining discourses, it is typical that the analysis starts with reading large sets of data before making the decision to focus on specific parts of it (Pynnönen et al., 2013; Pietikäinen & Mäntynen, 2009). In this study the data was selected after exploring Sitra's website few times before finding Megatrend reports a specific interest. When starting the analysis, it was not possible to understand what kind of meanings will be observed and what is the significance of them. Thus, the premise of the analysis was that I did not know what was emerging from the data while reading it.

Throughout the analytical process, I paid attention to the handling and representation of the data to increase reliability and transparency. I was also aware of my positionality, background and personal interests which may influence the findings. Addressing this, I paid attention to researcher reflexivity throughout the analytical process. Simultaneously, I questioned my own assumptions and returned to the data multiple times to look for alternative interpretations. I also aimed for transparency of coding by revealing any constraints I encountered during the analytical process. By explicating reflexivity in the analysis process and findings, the critical orientation of this study is supported as it increases the validity of the findings.

In a summary, the overall analysis followed a three-stage process designed to offer a comprehensive analytical tool for interpreting the meanings of sustainable future and technology at textual, interpretative, and critical levels within the Megatrends 2023 report, as presented in Section 4. While the premise of the analytical process was detailed in this section, each finding is subject to constraints, which is discussed in Section 6.

3.4 Ethical Considerations

Understanding the ethical principles of conducting a study is important throughout the research process. In this thesis, ethical principles were considered at every stage. All European Academies (2023) identifies four main principles of research integrity: reliability, honesty, accountability, and respect. These principles have guided this research process as they are universally accepted conventions defining academic research and its reliability. By following to these ethical principles, this study ensures reliability, honesty, accountability, and respect by providing clear explanations of the entire research process, including data collection and analysis. This transparency demonstrates replicability for other researchers wishing to conduct a similar study (Kovalainen & Eriksson, 2008).

According to Eriksson & Kovalainen (2008), clearly addressing the intellectual origin of research is important, and this is relevant for the study as part of a broader research project. The intellectual origin of this thesis is at Aalto University and Johanna Ahola-Launonen's Academy Research Fellow project SUSTHOPE, funded by the Research

Council of Finland and based at Aalto University. The project takes a critical stance toward overly optimistic technological solutions, while still recognizing that some optimism toward them is needed. Furthermore, this critical stance has influenced the interpretations and choices made in this thesis process, as the focus on organizational discourse and the role of technology in future visions is studied within the SUSTHOPE project.

Discourse studies, like other methodologies, are not free from researcher bias and must therefore be evaluated throughout the research process, as researchers often study topics of personal interest (Pietikäinen & Mäntynen, p. 171). As mentioned earlier; to mitigate researcher bias, I aim for reflexivity throughout the study process. This reflexivity involves honestly describing my choices, observations, and findings while critically evaluating both my own and others' thinking.

To ensure validity, this study is based on established theories in social sciences, organizational studies, and sustainability transition studies, ensuring a well-grounded conceptual foundation for analysing organizational discourses. Construct validity is ensured by consistently using concepts identified in the literature review during analysis and discussions. Additionally, validity is further supported by allowing the authors of the data to interpret my findings.

Lastly, since AI tools are recommended for students to improve efficiency when working on assignments (Aalto University, 2024), I have utilized Aalto University's AI Assistant tool for correcting the grammar and flow of the text. I want to declare that I am aware of the responsible use of AI in research and take full responsibility for its use in this thesis.

4 Empirical Analysis and Findings

In this section, I present the empirical analysis and findings of this study, following the analytical framework model outlined in Section 3.3. The analysis is conducted in dialogue with the literature review and interpretative framework development in Chapter 2. The findings are described and illustrated with raw data excerpts. Drawing from Pynnönen (2013), the analysis is informed by Norman Fairclough’s understanding of discourse as a power-laden social act embedded in institutional life, guiding the interpretations (Fairclough, 1992; Fairclough, 1993; Fairclough et al., 2004). Based on this approach, I identified the discourses in Sitra’s Megatrends 2023 report, which are presented in Table 1 below. The table is presented in the beginning of this section to inform the reader’s understanding. As this section continues, I have examined the first and second research question separately as the aim is to understand both the meanings given for sustainable futures and the role of technological innovation.

Discourse	Key findings based on CDA interpretation Model (Pynnönen, 2013)
4.1. Preparedness for Difficulties Discourse	Phase 1 - crisis, threat, challenge, difficulties, emotion of fear, uncertainty, technological threats, survival, European innovation values Phase 2 – future is given meaning of being under threat, future is not better if people decide not to act. Agency of “we” - Technology is a threat and challenge for institutions to understand and control Phase 3 – fearing the present-day crisis determines people’s actions cognitive capabilities. Human survival in the centre - Technology is presented as an external and inevitable force threatening institutional legitimacy
4.2. Hope from Action Discourse	Phase 1 – Possibilities, strengths, human influence, better future, emotion of hope, innovation potential

	Phase 2 – Future is given hopeful meanings. Human action and influence of “we” change the future. Market-oriented solutions and technical solutions are positive changes Phase 3 - Human action can change the future better. Pronoun use silences specific agencies and distributes responsibility vaguely. Weak sustainability solutions bring hope. - technology is inevitable possibility together with economic and political innovations
4.3. Future in Human Cognitive Control Discourse	Phase 1 – Understanding, Learning, Knowing, Developing Skills, Controlling, Emotion of hope Phase 2 – Future is given meanings through human capabilities to understand and learn to control future Phase 3 – Future can be controlled by human ability to think and learn to approach it. Humans are obligated to take responsibility of their own knowing - Technology is inevitable force to be learnt by humans
4.4. Reformist Transformation Discourse	Phase 1 – Critical tone, questioning status quo, transformation, reforming, emotion of fear and hope Phase 2 – Future is critically approaches by questioning the current social order. Economic and political reforms should be made for the better and sustainable future. Phase 3 – Future is to be transformed and the issues in the current system arise. Changes are suggested in the economic system and political participation. Radical transformation is not suggested by leading to reformist sustainability meanings. Problematizes human-centred approach to some extent - Technological inevitability is questioned and problematized to some extent. Not bringing non-technological innovations into centre

Table 1: Empirical findings table

Thus, this section introduces each discourse along with its common features, analysing how each constructs meanings of ideas, values, and actions. Interpretations are guided by the research questions and theoretical foundations, with Pynnönen (2013) serving as a tool to arrive at the findings. The guiding analytical questions are outlined in the analytical framework model in Section 3.3. As noted in Section 3.2, the data is available in both Finnish and English, and both versions were used to enhance understanding.

It's important to note before presenting the findings that discourses are inherently multi-vocal and intertextual, meaning that one discourse can simultaneously intersect with another (Pynnönen, 2013). Consequently, discourses may align with multiple categories (Pietikäinen & Mäntynen, 2009). However, guided by the research questions and theoretical framework, I present the discourses as listed in this section, with each discourse's name intentionally chosen to best reflect its meanings and social function.

Defining the Research Context: Sitra and Megatrends 2023

The Finnish Innovation Fund Sitra is a public organization operating within Finland's societal and political landscape. Its role in Finnish society is legally mandated, with strategic and anticipatory goals aimed at generating future-oriented knowledge and innovation. The members of Sitra's board include Finnish parliamentarians, former politicians, corporate leaders, and other highly educated experts, underscoring its position at the intersection of governance, citizen education, and innovation. The organization's main activities involve think tank services and the funding of societal projects, establishing it as a key stakeholder in Finland's innovation and sustainability agendas. (Kettunen, 2015; see Sitra, 2025.)

One of the future-oriented reports and tools that Sitra provides to its stakeholders is Megatrends reports, published every three years. For example, the next Megatrends report is scheduled for release in 2026 (Sitra, 2025). Sitra describes megatrends as slowly evolving social, technical, and economic developments, referred to as "broad development trajectories," which represent emerging phenomena in society. According to Sitra, understanding current megatrends aids in understanding, envisioning, and planning for the future (Sitra Megatrends, 2023). Researchers have identified

megatrends reports as organizational communication artifacts through which organizations and individuals explore, anticipate, and manage uncertainty (Muiderman et al., 2020; Naughtin et al., 2024).

In Megatrends 2023 report, Sitra (2023) identifies five prominent megatrends:

1. Nature's carrying capacity eroding
2. Growing well-being challenges
3. The battle for democracy intensifies
4. Competition for digital power gears up
5. Economic foundations are cracking

As this study conducts a discourse analysis on the Megatrends report, the focus is not on evaluating the megatrends themselves but rather on analysing how they are constructed discursively within a broader societal context. Consequently, the Megatrends report 2023 is treated as an example of organizational anticipatory discourse, embedding specific discursive features and meaning-making practices related to the understanding of how institutional discursive power may shape the sustainable future and innovation outcomes.

4.1 Preparedness for Difficulties Discourse

Beginning the description of analysis and findings, this chapter introduces the *Preparedness for Difficulties* Discourse first. This discourse constructs meanings of the sustainable future as threatened. An interesting observation is that term "crisis" appears 88 times in the document, indicating it as a dominant theme for 87 pages report. Textual analysis reveals frequent use of terms like "struggle," "challenges," and "uncertainty," contributing to a broader construction of difficulty, instability, and disruption. These elements include domains such as ecological degradation, geopolitical conflicts, threats to human well-being, economic turbulence, institutional fragility, and competition over digital regulations as interconnected with crises. Technology is portrayed as a threat due to its challenges, thus naming the discourse Preparedness for Difficulties.

In the interpretative analysis phase, several themes and categories were identified, constructing the future as challenging and difficult from a crisis perspective. The critical analytical phase revealed that difficulties and crises are not only a megatrend theme but also part of an organizational practice of legitimation for understanding unexpected events and uncertainty (see Gephart et al., 2010). As the interpretation deepened, the discourse implicitly ties meanings to national values embedded in the Finnish culture. The implicit meanings of national values are depended on the nation state context in which the discourse is presented. The upcoming excerpts illustrate this discourse's way to construct meanings of sustainable futures and technological innovation.

Beginning with the key themes and interpretations, Preparedness for Difficulties Discourse constructs meanings of the future as a domain of risk and crisis management, developed retrospectively rather than autonomously. Meanings arise from current events identified as crises, creating urgency through fear of inaction and warnings about its consequences. Critical interpretations finds that the discourse tries to legitimize a narrow future, conditioned by present-day crises. This way the discourse promotes a view on the future, in which inaction is irresponsible. By doing that, the discourse links today's actions to tomorrow's survival, presenting crisis survival as given without assigning accountability among societal actors.

Critical interpretations further reveal that the role of the discourse is to establish values, with Sitra presented as an institutional authority guiding accountability. Through verbs like “restoring,” “defending,” and “ensuring,” it develops meanings of sustainable futures from a preservationist and action-oriented perspective, supporting current systems over transformative changes. Critically speaking, this suggests a dominant paradigm focused on sustaining existing societal structures rather than achieving transformative systemic change within Finland's political and societal landscape. The excerpt below illustrates this observation:

“The essential role of megatrends is therefore to remind us that we are still urgently need to restore the carrying capacity of nature, address challenges related to well-being, strengthen and defend democracy and participation, and to

ensure that the economy and technology are developed and used in a fair and sustainable way. If we do not take the future seriously, we will face these issues later in crisis mode.”
(p. 4)

By examining how the Preparedness for Difficulties discourse constructs the sustainable future and its meanings, Sitra uses both rational analysis and emotional insight to portray the future as an urgent matter shaped by present coping strategies. From a CDA perspective, this temporal narrowing shows the emotional insight of fear related to inaction. The discourse refers to action and inaction of society and individuals by dividing the agency between the society at large and on individual actors. Focusing on difficulties and crises, the discourse talks about individuals rather than a responsibility of specific societal systems such as the political or legislative system. In this way, the discourse individualizes responsibility, reflecting values where societal issues are re-framed as personal challenges rather than structural issues in society (Fairclough, 1995, p. 70–83; Riedy, 2020). This observation is illustrated in the following excerpt:

“In the midst of severe acute crises, the future horizons of societies and individuals become narrowed and more strongly focused on the present and on coping with the challenges of daily life.” (p.4)

Within the discourse, fear and anxiety create a dual emotional framework. Critical interpretation reveals that the emphasis on emotions relates to future uncertainty. The excerpts show how Finnish citizens’ emotions are portrayed as both fearful and hopeful, based on Sitra’s expert’s research. From a critical interpretation perspective, Sitra constructs institutional legitimacy and control by discussing about the future to be controlled by responsible individuals rather than responsible institutions. This may function as an institutional sense-making or sense-giving act to distribute responsibility in societal change:

“The future now appears blurred, uncertain, even frightening. According to Sitra’s Futures Barometer, more than half

of Finns sometimes view the future as frightening and sometimes eagerly anticipate it.” (p.5)

“In a time of surprises and uncertainty, the future looks unpredictable, even frightening.” (p. 6)

The discourse also frequently uses the pronoun "we," distributing responsibility across society. By using "we" or "us" its distinctions between citizens, policymakers, and economic actors are erased, placing everyone in the same position. Viewed through a critical lens, this approach reproduces the narrative of individual citizen action while distracting attention away from areas requiring structural change. Consequently, it may distract attention from the accountability of institutional entities like corporations and policymakers. Moreover, the interplay of fear is interpreted and can be observed in the following quote:

“Views of desirable futures drive us forward and answer the question of what kind of change is desirable. Threat scenarios, on the other hand, lead us to dwell on what is important and what we do not want to lose – as long as we’re not paralysed by the fear associated with them.” (p. 12)

The discourse also embeds the idea of a fairer future and sustainable society in the long term. However, it constructs a pessimistic storyline where the present situation threatens the realization of a sustainable future. The discourse silences the forces that overshadow a fairer and sustainable future by shifting power on institutions. As the final excerpt below illustrates, the future is framed from a pessimistic and fearful institutional perspective, where anticipating difficulties may become a practice of preparing for the worst:

“Building a fairer and more sustainable society in the longer term is largely overshadowed by managing current crises, even though they could go hand in hand. (p. 37)

“Trust is eroding, and information manipulation is growing. An orderly and harmonious transition towards a fairer and more sustainable world looks increasingly unlikely” (p. 9)

“Change may seem daunting because the future looks so bleak...Uncertainty and disappointment that the promised future has not come about is likely to lead to deeper polarisation.” (p. 17)

Finally, the Preparedness for Difficulties Discourse reflects the culturally institutionalized values of viewing sustainable futures as challenges to be managed by Finns as responsible citizens. Within the Finnish national welfare-state context, public institutions are often perceived as rational and neutral forces (Kohtamäki, 2022). This insight emerges from the discourse, which positions Sitra as a rational and capable institutional authority that warns about the future. In this allocation of actionable tasks, technology's role within the discourse is inevitable, yet it poses a threat to institutional control.

Technology as an Inevitable Threat

Shifting emphasis to the role of technology within the discourse, technological progress is expected as an inevitable and unavoidable force, portrayed as embedded in all areas of life. However, the observations also illustrate how technology is perceived as a threat and a challenge. In this meaning making practice related to technology, it is expected to be as a significant driver of societies. The interpretation shows overlapping features with other discourses, particularly 4.2., which is to be presented in the next section. This discursive intersection is described below:

“Technology and data are increasingly embedded in people’s daily lives. Technology is developing rapidly, and new technologies are being introduced in new areas of life. Digitalisation has been the most significant technological development of recent times, cutting across all sectors. Data is

increasingly being collected and used to provide new customised services to individuals and organisations” (p. 9)

“At the same time, there are disputes about the rules of the digital world, the resources required by new technology and, more generally, the direction of technological development. The challenges include both the current dominance of the technology giants and the adequacy of critical resources.” (p.9)

The reason why technology is perceived as challenge within the discourse, is because the meanings of technological development are associated with the management of complex sustainability issues:

“The resources and energy use required by new technology are also an issue. For example, proof-of-work blockchains, such as the cryptocurrencies like Bitcoin, consume vast amounts of energy, and the energy consumption caused by their mining has increased rapidly. But they are still only a small part of a bigger picture where all everyday digital services consume large quantities of energy.” (p.47)

Within the discourse, some technologies are expected to cause risks and threats. This fearful voice is especially addressed toward digital technologies which are understood to be a risk for the current management of the economy. In critical interpretation this was interpreted to be a risk for sustaining the stability of the financial markets, which dominates the current economy:

“However, like other technology, blockchains can also be used for criminal activities, and cryptocurrencies are already being used for monetary transactions by organised crime.” (p. 48)

Technology is also interpreted as a threat because it poses challenges for institutional power and control. The threat consciously reflects public institutional anxiety about losing legitimacy in technology governance as technologies develop rapidly. The contradiction between fearing technology and recognizing its necessity was identified as a key theme in the Megatrends 2023 report. The following excerpts demonstrate these findings:

“This dependence on technology and the resulting vulnerability brings challenges to strategic autonomy, which refers to operating successfully in a landscape of heightened geopolitical tensions.” (p. 47)

“Societies are under strain as crises accumulate. Geopolitical power struggles have returned with a vengeance, and the rules-based world order – and trust in the institutions that underpin it – is wavering. At the same time, there are disputes over the ground rules of the digital world, the resources required by new technology and, more generally, technological trends, which means that the competition for digital power is intensifying.” (p.6)

In addition to perceiving technology as a threat, social algorithms and AI-driven systems are expected to pose a threat to democratic systems and civic participation. The critical interpretation reveals how public institutions are portrayed as victims facing the externalized force of technology:

“In addition to social media algorithms, other AI-driven systems – and new technologies more generally – can be used to erode the foundations of democracy and civic participation...” (p. 37)

Finally, as the focus of this study is on perceiving the role of technological innovation, the desired value base for these innovations is expressed as European. This institution-oriented approach displays an interest in European values while excluding other

cultural values. This rhetoric may highlight the fear of losing cultural hegemony and control (Fairclough, 1995), reflecting a preservationist stance on maintaining the current system and suppressing the need for structural changes. This prioritization or desire to innovate based on EU values silences the positions of others:

“There is growing concern in Europe about our ability to innovate and develop rules for the data economy based on European values.” (p.47)

“The risk is that views of the future are defined on the basis of values and interests that we do not share, or which are at odd with European values.” (p. 47)

Overall, the future what *Preparedness for Difficulties* discourse gives meanings to a sustainable future through fear, uncertainty, challenge and urgency. The discourse seeks to give sense to the future by mobilizing citizens as responsible agents while making sense of how to sustain institutional power during the times of crises. The role of technology, in the discourse, is expected as an inevitable and necessary force, but a threat for preserving the current institutional regimes. The name of the discourse *Preparedness for difficulties* reflects how the sense of fear and urgency of citizen action are presented as necessary in governing the future while institutions make sense the loss in power in the midst of crises. The final data excerpt illustrates this conclusion:

“The recent major crises – the Covid-19 pandemic and Russia’s invasion of Ukraine with its manifold consequences – have made the interdependence of our world more tangible. No change happens in isolation. Environmental degradation is reflected in growing geopolitical tensions, deteriorating economic capacity and well-being problems.” (p. 10)

4.2 Hope from Action Discourse

The Hope from Action discourse constructs the sustainable future as hopeful. Within the discourse, the future is portrayed to encompass possibilities and progress and as

being inevitably influenced by human action. These discursive features construct an alternative narrative for the future amid crises, suggesting that hope remains. As observed in the first phase of analysis (see Chapter 3.3), words and themes such as possibility, strength, opportunities, hope, influence, a better future, and a "we can do attitude" emerged from the data. I interpreted hope as an optimistic emotion, and phrases or words with a forward-looking orientation were considered possible elements of this discourse.

In the interpretative phase, I observed how meanings were attributed to the future as being influenced by human action and impact. Within the discourse, the future is constructed to be shaped by human involvement and technologies, placing them in inevitable position. From a critical perspective, other living features or socio-cultural innovations or roles remain in a minor position or silenced in this meaning construction. The discourse stabilizes hope by introducing effective market-driven and political solutions to support desirable actions seen as feasible without imagining transformative system change solutions on societal structures. Next, I will introduce my detailed interpretation of the Hope from Action discourse.

As mentioned earlier, the Hope from Action discourse constructs an alternative narrative alongside with the crisis talk. This narrative is mostly visible when the discourse intersects with the 4.1 Preparedness for Difficulties discourse. The following excerpts illustrate this observation, where the sense of challenge and fear are presented with future possibilities:

"While the challenges seem big, a different future is possible."
(p. 6)

"The future is not predetermined, and we can influence it."
(p. 7)

I also noticed how the decisions and choices are emphasized as necessary acts to influence the future in the present moment. The discourse further suggests that the future can be shaped through will and choice, without addressing who truly holds the power to make those choices, as shown in the following excerpt:

“Still, as clichéd as it may sound, the future is also built through decisions and choices made in the midst of crises.”
(p.4)

The discourse also presents Sitra's future vision as a hopeful narrative of Finland. This hopeful narrative is interpreted to support Sitra's institutional position within the landscape of national future politics. However, this nationalist value base, in the context of sustainable futures, may hinder the effectiveness of mobilizing collective action which is necessary for long-term sustainable transformations. As the excerpt illustrates, "we" can adapt and invest in the future, the vision excludes specifics about the type of investment and what the ecological reconstruction of society and daily life truly means. From the perspective of discursive power, Sitra's optimistic vision supports adaptation to the future through investment, yet ideas of transformative structural changes remain unaddressed in the discourse. Moreover, the focus shifts to discussions about people, while non-human positions are not recognized:

“In Sitra's vision, Finland will prosper by building a fair, sustainable and inspiring future that ensures people's well-being within the limits of the planet's carrying capacity. We can adapt to the limits of this carrying capacity by investing in the ecological reconstruction of society and daily life.”
(p.6)

As this insight was previously observed, the discourse reveals how it constructs meanings for action through the use of the pronouns "we" and "our." This discursive strategy was already identified in the 4.1 Preparedness for Difficulties discourse by showing it a common discursive feature throughout the Megatrends 2023 report. The use of these pronouns, without explicitly specifying who is included, leaves an ambiguous impression of whose responsibility is to act:

“As our faith in the future falters, it is important to identify the choices we still face and the issues that are important to discuss now to build a better future.” (p.4)

“...and even rapid change is possible. That is why it is worth paying attention not only in the big picture of change but also future possibilities of the future and the actions that take us towards a future we want. This can also be a source of hope and agency in a bleak and uncertain time.” (p. 65)

Moreover, Hope from Action discourse presents the future in a positive way through the present-day market-driven and technical changes. The sustainable change is described to be under its way, because the share of renewable energy sources in Finland is increased. Also, the decreased consumption of red meat is highlighted as a positive change. Also, circular economy is emphasised as a viable solution. When critically interpreting these meanings in the context of sustainability, these examples of changes refer to gradual individual shifts in consumption behaviour. Additionally, renewable energy and circular economy solutions favour market-based and technology solutions. Structural solutions are not addressed clearly in this discourse. Shifting attention to individually, economically, or technically controllable actions shapes the image of the sustainable future as a consumer-duty. These solutions are focusing on weak sustainability solutions toward sustainability rather than strong sustainability, and transformative changes:

“All of these changes are already underway. The share of renewables in Finland’s total energy mix has already surpassed that of fossil fuels. The consumption of red meat is on the decline and the demand for plant proteins is increasing. There are examples of circular economy business models in many sectors.” (p. 18)

A notable observation from the CDA point of view is how companies and corporations become visible actors in the Hope from Action discourse, as these power-holding social institutions remain mostly silent in the Megatrends 2023 report. The discourse presents corporations as responsible for seeking sustainability solutions by representing these organizations to do their best. From a critical lens, the ideas of the circular economy and energy efficiency are technology and economy-oriented solutions offering

systemic reforms in economy's material and energy flows while silencing the perspective of those desiring non-technological approaches. Thus, the discourse does not offer radical changes and protect the current structures of market-economy:

“Increasing importance is being assigned to the solutions to the ecological sustainability crisis, such as the circular economy and energy efficiency, and adaptation to the changes already taking place. Corporate responsibility has become increasingly important in recent years.” (p. 56)

“Companies are actively looking for ways to increase the positive impact of their activities.” (p. 63)

The discourse also assigns meaning to the potential of sustainability solutions in future by encouraging consideration of sufficient investments in infrastructure and urban life. This observation was interpreted critically as a desire for the development of urban environments, while excluding the perspective of others, especially those living in rural areas:

“Cities have great potential to develop sustainable solutions if sufficient investment is made in urban planning.” (p. 32)

The discourse also conveys positive and hopeful meanings to liberal democracies, viewing them as a powerful political system offered to support ecological and social sustainability. The success of democracy is directly linked to the commercialization of technological innovation, effective climate change mitigation, and the equitable distribution of wealth. However, critical interpretation reveals that structural issues within democratic and market-based systems are not addressed even though these are also recognized to be causes of some sustainability issues such as over-use of natural resources or issues in democratic participation. This way Sitra gives meanings to institutional power by representing democracy better than authoritarian political systems while silencing radically different visions to understand political decision-making and participation:

“Democracies appear to be more effective than authoritarian regimes in certain respects, such as climate change mitigation and creating wealth equally. In authoritarian countries, wealth is traditionally concentrated in the hands of a smaller group of people, and many authoritarian countries have not been good at commercialising technological innovation.” (p. 36)

Possibilities from Inevitable Technology

The hopeful meanings are given to technological innovations, already illustrated in the previous excerpt where technological innovation is expected to support the democratic political system's support for their commercialization. Technology is considered inevitable in this discourse, as it is in the 4.1 Preparedness for Difficulties discourse. Everyday consumption practices are presented as becoming technology-assisted, emphasizing how these technologies inform consumers. Viewed more broadly, entities other than people and technology are not considered agents of change. Transformative system changes solutions remain unaddressed. The envisioned future is interpreted as one where individual consumer decisions, enabled by technology, are expected to resolve some systemic issues. Responsibility is put on individual consumers to utilize new technologies:

“Going forward, people will be increasingly able to make choices based on the ecological footprint of products and services, meaning that their biodiversity impacts can be taken into account.” (p. 17)

The observations also show how the Hope from Action discourse expects new technologies to come. In the discourse, digital technological development is presented with the label of ‘green transition’. This hopeful tone in the discourse envisions technologies as part of the societal operations, human well-being, and improved state of the environment. Technology in the discourse is given meanings as an external force, which is expected to changes human being in the planet:

“Solutions must be found to accommodate new technologies within the limits of nature’s carrying capacity and to help improve the state of nature in line with the goals of the digital and green twin transition. Technological developments are changing how we operate and are linked to human well-being, the functioning of societies and the state of the environment.” (p. 10)

Moreover, the interpretation and orientation toward inevitable technological development in the Hope from Action discourse expects technological innovation to be a means to ensure the well-being of nature and a safe environment responsibly. However, the responsible use of technology remains central to societal debate, as this discourse attempts to normalise that the responsible use of technology is the desired direction. This illustrates how the Hope from Action discourse presents technological development as given and unstoppable, as it is already underway and harnessed at the European Union level, which is a powerful institution:

“Safeguarding human well-being in turn requires a well-functioning economy and society, the well-being of nature and a safe environment, the responsible use of technology and the strengthening of empowerment.” (p. 10)

“Significant changes are also discussed in the EU’s Strategic Foresight Report. It describes the digital and green twin transition where ecological sustainability and digitalisation can best support each other.” (p.18)

Overall, the discourse constructs a sustainable future through hope by emphasizing the imperative for action, incorporating "we" as actors, present actions, desired democratic values, and technology's potential. It envisions people as capable agents of change, with technological innovation seen as an inevitable component of the sustainable transition.

Critically, the discourse remains ambiguous about actors, responsibilities, and transformative actions. It leans toward current system solutions and gradual changes,

marginalizes challenges within democratic systems, and overlooks alternative systems. Hope is rooted in current actions, possibilities, and political governance, expecting individuals take primary responsibility, while societal systems remain gradually changed by individual actor actions, corporate impact and market-driven changes. Notably, the powerful Finnish government is absent from the discourse altogether.

4.3 Future in Human Cognitive Control Discourse

The third discourse found is in close relation to the previously presented Hope from Action discourse in Chapter 4.2. While Hope from Action emphasized the power of human originated action and influence, Human Cognitive Control discourse emphasizes the cognitive capabilities of a human being through learning and developing oneself. Especially, the human ability to learn, understand and think are seen crucial part of the development toward the future. The future is also given meaning as hopeful – paralleling to the 4.2 Hope from Action discourse by assuring that the future can be in human control. The role of technology in Future in Human Cognitive Control discourse is related to the human skill development in knowledge and understanding. Technology and its social and ethical implications are discussed but as from the perspective of inevitability, possibility and necessity. Next, the key characteristics of the discourse and its analysis are discussed.

By coding the key patterns and themes, the words "knowing," "learning," and "understanding" were observed. In the interpretative phase, the meanings attributed to a sustainable future emphasized the urgency of improving human cognitive capacity to understand, learn, and take responsibility for one's own thinking. In the critical interpretation phase, the underlying assumptions and the role of technology were interpreted as being integral to human development and societal change. Next, I describe the key features of the discourse.

The discourse constructs the requirement for understanding both as a foundational skill and a prerequisite for meaningful action. It also emphasizes the future as the big picture, where understanding complex interdependencies is not optional but necessary. From a critical standpoint, the language used constructs a future in which those who understand are capable of acting. Furthermore, critical interpretation reveals how

the discourse's emphasis on knowledge and understanding as necessities legitimizes the power of expertise, as comprehending interdependencies and complex societal tensions requires education, opportunity, and the ability to learn. As the values prioritized in the discourse privilege those with access to knowledge, it silences societal constraints related to accessing understanding and learning. Additionally, the discourse's focus on understanding and learning concentrates on humans, excluding others who lack cognitive capabilities but still inhabit the planet:

“Understanding the big picture of change is a prerequisite for action...” (p. 13)

“It is therefore important that we understand the big picture and the interdependencies and tensions between phenomena.” (p. 4)

The Future in Cognitive Control discourse also uses the pronoun "we" which is similar to the 4.1 and 4.2 discourses, by silencing the role of specific actors, institutions, or societal structures. Furthermore, in the critical interpretation, the Future in Cognitive Control discourse constructs meanings by providing the act of understanding as a relief to the anxiety expressed in 4.1. This reveals how Sitra offers learning and understanding for individuals to develop themselves and control their anxiety by taking responsibility of their knowing. The individual agency was interpreted because the pronoun use can mean anyone. This observation is illustrated in the following excerpt:

“The better we learn to understand and discuss conflicting views, the better we can alleviate anxiety by taking action.” (p. 18)

The imperative of understanding is also extended to the human-nature relationship, where nature is seen as serving human ends. This observation reveals how the perspective of "we" in the Megatrends 2023 report is intrinsically linked to the services provided by nature. It suggests that a sustainable future is constructed from the perspective of serving "we," without naming anyone, thereby placing the ecosystem and nature in a subordinate position in relation to "we", interpreted to refer to humans:

“At the heart of this change is an understanding and acceptance that we are completely dependent on nature and the ecosystem services.” (p. 16)

Interesting theme in Future in Cognitive Control discourse is how thinking is represented as a way to control and take responsibility. By interpreting the meanings, the discourse constructs sustainable future in which human mental effort is a necessity. The discourse also portrays thinking as a tool for controlling and being prepared to crisis. Moreover, the megatrend theme of intergenerational thinking constructs cognitive engagement as an essential action in overcoming sustainability challenges by legitimating the institutional power of knowledge. Critically, the discourse promotes an ideal of cognitively engaged human being, while not addressing structural inequalities or power imbalances that may limit people’s ability to act responsibly and think further. It also addresses individuals, communities and society responsible in the first place, but still uses the “we” pronoun by individualizing responsibility to everyone:

“All of this requires future-oriented thinking and the capacity for change. The important thing is not to predict accurately but to outline and learn from different potentialities, including the unexpected.” (p.4)

“Everyone – individuals, communities and society – all have a responsibility to think longer term and build a better future for the generations to come.” (p.4)

“Addressing the sustainability challenges of our time. Intergenerational thinking is becoming a more prominent aspect of sustainability thinking.” (p. 62)

The discourse also highlights knowing and skill development as crucial actions. In the interpretations, the discourse constructs thinking and knowledge as prerequisites for imagining and discussing alternative futures in the political context of democracy. In

turn, it presents a narrative of Finnish people as having a solid knowledge base in the areas of technology, sustainability, and the economy, which are understood as important for upholding democracy. By asserting that Finnish people possess an understanding of technology, sustainability, and the economy, the discourse attempts to naturalize the importance of these topics in the debate on imaging the sustainable future and developing the knowledge base to favour democratic societal structures. By illustrating this, the excerpt below is an excellent example of how sustainable future is a value-laden phenomenon, and never a neutral social construction:

“Imagining and discussing alternative futures also calls for the strengthening of future-oriented thinking and a strong knowledge base. People in Finland have a solid understanding of the themes of technology, sustainability and the economy, which is important for upholding democracy.” (p. 38)

Moreover, education is positioned as a central solution for constructing a sustainable future. As the following excerpt illustrates, new knowledge and skills are associated with the hope of influencing the future in intersection with the 4.2 Hope from Action discourse.

“Education and training play a key role in creating a sustainable future. We urgently need new knowledge and skills to understand and adapt to the changes around us, while influencing the course of the future.” (p. 65)

Finally, learning is associated with creativity but also career development which is a socio-economic innovation to sustain societies. From the lens of critical interpretation these meanings constructed together present the development of longer careers as an uncontested truth. This way the discourse constructs a burden of developing one's learning as an urgent requirement. This individualistic logic aligns with the modern individualism-oriented discourse (see Riedy, 2020) while silencing other views or possible development trajectories in the future.

“The importance of new learning, creativity, holistic thinking and meta-skills is increasing. Longer careers also create a growing need for continuous learning.” (p. 33)

Importance of Technology Skills

Although technology explicitly appears less frequently in Future in Cognitive Control discourse, it was observed to be given meaning in the discourse through skill development. New technologies and their social and ethical implications are recognized with skill development as the discourse obligates humans to learn use technologies responsibly. This way technology is represented as an inevitable force in the discourse, as humans need to improve themselves in order to understand its effects:

“Skills are not needed for new technologies only and their use, but also for understanding their social implications and ethical issues.” (p.47)

Moreover, the previously discussed feature of understanding is closely related to skill development. The following excerpt highlights how the inevitability of technology is constructed by emphasizing the importance of understanding technology and possessing technical capabilities. However, the discourse remains silent on structural issues related to social inequalities and power imbalances:

“The significance of technology skills will increase in both professional and non-professional contexts. In addition to technical capabilities, there is a growing need for understanding technology.” (p. 52)

In conclusion, the Future in Human Cognitive Control discourse constructs a sustainable future as achievable through human cognitive capabilities—understanding, thinking, and learning. It emphasizes the importance of mental engagement in utilizing these abilities as essential tools for navigating uncertainty, fostering a sense of responsibility, and legitimizing action. Understanding and thinking are presented as responsibilities of individuals, communities, and society, with education and skill

development as means to empower individual and societal readiness. Technology is given meaning as an inevitable force and expected to be learnt by everyone. However, critical interpretation reveals that the discourse overlooks societal structural challenges that affect people's abilities to learn and develop, which is a concern in addressing societal challenges.

4.4 Reformist Transformation Discourse

The final discourse is Reformist Transformation. This discourse includes some ideas of alternative futures, behaviour changes, and paradigm shifts. It constructs a questioning voice in relation to the other discourses. Features of this discourse include emancipatory-oriented language, such as words and themes related to change, reforming, rethinking, and transforming. These wordings and themes convey dissatisfaction with the status quo by critically evaluating the presented actions, ideas, and choices in other discourses. The role of technology is also questioned, as it is recognized as insufficient alone for constructing a sustainable future in the long term.

In the interpretative phase, the sustainable future is given meanings that suggest transformation and reshaping. These ideas are constructed in the discourse by expressing a need for reforming the economy and democracy, as well as human thinking about the dominant societal system. Moreover, in the critical interpretation, ideas of economic and political reforms are presented as desirable solutions. While economic and political reforms are proposed as solutions, the discourse excludes alternative future visions that extend beyond the current socio-political and economic systems established by humans, which are crucial from a transformation perspective. This constrains transformation to a narrow scope, not assigning roles for diverse transformative innovation capabilities that incorporate varied perspectives, including non-human entities beyond just technology, in sustainability transitions. Next, I describe how the discourse emerges in the data by demonstrating its features and my interpretations with data excerpts.

The Reformist Transformation discourse constructs a critical voice in relation to other discourses, highlighting the need for structural reforms in the economic system. Through critical interpretation, this discourse delegitimizes the dominant status quo

and opens up space for alternative visions. It assigns meanings to a sustainable future by projecting values of human rights and well-being alongside the concept of improving the natural environment. This broader sense of sustainability is linked to the role and purpose of the current economy. While the discourse acknowledges the responsibility of the current economy for societal systemic issues, it also recognizes the need to preserve certain economic structures even as it advocates for reform. The discourse reveals the prioritization of human well-being but do not address the diversity of needs among different social groups, or other species affected by the economic system:

“Economic foundations are cracking. Growing global inequalities and the ecological sustainability crisis creates a need to reform the economy.” (p. 9)

“Many at the global level have realised that the current economic system is not sustainable for people and nature. Sustainability is being emphasised in all activities and has extended from individual environmental issues to human rights issues, human well-being and improving the state of nature. The broadening of sustainability reflects a greater need to rethink the role of the economy and what it actually stands for.” (p. 8)

The same agency position and discursive feature of "we" is also observed in this discourse, as illustrated in the following excerpt. It shows how the 4.2 Hope from Action discourse intersects with the Reformist Transformation discourse by combining the "we can attitude" with transformative ideas. This use of pronouns is also interpreted as hindering agency positions and responsibility by failing to assign accountability to anyone to act the sustainable and responsible development:

“We can reform the economy to be more transformative by adhering to the principles of sustainable and responsible development.”

The Reformist Transformation discourse also attributes meanings to a sustainable future through the idea of value change that extends beyond monetary value. However, the critical interpretative lens reveals that these ideas and value changes primarily aim at enhancing human well-being, as previously illustrated. The suggested changes in ideas and values point to sustainable lifestyles, social relationships, and experiences of a good and meaningful life, while not specifying what these entail on practical level. Moreover, from a post-humanist perspective, the presented ideas appear as vague desires to prioritize human-centred action without recognizing others, nature, and other species from a viewpoint that transcends human visioning:

“Well-being is not measured only in monetary terms, but also in terms of other factors, such as sustainable lifestyles, social relationships, experiences of meaningfulness and the opportunity to work for the common good.” (p.33)

“Alternative economic indicators, such as ecosystem accounting, the genuine progress indicator and the happy planet index are receiving more and more attention. In addition to illustrating economic development, the new indicators provide information on human and environmental well-being and reflect changes in the values and goals behind economic thinking.” (p. 63)

As mentioned earlier, the discourse problematizes the status quo to some extent. It acknowledges the problems related to human exceptionalism, continuous economic growth, and the commodification of nature, as they may not be the best solutions to sustain society. Moreover, the discourse identifies issues in individual rationality. Criticism toward anthropocentrism, infinite economic growth, human superiority over other species, and short-termism are problematized, but the rhetoric of problematization does not extend far in the Megatrends 2023 report, as it occupies a minor position in this discourse:

“There are also problematic paradigms about sustainability that are thought deep rooted. Humans are seen as separate

from nature, superior to other species, and nature simply a human resource. Well-being is linked to material living standards, prioritising infinite economic growth and short-term gain. The focus is on individuals, who are presumed to act rationally.” (p. 27)

Moreover, the discourse portrays tensions between different societal actors: people wanting to promote new economic thinking are constrained by economists, businesses, labour markets, and leading politicians. Additionally, the media is described as presenting a narrow narrative of the future by focusing on crises, failing to address the link between the economy and societal changes. From a critical perspective, the identification of societal actors underscores the complexity and controversial nature of institutional sense-making regarding responsibility in sustainability transitions. Ultimately, this new approach to economic perspectives remains silent on alternative ideas and practices that extend beyond mere economic reform:

“People want to promote new economic thinking in practice. Shared ownership, exchanging goods and various lending services are changing the way markets operate. Field sharing and the direct distribution of local food from producers to consumers are becoming more common practices.” (p. 63)

“It is mainly economists, business and labour market and leading politicians. In other words, there is little room for new ways of thinking and challenging power structures.” (p. 57)

“The media debate on the future of the economy in Finland is narrow, short-sighted and characterised by a focus on crises. Attention concentrates on economic indicators that often disregard the linkages between the economy and other ongoing changes.” (p. 56)

The idea of reform also regards the democratic political system. The reform of democracy is interpreted as a trust building practice. Moreover, the discourse envisions societal imagination to be in crises and by solving this crisis, democracy is seen presented a solution to diversify perspectives on the future. The offered ideas encompass democratic lens by strengthening the current political structures. From a critical lens, the reform of democracy is presented as a given solution to transform society, however it does not address the current issues in democratic decision-making and decisions made against the sustainable future and development targets. The innovations presented target humans and the only non-human innovation presented is digital, technology-based innovation:

“Strengthening and reforming democracy is possible and is being done through a number of initiatives. The key is to strengthen trust, not only in institutions and decision-making structures but also between people.” (p. 38)

“The crisis of societal imagination can be addressed by expanding our power over the future: by increasing democratic participation and the diversity of perspectives of the future. New forms of involvement – such as participatory budgeting, citizens’ panels and the use of digital platforms – can play a key role in this respect if participation is successfully linked to decision-making, starting with legislative drafting processes and agenda setting” (p. 38)

Technology Might Not Be Enough

Importantly, Reformist Transformative discourse extends its critique to technological determinism. The use of rhetorical questions becomes a discursive break as the practice of not questioning technological development is problematized. Moreover, the discourse problematizes technological innovation to be not enough in constructing the sustainable future:

“Technological developments are a major driver of future trends, and one that is rarely questioned. Technology is perceived as developing quickly, but there is less attention on who determines its direction. What new technologies will be introduced and on what conditions? Where do future visions of the use of technology come from?” (p. 46)

“Indeed, the transition to a more sustainable world requires a change in how we act and think, and technological solutions are not enough.” (p.17)

As the excerpt below demonstrates, the mindset of growing technological solutions is problematized. The notion of challenging technological development is linked to the "growth mindset," as the discourse primarily critiques the current economic logic, but does not fully question the presented inevitability of technology:

Technological development and deployment cannot rely on a “more is more” mindset but must aim to use fewer resources and less energy. (p. 27)

Thus, Reformist Transformation discourse resists imaging futures as similar in the present moment, by asking for a systems evaluation on the current societal systems. Through Reformist Transformative discourse Sitra envisions a reorientation of the economy to satisfy the needs of the planet and humans but leaves other species and living systems in a marginal position by not giving space to them in the anticipation. The innovative ideas in the discourse rely mostly on the economic reforms and technological innovation to some extent. Some radically perceived ideas might show up but are not in the centre of the core ideas in the discourse. This critical observation aligns with the values in reformist discourses on sustainability, which propose structural changes to some extent but still lack vision for radical changes, as the ideas continue to sustain the current system on some level. Finally, the Reformist Transformation discourse addresses the status quo and problematizes it to some extent to be a threat for creative thinking needed for imagining alternative sustainable futures.

In conclusion, the Reformist Transformation discourse in Sitra's Megatrends 2023 constructs sustainable futures as shaped by societal business actors, policymakers, and citizens. It problematizes the dominant values and ideologies related to continuous economic growth and technological determinism to some extent, but it does not fully address transformative futures in economic systems, as the proposed reforms are cautious and based on already existing ideas. In Sitra's context, the guidance provided for transformative innovation futures is limited to economic and democratic reforms, while radical transformation ideas, needed for long-term sustainability innovation, remain in a minor position. In the next chapter, I discuss the findings with the existing literature and interpretative framework.

5 Discussion

This chapter discusses the discourses found in Sitra's Megatrends 2023 report in order to answer the research questions. The key findings present four discourses: Preparedness for Difficulties, Hope from Action, Future in Human Cognitive Control, and Reformist Transformation. I identified the discourses by using the interpretative framework I developed in Section 2.4 and the analytical tool presented in Section 3.3. The analytical process and interpretations are discussed in the previous chapters. Thus, in this section I discuss the findings and how they answer to my research questions:

1. *How are meanings constructed to sustainable future in Sitra's anticipatory discourse?*
2. *What meanings does Sitra assign to technological innovation from a sustainable future point of view?*

The discussion begins by presenting the interpretative framework and the findings in figure 3. The discourses found in this study are illustrated in relation to each other in the figure. The discussion continues by discussing the discourses and their interpretations. Furthermore, I discuss how the interpretative framework developed for this study helped me to understand the discourses in Sitra's context and finally answer the research questions. In the discussions, I also assess how my findings position in the previous scholarly discussions on sustainable futures and the role of technology. The limitations of the interpretative framework and findings are further discussed in the limitations, in Section 6.

5.1 Interpretation of the Findings

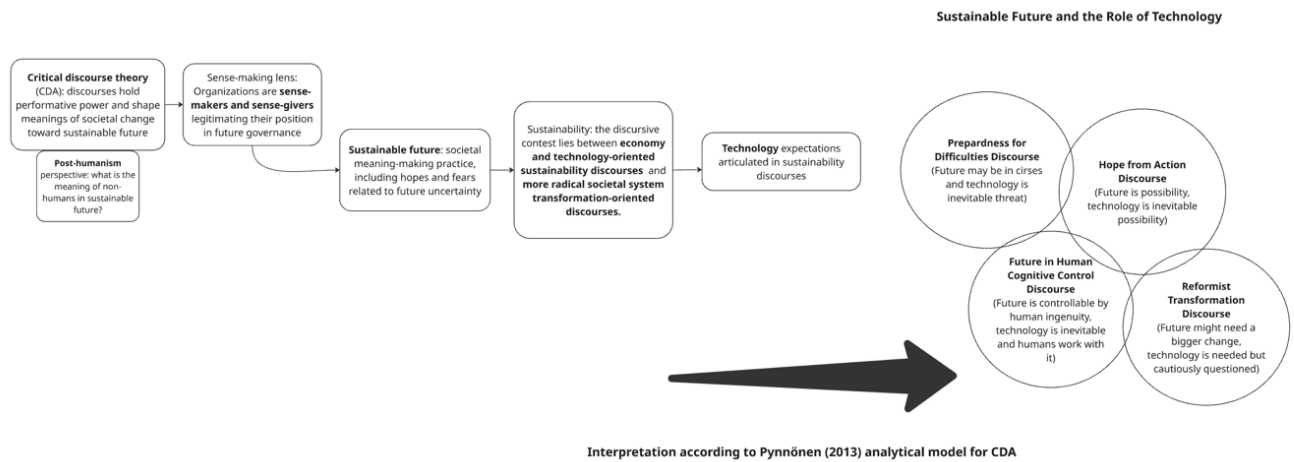


Figure 3 Interpretative Framework and Findings

The findings reveal four discourses in Sitra's Megatrends 2023 report, which are presented within the extended interpretative framework above. This interpretative framework and findings showcase the use of both the interpretative framework and the analytical model adopted from Pynnönen (2013). The findings are organized to highlight the intersections of these discourses within the data. As previously discussed, this study focused on the meanings of a sustainable future and the role of technology within Sitra's context. Thus, in this section I interpret and discuss the findings in relation to each other, while I also consider how the findings position with the existing literature and answer the objectives of this study.

While I interpreted the Megatrends 2023 report, I noticed an intriguing relationship between fear and hope in how Sitra makes sense and gives meanings to the future. The "Preparedness for Difficulties" discourse has a notably a fearful tone in the Megatrends 2023 report, constructing a key theme. Through the discourse, Sitra gives sense to the future trajectories closely connected to the present-day crises and uncertainties. This

way the discourse constructs public anxiety and fear stemming from the fear of inaction that could lead to worse outcomes. This fearful projections toward the future were identified to be related to futures uncertainty by Friedrichs & Hendriks (2024). Finally, the discourse highlights agency position of we by distributing the roles of responsibility to everyone. In the discourse fear is not just emotion, it is may also be used as a motivator that constructs urgency and mobilizes a thought of action while remaining silent about concrete agency positions.

Hope from Action and Future in Human Cognitive Control discourses support each other in Sitra's Megatrends 2023 report. Together, they convey Sitra's message of hope focused on human agency in creating a sustainable future. The "Hope from Action" discourse adopts an optimistic view of the future, portraying humans as powerful agents capable of shaping future trajectories. This discourse constructs meanings of a sustainable future positively and creates an alternative discourse for Preparedness for Difficulties. Through this discourse Sitra gives sense to opportunities, given for human and economic growth. A sense of hope contrasts fear portrayed in "Preparedness for Difficulties" discourse, by assuring that the future can be controlled through effective human action.

In conjunction with this, the "Future in Human Cognitive Control" discourse further reinforces ideas from the "Hope from Action" discourse, highlighting the development of human cognitive skills and abilities as unique forces for influencing future paths. Through human understanding, the future is given meaning as something that can be shaped and controlled by human influence. These characteristics reflect the findings that Joosse et al., (2023) found while studying sustainability from storytelling perspective, as they show how typical feature for sustainability stories is to place individuals in the centre while they make informed choices and influence by acting toward the sustainable future, identified to be features of market-driven and individualistic discourses by Riedy (2020).

In contrast, an interesting finding was found within the "Reformist Transformation" discourse which presents contradictory ideas in comparison to the other discourses. Initially, the discourse was interpreted as incorporating transformative ideas in terms of political economy and individualized action. However, a deeper understanding from

the literature revealed that radical transformative ideas were absent. Consequently, the discourse's construction of transformation is limited to economic and political reforms, while alternative innovations are given less importance. This interpretation positions the discourse as a cautious voice regarding systemic reforms, remaining focused on economic and political changes.

In addressing the role of technology, all the discourses present technology as an external and inevitable force. Even though, Reformist Transformation discourse sets a questioning tone toward technological development without radically imaging alternative pathways for the future. The dominant discourse, "Preparedness for Difficulties" views technological development fearfully, considering technology and technological innovation as a threat to institutional governance. This fear of losing the governance control might be an act of organizational sense-making while seeking legitimacy in crises to not lose control over technological development. In Sitra's context, these concerns are related to technological development and the sustainment of European values.

In contrast, "Hope from Action" expects technology to be an opportunity to shape the future. The way how technological innovation is expected to bring positive market-driven changes that fosters sustainability, identified as weak sustainability meaning construction (see Roggerio, 2021). "Future in Human Cognitive Control" assigns a role for technology to be controllable and understood by humans, enabling informed choices and diverse applications. Technology is thus, expected to be inevitable in human development. Finally, "Reformist Transformation" challenges the adequacy of technology and underscores the need for transformation in economic and democratic thinking and action, leaving alternative perspectives on technology's societal role unexplored. This discourse questioned how technology is developed and for whom, yet it does not extend to solutions aimed at radical systemic changes and visions. Thus, Sitra does not adequately represent marginalized groups or other species that are relevant when envisioning a sustainable future in its foresight.

Next, I discuss the findings in relation to the reviewed literature based on the interpretative framework developed for this study. The section is divided into themes addressed in the interpretative framework to best reflect the discourses with the prior research. The discussion starts with reflecting the meanings of sustainable future in

context of CDA approach inspired by post-humanism. Secondly, the discussion reflects Sitra's position as an actor in the Finnish landscape of future politics through the theoretical lens of organizational sense-making and sense-giving in future-oriented discourse.

5.2 CDA Approach and Sustainable Future Discourses

The interpretative lens employed in this study helps in explaining the construction of Sitra's anticipatory discourse in several ways. Firstly, meanings of a sustainable future were interpreted using a Critical Discourse Analysis (CDA) perspective, complemented by insights from post-humanism (Fairclough et al., 2004; Tallberg & Huopalaainen, 2024). The studies reviewed from a critical discourse analysis perspective enhanced the understanding of sustainable future meaning construction through the lens of discursive power (Fairclough et al., 2004; Pynnönen, 2013), helping to identify how language shapes perceptions of sustainability and influences public discourse. Additionally, post-humanism inspired the interpretation of organizational text from the viewpoint of others involved in sustainable future-making. Tallberg & Huopalaainen's work, in particular, helped highlight silenced voices and roles often overlooked in institutional decision-making and communication, thereby broadening the analysis to consider the impact of marginalized actors in Sitra's foresight.

Reflecting on previous empirical studies of sustainable future discourses, the reviewed studies help in understanding how visions of a sustainable future are constructed with meanings filled with hope and fear, as observed in this study (Willow, 2022; Friedrich & Hendriks, 2024). These studies provided an understanding for analysing emotional elements related to the future in sustainability discourse. Moreover, this study noticed the conceptual diversity in sustainability discourses, aligning with prior findings that sustainability is often represented through both weak solutions, like economic reforms and technological fixes, and strong solutions, such as planetary and community well-being (e.g., Ruggerio, 2021; Riedy, 2020; Alexander & Rutherford, 2019). This diversity in approaches informed the exploration of varying sustainability meanings within institutional settings.

Riedy's (2020) study was particularly informative, as the results showed that sustainability discourses are in Megatrends 2023 report give meanings to political reforms and market-economy solutions. This insight directed the examination of how economic interests shape the understanding sustainability in institutional context. The critical approach of prior studies enabled a critical interpretation of the discourses, drawing attention to the absence of diverse ideas and positions in sustainability narratives, which are frequently not expressed from the perspective of others within organizational communication materials (e.g., Joosse et al., 2023; Veland et al., 2018). These studies helped to pinpoint the gaps in inclusive narrative construction and provide a lens for critiquing institutional biases. Thus, the reviewed literature provided insights to review sustainable future discourses and their diverse meanings in an institutional context, often from the perspective of humans and established societal systems.

The results indicate that weak sustainability and strong sustainability discourses take turn in Sitra's foresight, as the weak sustainability conceptualizations appeared more frequently (Ruggerio, 2021). This finding is in a line with Riedy's (2020) study that found weak sustainability-based meanings and solutions to dominate the views on societal change while transformative views on radical systems change remain in a minor position. Therefore, the literature offered excellent discussions to take a part with this study as my findings bring insights to sustainability discourses in organizational foresight.

5.3 Sense-Making and Sense-Giving Perspective

In light of the literature on organizational sense-making and sense-giving, the reviewed studies helped in interpreting how Sitra may engage with these concepts related to futures governance through the practice of publishing Megatrends reports (Gephart et al., 2010; Sakellariou and Vecchiato, 2022; Muiderman et al., 2020). These studies provided a lens to interpret Sitra's position as a communicator shaping perceptions on future scenarios, by recognizing possible processes that may contribute to the construction and dissemination of these discourses and assumptions in them (Pollock & Williams, 2010). Thus, Sitra was interpreted as a sense-maker and sense-giver, communicating its views on the future within the Finnish governance of futures (see

Kettunen, 2015). This helped to interpret the discourses critically seeing Sitra to be an actor having also its own interests in its foresights.

However, throughout the analysis, I became aware of the limitations posed by a small sample of data. The literature underscored the importance of context and interaction in understanding sense-making and sense-giving, which became evident with the restricted sample size. Without directly engaging with Sitra, it is not feasible to make further interpretations about the intentions behind the specific ideas presented in the Megatrends report without interviewing its authors. The reviewed studies emphasized the necessity for context-rich analysis, highlighting the challenges in fully understanding organizational motives from institutional documents alone.

Thus, the organizational sense-making and sense-giving perspective informed this study of language within the context of public institutional actors (Whittle et al., 2023). While this perspective helped me adapt the analysis by providing tools for critiquing the rhetoric constructed by institutions like Sitra in crafting the sustainable future, the theories were not deeply tested or asserted as the sole reasons why organizations present certain ideas on the future. However, the theories helped me understand the significance of discourses, enabling a deeper analysis of the logic behind institutional meaning-making.

5.4 The Role of Technology

In light of the literature, the role of technology in Sitra's Megatrends 2023 is anticipated to be central in shaping the future. The lens of technological expectations, as communicated by promissory organizations, informed my interpretation of the discourse on technology as performative in organizational communication (Brown, 2003; Van Lente, 2012; Pollock & Williams, 2010; Beckert, 2021). Technology is expected by Sitra as an external and inevitable force, with its inevitability and ongoing development being reinforced through the rhetoric of hope and fear. These interpretations position technological advancement both as a threat that must be managed and as an opportunity for human self-improvement. Yet, technology is also approached with caution, as its assumptions are questioned to some extent.

The empirical discourse studies reviewed were useful in understanding how technology is framed within institutional contexts. Specifically, the studies on AI discourses enhanced my understanding of how technologies are approached in institutional reports and public communications across various communities. These studies helped identify the meanings of hope and fear associated with the uncertainties surrounding technological development and the governance challenges institutions face (Bareis & Kazenbach; Elmhold et al., 2025).

Regarding the intersection of sustainability and technology, Üzelgün & Pereira's (2020) work informed my interpretation of how technology's role in sustainability discourse shifts based on temporal framing. In future-oriented contexts, technology is portrayed as an external, potentially disruptive force driving societal transformation as the findings indicate that in this study.

Studies on transformative innovations further clarified how technological innovation is often prioritized as a solution, while other types of innovations remain marginalized (e.g., Lowery et al., 2020; Kivimaa et al., 2021). Finally, McKeown's (2017) study on techno-optimism and proportional certainty within institutions guided my understanding of how technological claims and representations of certainty may be portrayed as institutional ways to prepare and control, underscoring the complex dynamics at play in institutional discourses about technology and its future implications.

Overall, insights from the literature contribute to a nuanced discussion of meanings related to a sustainable future and the role of technology. These meanings may become performative in shaping both sustainability actions and institutional strategies to govern the future in a direction that serves the needs of the planet and humans, while also considering other living beings and non-human forces that coexist with humans on the planet.

6 Conclusions

This final section concludes this thesis by summarizing the key findings, theoretical contributions, and suggests managerial implications based on the findings. It also addresses the limitations of this study as well as suggests future research possibilities.

6.1. Summary of the Key Findings

In conclusion, this thesis study has explored the discourses surrounding the sustainable future and the role of technology, contributing to the existing body of knowledge. Through data collection, careful analysis, and critical interpretation, I have provided valuable insights into the sustainable future and technology discourses found in Sitra's Megatrends 2023 report. Next, I present summarized answers to my research questions presented at the beginning of this study.

RQ1: How are meanings constructed to sustainable future in Sitra's anticipatory discourse?

The findings reveal the complexity and diversity of sustainable future meanings within Sitra's foresight. A sustainable future is crafted by constructing a pluralistic array of meanings that encompass emotionally charged visions marked by both hope and fear regarding potential futures. Both weak and strong sustainability meanings were found throughout the report but the emphasis is toward weak sustainability meanings, including technical solutions with economic reforms (see Ruggerio, 2021). Through the interplay of hope and fear, Sitra constructs future actions by delivering a compelling message that navigates future uncertainty, normalizing both affects as part of sustainable societal change.

A sustainable future is also constructed around meanings of possibility for humans. This possibility stems from human action, portraying an optimistic outlook that expects everyone to take active steps today to influence tomorrow. Such actions are linked to individual behaviour in economic markets, technological advancement, and skill development. Lastly, Sitra critically reflects on the adequacy of current solutions, ideas,

and technologies by acknowledging doubts and addressing issues related to actions toward the future.

An unexpected insight from the study was how a sustainable future is given meanings through the agency of "we," a pronoun that distributes responsibility among all individuals. While this approach obligates everyone to act for the future, it may present challenges from a power perspective. The role of non-human actors is limited in Sitra's anticipation. Although Sitra emphasizes human-centred innovations in its Megatrends 2023 report, it notably lacks recognition of other types of innovation or agency beyond the human realm.

RQ2: What meanings does Sitra assign to technological innovation from a sustainable future point of view?

Addressing the second research question, Sitra views technological innovation as essential and inevitable for a sustainable future. Sitra's anticipatory discourse on the future put emphasis on technological development and knowledge as integral parts of societal progress. In the context of a sustainable future, technological development and knowledge carry both hopeful and fearful implications. Hopeful discourses highlight the opportunities and possibilities that technology can bring, while concerns are raised about the speed of technological development and its association with governance challenges for institutions. One of the discourses questions the roles of technology to some extent but leaves the construction of meanings open to alternative innovations, thereby recognizing the need for such innovations.

The findings prompt consideration of who benefits from technology and for what purpose it is developed. Sitra tends to approach this questioning of technological solutions cautiously, focusing more on existing system solutions—economic and political reforms—rather than exploring sustainability innovations beyond technological or economic-political forms. Consequently, Sitra's anticipation in the Megatrends 2023 report concentrates on technological, economic, and political innovations, while less emphasis is placed on other types of innovation.

In summary, technology is viewed both as an inevitable possibility and as a risk for societal development. However, the focus remains largely on how it can be controlled

and how the governance of technologies fits within existing economic and political structures, potentially limiting the attention paid to alternative innovation approaches.

6.2. Theoretical Contributions

This thesis contributes to the theory of critical organizational discourse and sustainability. Building on literature and theories from multidisciplinary research, mainly from social sciences and organizational studies, this thesis develops empirical understanding and knowledge of discourses on a sustainable future and technology by interpreting organizational discourse through a critical lens.

Applying the Critical Discourse Analysis (CDA) method enriched by a post-humanist perspective, this study examined discourse as an institutional sense-making and sense-giving practice in strategic foresight, focusing on the meanings attributed to sustainable futures and the role of technology within them. As a result, it advances empirical understanding of theories related to organizational sense-making and sense-giving, in conjunction with topics of sustainable futures and technology. Additionally, this application of theories enhances the comprehension of combining post-humanism with discourse studies, using post-humanism as an inspirational foundation rather than fully adopting its insights. The understanding gained through this study offers valuable knowledge for comprehending an organization's forecasts at a discursive level, which may help in critically assessing how organizations project sustainable futures and visions of technological development in the present.

Finally, this thesis makes a contribution to the Critical Discourse Analysis (CDA) theory within organizational studies. It does so by employing discourse scholar Norman Fairclough's conception of discourse and Pynnönen's analytical framework (2013) to analyse discourses at Sitra. The study also integrates a post-humanist perspective with critical discourse theory to explore organizational discourses from viewpoints beyond human perspectives. By taking this approach, it initiates theory development by incorporating insights from organizational post-humanism that could be comprehensively combined in future research. Therefore, with this thesis I contribute to a broader conversation on futures and encourages other researchers to explore related topics.

6.3. Managerial Implications

This thesis provides several insights for organizations to reflect on their sustainability communication concerning the desired future. The findings reveal underlying assumptions, ideas, and values embedded in organizational anticipatory discourse. Since a sustainable future is ultimately imagined, it is crucial for organizational strategists, sustainability managers, and others involved in strategic anticipation to consider how the future is presented and whom it might benefit. While Sitra's Megatrends forecast and reflect possible future events, they also mobilize action in the present. Therefore, expert organizations should treat any future-oriented publication as a strategic cue that communicates specific actions, desires, hopes, and expectations to stakeholders and society at large. These strategic anticipations should encompass futures constructed from diverse perspectives on sustainability.

This thesis also encourages those responsible for strategic foresight to incorporate and explore alternative innovations and knowledge alongside strongly technology-oriented approaches. Expanding perspectives to include those of inhabitants of nature and ecosystems, rural communities, and minority groups would prevent overreliance on human-centered, technological, or economic-political discourses, as noted by scholars of sustainability and language (e.g., Joosse et al., 2023; Riedy, 2020; Tallberg & Huopalainen, 2024). This recommendation involves questioning whose futures are being prioritized and for what purposes. Critical reflection is necessary, as expert organizations should increase inclusivity and flexibility in both strategic visions and innovation-policy influence.

A truly sustainable future must incorporate all actors, according to scholars of sustainability transitions (Köhler et al., 2019). Including diverse ideas and perspectives on futures within organizations like Sitra would enable them to engage in transformative innovation policy-planning and development (e.g., Loorbach et al., 2020) and expand future anticipations to imagine futures even radically from diverse innovation perspectives. For organizations that produce future-oriented knowledge, anticipations, and other public communications based on expertise, this thesis offers insights to reflect on dominant ideas, knowledge, and values in sustainability discourses from a critical perspective. Finally, this thesis encourages redefining humans and technological

solutions as one set of possibilities among many in sustainable future-making. Thus, this study encourages organizations to imagine futures beyond incumbent ideas and challenge the dominant paradigms in discussions on sustainability.

6.4. Limitations and Suggestions for Further Research

This thesis study shares common limitations with qualitative research. These limitations include the scope of the analysis and potential researcher bias in interpreting the findings. Although I have aimed for reflexivity by clearly explaining my choices and maintaining transparency in my interpretations, still I may have overlooked perspectives that other researchers could identify in a similar discourse study within the same context which may impact the credibility and validity of some interpretations. The inherent limitation of researcher bias in discourse studies is acknowledged by other scholars as a characteristic of qualitative research (Pietikäinen & Mäntynen, 2009).

Moreover, limitations regarding the scope arise as this thesis does not focus on a large sample of data or involve a longitudinal investigation of sustainability and technology discourses in organizational anticipatory communications. Such research would be valuable for future study agendas. In particular, it would be interesting to explore how the technological inevitability found in this study is constructed within expert organizational agendas across different communication contexts or temporalities. Another scope-related limitation is that this study focused on a single case organization in Finland, making the findings non-generalizable to other organizations or countries. Future research would benefit from including multiple case organizations studied in a comparative setting. Additionally, future research could enhance understanding of the writing process behind anticipatory claims communicated through reports like Megatrends, potentially offering insights to develop the discursive construction of anticipatory discourse from its inception.

Finally, there are limitations related to the approach of developing the literature review alongside the discourse analysis, as some earlier reviewed studies may have become misaligned with the findings. Since the literature was developed before and after the analysis, some works reflect pre-analysis perspectives while others were integrated afterward. Additionally, some studies were reduced after completing the analysis. This

approach may limit the comprehensive discussion and alignment with the findings in this study. On the other hand, the abductive reasoning employed increased understanding of the phenomenon as a whole.

In conclusion, I want to emphasize that this study is a contribution to the academic discourse on sustainable futures and the role of technology. The stance taken in this thesis is positioned on the critical side of scholarly work, underscoring the importance of challenging incumbent perspectives to discover truly sustainable practices and innovations that benefit not only humans but also others on Earth, as society adapts to new ways of living on the planet.

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