Sustainable craft is a multi-layered concept of practices and products and their relationships on the surrounding world. This dissertation study opens up the concept of sustainable craft on practical, theoretical and conceptual level. The results of the study show how the system of sustainable craft is formed and how sustainability can be approached through craft. Furthermore, the study shows the concept of sustainable craft is one solution in achieving flourishing and well-being.
SUSTAINABLE CRAFT

DISMANTLED AND REASSEMBLED
ABSTRACT

The aim of this study is to describe and analyse sustainable craft on a practical, theoretical and conceptual level. This task is approached by employing grounded theory and concept analysis methods. The research questions are: What is sustainable craft? How is sustainable craft understood among craft makers? What does sustainable craft mean? What are the potential implications of sustainable craft?

For this study, data gathered using qualitative methods from craft practitioners and student craft teachers, as well as relevant literature, were viewed analytically. Craft practitioners were interviewed and student craft teachers were asked to write essays. The phenomenon was viewed from multiple perspectives and the data were analysed using several methods, including the grounded theory method expanded via quantitative description and analysis. The literature was analysed using the concept analysis method. By approaching data using mixed methods, it was possible to establish a comprehensive concept of sustainable craft.

The findings of the practitioner data revealed a system of sustainable craft (Study I). The system comprises three fundamental elements: craft as practice, product, and immaterial craft. In addition, each element has properties of its own. Sustainable craft as practice begins with acquiring skills that increase craft knowledge and further shape values and attitudes and, thus, the ideology of craft. Sustainable craft products are built on the interaction of the materials, life cycle, technique, design, quality, aesthetics, needs, and product relationship. Sustainable immaterial craft includes the environment, cultural, social, economic, psychologic, societal, philosophical and communicational aspects. Immaterial craft reveals the importance of craft in understanding sustainable development. These elements work together to shape the environment, a specific product, and the actions towards sustainability.

The aim of the second study was to analyse the kind of conceptions of student craft teachers of sustainable craft (Study II). The grounded theory analysis was further expanded with data quantification, transforming codes into numbers. This enabled quantitative description and analysis. Practice is key to sustainable craft, through the skills and knowledge that link the product to its immaterial context. Also, any differences between participants were identified and were called approaches to sustainability through craft. Sustainability was approached as material, individual, socio-cultural or holistic perspective, depending on the engagement with the action. The more committed the craft maker, the more holistic were their thoughts regarding sustainability.
The literature was reviewed using concept analysis (Study III) and revealed the antecedents and consequences of sustainable craft, a description of how the matter has been addressed in contemporary academic literature and draws a definition as a conclusion. It also defines how craft practices are seen to be changing towards sustainability.

This dissertation combines these studies into one – a holistic picture of the importance of craft in the context of sustainability. It provides a framework and a tool for sustainable craft. This is expected to be useful for craft educators, scientists and craft entrepreneurs in product design and artisanal production. In conclusion, it can be said that craft is an excellent school subject, hobby and livelihood for discussing sustainability and understanding one’s own position in the world. Furthermore, this study also underlines the necessity of craft education in developing a flourishing human agency.

**Keywords**: craft, sustainability, sustainable craft, sustainable development, system of sustainable craft, approaches to sustainability, concept analysis
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TIIVISTELMÄ

Tämän tutkimuksen tavoitteena on kuvailla ja analysoida kestävää käsityötä käytännön, teorian ja käsitetteen tasoilla. Tutkimustavoitteita lähestytään grounded theory -menetelman ja käsiteanalyysin keinoin. Tutkimuskysymyksillä haetaan vastausta siihen, mitä kestävä käsityö on. Miten kestävä käsityö ymmärretään käsityönteoksi -den keskuudessa? Mitä kestävä käsityö tarkoittaa ja millaisia seurauksia sillä voi olla?


Käsiteanalyysin avulla tarkasteltu kirjallisuus (Julkaisu III) paljasti kestävän käsityön ennakkoehtoja ja seurauksia sekä kuvauksia siitä, kuinka käsitettä on käytetty 21. vuosisadan alun ajankohtaisessa akateemisessa kirjallisuudessa. Tutkimustulosten avulla voitiin hahmotella käsitettä siitä, kuinka käsityötoiminnan nähdään muuttuvan kestäväksi.

Tämä väitöskirja yhdistää edellä mainitut kolme julkaisua yhdeksi – kokonaisvaltaiseksi kuvaksi käsityöstä kestävyyden kontekstissa. Tutkimus luo viitekehyksen ja käytännön työkalun kestävää käsityöstä. Tämän toivotaan hyödyttäävän käsityön pedagogiaa ja tutkijoita, sekä käsityöyrityjä tuotekehityksessä ja käsityöllisessä tuotantamisessa. Tutkimuksen lopputuloksena voidaan päätellä, että käsityö on erinomainen oppiaine, harrastus, ja elinkeino käsitellä kestävää kehitystä sekä ymmärtää omaa osallisuuttaan maailmassa. Tämän lisäksi tutkimus alleviivaa käsityön opetuksen merkitystä ihmisyyden kehittämisessä kukoistavaksi (flourishing).

**Avainsanat:** käsityö, kestävyys, kestävä käsityö, kestävä kehitys, kestävän käsityön systeemi, lähestymistavat kestävyyteen, käsiteanalyysi
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This dissertation is dedicated to my loving family, my parents, my mother Maija and departed father Helge, and my children, Nevan and Clodagh – my dearest treasures of life – continuity of craft.

Kuopio, 02 January 2020
Niina Väänänen
LIST OF ORIGINAL PUBLICATIONS

The following publications are the basis of this dissertation. The publications are referred to in the text using roman numbers (I-III).


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The original publications are mainly written of the first author, who is responsible for the research design, analysis and reporting. In Study I, Professor Pöllänen contributed the structure of the publication, EdD Kaipainen and EdD Vartiainen acted as commentators and were responsible for fact checking. In Study II, EdD Vartiainen verified the analysis and coding, EdD Kaipainen commented on the process, EdD Pitkäniemi contributed to the methodology, and Professor Pöllänen commented on and guided the process. In Study III, Professor Pöllänen oversaw the process of concept formulation.
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1 INTRODUCTION

On a very basic level, human beings need food, clothing, shelter and work (cf. Brundtland 1987; Maslow 1970). For food, we need agriculture and the requisite tools, not to mention what is needed for livestock and cooking. We also need to protect ourselves from the weather, and for this we need material and the tools with which to create clothes. We need shelter to protect us from rain, snow, cold, even the heat from the sun, again needing supplies and tools in order to succeed. We need crafting skills to survive, but that is not all we need. The above are just the foundation for what humans need to live, without taking into account the need for social interaction, self-realisation and even aesthetics (cf. Schwartz 1994; Dissanayake 1995; Seligman 2011).

As soon as we were able to meet our basic needs, humanity could focus on complexity and artistic expression crafting being the main outlet for both necessities and art throughout the history of humankind (Dissanayake 1995; Alkire 2002; Moran 2006). Symbols of social status, i.e. more intricate and numerous artistic crafts, became cultural heritage, eventually disappearing into museums (Kokko 2018). News reports on the state of the earth and the conditions of people and nature itself all point to changes that are drastically needed (Ehrenfeld 2014). Towards this change, we need to analyse the current state of the issue of sustainability, how it was in the past and the ways it can evolve in the future, including potentials ways it could be changed.

The particular interest of this study is sustainable craft. Craft has been part of human development for centuries, but nowadays, following the industrial age, do we still need craft? If so, is there a great need? And in a wider context, how could craft contribute to sustainability? More specifically, what does sustainable craft mean? This is the main research question of this study and the above questions will be answered in this doctoral dissertation.

The present study uses grounded theory as its research methodology in order to find a thorough answer to the main research question. Grounded theory was considered to be a suitable method for persistent knowledge seeking and intensive analysis. As the concept of sustainable craft was still open and fragmented, a concept analysis was used in order to clarify it. These two research methods evolved throughout the research process. One set of data were also quantified in numerical form to better view and understand the patterns of similarities and differences in participant conceptions.

The research has been iterative process that began from a qualitative starting point through background literature research, interviews with professional practitioners and collecting data from future craft teachers. Work in these cycles is somewhat hermeneutic, getting closer to the phenomenon through each cycle. Even though the aim of this study is conceptualisation, the data initially came from real-life narratives of craft makers and future craft teachers, and how they understand it.

The structure of this thesis is divided into five main chapters: The first chapter opens with the approach, the theoretical framework, the aim of the study and the research questions. The second chapter presents the framework of the study, craft and sustainability, and how they have been used in a craft and design context. The third chapter discusses the research methods used in the study. The fourth chapter summarises the articles that form the core of this dissertation. The fifth chapter discusses the themes that arise from the articles in greater depth. The conclusions
drawn from the results are evaluated and interpreted in the final chapter, together with proposals for new ideas for future research, presented in the end of chapter five.

1.1 APPROACH OF THE STUDY

This mixed-method study describes, views and analyses the concept of sustainable craft through the empirical reflections of different craft makers. This concept is used in various ways, but a definition and clarification were needed (Cox & Bebbington 2014). The aim of the study is to understand what sustainable craft means, how it is applied, and the changes required in a craft context in order to make the world more sustainable. In practice, the study utilises three main methods and approaches to conceptualise the phenomena. Firstly, grounded theory draws on theory from practice. Secondly, a quantitative description and analysis allows the dependencies of the data to be viewed. And thirdly, the literature is analysed using concept analysis. Conceptually, the philosophical underpinnings are explained using philosophical concept analysis.

When studying a concept, the way we understand language must be acknowledged. Niiniluoto (1996) explains semiotics as a general theory of sign systems of shared interactions, whereas semantics is the meaning of language – how different expressions can have the same meaning. Conceptualism resolves the ideas of the human mind, concept realism resolves the abstract beings of a higher idea world, whereas pragmatism views language on a level that identifies the users and the usage of language in different communicative situations. Pragmatic information is the combined meanings of people and cultures. Thus, this study utilises a pragmatic approach with hermeneutic cycles of increasing understanding (Niiniluoto 1996; Anttila 2006).

Ontologically, this study utilises Popper’s (1972) three worlds of reality: World 1 contains physical objects, events and processes, matter and energy, inorganic and organic nature present in time and space. World 2 is described as an individual state of consciousness, mental occurrence and psyche. World 3 presents cultural objects, artefacts and abstractions realised through human social action, as well as culture and society (also Niiniluoto 1996; Anttila 2006). These worlds are utilised in order to understand the concept of sustainable craft. Thus, the area of study is World 2, the individual conceptions of World 3, the phenomena or abstraction of sustainable craft that is typified in World 1 that the material world processes (see Figure 1). However, as Rauhala (2005) points out, these are not separate ontological worlds but parts that influence each other. However, for example, an object from World 1, does not have meaning without the presence of World 2, the human conception of it, and therefore, the meaning and understanding of World 1 and 2 form World 3. Additionally, there has been some discussion that there is another dimension, World 4, signifying the age of the internet (Anttila 2006; Vartiainen 2010).

The research questions of this study can be simplified and reasoned through the three worlds of Popper (1972). In this study, it is important to specify the meanings and pragmatic presentations of the phrase “sustainable craft” in the written and spoken world. As Anttila (2006, 335) clarifies, a concept and a phenomenon co-exist through experience; it is important to study how the conceptions of sustainable craft describe the phenomenon through the experiences of the craft makers. This study is not interested in the semantic meanings of words per se, and they have been left outside
the scope of the study. However, it is understood that in the search for meaning, it is necessary to be aware of the importance of semiotics, for example, in the definitions of sustainable development or the variations of craft in English compared to Finnish or Greek, as discussed in the upcoming chapters. This study focusses on describing and analysing the concept of sustainable craft. Thus, the products and artefacts that present the material existence have not been analysed directly, although they are present in the descriptions of the participants in the study.

![Figure 1. Popper’s (1972) three worlds and the conceptions of sustainable craft in theory.](image)

### 1.2 THEORETICAL FRAMEWORK

In this study, the two concepts, sustainable development and craft, emerge and form a new concept – sustainable craft. The concept is relatively new to the field of craft; it was previously studied by Suojanen in Finland in 1997 and 2001. Although Papanek (1973) was already seen as one of the first influential spokespersons of green design in 1970, he never mentions sustainability in his work (Knott 2013). Since this time, environmental awareness and the imperative for change has increased, as concepts are the states of our minds, which evolve and change over time (Walker and Avant 1988; Rodgers 1993). Thus, it is important to view the concept of sustainable craft in a new light.

Even though both theoretical concepts are complex, this study aims to clarify the concept of sustainable craft. The study begins by examining the concept of craft and moves onto exploring the concept of sustainable development. Thus, the framework of the study is based on the theories of craft and sustainable development (see Figure 2).
The distinction between casual crafting activities and professional craft is clearly visible. Despite the Industrial Revolution and mass production, craft is still valued and practised, and it has transformed its existence and occurrence during this time (Kupiainen 2004; Vartiainen 2010; Hackney 2013; Kojonkoski-Rännäli 2014). Craft today varies from traditional and cultural heritage contexts (Kokko & Dillon 2011; Nugraha 2012) to leisure activities (Pöllänen 2013; Kouhia 2016), using recycled materials and the innovative use of novel materials or technical applications (Kuusk, Wensveen & Tomico Plasencia 2016). This study reviews the concept of craft, including the practice as meaningful making process, crafted products, craft culture and the societal aspects of craft – education and professional practice.

In order to understand sustainability, we need to review the definitions, frameworks and goals of sustainable development. Because the concept of sustainable development is general and broad (Brundtland commission 1987; Ehrenfeld 2014), it can be confusing. Thus, it is important to analyse the issue from different angles in order to make it more comprehensible. In addition to defining the concept, this study considers some of the relevant ethical aspects and briefly outlines the environmental and human viewpoints in the discussion of cultural change.

Craft science is a multidisciplinary field of science specific to Finland. The discipline of craft science is rooted in the beginning of craft teacher education in 1886. Craft received the first professorship in textiles, design and manufacturing processes for handmade textiles in 1982. The doctrine of craft science was granted in 1992, with the focus on craft products and their design and making processes and their use within the environments in which these practices are situated (Seitamaa-Hakkarainen et al. 2007, IV; Kaukinen 2010; Pöllänen & Urdziņa-Deruma 2017.) The broader view of craft (not fixed on specific materials, techniques or products) transformed craft science into a multidisciplinary research field (Pöllänen & Urdziņa-Deruma 2017).

According to Kuhmonen et al. (1988, 7), craft is interconnected with humans, the world and technology. Among these, craft can be viewed from aesthetic, socio-cultural, socio-economic, psycho-pedagogical, ethical-moral, and natural scientific and methodological perspectives (see also Kojonkoski-Rännäli 2014). Na (2012) considers the general approach to studying craft as craftology, a field of science that studies craft as cultural presentations, but also through the meaningful making
process in a sustainable future. In recent decades the number of research articles on crafts has increased significantly (Greenhalgh 2002). The perspective in craft research is multidisciplinary with connections to social-economic, psycho-social, societal, cultural-historic, design and communicational, as well as natural environment and technological dimensions (Seitamaa-Hakkarainen et al. 2007).

In Figure 3, crafts and sustainable development are placed between a natural scientific and technological and socio-economic orientation. However, the orientation shifts and moves around the centre, which is the producer and the product. This study views craft holistically in the context of sustainability. It approaches craft from environmental, economic, social, cultural and societal perspectives. This study is multidisciplinary, as it seeks to understand and apply theories from craft science, design studies, social sciences, psychology, business, organisational and educational studies (see Dillon 2008). During the process of reviewing the literature, performing empirical research and analysis, the concept of sustainable craft became more crystalized. In the following chapters the two underlying concepts will be explained through relevant literature to better understand and clarify the complexity of the phenomena.
1.3 AIM OF THE STUDY AND RESEARCH QUESTIONS

The aim of this study is to describe and analyse sustainable craft on a practical, theoretical and conceptual level. This task is approached using grounded theory and concept analysis methods. The research begins with exploring the relevant literature for the background context. Empirical research was then conducted using interviews and essays on craft maker conceptions of sustainable craft. This practical information drawn from craft makers is compared with documentary data retrieved from previous research with the aim of achieving a theoretical understanding. Collectively, these form a conceptual understanding of the phenomena (see Bayliss & Dillon 2010; Niedderer 2013).

Below are the main study questions. They are answered in more detail in the original publications. For clarity, the relationships between the elements of sustainable craft refer to the relationships between the variables in quantitative analysis (third question), while the relationships between sustainable craft refer to the concept analysis of the literature review.

- What is sustainable craft?
  - What are the properties of sustainable craft?
  - What kind of relationships do the elements of sustainable craft have?

- How is sustainable craft understood among craft makers?
  - What kind of conceptions do professional craft practitioners have of sustainable craft?
  - What kind of conceptions do student craft teachers have of sustainable craft?

- What does sustainable craft mean?
  - How is sustainable craft described in the literature?
  - What kind of relationships does sustainable craft have?
  - How can sustainable craft be defined?

- What are the potential implications of sustainable craft?
2 CRAFT AND SUSTAINABILITY

2.1 CONCEPT OF CRAFT

In this study, the concept of craft is initially explored by its definition, as a practice and a process through a product and its qualities, and how craft fits into culture and society especially in education and as a profession.

2.1.1 Definition of craft

The definition of craft has multiple perspectives from the maker to the product and process (Nugraha 2012; Kouhia 2016). However, to understand craft, a definition of its present forms is required. Craft is seen as a product and a practice with implications in the surrounding world (Anttila 1993). Anttila (ibid. 10) defines craft as labour done by hand or with tools that are held in the hand; it can also mean a handmade product.

Craft has various meanings and can be approached from different perspectives and fields of science. It can be seen holistically, as a system of human and environment communication, both internally and externally. Crafted products are the result of a complex or simple process, aimed at producing a crafted product. This creation process can be divided into many smaller processes. Adamson (2007, 3–4) emphasises the craft process as an attitude, an approach and a habit of action.

The Oxford Dictionary (2015) defines craft as an activity involving skill making things by hand. The plural form crafts means work or objects that are made by hand; the singular form craft means skills involved in carrying out one’s work. Walker (1989, 38) defines craft as manual skill, but it also refers to a trade or occupation and can be characterised by the technique that is utilised, for example, knitting. Craft is called sloyd in a Nordic context and is associated with school craft (Marjanen & Metsärinne 2019). The word sloyd, slöjd [Swe] has its origin in the Swedish slöghþ in the 1290s and means canniness, diligence, skilfulness, cunning, wisdom, the property to be handy, dexterous craftsmanship, skilled in designing, experienced skilful, ingenious, and creative (Marjanen & Metsärinne 2019; NordFo 2019).

Ihatsu (2002) sees craft as a trade and profession, as an activity and a creative process, as a skill and craftsmanship, as an object, product and artefact, outlined by quality and culture. Shiner (2012, 232) distinguishes craft as a process and practice and as a category of disciplines. There are various craft practices, including studio, trade, amateur and DIY (do-it-yourself). The relationships are historically bound by both art and design and by digital design and fabrication in the present day. Craft is a consortium of techniques, materials and functional objects that are made (Greenhalgh 2002; Shiner 2012). Greenhalgh (1997a) explains that crafts are rooted in traditional methods of making objects or artefacts that are designed to make life easier with tools to modify our surroundings. After all, craft antecedents from physiological need (Risatti 2007). Although crafts have offered protection from environmental changes, every culture also had a need for decoration (see also Dissanayake 2003).

Risatti (2007, 14–18) claims the words ‘craft’ and ‘craftsmanship’ not only refer to the quality of making, but also assumes that skilled hands were the source of this quality.
After the Industrial Revolution, defining how objects are made is important because of the manufacturing process. Well-made crafts are an aspect of quality; craft refers to skills and mastery of materials and techniques that have practical physical function and activity. The tools used in a craft practice through manual labour differentiates crafts from machine-made objects.

Shiner (2012, 234–236) notes that craft is articulated by four arguments: hand/body, materials/medium, skills/mastery, aesthetics and function; the latter two are extended properties of objects, not properties of the practice. Hand, as in handmade or handicraft, actually refers to the body and differentiates the process of making an object manually as opposed to using a machine. The interaction with materials, not the materials per se, but as a motion and transformation of the ideas of craftspeople through the materials is significant. Skills and technique refer to technical proficiency and manual dexterity, but the preference over mastery of the two indicates performance at ‘their highest level’ (cf. Dormer 1994).

For Sennett (2008), craft comprises the craftsmen, craft, and craftsmanship; craftsmen are the labourers of craft practice, craft is either the action or skills required for the process, and craftsmanship refers to the connoisseur, to the knowledge of craft, to the expertise of making (see also Dormer 1994). Aakko (2016, 45–49) states that artisanal and craft production are similar in action and definition: an artisan and craftsman (craftsperson) is a skilled person making things by hand.

### 2.1.2 Craft practice

Craft practice begins with learning the necessary skills. Craft is associated with the use of the hands, like during very early stage of our lives, we anticipate when a baby first grabs something intentionally with its hands, and differentiates the touch from its biological need to hold onto its mother (Lew & Butterworth 1997). However, people who have limited use or no use of their hands are still able to create art and crafts using other parts of the body, for example, their feet or mouths. In this sense, crafts are everyone’s right and are not exclusive to people who have hands. Thus, the benefits of craft would appear wider than merely manual practice and dexterity, although semantically ‘handicrafts’ would suggest this (cf. Ihatsu 2002).

The development of craft skills into craft knowledge and expertise is a product of practice (Dormer 1994). The quality of a crafted object depends on the expertise and skills of the maker (Risatti 2007). From the novice to the expert stage, the perspective on matters develops from none to experienced, decision-making from analytical to intuitive and commitment evolves from detached to involved (Dreyfus & Dreyfus 1986). Expert designers can multitask cognitively and perform according to their expertise, while novices struggle with multiple tasks (Seitamaa-Hakkarainen & Hakkarainen 2001; Kavakli & Gero 2002). Yet, the Pro-Am (professional-amateur) might be just as skilled as the expert designer because of the many hours they spend on the hobby (Solomon 2013). Thus, expertise does not refer to a status granted by an educational system, but the earned performance of an individual. Expertise grows through action, whether the knowledge gained is tacit or verbal (Nimkulrat, Niedderer & Evans 2015).

The craft process

Craft practice is a process; it begins from developed ideas and ends with completed solutions: the products. During this process, the initial ideas are transformed into
visual designs, either mental images, as described by Anttila (1993), or visual design (Seitamaa-Hakkarainen & Hakkarainen 2001). This requires the ability to plan for the actions necessary for the next phase of evaluating, testing materials and methods and generating the construction and form of the object, concluding with an evaluation of the final product (Anttila 1993). This process may take multiple iterative cycles before completion. In Anttila’s model (1993), the process is reflective, including internal and external feedback aimed at problem-solving.

The more engaged and skilled the craft makers are throughout the making process, the more insightful are their reflective processes (Bennett 2013). Anttila’s (1993) presentation of the craft process includes internal and external reflection as an essential part of the process (cf. Schön 1988). Sennett (2008, 277) argues that craftsmanship has three foundational abilities: localizing, questioning and opening up, and the reflective, concrete practices convey more than what we consciously process. The brain processes information it receives from the tactile, visual, aural, and the cultural language-symbol-codes simultaneously. The ability to use tools and materials through a system of continuous trial and error to eventually achieve mastery also provides knowledge (Dormer 1994; Sennett 2008). Even though the practitioner might be unable to read, they can still be a talented craftsperson and an educator of their trade (Belaram 2010). Craft skills, knowledge and craftsmanship used to be educated through guilds, a system of master and apprentice education (Risatti 2007; Sennett 2008).

Holistic craft (Kojonkoski-Rännäli 1995) and a holistic craft process (Pöllänen & Kröger 2004) emerge when talking about the craft process. Pöllänen and Kröger (2004) explain that the holistic craft process begins with ideation, the innovative and creative process of establishing what is wanted and needed, what it looks like, what is hoped to be achieved through it. The design phase actualises the initial idea in a visible form. The initial ideas are sketched in terms of how to bring the idea together as an actual product. The making process actualises the design by using traditional techniques and learning new skills. The evaluation phase is a reflective part of the process.

Contrary to holistic craft, the term ordinary is also discussed in relation to the process¹. Ordinary craft is used when the craft process is divided and not holistic (Pöllänen 2013), meaning that the entire process of making is not in one person’s hands. For example, the design phase is conducted by someone else, using ready-made patterns (see also Rönkkö 2011). However, Walker (1989, 40) clarifies that copying other people’s patterns and designs in crafts is the nature of ‘rural’ craft based on traditions. Greenhalgh (1997a) terms traditional craft as a vernacular. Nevertheless, both these methods involve material interaction and bring meaningfulness to the craft makers (Kouhia 2016, 15). From an educational context, Rönkkö (2012, 131–133) considers the process to be holistic if the person is committed to the making process, including ordinary craft, which has been modified to meet the needs of the maker and is considered important for learning crafts.

Meaningful making process
The importance of craft making from an individual perspective could be explained by the fact that craft making is connected to all the senses and physical work (e.g. Anttila 1999), it is the essence of being a human. Venkula (2005) claims that the entirety

¹ In this study ordinary refers to plain, common, and conventional craft, not to the counterpart of holistic crafts of a divided craft process (see Pöllänen 2013; Kojonkoski-Rännäli 1995).
of humanity and human well-being is based on doing and on the skills that doing produces. People have a need to make things by hand in order to express and realise themselves (see also Dissanayake 1995; Greenhalgh 2002). Craft connects to human values with its experimental and emotional knowledge (Niedderer & Townsend 2013). Melsop (2013) argues that the meaningful making process of craft is a matter of hand, head and heart. The head refers to intellectual and cognitive development, hand to the body, senses, somatic learning by doing, while the heart refers to the affective side of crafts that develop empathy in collaborative activities and emotional connectivity to people and places. However, these are not separate processes, they are embodied together (see Thompson 2007; Dillon 2018).

This connection is also recognised by Groth (2017), who describes embodied cognition through craft. The embodied sensations guide our body to act according to our mind, educating our mind and body to work together (see also Anttila 1999; Härkki, Seitamaa-Hakkariainen & Hakkarainen 2018; Dillon 2018). Through repetition, certain manners are refined in the process, and hand-eye coordination and the body’s fine motoric skills, for example, develop further (e.g. Dormer 1994). The skills that craft practice develops include physical and neurological sensations that further affect our brains and thinking skills, various cognitions, for example, spatial perception, haptic-kinetic perception, ability to form and reproduce shapes, psycho-motoric skills (hand-eye, hand-foot, hand-hand coordination), motoric skills (stability, accuracy, speed), and visualisation (Kuhmonen et al. 1988; Anttila 1999; see also Groth 2017; Huotilainen et al. 2018). Furthermore, craft making is connecting with the surrounding environment (Dillon 2018).

Kojonkoski-Rännäli (2014, 14–20, 60) also views craft as the body/mind2 developing consciousness, as a bodily work in connection with life and as a form of culture. Craft skills are not simply a skill, because skills always require a conceptual understanding of what we are doing. Currently, the body and mind discussion can be seen as being embodied in craft making, with the hand and head communicating (Anttila 1999; Sennett 2008; Shiner 2012; cf. Groth 2017; Melsop 2013). Risatti (2007, 55–59) states that craft’s fulfilment of human physiological need, because this fulfilment is the result of a conscious act, also has a psychological dimension to it that cannot be divorced from consciousness; after all, consciousness itself has psychological dimension at its core. The purpose of craft is something deeply human, stemming from a physical need and its connection with psychological consciousness, from the evolutionary, cultural and historical perspective, human and environment relationship and, therefore, is one of the glories of craft that make it a meaningful endeavour.

Consciousness as a psychological state also directs our relationship to meaningful objects, the products (Csikszentmihalyi & Rochberg-Halton 1981, 4–6). Sen (1985, 9–10) points out that the characteristics of objects are not enough to provide well-being, it is the functioning of a person and what he or she is able to do with these goods. Thus, a functioning is an achievement of a person: what he or she manages to do or to be. However, during the work flow, a person may experience a loss of self-consciousness and become one with the action and actor: Flow is a subjective state that people report

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2The body/mind discussion stems from Descartes (1596-1650) notion: ‘Cogito, ergo sum’ or ‘I think, therefore I am’ (Anttila 2006, 529-532; Varto 2001, 111; see also Csikszentmihalyi & Rochberg-Halton 1981, 3–4). Rationality was Descartes reasoning in separating man from other species; rationality/the mind includes cognitive abilities such as self-consciousness, memory, observation, conceptualisation, moral will and responsibility (Oksanen 2012, 214).
when they are completely involved in something to the point of forgetting time, fatigue, and everything else but the activity itself, also acting as a motivator for accomplishment (Csikszentmihalyi 2014, 230).

Rauhala (2005, 31–33) draws a distinction between a spiritual and a psychic division of consciousness. Knowing, conceptualising, thinking, reflection, ability to experience holiness and beauty is typical of spiritual consciousness, whereas psychic consciousness does not contain any of the above but is present in needs, wants and emotions. Consciousness also needs embodiment and situationality in order to fully function. As Kojonkoski-Rännäli (2014) states, consciousness is needed to view craft from an ecological point of view. Craft practice turns into meaningful making process through self-management and empowerment (Pöllänen 2015a).

Well-being
Craft can be a source of empowerment and well-being3 (Pöllänen 2013; 2015a), e.g. in coping with stress during leisure time by sorting our emotions through the corporal activity of craft or the personal growth it provides. Pöllänen (2015b) explains how crafts can be a source of empowerment. The interaction with materials, creating a meaningful object, the social and cultural dimension (such as gifts, traditions and celebrations), the development of physical and cognitive skills, the thoughts and feelings that are organised for personal growth, even the control of pain – all contribute to self-management and empowerment. Also, the flow experience can counter-act stress (also; Csikszentmihalyi 2014; Huotilainen 2016; Huotilainen et al. 2018). This kind of ‘positive stress’, den glada stressen, (see Frankenhauser in 1999) can give a person control over their actions and provide pleasure for the maker (Pöllänen 2015b, 74). Similarly, according to Pöllänen (2009b), craft can be viewed as a therapy and in therapy. Craft as a therapy means that it is a therapeutic action, whereas craft in therapy refers to the method used in rehabilitation.

Social interaction in craft groups enhances the sense of belonging and may have healing qualities but also contributes to happiness through accomplishment (Kenning 2015; also Maidment et al. 2019) and increases quality of life and personal and social well-being (Riley, Corkhill and Morris 2013). The current online culture has established new forms of connecting and participating in social activity (Gauntlett 2011). This can be used for shared craft processes in seeking ideas, knowledge and help, doing it together and participating, gaining feedback and serving as a notebook (Vilhunen 2018). This kind of activity can work as a stress reliever (Pöllänen & Voutilainen 2017) but also extend to the social interaction between people and bring a sense of belonging and connection.

Because arts and crafts are crucial for developing the brain, specifically the cortical area that controls the somatosensory, motor and visual areas – which is activated in childhood and also in rehabilitative practices (Pöllänen 2009b; Veeber, Syrjäläinen & Lind 2014; Huotilainen et al. 2018, 4) – craft’s potential as a source of well-being should be emphasised. Craft skills, once acquired, remain with a person throughout their life. Well-being as a concept and a goal of sustainability will be discussed in more detail in Chapter 2.3.5.

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3 There are two forms of the term well-being and wellbeing. Well-being is used in American English to signify state of being comfortable, healthy or happy (Oxford Dictionaries 2019) and wellbeing is a British expression for the condition of being contented, healthy, or successful; and welfare (Collins English Dictionary 2019). For consistency, this study uses the term well-being.
2.1.3 Hidden properties of crafted products

Crafted products have different names depending on the context of their use. A crafted product can also be called an object and an artefact (Ihatsu 2002; Anttila 2006). An artefact is a deliberately produced product of practice. It may be natural, for example, nests are artefacts made by bees; they can also be abstract, but what is common to them is that they involve the process of doing or making, e.g. creating a piece of music (Siipi 2008/2014). The connection of artefacts with the process, to the creator and the immaterial surrounding the object therefore extends the meaning of the product or object itself. In this study, the terms object and product are used to refer to crafted objects. However, to emphasise the maker’s input, the term artefact will be used.

Artefacts are also ideological, as they are designed to respond to our needs and have symbolic meaning and value (Walker 1989, 60). For example, in clothing, there are both physical and social psychological dimensions in the person-clothing-environment triangulation of attributes that contributes to clothing comfort (Branson & Sweeney 1991). The meaning of things or objects as described by Csikszentmihalyi and Rochberg-Halton (1981, 38) are connected in three ways: on the personal, the social and the cosmic level. The meaning of the self (personal) differs from the meaning of the social, as they are personal expressions of the self and are depicted as the social sphere of culture. They are both concrete and symbolic signs of a person’s status and personality and also of a person’s inner self. Things become meaningful through consciousness, the active pursuing of goals. By cosmic level, Csikszentmihalyi and Rochberg-Halton (ibid.) mean a connection with the natural phenomena that control the rhythm of life.

Materials

Materials are what are most essential in crafts and result in products. Materials are modified, shaped and altered to specific crafted items (Nimkulrat 2010; Dillon & Kokko 2017). Materials are closely connected to the methods of practice, for example, clay – pottery, wool – felting, spinning, knitting, crocheting etc. and they define the type of practice (Risatti 2007; Shiner 2012). Yet the craftsperson may use unconventional materials in the conventional practice of a traditional method (see Suojanen 1997; Sung & Cooper 2015). Thus, materials act as a resource for human practice as materials on their own are not a craft. This claim presents an ethical problem regarding the use of these materials as resources, and this use has far-reaching consequences. For example, the cultivation of cotton has dried the soil in certain regions through the overuse of water (e.g. Talvemaa 2002; Fletcher 2008).

For a crafted product, the materials define what can be done with it and affect the results of the craft practice, as materials on their own have properties about which the craftsperson must be aware. By manipulating the materials and these properties, an object can be crafted. For example, wool sheared from a sheep must be washed, dyed (if needed), spun, made into yarn and from this point into a knitted, crocheted, or felted product (e.g. Talvemaa 2003; Taylor 1993). Because much laborious work is carried out by machines, the materials are more easily accessible to craft makers, yet exclude the traditional ‘holistic’ craft process. Thus, the craftsperson must deal with the issue of the origin of the materials for the products, but also how they can be used effectively.

Because materials can be produced outside local regions, the logistics have an impact on the environment, i.e. made in one location and distributed globally (Fletcher 2008; Blackburn 2009). For example, the textile industry with its fast production and
disposal cycles are responsible for 10% of the world’s carbon emission and 20% of waste water (UNECE 2018). In Finland in 2012, 77 % of clothes ended up in landfills and 23% were recycled for charities or flea markets (Dahlbo et al. 2015). These are materials that could have been recycled more efficiently using chemical, mechanical or thermal systems instead of burning them for energy.

Function
All objects have their specific properties or characteristics, depending on the user or the function of the product (Sen 1985; Papanek 1995; Luutonen 1999; Ihatsu 2002; Anttila 2006; Risatti 2007; Shiner 2011). Crafted objects are commonly classified by form, materials, techniques, necessity, purpose and function (Risatti 2007), even though objects may be used for different purposes than they are designed for and are therefore not the same thing. Risatti (2007, 87) claims that craft objects are inextricably tied to nature since their purpose is founded in physiological need their functional forms reconstitute models found in nature, and they operate by carrying out practical physical functions physicals laws defining the form, materials and techniques.

Risatti (2007, 239–250) illustrates that all man-made things have a purpose according to their function: an applied physical function (as a means: tools, machines, equipment; as an end: containers, covers and supports) and a visual communicative function (as conceptual ends: paintings and sculpture; as practical ends: as commercial arts; presented as 2- and 3-dimensional images). Between these two functions lies the decorative aspect of man-made things such as jewellery, tattoos and mosaic tiles. These functions result in a utilitarian or fine design, craft and art. Utilitarian covers commercial and other practical needs, whereas fine refers to the refined end of carefully considered aesthetic objects (ibid. 246–247). Shiner (2012, 233) points out that because Risatti defines containers, covers and supports as crafted objects, jewellery and tableware cannot be viewed as crafts. Craft and art have also been cross-wired (Pöllänen & Ruotsalainen 2017), depending on the cultural context, for example, American craft is considered to be art-craft (cf. Ihatsu 2002).

Shiner (2011) concludes that there are multiple functions that govern craft, including social, symbolic, aesthetic and practical functions. These functions are rarely separate but embedded and intertwined. The symbolic function explores meanings, the social function – human interaction, the practical – how things work, and the aesthetic function is perceived and experienced as beauty, forms, shapes, etc. The aesthetic function may also comprise the practical function (Shiner 2011), which may be acceptable in design and art, but in terms of constructions and buildings, it may be hazardous if not practical.

Papanek’s (1973; 1984/1992; 1995) contribution to the design world was his theory of practice through the products function analysis framework. The analysis framework takes the product and analyses it through different functions: use, need, method, association, aesthetics, Telesis (see Figure 4). Need refers to biological, social, cultural, psychological needs and questions whether the product is fulfilling physical, psychological (e.g. pleasure, aesthetics, meaning), or socio-cultural needs (e.g. fashion). The use function is about how the product works in practice. Method ensures that techniques used in production are used appropriately. Association refers to personal

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¹ Coincidently, Clarke (2013) underlines the relationship of Papanek with the Finnish design industry in the 1960s and 70s and believes that much of Papanek’s work was influenced by Finnish honesty and need for the function of product design (see also Papanek 1984, epilogue).
preferences and feelings towards the product and can be connected to a person’s history or other associations. Aesthetics can be many things, but the basic premise is that it is personal emotion that may have visual, technical, material and qualitative properties. The Telesis function is a meaningful and well-considered process of nature and society towards achieving desired goals.

Figure 4. Function analysis tool (Papanek 1973, 25).

Need
Risatti (2007, 54–59) claims that needs and desires may be confused: one can desire something without actually needing it due to the advertising and creation of desires. Physiological needs have biological origins, and crafted objects were initially designed to fulfil these survival needs. Max-Neef (1992) separates needs and satisfiers by explaining that, for example, food and shelter are satisfiers for the need of subsistence. Greenhalgh (1997b) calls this requirement to fulfil one’s needs a reminder of the primitive self, and thus, crafts are attractive to tourists around the world; and as Risatti (2007) states, crafted objects have historical necessity that has significant cultural importance. Dissanayake (1995, xiii) discusses the primitive need as a need for aesthetics; it is universal and biological and may emerge as a need to perform and experience art in the form of decoration.

Maslow (1970, 51) also identified aesthetic need as being apparent in our universal behaviour along with the need to understand. The famous hierarchical needs

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5 Telesis in the original function matrix (in 1973, 32–34) meant that a product should reflect time and conditions, the fit and function of its origin, the socio-economic system. Telesis remained in Design for the Real World (Papanek 1984/1992, 7) in connection with nature, society and technological bias but was changed into consequences in the Green Imperative (1995, 34). Consequences refer to a broader discussion of ecological-environmental and social-societal aspects and materials and energy consumption (1995, 34).

6 Max-Neef (1992, 146–147) claims that, on the one hand, needs are interact with Being, Having, Doing and Interacting and, on the other hand, with Subsistence, Protection, Affection, Understanding, Participation, Creation, Leisure, Identity and Freedom, which can be satisfied on a personal, social, and/or environmental level.
described by Maslow (1970) fall into the categories of basic needs (physiological), safety (psychological: home and family), belonging (social: group, family, etc.), self-esteem (emotional: acceptance and admiration) and self-actualisation (a result of all other needs being fulfilled) (see also Clarke 2007). These needs direct our motivations.

A holistic view of needs by Kamenentzky (1992) shapes the body, mind and society. On a biological level, we have bodily needs, the bio-psychological level intersects with the mind and body, including clothing, shelter, care and protection. Psychological needs comprise the mind and include such aspects as knowledge, recreation, etc. Socio-cultural needs include intellectual, emotional, and physical communication, participation and autonomy.

Although the physical need for craft making is not necessary for our survival (Pöllänen & Kröger 2000), there is a psychological need (Pöllänen 2015b), and this need may be developmental from the cognitive aspect and being a human (Seitamaa-Hakkarainen et al. 2016; Groth 2017; Huotilainen et al. 2018; Pöllänen 2013; 2015a; 2015b). Today, the concerns of consumption culture and the need for craft may also be cultural (UNESCO 2003; Risatti 2007; Sennett 2008; Kokko & Dillon 2011) and for professional practitioners, the need is economic (Lith 2005; Schwarz & Yair 2010). In this regard, craft has the ability to fulfil these physical, biological, psychological and aesthetic needs.

Aesthetics

Even though aesthetics is more connected to arts, Risatti (2007) considers that all crafted objects can be seen as having aesthetic appeal (see also Luutonen 1999). Varto (2004, 13) explains that the term aesthetics is from the Greek word aethesis, meaning senses (aistisuus in Finnish): the ability to sense by seeing, hearing and touching. It can be subjective and objective, personal and commercial, connected to beauty, often harmonious and good. It is a concept of knowledge and its origin, connected to its time, place and culture. It is also connected to an ability to express thought, principles of skills, product of practice and the discussion of these two. The Greek word aisthetikos signified one who is perceptive of things through his sensations, feelings, and intuition (Risatti 2007, 263).

Risatti (2007, 262–273) opens the debate on aesthetics as a function/nonfunction dichotomy, intentionality, meaning, beauty and contemplation. However, we would grow tired from sensory overload, if we considered everything around us aesthetically (ibid. 267). Similarly, not all objects are aesthetic, although they may have aesthetic features (ibid. 269). Things are often viewed from a Western perspective, but different cultural objects or artefacts are bound to various cultural, religious and educational rituals and functions (Puolakka 2018). In this sense, aesthetics intersect with Papanek’s (1973) Telesis, as objects are related to a certain time, occasion, place and culture and therefore have different meanings and uses to different people.

Crawford (2009) considers nature to be something opposite to a man-made artefact, yet aesthetics may unite the relationship of nature-human-artefact. Dissanayake (1995) underlines the nature of homo aestheticus, the inborn aesthetic nature of human beings, which is understandable, as our senses connect us to our surroundings (cf. Varto 2004). In this study, aesthetics is used to signify the shape, colour, position of light, feel, sound or movement of the artefact; for example, fluid motion in a dance performance, or the motion of the hand, the needle, the eye, in combination with materials, thread, colours, haptic feel and the appearance of the shapes in a craft such as embroidery.
Durability

Durability is an aspect of product design, especially in relation to industrial products. Koskennurmi-Sivonen and Anttila (2008) align durability with product quality. Durability is a result of design, technique and materials, as well as other product properties, such as style and basic functionality. Naturally, the materials and techniques used in the process all contribute to physical durability (e.g. Taylor 1993; Sherburne 2009). Physical durability is one of the most important factors in crafted products, for example, the kinds of structures used in building houses or the technical properties of textiles (see Kaasinen 2014; Lindfors 2002).

In addition to the physical order of materials and techniques, including natural and manipulated structures, durability is also related to emotions. Chapman (2009) divides emotionally durable frameworks for design into six points: narrative, detachment, surface, attachment, enchantment, consciousness. For example, most e-waste (i.e. electronics waste) still functions in a utilitarian sense, but it may not be emotionally durable anymore. This could be prevented by paying attention to the design.

However, Fletcher (2016, 183) believes that things are durable as long as people want them to last, but the materials, design and construction are supported by the social systems that dictate the usage of things. Fletcher (ibid.) links durability to sustainability, fashion system of consumption and obsolescence, material and garment durability, emotional durability, investigation of the social durability of the object, and extended usership. The various aspects of durability are balanced between physical durability, the longevity of materials and their construction, and the emotional characteristics of the shared social systems.

In conclusion, there are many reasons why objects are desirable to us. They respond to our needs and desires on a personal, social and even a cosmic level, as stated by Csikszentmihalyi and Rochberg-Halton (1981, 38). An artefact is satisfying from a creational, material, emotional and even a social perspective (Niinimäki 2011; Pöllänen 2015b; Groth 2017). Today, when products are generally mass produced, this relationship is challenged by the perceived and planned obsolescence created by market forces (Walker 1989; Papanek 1995; Leonard 2007). The competitive advantage of crafted products is their uniqueness and the deeply meaningful stories behind them (Luutonen 2007b).

2.1.4 The relationship between craft, design, art and technology

The relationship between craft, design and art has intrigued many researchers (Walker 1989; Dormer 1997a; Greenhalgh 1997a; 2002; Ihatsu 2002; Sennett 2008; Risatti 2007; Shiner 2012). Ihatsu (2002, 54–55) believes that craft was initially all three, but over time, art and design went on to develop as separate domains. In the beginning, there was craft. Crafted products were made to provide shelter, assist in food-making processes, help farming and hunting and offer protection from environmental conditions. Fine art was distinguished from craft in the intellectual art theory of the Renaissance and, in 20th century, design was separated into industrial objects and crafts, whereby the production was moved from maker to machine (Dormer 1994; Greenhalgh 1997b; Ihatsu 2002).

To clarify how design and art differ from craft, some definitions should be provided. In simplicity design, is a verb and a noun, a drawing or a plan of an object and its functions (Oxford Dictionaries 2018). This simplicity is far from simple, as design is as
complicated concept as craft. Design is action, it is form and functionality, but relates to many fields of industry, for example, graphic design, architecture, engineering, and even health and social sciences; it is everywhere (Ihatsu 2002; Belaram 2010; Kimbell 2012). Papanek (1984/1992, 4) defines design as a *conscious and intuitive effort to impose meaningful order*. However, what is considered design is decided by the *design world*, those involved in design (Walker 1989, 32).

Fry (2009, viii) extends the concept further to include all humans *as* designers (also Papanek 1973, 21), yet only some of us develop and use this ability as a source of employment. We all design and alter our surroundings. We are intrigued by symmetrical and asymmetrical natural formations and sequences such as snowflakes or stem-and-leaf ratios (Papanek 1973). Also, humans are not considered to be the only designers because designs can be created by other forms of life as well (cf. Rolston III 2003; Siipi 2008).

Art, as an artefact, a performance or even an art world, is connected to aesthetics, the shapes, colours, forms are all satisfying to the senses (Ihatsu 2002; Focosi 2016). Greenhalgh (2002, 13) emphasises that art is actually the *relationships between people and objects*. Similarly, Risatti (2007) elaborates on the liberation of fine arts from the material and functionality of craft and attaches it to symbolism. Art is communicated through symbols, signs or behaviour and these have socially constructed meanings. What can be considered as art is normative and therefore also compelled by anti-art that aims to shock and cause a reaction. Currently, there is great variation in arts (Focosi 2016).

Craft and fine arts have had the same elements of practice (skills, knowledge, technique, materials), yet contemporary fine art can be created without such intrinsic elements (Risatti 2007). For Dissanayake (2003), art is something that is deeply human. According to its original “definition”, art is closely related to craft and human behaviour in play and ceremonial rituals, and is furthermore connected to feelings. Adamson (2007, 9–13) sees craft as being supplemental to art. While Shiner (2012, 237–238) sees function as the focus of studio crafts and the aesthetics of art-craft, a combination of the two are rare pieces destined for exhibitions. Yet they were once a standard procedure in craft production in a historical context and should initially be considered as being essential parts of craft practice.

Greenhalgh (2002) shows competition between design, craft and art. He (ibid.) defines craft as being interconnected and stresses that we should not focus too much on the definition. After all, *the urge of creative making* whether it is arts, design or craft, is all the same (ibid, 4). Ihatsu (2002, 57) also reconciles these differences and draws orientations between conventional craft, art-craft and craft-design through a literary presentation of the concept of craft (see Figure 5). Conventional craft called *ordinary craft*, is the basis of craft. The two dimensions that derive from conventional craft are *craft-design* and *art-craft*. Craft-design is moving towards industrial design, with its emphasis on function and service. Technology and rationality are major activators of craft making. Art-craft, on the other hand, is based more on free expression, intuition and imagination and leans towards fine arts and the *avant-garde*. In conclusion, contemporary craft can be defined as a triangle of art-craft, design-craft and ordinary craft.
Nugraha (2012, 176) places these three ‘siblings’ (art-craft-design) in a pyramid with mass production – the competitor of unique one-piece art and craft production and design that echoes mass production (see Figure 6). At the centre of the model is the product or the artefact that is surrounded by the elements that modify it. Nugraha (ibid.) presents the ATUMICS tool for designers, an acronym for Artefact, Technique, Utility, Materials, Icon, Concept, and Shape. Technique is not simply the skills required for crafting but also the knowledge thereof, and the tools used in the process. Utility refers to the use, purpose, need and functionality of an object. Materials are either traditional or new, and as long as the materials are used appropriately, their functional and material properties are considered. The icon signifies the sign and symbol of the object that gives it meaning, this being decorative motifs or colours that have cultural significance. The concept means hidden factors, including cultural representation such as norms, beliefs, emotions, feelings and values. The shape is the form, performance, visual and physical properties of the object. All the above works on a micro level of the object, presenting the properties of the product. The method draws motivation from the social, cultural, economic, ecological, self-expressive and survival elements of the maker.
According to Burns et al. (2012), craft is rooted in tradition, materials and authenticity, but the changes in craft practice can be attributed to digital technology and environmental and ethical concerns. Technology refers to the means of making or practice developed by people (Dormer 1997a, 7). As Varto (2001, 113) states, *techno* derives from *techné* – the skill, and *-logy* comes from *logos* (word, speech, language; expression, conclusion; thought, thinking, reason, logic, science (Koukkunen, Hosia & Keränen 2008)). The word *tekhnologia* is Greek and means systematic treatment (Oxford Dictionaries). Parikka (2003) distinguishes *technique* as the tools or practice required to produce products, and *technology* as scientific theories, processes and products, technical performance, technical terms and materials in addition to the qualities of technique.

Contemporary craft is also seen to compete with technology, mass production, and fast fashion (Dormer 1997b; 1997c; Fletcher 2008; Metsärinne & Kallio 2014). However, technology is not only perceived as being the opposite of craft, it is also a part of craft, especially in craft education (Hast 2011). Parkko (2016) adds technology to the traditional division of the three siblings: art, craft and design. In her study (ibid.), technology was a tool for marketing and information distribution, but also for design. Nowadays, craft is shared and communicated, for example, through internet blogs, and has different meanings to craft makers (Kröger 2003; Gauntlett 2011; Na 2012; Vartiainen 2010; Pöllänen & Voutilainen 2017; Vilhunen 2018).

Basic craft skills can be gained through online knowledge seeking and the reflection process can be documented in blogs, for example (Vilhunen 2018; cf. Anttila 1993). This is a huge cultural change as we no longer live in communities and generations do
not live under the same roof, which is how knowledge used to be shared (cf. Papanek 1995). The community is now online (see Vilhunen 2018; Pöllänen & Pöllänen 2019), for example, Vartiainen (2010) opened her study with live role playing or Kröger (2003) studied the virtual platform for craft education. We now live in communities in which we search for information and find results from all over the world in a matter of seconds. At times, the virtual community can provide the social and technical support that would not be available face to face because of time constraints and inconvenience (Pöllänen & Voutilainen 2017). Thus, technology has its advantages for craft making (Suojanen 2001) and should not be placed in opposition to craft but alongside it, as programming and crafting processes are similar (Gauntlett 2011). Pöllänen and Pöllänen (2019) argue that craft precedes computational thinking and therefore acts as a foundation for understanding technology.

In sum, there are cultural nuances in the relationship between art, craft and design. Ihatsu (2002) viewed the differences in craft, design and art in Finland, Britain and North America through literary sources and found that Finnish craft is more conventional and lean towards design, whereas British craft balance between design and art, and American craft is more avant-garde and based on art. Botnik and Raja (2011, 43) consider the appreciation of craft perceived as lowly hand work in developing countries and as valued works of art in the developed countries. This presents a conflict in reconciling sustainability in crafts. How can we safeguard something we do not value?

In this study, when craft is mentioned it already includes aspects of design and art because of their varied foundations and conceptions, as argued above. However, when the emphasis is either on design or art, the terms used will be in accordance with the emphasis (i.e. art-craft or craft-design). Also, technology is accepted as a part of contemporary craft. However, this study does not take a stand regarding the level at which craft is considered to be handmade or technology assisted. Some technologies speed up the process of making, for example, using a belt sander or a sewing machine (see also Dormer 1997b; 1997c).

2.1.5 Craft culture

In addition to craft practice and crafted products, craft has other aspects (cf. Figure 2 p.21). Craft as cultural representation can be material and concrete such as products that have a historical context (Ihatsu 2002; Sipilä 2012), or abstract, such as craftsmanship passed from one generation to the next (Greenhalgh 1997a; Ihatsu 2002; Sennett 2008). It could also be a contemporary phenomenon of DIY craft shared and distributed online (Vartiainen 2010; Gauntlett 2011; Na 2012; Haveri 2013; Vilhunen 2018). Crafted objects in museums are part of history and cultural heritage, but it should be understood that craft heritage is more, it is also living traditions – the practice of crafts (Marsio 2017; Kokko 2018). Kokko and Dillon (2011, 488) define craft tradition as the craft artefacts and the associated lifestyles and structures at a given time and a given place that are localised formulations of prescriptive knowledge. Craft traditions can be viewed as cultural ecology that is manifested in needs, wants, values, attitudes, tastes, function and purpose, human and material resources, economic conditions, social norms, means of exchange and institutional structures (Dillon 2011; 2018).

Historically, crafts have evolved over time and the meanings have naturally changed. In brief, the evolution of socio-economic phases of crafts in a Western context, as
Pöllänen (see Pöllänen & Kröger 2000) summarises, comprises four different periods. The first period is *craft as an everyday phenomenon* in previous societies. The making of a product and its usage was usually in the same person’s hands. Then came the *period of production technology*, when the skills were separated from work, hobby and education. Mass production began to increase and craft was left to the people; some of them carried on making products domestically for a living. The *period of information technology* since the 1960s and 70s put pressure on craft education; it was seen as old-fashioned and unnecessary. Craft was no longer a necessity for producing products. Craft as a hobby became to fill its purpose as pleasure of self-expression. The fourth period, *the future*, is based on knowledge, skills and survival. The future, with its need to respond to the changes of work practices, still requires skills that craft is able to develop, such as creativity, entrepreneurship, and which may lead to emotional satisfaction. Regardless of socio-economic changes, in many cultures, traditional crafts are still practiced globally as an everyday phenomenon based on needs.

A new increase in craft can be seen in the growing interest in craft research (Na 2012). Since the struggles of craft and its ‘rivals’ – design and art – against mass production and institutionalised production of the Industrial Revolution, for example, the Arts and Craft movement has kept the traditions alive and given craft a political shift in tone that is also economic and institutional (Greenhalgh 2002). Historically in Finland, the cottage industry (*kotiteollisuus*) was seen as a promoter and a protector of craft skills through cultural continuity in and through education (Kraatari 2016; see also Ihatsu 2002).

Hackney (2013) describes the preference to make your own items as *quiet activism*, although there is visible *craftism*, craft activism, which the DIY culture presents in contemporary craft (Na 2012; Haveri 2013; Garber 2013; Greer 2014; Kouhia 2016). Shiner (2012, 231) distinguishes between the DIY *craftivist* with a political message and DIY *crafters* who use irony and humour in craft. The maker culture can also be divided into professional craft makers and hobbyists. Kouhia (2016, 17) defined ‘hobby craft’ as self-governed leisure-based craft activity, *with an emphasis on hobbies as an enjoyable, private time outside the burden of vocational work*. This definition differs from Bouette and Magee’s (2015) view of *hobbyists* who occasionally sell their crafts. Hobby craft is a vivid part of the craft making industry. Although the activity has decreased between 1980s and up to the 2000s (Kouhia 2016), it has increased since the creation of the virtual community of Etsy (Na 2012; Jakob 2012; Luckman 2015). Children and youths are spending most of their leisure time on sports and social media, but crafts are among the top ten favourite hobbies of children and youths in Finland, with 34 % of the respondents making crafts more than once a month (Hakanen, Myllyniemi & Salasuo 2019, 58–59). According to Statistics Finland (SVT 2018), one half of the Finnish adult population make crafts in their leisure time. Men focus on building (24%) and fixing (29%), for example, cars or electronics, while women make clothing (20%) and use yarn techniques (43%), for example, knitting or crocheting. Craft hobbyists are motivated in crafting because it is considered to be a therapeutic and relaxing activity (Taitoliitto 2018).

Adamson (2007, 140) notes that amateur craft today is widespread and reaches all social classes, compared to its aristocratic and private nature in Anglo-American history. Today’s amateur craft is apparent, particularly in knitting, and is an active/passive demonstration of values (Haveri 2012; Hackney 2013; Pöllänen & Pöllänen 2019). Connecting larger audiences with craft, Gauntlett (2011) explains that making and practicing online is in contrast to the previous ‘sit-back and be-told’ culture.
Anyone can be a content producer and share ideas and creativity through the World Wide Web, which has changed learning and entertainment patterns. This creates freedom and control over making and has different meanings to craft makers in the context of hobby crafts. Kouhia (2012) thematised these cross-cultural meanings of hobby craft as being interrelated, classifying them as functional, material, aesthetic, expressive, experiential, multi-sensory, collaborative and narrative. Craft activity enhances well-being through the interaction with materials and maker’s personality and activity itself, which corresponds with socio-cultural accounts (Pöllänen 2013). Pöllänen (ibid, 218) distinguishes activity and occupation: activity is an impersonal term for a generic event, whereas occupation gives personal meanings and experiences to cultural activities.

This study is particularly interested in professional practitioners who represent the economic aspect of sustainability and craft education because this is where traditions are formally transferred (cf. Porko-Hudd, Pöllänen & Lindfors 2018). There are two reasons why these two aspects, education and crafts as professional practice, are the most relevant to this study of sustainable craft: Firstly, education improves lives and passes on skills, and secondly, craft as a trade produces products that have an environmental and economic impact (Wals 2009; Yair 2010; Luutonen 2013; Lith 2017; Porko-Hudd et al. 2018).

2.1.6 Craft education in Finland

Finnish craft education is an institutional example of how traditions are kept alive. Craft has a long tradition in education in Finland. Craft has been taught in basic education since its origins in the 19th century (Marjanen & Metsärinne 2019). Uno Cygnaeus was a developer of the Finnish education system in the 1860s and saw the developmental aspect of craft on people (Pöllänen & Kröger 2000; Marjanen 2012; Pöllänen & Urdziņa-Deruma 2017). Nowadays, in Finnish basic education, craft is taught from the age of seven to sixteen. In basic education, craft is compulsory in grades 1–7 and optional in grades 8–9 (Finnish National Board of Education, FNBE, 2014; Porko-Hudd et al. 2018). The competence to teach craft in formal education is achieved by completing craft studies as a major or minor subject. Thus, craft may be taught by class teachers, particularly in the primary schools (Pöllänen & Urdziņa-Deruma 2017).

Craft education after basic education prepares students for an occupation. This second-level education normally last for 2–3 years, depending on whether the student has graduated from upper secondary school. Graduate students are qualified artisans. The next level of education is higher education at college level and is a qualification for a designer of interior design and furniture, textile design, industrial design or ceramics and glass design. There are also four universities in Finland that offer a master’s degree as well as doctoral-level education in craft (Porko-Hudd et al. 2018). These are the University of Eastern Finland, University of Helsinki, University of Turku and Åbo Akademi University. If art and design studies are included, there are more institutions that provide formal education (Studentum Oy 2015). Alongside formal education, there are after-school activities or extracurricular art education for children and young people. This education is arranged by local community colleges or craft organisations, for example (e.g. The Finnish Crafts Organization Taito 2016). Additionally, museums act as another sector by preserving the tangible cultural
heritage of craft and may serve as a formal or informal learning environments (e.g. Marsio 2017; see also Vartiainen 2014).

Historically, craft education has experienced periods of different emphasis on education. Marjanen and Metsärinne (2019, 49) classified these periods as craft for home well-being (1866–1911), craft for civic society (1912–1945), craft for independent hard-working citizens (1946–1969), toward equality craft (1970–1993) and unlimited craft (1994–2014). Thus, the purpose of craft education has changed to reflect the needs of society and the development of its citizens. Today, the purpose of basic craft education is to develop the skills of students so that their self-esteem increases and they feel contentment and satisfaction in their work. Craft can enhance self-esteem through the satisfying experience of craft making, thereby enhancing well-being. The purpose of craft education is to develop motoric skills, creativity and design know-how. Craft education directs students towards an intentional, long-term and independent work mentality, develops their creativity, aesthetic, technical and psycho-motoric skills, problem-solving skills and their understanding of technology as an everyday phenomenon (FNBE 2014).

The significance of craft practice is in the long-term commitment and innovative, holistic working processes (Pöllänen 2019). The educational content is on innovation, design, experiments, documentation and evaluation, as well as in practice, work safety, entrepreneurial learning, with acknowledgement and participation. The education is based on a student-centred approach of learning through collaborative action. The knowledge of the material world is rooted in sustainable lifestyle and development. Students are also directed to familiarise themselves with the craft heritage of Finland and other cultures (FNBE 2014). The curriculum accommodates the framework of 21st century competencies of the Knowledge Age. However, Kojonkoski-Rännäli (2010) highlights the autonomy of Finnish teachers. Even though the education is included in the national curriculum or education plan, teachers are able to teach the subject from their own perspectives. The teacher’s task is not easy and requires knowledge of the subject. Teachers with strong subject management are able to teach the subject contents in correspondence with their students’ needs.

From gendered craft to multi-materialism
Finland has a historical foundation of gender-based education in crafts (Kokko 2007; Lepistö & Lindfors 2015; Niiranen 2016; Marjanen & Metsärinne 2019). Marjanen (2012) and Lepistö and Lindfors (2015) explain that craft education in Finland has a long tradition, and because of this history, craft has been gendered to men and women (1886) and boys and girls (1912). The researchers claim (ibid.) that craft education changed in 1970 when the national core curriculum was introduced to the Finnish education system. Craft became technical and textile handicraft continued to be technical and textile work from 1985. In 1994, the two subjects/contents were combined

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7 The competencies (in Europe) or skills (in North America) of the 21st century are described as social (collaboration, communication, digital literacy, citizenship) and individual (problem solving, critical thinking, creativity, productivity) (Voogt et al. 2013). Trilling and Fadel (2009) sort the skills thematically into three core skills: 1) Life and career skills, 2) Learning and innovation skills, and 3) Information, media, and technology skills. Binkley et al. (2012) recognize ten core skills that are categorised into four groups: Ways of thinking (creativity and innovation, critical thinking, problem solving, and decision making, learning to learn, metacognition), Ways of working (communication, collaboration), Tools for working (information literacy, ICT literacy), and Living in the world (citizenship – local and global, life and career, personal and social responsibility – including cultural awareness and competence).
as crafts and remained like this in the 2004 curriculum. In the 2014 curriculum, craft was presented as multi-material (FNBE 2014).

Multi-material craft does not dichotomise between soft and hard materials or technological and textile work; it is craft, despite its materials or methods (Lepistö and Lindfors 2015; also Pöllänen & Pöllänen 2019; Pöllänen 2019). The purpose of multi-material craft is to develop the students’ skills holistically in order to give them a deeper understanding and knowledge of the processes and phenomena at hand, while also increasing their innovativeness and creativity (Kojonkoski-Rännäli 1995; Pöllänen 2009; Lepistö & Lindfors 2015). Multi-material learning in doing creates opportunity to understand sustainable development through maker-material interactions (Pöllänen 2019). The present study supports this view and makes no distinction between the materials or methods being used.

Metsärinne and Kallio (2014) explain the students’ growing interest in technical craft and decreased interest in textile craft by the changes in technological appliances. Niiranen (2016) discovered that girls are more interested in environmental aspects in relation to craft education, as well as useful and decorative artefacts, whereas boys are more interested in electronic devices. There is also evidence that when the materials and methods are combined, boys are also interested in textiles; this supports computational thinking (Fernaeus et al. 2014; Pöllänen & Pöllänen 2019). However, this does not explain the lack of interest in textile craft in education. There are various reasons that could affect lack of interest. It is evident that the world has changed with fast fashion and clothing production (Fletcher 2008) and this affects consumer goods and behaviour on a global scale (Niinimäki 2011), as well as the need to make clothes themselves. On an individual level, the motivations to learn craft can vary. For example, Hilmola and Lindfors (2017) grouped students as positive achievers, positive underachievers and negative achievers and found correlations between gender, attitudes, knowledge and skills in managing the holistic craft process.

Facilitating learning
The Finnish National Curriculum of Education (FNBE 2014) requires craft to be taught holistically. This means that craft is idealised, designed, produced and evaluated by the students individually or collectively (see also Pöllänen and Kröger 2004; Kojonkoski-Rännäli 1995). The teacher is the facilitator and instructor in the learning process (Lepistö & Lindfors 2015). Metsärinne and Kallio (2014) argue that craft education should be student-centred and be close to students’ real-life experiences in order to sustain their interest in craft both intrinsically (after school, hobbies) and extrinsically (school, learning outcomes). Rönkkö (2011) lists five important meanings for craft education: developing craft skills, the holistic craft process, making a craft product, developing craft expression and paying attention to the diverse contents of craft education.

Rönkkö (2011) suggests that student craft teachers have different meanings to craft according to their viewpoints, product, skills, tradition and expression. The product-oriented students pay attention and start designing a product initially, the skill-oriented students focus on developing their skills, craft tradition-oriented students are inspired by traditions, and the craft-expression-oriented students are concerned about the psychological aspects of craft making, the emotions, experiences, memories, etc. Kröger (2016) concludes that the different viewpoints of student craft teachers are actually transferred from their own time at school and in higher education,
these distinctions need to be modified to accepting other possibilities. Thus, it is not insignificant how craft is taught.

Making a decision yourself, self-determination, is directly connected to intrinsic and extrinsic motivations (Deci & Ryan 2000; Ryan & Deci 2000; cf. Hilmola & Lindfors 2017). Autonomy, competence and relatedness are core factors that direct human motivation and behaviour, not only in a school environment (Ryan & Deci 2000; Määttä & Palmu 2018; see also Jaatinen, Ketamo & Lindfors 2017). Another driver for motivation is flow, the ability to focus on a task and be carried away without the sense of time (Csikszentmihalyi 2014). Furthermore, flow is associated with craft making and well-being (see Pöllänen 2013; Huotilainen et al. 2018). In a craft context, motivation and the meaningfulness of tasks support the engagement in design and crafting processes (Porko-Hudd et al. 2018). Even the youngest students in preschool environments enjoy craft making, once they have the ability to make decisions according to design and procedure (Yliverronen & Seitamaa-Hakkarainen 2016).

To facilitate learning, different learning strategies and didactical tools have been introduced in relation to craft education. Collaborative learning and design may increase active learning of open-ended problems and requires problem-solving skills that can be enhanced during a holistic design process (Kangas, Seitamaa-Hakkarainen & Hakkarainen 2013). Design-oriented pedagogy is based on participatory learning, the internet as a technological platform and co-development (Vartiainen, Liljeström & Enkenberg 2012, 2100). Co-teaching and co-creation with open themes in interdisciplinary projects are requisites of the curriculum (Porko-Hudd et al. 2018).

Another aspect and possibility to apply crafts is a practical approach to STE(A)M in education. STEM stands for Science, Technology, Engineering and Mathematics, the additional A meaning Arts (see also Kangas 2014, 71). In craft education, the students will have the opportunity to learn and apply hands-on the mathematical equations, chemistry and physics learned in the other STEAM lessons (Vähävihu 2006; Kokko, Eronen & Sormunen 2015; cf. Nimkulrat and Matthews 2017). Biedenweg, Monroe, and Oxarart (2013) argue that in education for sustainable development (ESD), particularly in STEM education, there are benefits in practical examples of applying ethical principles to action. This will increase the understanding of ethical issues relating to sustainability more holistically. Future craft teachers feel they have a responsibility to educate students in sustainability (Vartiainen & Kaipainen 2012). But how will they do this, if we do not know what sustainable craft is? However, craft education is danger of extinction, if it is on the savings list of policymakers, is increasingly less valued and not defended (see Dillon & Kokko 2017; Kojonkoski-Rännäli 22.10.2018; cf. Tekstiiliopettajaliitto TOL Ry/Association of Craft teachers 2019).

2.1.7 Craft as professional practice / commercial craft / craft trade

Craft as a professional practice is different from hobby craft, although ‘hobbyists’ may also be part-time entrepreneurs (Burns et al. 2012; Bouette & Magee 2015; see also Luckman 2015). Lith (2005, 9–10) explains that craft enterprises produce products that are unique artefacts or the production is carried out in a small series. The basic idea of a craft company is that the entrepreneur uses their skills and product ideas. Most craft companies in Finland employ only one person, the entrepreneur themselves. Thus,
the craft entrepreneur has a mixed role in the company: the designer, the producer, the marketer and the economist (see also Lille 2010).

Burns et al. (2012) describe the changes in the contemporary craft sector in the UK. Craft makers can be categorised into four different profiles: craft careersists (who are committed to craft as a career and are educated in the field), artisans (no academic degree in craft), career changers (have changed from another profession to a craft career), and returners (people were educated in the field, but were following a different career path in order to return to craft). The craft companies in the UK are small one-person companies; almost 88% of the craft makers are sole traders. Craft as part-time work is mostly conducted by women and those who have an academic degree in craft. The work is usually performed in a workshop, a room at home (~66%) or in rented premises (individually or shared, 25%).

According to Lith (2005; 2015; 2017), in Finland, the craft industry decreased development at the start of the 21st century. In 2005, there were 9,400 craft companies with 1,400 full-time employees. By 2017, there were 7,020 craft companies with 8,900 employees with a turnover of EUR 1,17 billion. The craft industry represents 3–5% of micro companies that employ less than 10 persons. However, the craft industry also employs numerous persons (21,000) as subcontractors and service entities, thereby indirectly affecting the economics. Despite their small size, the survival rate of companies is higher in the craft industry than in the entrepreneurial field in general. The industry is influenced by the markets, as can be seen in the Craft Industry report (Lith 2017), which showed the author’s optimism about the entrepreneurs and the business growing stronger in the future (Lith 2017).

Statistics Finland presents the craft industry by dividing it into 17 specific sections according to the materials or techniques (Lith 2005; see also Jakob 2012) (see Table 1). The usual products made by craft companies are textile, clothing or interior design products. Craft companies can also provide services such as repairing or training. The craft industry is clearly divided in to female and male orientations, and despite a common misconception most craft companies are owned by men. (Lith 2005, 13).

Table 1. Craft industry’s division (adapted from Lith 2005).

| 1. | Textile production |
| 2. | Clothing production |
| 3. | Leather and leather product production |
| 4. | Carpentry and other wood products production |
| 5. | Printing and bookbinding |
| 6. | Glass and glass product production |
| 7. | Ceramic product production |
| 8. | Stone product production |
| 9. | Metal forging and metal product production |
| 10. | Ship and boat production and repair |
| 11. | Furniture production |
| 12. | Goldsmith product production |
| 13. | Musical instrument production |
| 14. | Sports equipment production |
| 15. | Games, toys, and other product production |
| 16. | Footwear and leather product repair |
| 17. | Watch repair, goldsmith products and other similar items |
In the UK, the most common fields of activity in craft are ceramics 25.7%, textiles 22.9% and jewellery 20%. Men usually work with ceramics, wood, furniture and metal, whereas women work more with textiles, jewellery, paper and weaving (Burns et al. 2012). Craft also has a presence in the theatre and film industry (Yair & Schwarz 2011). The textile and clothing sector has gone through inflation in Finland since the 1990s (Lille 2010; Niinimäki 2011), as in other European countries (Fletcher 2009; Cox & Bebbington 2014). The craft industries of the UK and Finland appear to be similar (e.g. Burns et al. 2012; Lith 2005; 2015; 2017; Luutonen 2013).

Lille (2010) explains that most craft companies in the textile and clothing sector use industrial methods in the process of making clothes. However, some companies/makers are more interested in freedom of expression than in increasing the economic capital of the company. In this field, there are many entrepreneurs who produce design collections for unique products with moderate expectations of economic growth. There are also companies that are purely commercially driven, their interest being in building a brand, efficient internationalisation and strong growth. Whether large or small, the same principles prevail. The product must be functional, the design unique, and there must be a clear target market.

Luutonen (2013, 15) explains that the most important thing for a craft company to succeed is the product, followed by service, originality, design knowledge, the entrepreneur’s personality and sustainable materials. Ethical and sustainable action are also important, as well as distribution and marketing. Luutonen (ibid.) concludes that an entrepreneur should invest in unique products and bring out the ethical and sustainable work mentality in conjunction with the materials. A person’s personality and story can enhance the clientele’s interest. The secrets to success are quality and uniqueness, but also digitalisation, which is seen as both a threat and an opportunity (Lith 2017).

2.2 SUSTAINABLE DEVELOPMENT TO SUSTAINMENT

The post-modern age together with mass production and globalisation have increased consumer goods production exponentially, and new challenges have surfaced, for example, employment, social inequality, competition of expertise and investments (e.g. Ruokanen 2004; Hämäläinen 2013; Thackara 2014; Ehrenfeld 2014). From the psychological perspective, Kasser (2002) argues that materialism actually decreases individual well-being. This is because people need to work harder in order to consume more, and there is less time for social activity. More subtle claims view an increase in well-being up to certain level in financial or material terms (Wilkinson & Pickett 2011; Seligman 2011). The next chapter explains what is understood by sustainability and connects sustainability with craft.

2.2.1 Understanding sustainability

Sustainable development (SD) is a relatively new concept, and it is understandable that without a clear concept of SD, any discussion can be misleading (Ehrenfeld and Hoffman 2013). There are numerous reports about the condition of the planet, people and nature. In brief, Salonen (2010, 21–22) explains that the concept of sustainable development, in practical terms, is presented as a concern of continuity, particularly
from the human perspective. The concern of continuity can be traced to sheep herders in Iceland in the 15th century: how will the environment continue to support them and their stock? Another historical discussion was presented by Malthus (1798) in the form of calculations and limitations to populations, food and the economies of societies in the 18th century. In the 19th century, consumerism increased with industrialism (Zukin & Maguire 2004) and, at the same time, concerns about the environment began to increase (e.g. Oksanen 2012). Today, we are faced with multiple challenges and changes are to be made (Ehrenfeld 2008). In an environmental-historical context, the 1950s are seen as the 1950s syndrome or The Great Acceleration, a period when industrialisation moved to consumerism and an exponential growth in carbon dioxide emissions (Pfister 2010; see also Moran 2006). In the 1970s, the Roman Club assessed the environmental conditions and strove for political change in order to protect nature (Engels 2010). The concept of sustainable development is political and is coordinated by the United Nations (UN) (Salonen 2010).

In the Finnish language, sustainable development, kestävä kehitys, comprises kestävä and kehitys. The latter translates directly into English as development, but the former, kestävä, has different meanings. Kestävä also means durable, for example, washable or weatherproof, as well as the most lasting or strong ties in life in connection with development, forestry and use of the environment (Kielitoimiston sanakirja 2017), thereby, differing from the meaning of sustainable, which means able to be maintained at a certain rate or level, conserving an ecological balance by avoiding depletion of natural resources or to be able to be upheld or defended (Oxford Dictionaries 2018).

The Brundtland Commission (1987, 43) officially defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The definition was derived from the inequity of people and ability to satisfy their basic needs: food, clothing, shelter, jobs. The report continues by identifying that perceived needs are culturally and socially determined (ibid. 44). Therefore, values need to be developed in the consumption of natural resources and to promote equality. Although the definition and the over-all goal of the commission is general and broad by its description, it calls for action on social, economic, technological and political levels to identify strategic solutions for the challenges of the era.

2.2.2 Aspects of sustainable development

For the Brundtland Report in 1987, the major concern was pollution, use and distribution of resources and the deterioration of the environment resulting from of natural disasters caused by industry, agriculture and population growth (Brundtland 1987). Although the report has been criticised as being anthropocentric (see Attfield 2003), a careful reading of the report finds that the interconnectedness of the three main aspects – environment, economy and people (Brundtland 1987) are in accordance with the idea of sustainable development. Salonen (2010) discusses sustainability from ecological, economic, social and holistic perspectives. The ethical principles are based on human rights and justice; the values on freedoms and responsibilities, ecological diversity, dependence of people, peace, non-violence and democracy.

In some of the clarifications, culture is included as part of the social aspect, and since the discussion has developed, it is understood that it also has political and spiritual aspects (Leal Filho, Manolas & Pace 2015; Häikiö 2005). As Portney (2015) clarifies, in
the original World Commission Report, the three pillars were environment, economy and equity, although equity has been transformed into a social aspect over the years. The purpose of the equity element is to bring equity into the sharing and distribution of natural resources, environmental impacts, products and services, incomes and wealth (ibid. 194). Portney (ibid.) also claims that technological solutions for sustainability are not adequate. We need to limit our consumption, conduct research, communicate, collaborate and make changes in policies.

Salonen (2010) noted the dichotomous thinking in the current discussion – preaching and blaming or reasoning and developing – and would rather highlight systemic and holistic thinking. Moran (2006) further explains these dichotomies in terms of our Eastern and Western religions/traditions, views and positions on people and nature. Eastern traditions lean on the cycles of life, Western traditions position humans as superiors over nature. Either way, we need a common language and goal in order to work simultaneously on our domains: human, nature, ethical (Ehrenfeld 2008). The current Knowledge Age brings information at our grasp, yet it is unclear which perspective matters most. After all, the title of the Brundtland Report is Our Common Future.

Because the concept of SD is very broad and has been studied from multiple perspectives, it is important to focus on the key themes in relation to this dissertation. The literature offers many examples of expedient work across disciplines and cultural, social, technological, environmental, political, and philosophical perspectives. For practical reasons, this study presents the main aspects necessary to understanding sustainable craft as a concept and a phenomenon.

Economic

Economic sustainability is not straightforward; on the one hand, consumption increases waste and use of resources, and on the other hand, it creates employment. The old ways of businesses and corporations in the materials economy are transitioning towards the knowledge industry, yet we still have our needs, wants and desires. Economic as an adjective refers to economics or the economy, and is considered in relation to trade, industry and the creation of wealth; justified in terms of profitability, requiring fewer resources or costing less money (Oxford Dictionaries 2018). The word originates from the Greek word oikonomikos, oikonomia, meaning household management or being skilled in this.

The economic aspect of the Brundtland Report (1987) refers to the embeddedness of environmental resources, equality of human beings (poverty alleviation, education, food, etc.) and is committed to the long-term responsibilities of action in economics, instead of generating short-term financial returns. Eco-efficiency, financial growth and innovations are expected to be on solid ground (Salonen 2010). The economic aspect includes technological innovations regarding how to be more energy efficient (UN 2015).

Currently, the economic trend is circular. The arguments used in a discussion about the circular economy is that we need to move from a linear to a circular system because we live on a finite planet (Leonard 2007; Ellen MacArthur Foundation 2013; Pantzar & Herlevi 2016; Stahel 2016). The calculations by Enkvist and Kievinäs’ (2018) project circular material flows, particularly in steel, aluminium, plastics and cement in construction and passenger car contexts. In this way, we could significantly reduce emissions and focus on material recirculation, product material efficiency and form new circular business models. For example, the report (ibid.) reveals that the current volume of waste on construction sites is 15%, i.e. materials being dumped. Also 60%
of office space is vacant. The report (ibid.) envisages a sharing economy, in which we do not own our possessions, but borrow them and share them with others.

Social
Social and cultural, or the socio-cultural aspects of sustainability, focus on the human aspect of the matter. The Brundtland Report (1987) paid much attention to the human agency in poverty and its reduction, unequal distribution of well-being and meeting the basic needs of human life, including food, clothing, shelter and jobs. The social aspect includes education, employment and equality, among others (UN 2015) and intersects with the goals of SD, described later in Chapter 2.2.3.

Social as an adjective refers to society or its organization, rank or status in society or relationships between people in communities, and it refers to zoology, hierarchical systems with complex communication such as bird or insect colonies, i.e. organized communities and mammals living together in groups. As a noun, social refers to social gatherings. (Oxford Dictionaries 2018). Social sustainability strives for equality, justice and the well-being of people; it aims to reduce poverty and hunger, creating equal opportunities for people to have an education, good health, and work (Brundtland Commission 1987; UN 2015). Social capital is regarded as a network of relationships that may be close or distant, but that affect our behaviour, emotions, values that are triggered by participation, reciprocity and exchange of communication, measure trust and confidence that are bound by social norms and commons (Ostrom 1999; Padovan 2008).

The social aspect can also be viewed as a responsibility: as a consumer and as a corporation. Consumer responsibility may be direct or indirect, but it nevertheless impacts the working conditions of the people who produce the items (Salonen 2010, 114–118). Social in a business context means corporate social responsibility (CSR). Meehan, Meehan, and Richards (2006) associate CSR with commitments, connections and consistency. Commitments refer to ethical and social commitments, connections to connections with partners in the value network and consistency to behaviour over time to build trust. Commitments are the values of social resources that are manifested in missions, strategic objectives, strategy programmes, organisational policies, and corporate culture. Transparency in actions and auditing standards are one way of proving ethical and social commitments. Connections indicate the partnerships in the value network, for example, working on Fairtrade principles. Consistency of behaviour means that a corporation is taking responsibility and working on these issues, rather than saying one thing and doing something else. CSR is one of the key factors in growing ethically aware consumer markets in any industry.

A study by Parrish and Tilley (2010) indicates that small businesses are more likely to contribute to sustainable development than global corporates. Thompson and Doherty (2006) claim that social entrepreneurship has a social purpose, that assets and wealth are used to create community benefit, they pursue trade in a market place, profits and surpluses are not distributed to shareholders contrary to larger corporations, members and employees have a role in decision-making, and the company is accountable to its members and the wider community, resulting in healthy social and financial returns.

Cultural
Culture is a noun and its dictionary definition is the arts and other manifestations of human intellectual achievement regarded collectively, a refined understanding or appreciation of culture; the ideas, customs and social behaviour of a particular people or society, the attitudes and behaviour characteristic of a particular social group; in reference to biology: cultivation
of bacteria tissue cells, etc. in an artificial medium containing nutrients, preparation of cells obtained by culture and the cultivation of plants. The word comes from Medieval Latin or French meaning: *cultivation of the soil* and, in the 16th century, it began to signify the cultivation of mind, faculties or manners (Oxford Dictionaries 2018).

Marsella (2005) defines culture as shared and learned behaviour and meanings that are transferred socially in different situations for individual and collective consideration and use, they exist internally or externally, and they build and change reality that affects ideas, morality and choices. An individual can live in and travel across different cultures and be part of different subcultural groups (Goldsmith 2005; Longhurst 2007). Hofstede and Hofstede (2005) see culture as the *Software of the Mind* and even though our national cultures have different dimensions (e.g. equality, individualism-collectivism, and hierarchies), we still need to communicate and unravel the global challenges together, despite these differences. Furthermore, Hall (1976, 237) explains that there is visible culture that appears in our behaviour and cultural artefacts, an invisible culture, values and thoughts, which are hidden below the level of conscious awareness.

Rauhala (2005) understands culture holistically as being not only the sophistication, manners, norms and beliefs of social encounters or cultural objects, but a combination of the conscious interaction of people in a culture that is expressed through objects and other cultural presentations. It is not only high, prestigious culture, but also the piles of waste that the people produce. Rauhala (ibid.) extends culture as something to be explored through different approaches to science, for example, economy as part of a culture, but not nature or animals, because it is the human mind, body and experience that can reflect on these things.

Culture includes both tangible and intangible objects; the actions we take in our cultural activities are the same as cultural heritage yet are also much more than old artefacts (Barthel-Bouchier 2012). Barthel-Bouchier (ibid.) shows the complex systems that people have created in relation to nature and claims that culture is our second nature, but we should not take for granted all cultural heritage that is worth sustaining. For example, traveling and tourism could have a negative impact on the environment, although a positive effect on the local economy, furthermore is bringing people together.

Regarding to sustainability, cultural heritage needs attention. Marsio (2017) explains safeguarding is being directed by UNESCO’s agendas since 1972 when the World Heritage Agreement was made in order to protect cultural and environmental heritage. The Finnish Heritage Agency (Museovirasto) is coordinating the work of cataloguing the living traditions (see www.aineetonkulttuuriperinto.fi) in Finland. This list includes techniques and products that are traditionally Finnish and ought to be valued and safeguarded. The agreement of protecting the cultural heritage aims to:

(a) safeguard the intangible cultural heritage; (b) ensure respect for the intangible cultural heritage of the communities, groups and individuals concerned; (c) raise awareness at the local, national and international levels of the importance of the intangible cultural heritage, and of ensuring mutual appreciation thereof; (d) provide for international cooperation and assistance (UNESCO 2003/Valtioneuvoston asetus 47/2013).

Traditional craftsmanship is in the domain of intangible cultural heritage that covers both practices, artefacts, and spaces, as well as the environment and interaction with nature and history (UNESCO 2003/Valtioneuvoston asetus 47/2013; Dillon 2011; Kokko & Dillon 2011). This means that cultural heritage not only comprises tangible
and intangible practices and cultural presentations, but also the environment from which it comes. Thus, the environment becomes significant grounds for social and cultural interaction. Knuutila and Piela (2014, 7) equalise culture and the environment with the multipurpose and relevance of the material, natural or build in the physical or virtual social relations.

Environmental

The terms ecology and environment are often used in the literature and in the definitions of sustainable development, also mentioned in the Brundtland Report (1987). These terms refer to the surrounding world that is material, natural. Ecology is a noun, referring to the branch of biology that deals with the relations of organisms to another and to their physical surroundings, it originates from oecology, from the Greek oikos – house and –logy (Oxford Dictionaries 2018). Ecological is an adjective relating to or concerned with the relation of living organisms to one another and to their physical surroundings (Oxford Dictionaries 2018). The Finnish equivalent ekologia is a branch of science investigating the relationships of organisms and environment, and ekologinen is part of ekologia (Kielitoimiston sanakirja 2018).

The environment is either the surroundings or conditions in which a person, animal, or plant lives or operates, or the natural world, as a whole or in a particular geographical area, especially as affected by human activity (Oxford Dictionaries 2018). Similarly, environmental is an adjective relating to the natural world and the impact of human activity on its condition or relating to or arising from a person’s surroundings (Oxford Dictionaries 2018). The Finnish equivalent is ympäristö, which refers to the 1) area surrounding something, 2) nature surrounding people, 3) cultural, societal, residential, work or equivalent conditions, a person lives in, milieu, also animals or plants living or growing in a place or habitat, 4) neighbourhood, community and other people, 5) computational sciences (Kielitoimiston sanakirja 2018).

Crawford (2009) conceptualises the environment with geology, biology and ecology. However, Cooper (1992, 165) explains that the environment is something that surrounds another, etymologically. Similarly, Bayliss and Dillon (2010, 14–16) emphasise that the environment includes social interaction and transformation, called cultural ecology. In a cultural ecology framework, the lived experiences transform into conceptual abstractions and theories, bringing meaning-making.

In this study, I prefer the term environment, although the concept of the word is close enough to be a synonym. By using the term environment, the surrounding nature, including people, is viewed holistically. This is because of my Finnish background, and the direct translation of ‘ympäristö’ being more connected to surroundings than environment (surround as a verb means to be all round someone or something or as an adjective – surrounding – meaning all round (Oxford Dictionaries 2018)). In this study, ecological or environmental, are used as adjectives when signifying the quality of the relationship. It is considered to have an impact or effect on the environment (as a whole) or ecology (in biological terms).

Political

The political aspect enforces the aspect of sustainability. Ever since the start of the UN’s official political work, sustainability can be seen as a political issue in ground laying, discussions and political agenda platforms. Political discussion is based on ethical debates, the greatest good for the greatest number and whose perspective is the most important. Political agendas and decisions are made on a local and a global
level, institutions and organisations, within and between governments. The dictionary definition states *ideas and strategies of a particular party or group in politics, interested in or active in politics, motivated by person’s beliefs or actions concerning politics* (Oxford Dictionaries 2018).

Häikiö (2005) sees sustainable development as a political issue instead of an environmental, as sustainable development has shifted from a global to a local level. Many municipalities have their own agendas based on sustainable development, mostly from an environmental perspective. Häikiö (ibid.) criticised there not being legislation to require these voluntary agendas to realise. However, Thackara (2015) claims that even though the question of sustainability is political, he believes that change is possible because of the collective mindset of people globally. Collaboration is one of the most important factors we need in order to make those political and practical decisions and solutions a reality and defeat climate change and its consequences (Metz 2010).

**Spiritual**

Spirituality, in the context of sustainability, means the natural experience of holiness, a spiritual aspect that is present in art, nature or the worship of God (Salonen 2010). The dictionary definition states that the spiritual is opposed to material or physical things that are affecting human spirit or soul, mental and emotional communication, on a personal level, it is not concerned with material values or pursuits, also referring to religion or religious belief (Oxford Dictionaries 2018). Stead and Stead (2014, 148) define something as spiritual if it relates to a higher purpose, meaning, place or level of existence and provides individual joy, peace, love, patience, kindness, goodness, faithfulness, gentleness and self-control, involves caring, compassion, service to others and/or is related to a meaningful relationship with the divine. Carroll (2004) claims that all people are spiritual and believe in something, whether the belief is of a religious or a technological kind.

### 2.2.3 Goals and frameworks for sustainability

According to the *Knowledge Platform* of the United Nations (2018, [https://sustainabledevelopment.un.org/](https://sustainabledevelopment.un.org/)), the history in brief describes the role of the United Nations from laying the foundations to active global participation and implementation from 1972 until today. The UN works on facilitating discussions on a state level with general guidelines and goals that are now implemented by the UN member states.

The United Nations have worked on the issue of sustainability since the 1972 conference that was held in Stockholm, Sweden. The World Commission of Environment and Development (WCED) conference in 1987 provided the famous definition, referred today as the Brundtland definition. In 1992, the UNCED Earth Summit introduced Agenda 21 as promotional and monitoring guidelines for the Rio outcomes. In 2002, the World Summit took place in Johannesburg and aimed to draw attention to the worsening conditions in the world. The second follow-up to the Rio Summit resulted in Sustainable Development Goals. The Paris Agreement was agreed upon in 2015, the goal of which agreement is to limit global warming to below two degrees of the pre-industrial level. *Transforming our world: the 2030 Agenda for Sustainable Development* was also launched in 2015.

There are 17 segments in the UN goals released in 2017 (United Nations 2017). The goals cover a vast range of human life and nature (see Figure 7). The Goals of the
2030 Agenda (United Nations 2015 A/RES/70/1) focus on people, planet, prosperity, peace and partnership. These goals are also a route to SD. The goals oriented towards people include poverty, equality, education, safety and well-being. The planet aspect aims to protect, restore, build and rebuild the man-made and natural environment, including oceans, land, and air. Prosperity refers to stable economies, technologies, sustainable consumption and production. Peace and partnership among multiple stakeholders will help realise these goals.

The socio-economic-environmental view needs to be understood as an interlinked system, not as a singular viewpoint, for action to take place (UN 2019, xxi). The entry points described for the Agenda 2030 to realise are human well-being and capabilities, sustainable and just economies, food systems and nutrition patterns, energy decarbonisation with universal access, urban and peri-urban development, and global environmental commons. For systemic change there are levers (governance, economy and finance, individual and collective action, and science and technology) that are used to make these transitions. These mechanisms, entry points and levers assist the process of becoming involved in action.

There are different frameworks of sustainability, naturally bound to the industries to which a person is affiliated. For example, Mann (2009) presented 282 visual frameworks of sustainability in 2009 (https://computingforsustainability.com/2009/03/15/visualising-sustainability/). A number of the frameworks integrate Venn diagrams of the basic elements, while some are more detailed and complex models. Tavanti (2010) draws a concentric framework for sustainability, from environmental sustainability, social responsibility, economic justice, institutional policy, organizational culture to personal values, by tying all aspects together as an intersecting continuum, the Concentric Sustainability Framework, and combines
the institutional and organizational perspectives into sustainability, including the personal values that guide our behaviour.

Salonen (2010, 236–240) examined the attitudes and behaviour towards sustainability and found five embedded characteristics that signify the importance and execution in realising these goals. The factors that he concluded would aid the practice of sustainability depended on 1) the quality and quantity of consumption, 2) solidarity and indulgence, 3) energy and material flows, 4) a strong local economy and 5) nurturing health and well-being. However, the attitudes and behaviour do not always necessarily manifest each other, hence people say and do different things.

2.2.4 Alternative definitions and viewpoints

Sustainable development has also faced criticism, alternative definitions and viewpoints. In order to understand sustainability in the right context, some basic ethical guidelines must be addressed here. These guidelines are in the background of our decisions, whether or not we actively think about them (cf. Hall 1976). Salonen (2010, 37–53) has found four ethical principles of sustainable development: 1) human rights, 2) common morality, 3) justice and 4) worldviews. The values of SD are 1) freedom and responsibility, 2) ecological integrity and diversity, 3) the need for human connection and 4) democracy, non-violence and peace. These principles work as the ethical grounds for actions and decision-making. The ethical arguments also support most of the religious arguments that guide people to interact. Thus, religious culture cannot be used as a counter argument for not following these principles (Salonen 2010, 42; cf. Nussbaum 2011a). The ethical principles concluded by Salonen (ibid.) address the environment as sustaining the diversity of nature.

Flourishing is also commonly used in the literature on sustainability (e.g. Ehrenfeld & Hoffman 2013). Ehrenfeld (2008, 49) defines sustainability as the possibility that humans and other life will flourish on the Earth forever. Flourishing refers to Eudaimonia (happiness); it is the ultimate goal of human life, and other goals are subordinate to it (Aristotle 1989; Salonen 2010). Ehrenfeld & Hoffman (2013) point out that the discussion around sustainability has been incorrectly addressed because of a lack of understanding and a misleading use of the discussion. However, change is possible through cultural change from quantity to quality. Ehrenfeld (2014, 60) criticises sustainability; it is just a method of catch-up and clean-up. He argues that without a cultural change of beliefs and practices, the negative consequences of unsustainability will persist. Yet sustainability-as-flourishing is a vision rather than a specific code of conduct (Ehrenfeld 2008, 54).

Parrish and Tilley (2010) conclude that sustainable development has been interpreted as humans-and-ecosystems or humans-in-ecosystems (see also Davidson-Hunt & Berkes 2003). The former seeks improvement through quantitative growth, the latter seeks improvement through qualitative change. Saari and Värri (2017) state that nature is part of the cultural environment and people are part of nature. Thus, there should be no dualistic division of the two. Moran (2006) explains that the dualistic view is connected to Western traditions, whereas Eastern traditions view life through cycles of incarnation and reincarnation. Martusewicz, Edmundson and Lupinacci (2011) call people-nature unity the commons, the surroundings that include everything, from nature to culture, from individuals to shared systems. Davidson-Hunt and Berkes
(2003) claim that the resilience of social ecosystems helps to explain the complexity of the dynamics in the system. The significance is in the processes, not in the static form.

Another alternative definition of the design context is presented by Fry (2009, 44–45): \textit{to sustain-ability or sustainment}. Sustain-ability would be a long-term process to help understand what needs to be done in levels to sustain the ability. The importance here is on enabling people to remain human or sustainment that is a continual material and cultural change to keep what sustains in dominance. Fry (ibid.) claims that we need radical change in the design context; we cannot create something sustainable from the ‘old’ linear thinking that equates to the instrumentalist view of our surroundings.

There are three key concepts of environmental ethics: holism, biocentrism and anthropocentrism, also affecting the concept of sustainable development (Attfield 2003). Anthropocentrism concerns issues from the human perspective, biocentrism includes the animal perspective and holism includes the entirety of the surrounding world. The central question is from whose perspective, although Norton (2015, 258) argues that natural systems change naturally, and humans have always had an impact on the environment.\footnote{Norton’s (2015) solution for environmental decision-making relies on heuristics, which enables a person to learn or discover something for themselves. Norton (ibid. 286–289) suggests that the hands-on approach is the best solution for discovering real problems and their solutions in an ever-changing sustainability context. His (ibid. 293–294) ten heuristic principles offer practical analysis methods for evaluating how to perform and act, and although everything might not be precisely projectable it is better to do something than keep on doing nothing, for example, developing capabilities that would ensure the well-being of the future.}

Salonen (2010) argues that it is a human responsibility to look after the environment because of the supreme position of humans over nature. As Ehrenfeld (2008, 56) points out, it is only the human species that are able communicate through language about sustainability and can affect the survival of other species. This does not mean being superior to other species, but the ability to change the environment radically, like no other species. We live in ecosystems that are delicate and very diverse. However, Keto (2017) argues that nature, ecosystems and living organisms have the ability to self-correct if some parts of the systems are failing. For example, if certain cells are damaged in an organism, other cells will help repair them.

Rolston III (2003) describes humans, animals, organisms, species, ecosystems, the Earth and nature as valuable. These values are \textit{intrinsic}, valuable on their own, or \textit{instrumental}, valuable to humans as a means of achieving something. For example, a tree exists without the understanding and judgement of humans. Another holistic view, deep ecology, can be divided into shallow and deep ecological thinking (Naess 1973, translated into Oksanen & Rauhala-Hayes 1997). The shallow ecological movement fights against pollution and the exploitation of natural resources from the anthropocentric viewpoint of the health and well-being of living human beings. Deep ecology goes further in order to change the cause of environmental problems and aims to increase the understanding of humans as part of the diversity of nature. Singer’s (1993, 288) stand on environmental ethics seeks pleasure from the relationships, creativity and actions \textit{that are in harmony with our environment instead of being harmful to it}. However, this requires openness to diversity because we are accustomed to respecting things that are similar to our kind, not the opposite (Aaltola 2017).

Although the future, in a philosophical sense, is not a good argument, for we do not know what the future holds, a stronger argument is the \textit{intrinsic} instead of the \textit{instrumental} value of the environment, in the same way as humans and sentient non-
humans have intrinsic value (cf. Singer 1993; Oksanen 2012). Regardless, it is generally agreed that we need to extend our thinking to the future so that we can make changes that are necessary for future generations (Brundtland 1987; Ehrenfeld 2008; Salonen 2010). In order to flourish, we need empathy, the ability to place ourselves in another person’s shoes, because if we do not feel empathy, we cannot imagine what other people think or feel, nor can we live in our communities (Aaltola 2017).

Despite the ethical and environmental grounds of sustainability, this study does not attempt to solve the questions of environmental ethics. This study presents the central viewpoints for a better understanding and analytical reading of literature that reflects sustainability in the craft context. This study uses the term sustainability and sustainable development as synonyms. When the emphasis is on philosophy, a deeper meaningful making process and well-being as an end or as a source, sustainability as flourishing will be used instead. This study tends to hold a holistic view of the human–nature relationship and interaction, even though there is no doubt that viewing craft from a human perspective has an anthropocentric basis. However, the discussion about flourishing or holism enables an understanding of the connectedness that human beings have to nature. In light of the environmental ethics discussion, sustainability depends on our world-view and our ability to act and make a difference in fair and just economies and societies and in valuing cultural diversity.

2.2.5 Aiming for well-being

As humans, we have had a relationship with nature one way or another. We have also used nature to our benefit and, from the crafts perspective, we have developed our ability to use our hands and our heads (Papanek 1995; Anttila 2006; Risatti 2007; Dillon 2018). Thus, a central theme behind the concept of craft is the ability to make things, associated with the capability. The dictionary explanation of capability is the power or ability to do something (Oxford Dictionaries 2018), which differs from the human rights discussion on capabilities about what each person is able to do and to be (Nussbaum 2011a). Sen (1985) and Nussbaum (2011a) defend capabilities as being human rights and hold governments responsible for upholding these rights. One of the goal of sustainable development is well-being (Hämäläinen 2013; United Nations 2017) or it can be seen as a holistic system (cf. Salonen 2010, 28–29).

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Nussbaum’s (2011a) Capabilities Approach takes a stand against the basic capabilities with which a person is born: health, freedom to choose and education, internal capabilities as a combination of human characteristics such as personality or emotions that develop in social systems, and combined capabilities that are the substantial freedom to choose and act on that choice. These capabilities are not only individual freedoms, but freedoms of societies, as part of a political, social, and economic environment. The ten Central capabilities include aspects of human life from physical health to the mind, the senses, imagination and thinking, feelings, practical reasoning, but also the capabilities of togetherness, connection to other species, play and decision-making regarding governance, work and ownership.

Sen (1985) clarifies the concept of utility, well-being, and functioning. Utility means different things; it varies from a functioning to a utilitarian philosophy and is often used without a clear conception of what it means. The utilitarian meaning of it is related to consequential ethics, the desired cause and effect of things, with the emphasis on decision-making to maximise personal benefit. Thus, in political systems, it is important not only to think about yourself but also others. We are not satisfied by the same functions or objects because we are all different. Instead, we need to consider what maximises the well-being of the majority.
There is no universal definition of well-being, but it is possible to assess various components that deal with human development, capabilities and needs (Clarke 2007). Dodge et al. (2012) explain that the historical background of well-being is either hedonic (e.g. happiness and life satisfaction) (Diener 1984) or eudaimonic (positive psychological functioning and human development) (Ryff and Singer 2008) tradition, now understood as a multidimensional construct. Salonen (2010, 11) defines the concept of well-being as having different meanings: human well-being, quality of life, living standard, human development, life satisfaction, happiness, prosperity. The Finnish word ‘hyvinvointi’ is trivial and means wellbeing, wellness and welfare, therefore creating confusion (Konu 2010). Well-being signifies experienced well-being, wellness stands for produced well-being (e.g. Konu 2010) and, on a societal level, it acts as a welfare state (cf. Wilkinson & Pickett 2011; La Placa, McNaught & Knight 2013). Häämäläinen (2013, 13) broadens and specifies the concept of well-being as available resources and capabilities; relevant aspects of living environments; everyday activities and experiences; as well as the basic physiological and material, social and psychological needs of individuals and connects these as contributors to sustainability.

Steen (2016, 5) argues that well-being has been debated since ancient Greece. Seligman (2011, 9) explains that there are theories of well-being that are monistic. For example, for Aristotle, it was happiness as a life goal, for Nietzsche – gaining power, for Freud – avoiding anxiety. Sheldon et al. (2004) propose that people ought to seek well-being in growth, connection and contribution instead of money, beauty and popularity. Diener and Seligman (2004) claim that once human needs are satisfied, we start looking for aspects of quality of life in well-being in society, income, work, physical and mental health and social relationships. Subsequently, after developing the theory of positive psychology, Seligman (2011, 14–26) described the well-being theory using five measurable qualities: positive emotion, engagement, relationships, meaning and accomplishment (PERMA). By increasing these qualities in life, the flourishing of human-kind can be achieved.\(^{11}\)

According to Jayawickreme, Forgeard and Seligman (2012), there are three main types of theories of well-being: Wanting, Liking and Needing. Wanting is formed from desire fulfilment and the reinforcement theories used in economics. Liking refers to hedonic accounts, feeling good, which is subjective well-being. Needing theories vary from objective to subjective and plural theories. The theories of needs (Maslow), human development (UN), and capabilities (Sen, Nussbaum) are objective. Psychological well-being (Ryff) and self-determination (Deci and Ryan) theories are subjective, while the well-being theory (Seligman) is plural. Well-being can be measured in terms of incomes, behaviour, positive and negative emotions, human development indicators or psychological indicators and scales (Jayawickreme et al. 2012).

All in all, well-being is a multidimensional question and, from a psychological perspective, it is presented through the individual. Once society and nature are brought to the discussion, the viewpoint extends to include multiple stakeholders, which consequently makes the issue more complex. However, La Placa et al. (2013) present

\(^{11}\) Seligman (2011, 26-29) adopts Huppert and So’s measurable definition of well-being: ‘to flourish, an individual must have all the ‘core features’ below and three of the six ‘additional’ features. The core features are positive emotions, engagement, meaning and the additional features are self-esteem, optimism, resilience, vitality, self-determination and positive relationships. The PERMA theory of well-being has three properties: contribution to well-being, pursuit for its own sake, and being defined and measurable independently of others.
a more holistic views of well-being. Their (ibid.) structured framework for defining well-being includes individual (physical, psychological, social and spiritual), family (housing, relationships, economic and social resources, ecology and environment, physical safety, social cohesion), community and society (identity, economic and physical security, political and geographical integrity, pride and self-determination, fairness, equality, social justice). These defining characteristics work in a dynamic interrelationship. Dodge et al. (2012) call well-being a balance or equilibrium of resources and challenges of the psychological, social and physical kind. Alkire (2002) links well-being/values/human needs and synthesises these “lists” as dimensions, so that they can be applied in the contexts of human development and flourishing.

2.2.6 Aiming for cultural change

Historically, the change in consumerism happened from the 1870s onwards and became an institutional field affecting social and cultural settings in different ways (Zukin & Maguire 2004). 100 years later, in the 1960–70s, there was a huge increase in concerns about the environment and, from then on, the role of people in the environment has been fiercely debated (Attfield 2003; Lindroos & Cantell 2007; Oksanen 2012; Norton 2015). Nevertheless, people have always needed shelter, cover or food, as well as methods of survival (Moran 2006; see also Radkau 2002). Today, these skills are no longer a necessity (cf. Pöllänen & Kröger 2000) as people are more than well equipped with useful or useless products that last as long as the manufacturers deem necessary (Papanek 1995; Leonard 2007). As a society, we are already making changes on multiple levels (Hämäläinen 2013).

Ehrenfeld and Hoffman (2013) underline the need for cultural change from Having to Being. Using an upper case B in Being, Ehrenfeld (2008, 6) refers to the unique way of existence human beings possess. Being is also related to Allardt’s (1980, 37–38) theory of sociology: Having (the living standard), Loving (the relationships between people), Being (the self-realisation). The theory is based on human needs, how people govern the resources available to them and act in relation to others. In connection with SD, Salonen (2010, 136) associates Allardt’s Being with post-materialism together with Schwartz’s universalism, openness to change and the higher needs of Maslow, while materialism responds to the physiological needs of Maslow, the living standards/having of Allard and the conservation and self-enhancement of Schwartz. Hämäläinen (2013, 8–9) noted that consumerism and materialism do not increase well-being. Thus, the post-materialist worldviews and social relations ought to be highlighted.

Change is always a challenge. Walker (1989, 89) prefers ‘development’ or ‘progress’ due to the connotations associated with change. From an institutional perspective, there are always people who resist change, and those who strive for it (Ford, Ford, & D’Amelio 2008). It could be said that change is constantly evolving (Ervin 2016). The changes we need on a global scale are actually internal, although there is an external necessity or urge to make the change (Ehrenfeld & Hoffman 2013).

Bornstein’s (2007) inspirational stories of people making social change and persistently working for the common good offer hope that we are not as evil as the critical and radical views claim. Change theories offer models and frameworks for the change process, whether it is the processes, visions, goals or strategies for achieving change or whether the change is driven by people, organisations or politics (Bornstein 2007; van Hal & van Bueren 2012; Folke et al. 2007). Yet change, alongside innovation,
is what is most effective in business; the global institution that subsidise governments and other institutions while, at the same time, being the most destructive to the environment (Ehrenfeld 2008, 197–198).

In the organisational development context, sustainability is also seen as a driver for change, bringing new innovations and creativity to the drawing broad, and can be used as a guide for developing the organisation and also bringing a commitment to working, for example, with values (Yegeneh & Glavas 2014). According to Sackmann, Eggenhofer-Rehart and Friesl (2009), there are four approaches to strategic change in an organisation: rational, learning, cognitive, and organisational becoming. The approaches use different criteria to view change in an organisation that depends on perspective – an overall development and change or change in personnel, financial performance, structures and processes. The theory of organisational becoming offers an understanding of constant change and development (e.g. Rainey & Kolb 2014; Lehtimäki 2016; Thomas, Sargent & Hardy 2011).

Can change be managed? Institutional management literature offers an example of how global industrial organisations are taking greater care of people and the social aspect (e.g. Darby & Jenkins 2006; Yegeneh & Glavas 2014). Rainey and Kolb (2014) align theories of learning with organisational development. Their (ibid.) theory is similar to the pedagogical models of inquiry-based, active learning (Hakkarainen et al. 2005), in which the initial conceptions are further investigated through knowledge seeking and reflections in a collaborative, iterative process. This means that organisations can also change and learn, and should not be considered unchangeable entities with fixed conditions. This is because in controlling climate change and the effects it has on nature and people, there needs to be a collaboration between all parties, organizations, people and policymakers (Metz 2010; UN 2019), although intrinsic and personal motivation in pursuing goals is more effective than being forced or pressured to do so (Sheldon et al. 2004).

The change mechanism in Stern’s (2000) value-belief-norm theory of environmentalism (Stern et al. 1999) draws causalities between variables that affect the behaviour, beliefs and values of human-environment relations. A person does not need to be an activist to be pro-environmental, yet altruistic or self-transcended values matter. Change interventions that combine the different fields of influence offer the most optimal results in changing environmentally significant behaviour. The religious and moral approaches to values, worldviews, beliefs, education, rewards and penalties, community management, shared rules and expectations ultimately shape our understanding and behaviour as responsibility and actions. Internal and external factors may work as barriers to change if attitudes and behaviours do not correspond. As Salonen (2010, 240) explains, there is a gap between behaviour and attitudes, i.e. in the context of sustainability we might say one thing but do another.

Values are the foundation of practice; they are personal but also collective; they exist in organisations and are negotiated over time (Hall 1976; Schwartz 2012; Hofstede & Hofstede 2005). Jamieson and Gellermann (2014) list the values that effected practice in the organisational level: life and happiness, freedom, responsibility, self-control and justice, which are now contested by globalisation. Schwartz (1994) has developed a theory of universal values that manifest in behaviour. The theory has developed over the years and currently offers more explicit measurements and meanings. It also takes into account cultural differences, how they appear in individuals and society at large. There are four main motivational types that disseminate values and affect behaviour: self-transcendence (universalism, benevolence), conservation (conformity,
tradition, security), self-enhancement (power, achievement, hedonism) and openness to change (hedonism, stimulation, self-direction) (Schwartz 2012). In direct relation to sustainable development, the values can be described as freedom and responsibility, ecological integrity and diversity, interdependence between people, democracy, non-violence and peace (Salonen 2010, 54–60).

An historical and anthropological view by Moran (2006) sheds light on how human agency, from hunter-gatherers to farmers and herders, and subsequently to the industrial age, have changed the natural surroundings. This view supports the understanding of people as being part of nature, although since the Industrial Revolution, our impact on the environment has been more severe. The evolution of human behaviour has roots in the way things were shared: hunter-gatherers shared their food and only travelled with what they were able to carry; farmer-herders looked after their resources in specific locations and defended their properties – this is linked to the tools and items that the individuals and groups needed.

In summary, the variable definitions, criticism and new approaches in the discussion of sustainable development are still ongoing. The complexity of the concept is challenging, especially without a clear understanding and direct applications to real life. Then again, reality is a nested system of systems (Byron 2006, 21–22) that can be simple or complex and adaptive. Social-ecological systems are described as being interdependent, complex and adaptive, cross-scale and dynamic (Folke et al. 2007), and resilient (Davidson-Hunt & Berkes 2003). Currently, these systems include socio-technical systems such as food and energy, in the context of sustainability (Gaziulusoy 2015). The concept of sustainable development here is seen as a system of human activity in the natural ecosystem.

2.2.7 Education for sustainment

Education is one of the United Nations goals for 2030. Goal 4 – Quality education is the result of the concern about inequity in education. It calls for education for all, regardless of geographical, political, social or cultural environment. Education ought to be free, both at a primary and a secondary level; affordable vocational, technical or higher-level education should be available. The major concern is Sub-Saharan Africa but, in principle, everyone should have access to quality education in literacy and numeracy regardless of their gender, social status or disabilities (UN 2017).

The UNESCO report (Wals 2009) emphasises the complexity of different definitions of education for sustainable development (ESD), although there are two core pedagogical interpretations of ESD: 1) knowledge transfer, attitudes, values and behaviour, 2) developing people’s capacities and opportunities to utilise sustainability issues in their own surroundings. The focus on ESD is to find a balance between the different aspects of sustainable development and to empower and enable people to participate in society and to understand complexity. The definitions used in ESD can be summed up by the following key terms: creation of awareness, local and global vision, responsibility, learning to change, participation, lifelong learning, critical thinking, systemic approach and understanding complexity, decision-making, interdisciplinarity, problem-solving, satisfying the needs of the present without compromising future generations.

Holm et al. (2015) noted that ESD in different academic fields in the Nordic countries contains political, economic, technical, social, cultural and environmental aspects. The study reveals that even though ESD is applied to higher education, the view point
changes with the discipline. Coops et al. (2015) introduce a reflective interdisciplinary pathway to sustainability applied to a curriculum at a university level. Their teaching experiment was based on two concepts: “head, heart and hands” – a framework of experiential reflective learning for sustainability and student sustainability attributes: 1) holistic systems thinking, or holism, 2) sustainability knowledge, 3) awareness and interaction and 4) acting for positive change. The results indicate that personal reflection and interactive team activity develop holistic systems thinking.

According to Salonen (2010), education is considered to be the best method to promote sustainability. Laine (2017) has noted that in Finnish basic education, in order to develop education for sustainability, we require more cross-disciplinary information and knowledge and collaboration between different parties. Also, educators require more education to understand the phenomena holistically, the interconnectedness of cultural presentations, such as generations, multiculturalism and the cultural environment, as well as practical culture, how things are done in organisation and how they could be improved in everyday life. Ålhberg (1998, 35–41) proposes concept mapping and action research methods (planning, implementation, evaluation) in order to improve learning outcomes and to understand the holistic nature of SD in education.

Leal Filho et al. (2015) view the concept of SD critically. Firstly, their concern is that SD is more theoretical than practical, and there is a conflict of interest in the action, i.e. rampant hypocrisy, for example, taking advantage of other people or exploiting natural resources. Secondly, their investigation of literature reveals more pillars than in the original model of SD. These pillars are social, economic, environmental, cultural, political and spiritual. The cultural pillar is seen as a change agent for sustainability; the political pillar expects good governance and aims to achieve goals that are interconnected, whereas the spiritual pillar holds the values of promoting SD. Thirdly, the unrealistic targets of policymakers must be adjusted to a more achievable level. The solution they (ibid.) suggest for a better understanding of the complexity and improvement of the quality of life is communal involvement, appropriate funding, replicable best practices and coordination of systems.

Another approach in education is EcoJustice education, which differs from environmental education and education for sustainability with its deeper views on the cultural beliefs and behaviours, also broadening the meaning of truly understanding, reflecting and analysing our roots and presence (Martusewicz et al. 2014). The goal of EcoJustice education is to create democratic and sustainable communities, the cultural and environmental commons. Commons refers to an extended community, not only a culturally shared space, but also the environment in which a person lives. To some extent, EcoJustice education is a view of life to be passed on to future generations in local real-life settings, whereas education for sustainability argues the same principles – change – but under a different name or a language transaction specific to different disciplines (cf. Dillon 2008, 260–261).

Education for sustainability is derived from environmental education (Leal Filho et al. 2015) but EcoJustice education understands the connectedness of people to nature (Martusewicz et al. 2014). It is important to understand that things are interconnected and form cultural ecologies (Bayliss & Dillon 2010; Tarrant & Thiele 2016). In more general terms, the purpose of education is to develop an individuals’ capabilities in different subjects, not only those that benefit economies, aiming for responsible democratic citizenship and critical thinking (Nussbaum 2011b). This dissertation does not comment on the difference between education for sustainment,
sustainability, sustainable development, and environmental education, although the author understands the differentiation in environmental education that deals only with the natural environment rather than the cultural environment. In this study, issues are viewed holistically and each orientation is considered.

2.3 CRAFT (DESIGN) AND SUSTAINABILITY

The methodological structures of this thesis, the data collection, analysis and comparison with existing theories, were simultaneous. Thus, this chapter introduces the key theories and studies related to craft and sustainability before the research began in 2013. To avoid repetition of the overlapping concepts, Chapter 5.3 presents a concept analysis focused on a literature review.

2.3.1 General discussion of craft and sustainability

Bamford (2011) argues that craft is a signifier in the context of sustainability and the consumption culture due to the effectiveness of production. He (ibid.) views craft through design for sustainability, change, life cycle analysis, the product service system and aesthetics. Much of the craft and sustainability discussion is in closely related to design, as argued in Study III. It began with Papanek’s discussion of Design for the real world that had influenced the design world and was mutually influenced by Finnish craft and design education (Papanek 1972; 1985; Clarke 2013).

According to Gauntlett (2011, 57–58), on a conceptual level, craft is very much linked to sustainability, environmentalism and anti-consumerism with its attitudes towards DIY and well-being. vanKoten (2009, 230–231) calls for radical change in lifestyles towards nature, not crafts, design, art or technology. Yet, craft skills (practical and intellectual) are essential for survival. On a more practical level, Saha (2011) attaches craft to sustainability (lifespan and natural resources), culture (traditions and know-how), beauty (values and meanings), engagement (connection between people, time and culture), viability (livelihood) and communication (collaboration of product, maker, producer and user).

Burns et al. (2012) identify the changes in craft practice as being the result of the development of technology, but also the environmental and ethical concerns of production. Sustainability concerns the whole society, not only the craft sectors. However, there is a clear connection between the environmental sustainability of craft production through the use of materials, production processes and local suppliers and the reduced impact of transportation on the environment, although the roots of craft in cultural traditions are obvious, both on a local and a global scale.
Table 2. Linking craft and SD (Cox and Bebbington 2014).

<table>
<thead>
<tr>
<th>Environment Limits</th>
<th>Linking craft and SD</th>
<th>Healthy &amp; Just Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sustainable management of resources (carbon impact, careful resource management, responsible procurement)</td>
<td>• Environmental impacts of production &amp; consumption</td>
<td>• Social responsibility in production</td>
</tr>
<tr>
<td>• Environmental impacts of production &amp; consumption</td>
<td>• Lifecycle effects of craft (and products that it displaces)</td>
<td>• Cultural integrity (countering rootlessness of products &amp; consumption)</td>
</tr>
<tr>
<td>• Adding value to existing resources</td>
<td>• Reusing existing materials</td>
<td>• Valuing cultural aspects of place (&amp; localness)</td>
</tr>
<tr>
<td>• Reusing existing materials</td>
<td></td>
<td>• Communities of makers/makers in their community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Access to craft practice (&amp; sustaining the future of craft makers)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sustainable Economies</th>
<th>Governance</th>
<th>Using Sound Science Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Creative entrepreneurship</td>
<td>• Effective, transparent &amp; democratic governing bodies</td>
<td>• Knowledge of the impact of the craft sector</td>
</tr>
<tr>
<td>• Facilities for makers (workshops &amp; places to showcase/sell work)</td>
<td>• Engaging craft makers in the future of their sector</td>
<td>• Education for SD informed craft practitioners</td>
</tr>
<tr>
<td>• Knowledge &amp; skills (developing &amp; sustaining new skills)</td>
<td>• Participatory structures for makers (each other &amp; institutions)</td>
<td>• Use design to communicate SD messages</td>
</tr>
<tr>
<td>• Co-operatives (for resilience)</td>
<td>• Educating for SD &amp; craft skill development</td>
<td>• Documenting and passing on skill knowledge</td>
</tr>
<tr>
<td>• Branding &amp; labelling (SD messaging in the product)</td>
<td>• Creating an economically viable sector (not subsidised indefinitely)</td>
<td></td>
</tr>
<tr>
<td>• Creating an economically viable sector (not subsidised indefinitely)</td>
<td>• Sustainable livelihoods (in sustainable communities)</td>
<td></td>
</tr>
<tr>
<td>• Scale of activities (&amp; appropriateness)</td>
<td></td>
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</tbody>
</table>

According to Cox and Bebbington (2014), craft and SD can be explored in two ways: Firstly, how the craft sector affects the achievement of SD and, secondly, how SD thinking can support the craft sector. As an example, there are environmental and ecological impacts that depend on the materials and methods. However, nature can also be a source of inspiration, and unsustainability can create craftivism. The link between the past and the present is cultural, the same as the skills and objects we use. There are also values involved in both craft and SD. Cox and Bebbington (ibid.) have combined the UK’s framework of SD together with craft (see Table 2). One emerging theme is education as a continuation of traditions, skills and knowledge. Thus, craft teachers are in a key position to transfer skills and knowledge (Vartiainen & Kaipainen 2012).

2.3.2 Craft industry and artisanal production

The challenges and opportunities of the craft industry have been drafted by Burns et al. (2012) and Soini-Salomaa (2013). Four themes emerge from Burns et al.’s (2012) study:
1) internet and digital technology, 2) global/local debate, 3) issues of sustainability, and 4) effects of economic difficulties. Digital technology is used for designing, making and other uses such as marketing, communication and photography. Even though globalisation is altering the production of goods and shifting it overseas, craft is seen as being strongly local. Craft items are not usually exported, yet tourism, both domestic and international, is important to craft businesses, although more to the retailers than the makers. When it comes to sustainability, the changes in environmental practice are centred on sources of more environmentally sensitive or sustainable materials, production processes or local suppliers in order to reduce transportation. However, the ethical grounds for change in practice were less popular. Concerns for sustainability appears to be a part of a wider change in the society’s attitudes than solely in the craft sector.

Soini-Salomaa’s (2013) study developed the themes of Burns et al. (2012) and formed a future oriented picture of craft: 1) Eco Ethics – small is beautiful, 2) Globe Local – Techno design, 3) Redesign - community power, and 4) Cultural Power – Global Quilt. The craft makers’ values turn to SD and ecology through small chain production. Artisanal activity is dependent of communal networks, and upcycling materials is considered trendy. However, techno innovations are being attached to crafts, and professional identity and success is dependent on multicultural competence and on the ability to collaborate in global and multicultural networks.

Although the fashion and clothing industry is one of the major challengers of sustainability with its fast production and consumption cycles, artisanal and craftsmanship production in a fashion and clothing context is seen as the solution. These studies question ethical and ecological production methods, as well as the product life cycle through sensible use of materials, which evidently have the strongest relationship to the environmental impact of production. Several researchers (Fletcher 2008; Yair 2010; Na 2012; Niinimäki 2011) have defied the transition from fast fashion to slow fashion and defended artisanal production. Fast fashion refers to the fast production and sales cycles of the clothing and fashion industry, while slow fashion is the opposite – slow cycles, designed to last. Ecological and ethical production methods and values, quality over quantity, the product relationship that results in a reduction in the consumption and elevation of artisanal production, are key to this discussion. Artisanal production is one way of taking production responsibilities into our own hands. Fletcher (2009) encourages fashion and clothing consumers to become makers of their own products, and if they lack the ability, at least buy their clothing from artisans. This way, they would support local production and socio-ethical questions would be more likely to be in good hands.

Luutonen (2007a) claims that although practitioners feel their products speak for themselves, design, materials, technique, and narratives for marketing are essential to the product. Aesthetics is also in high demand throughout the lifespan of the product (see also Zafarmand, Sugiyama & Watanabe 2008). For Niinimäki (2011), it is uniqueness, a meaningful product relationship and empathic and sustainable design that is important. Aakko and Koskennurmi-Sivonen (2013) frame sustainable fashion design together with the environmental aspects of the production, materials and lifecycle, but also call for transparency in practice and participatory design in an artisanal production context. In this study, Study I claimed that professional craft practitioners have strong values regarding their work ethos and that sustainable craft is one way of making things right.
Tung (2012) believes that a collaboration between designers and artisans can revitalise local crafts production and also empower craft practitioners to use their skills, materials and techniques to the benefit of local communities. Social and collaborative work has been a strength in the design and craft industry (Walker 1989). Thomas (2006) criticises the means of craft production, as makers in developing countries might not develop their own designer skills if the design take place elsewhere. It could elevate them out of poverty, but are they really gaining the skills they need for their sustainable future? Instead of focusing the collaboration on designers and artisans, a collaboration between all stakeholders, including suppliers and end users, would result in sustainable business models from a social and economic perspective (Padovani & Whittaker 2015).

Niinimäki’s (2011) studies have a strong message to designers of fashion and clothing: consumers are interested in buying ecological products, not mass produced products. In the Green Imperative (1995), Papanek describes the importance of design and product properties, but also the role of the designer, how different cultures have been living in harmony with nature, applying nature as an element in their designs and producing what is functional and necessary. Papanek’s ‘prophesies’ are still applied to design and craft when considering a product’s functionality, but also sustainability (Clarke 2013; Knott 2013; later Steen 2016; Zhan & Walker 2018).

Business studies and strategists predict that sustainability will be a huge trend, not only because of necessity, but also because of the growing interest and awareness of consumers (e.g. Yegeneh & Glavas 2010; Pantsar & Herlevi 2016). Craft industry reports from the UK and Finland (Burns et al. 2012; Luutonen 2013; Soini-Salomaa 2013) describe and forecast the development of the craft sector dependent of technological, financial growth and issues about environmental and ethical concerns. Fraser, Oberlack and Wright (2010) state that future forecasting based on trends will be beneficial to sustainable craft and artisan production. By understanding the contemporary markets and design, a new creativity can be introduced to traditional methods of production and artisan communities would be revived through the collaboration of craft, craft design and industrial design. For example, Luutonen’s (2013) report reveals that recycled materials, which are the main materials used by craft companies in Finland, had more than doubled from 2009 to 2013. This is the direction in which Finland is currently moving regarding the craft industry (e.g. Niinimäki 2011; Soini-Salomaa 2013).

However, regarding craft, recycled materials are not a contemporary discovery. Recycled materials have always been used in craft production (Suojanen 1997), even though upcycling materials could reduce the amount of energy consumed compared to raw materials (Sherin 2013, 81). Yet today, because already materials exist, the demand for reuse is fiercer (Dahlbo et al. 2013). Sustainable production such as artisanal production is empowering local workforces and is seen engendering innovative and creative solutions to counter the environmental impact of materials and their life cycle. The consequence of this process is a relationship between the maker and the user (Luutonen 2007a; 2013). The consumption of local artisanal products directly impacts local production (Yair 2010). In this study, consuming can also refer to workshops and craft training at local community centres or by experts (Study I). Regardless of a

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12 Hurme (2017a) clarifies the terms recycle, up-cycle and down-cycle. Recycling means that items are sorted and collected to be used again as material; this divides into up-cycling (from low-value material to high-value products) and down-cycling (the product is dismantled into materials that are re-used).
consumer’s motivations to buy crafted items, craft’s function from a utilitarian item to sustainable luxury (Na 2012) causes less environmental harm (Yair 2010; Burns et al. 2012; Soini-Salomaa 2013), as long as the product’s properties, including its life cycle, are as sustainable as possible (Nugraha 2012; Koskennurmi-Sivonen & Anttila 2008; Zafarmand et al. 2003).

It could be concluded that the industrial field of craft is changing. Craft has the advantage of changing practices in accordance with the challenges it faces. Contemporary research has shown that design is on the way to transitioning to sustainability (Irwin 2015), art-craft is taking a stand on the madness of the world through craft activism (Garber 2013; Greer 2014), and craft traditions are being elevated from *lowly hand work* to meaningful practice (Botnik & Raja 2011). In this study, sustainable craft was seen as a negotiator for sustainable future (Study III).

### 2.3.3 Sustainability in relation to product and design

The trend at the start of the 21st century has been the innovation boom of fibre research aimed at finding the best solutions for greener and cleaner production (e.g. Fletcher 2008). The research has produced interesting alternatives to both organic and man-made fibres. For example, cellulose-based fibres are said to be more environmentally efficient because they are compostable (Sherburne 2009). However, these materials are still in the development phase and it remains to be seen whether they will be used in the global markets. Also, the question remains as to whether these materials are accessible to craft makers or are only for industrial use. Mixed materials, fibre or components used in products or materials are also problematic, and we still need to develop methods to separate one fibre from another in order to reuse the materials (Sherburne 2009). Ideally, materials (fibres and compounds) would not be mixed in the first place, which would make them easier to separate (Sherburne 2009). However, once the materials have been mixed, this enhances the durability of textile materials, for instance (Taylor 1993).

Materials are just one fundamental aspect of a product, but products also need other features, as previously discussed. Koskennurmi-Sivonen and Anttila (2008) state that basic functionality, features and style are created using design, technique and material in the framework of resources (Figure 8). Resources will compensate for each other if a person has the time to search for high-quality products, for example, as they might be less expensive. Skills can also compensate for economic resources. The problem with the resource equation is that the lack of time and economic resources mean the skills resources will not be able to develop.
Figure 8. Quality of a craft product (Koskennurmi-Sivonen & Anttila 2008, translated by the author).

Quality is the end goal of the product, ensuring a long-lasting relationship in a utility sense, but it is also the means of achieving the end that is inseparable from craft practice (Ihatsu 2002; Risatti 2007; Koskennurmi-Sivonen & Anttila 2008). Ihatsu (2002) considers quality to be equal to craftsmanship, continuing the relationship between the person and the product, not just a property of the product. Quality can be subjective or objective (see also Anttila 1999), and good quality is an advantage from a sales perspective (Yair 2010; Luutonen 2013). Koskennurmi-Sivonen and Anttila (2008) consider quality to be important throughout the craft process (design, manufacture, materials, etc.). Niinimäki (2011) concludes that although quality has been replaced by quantity in the postmodern world, the person-product relationships are affected through value creation of meeting consumer needs that actually change, as their environmental awareness rise.

Suojanen (2001) based her description of sustainable craft on the common theory of sustainable development and linear life cycle analysis. She identified two sides to production: the practitioner and the product, both of which contribute to the production chain. The closer the product is to the end of its life, the less value it has. Thus, it is vital to pay attention to the way in which the materials are cultivated or produced from the start of the process.

Life cycle analysis and assessment have been around since the 1960s. Initially created for inventory analysis and marketing strategies for businesses, the ecological crisis of the 1970s attached the environmental aspect to it (Lewitt 1965; Curran 2006). According to Osland (1991), the concept of a life cycle originates to Malthus (1798) and to the concept of biological life cycle. In the 1920s, the discussion was focused on the life cycle of fashion cycles that followed the normal curves discussed in the Harvard Business Review. A prime example of a life cycle was nylon stockings (Lewitt 1965), and how they replaced silk stockings, yet were still needed and purchased, their life cycle assisting the management of the manufacturing process to estimate demand.
Walker (1989, 89) argues that a life cycle has early, middle and late phases, and finds this problematic because, for example, late connotes to decline, decay and decadence, and feed obsolescence.

Through a literature review, Zafarmand et al. (2003, 178–179) evaluated the measurable aesthetic attributes that relate to product sustainability. These aesthetic attributes are:

1) **Aesthetic durability.** Considering aesthetics throughout the life cycle, timeless design, user-based design strategy to beat the market.
2) **Local aesthetic and cultural identity.** Traditions, crafts, patters, symbols, decoration, anti-fashion.
3) **Individual and diversity.** Taste, alterability, depend of time, culture, place, identity, user centred design.
4) **Logicality and functionality.** Function-need-form-user preference.
5) **Aesthetic upgradeability and modularity.** Refurbishing, or changing components, serviceability, reduced material/energy use.
6) **Simplicity and minimalism.** Reducing all unnecessary phases in production, or components for better repair and disassembly, “less is more”.
7) **Natural form and materials.** Aesthetics values of nature in culture and traditions.

Nowadays, life cycle is seen to be circular instead of linear, as described by Suojanen (1997, 2001), for example. The circular system means that the life span of a product is designed in such a way that it can be returned to the cycle (Ellen McArthur Foundation 2013). This is called *cradle-to-cradle* design or *close-loop* production (Sherburne 2009; Sherin 2013). The circular economy, which is gaining attention the industrial production, is shifting the mentality of linear systems to circular systems (Ellen McArthur Foundation 2013; Leonard 2007).

Materials are actually the environmental factor that impacts ecosystems the most (Fletcher 2008), with the cultivation, watering and use of pesticides, repellents and other treatments, not only in the cultivation phase but also during the entire industrial manufacturing process (Talvemaa 2002; Fletcher 2008; Sherburne 2009). In this study, life cycle is understood from the environmental perspective and the footprint of a craft; marketing is understood as being a part of the cycle, but is not emphasised, as opposed to marketing and business school literature.
3 MATERIALS AND METHODS

This chapter presents the data collection and study participants. The analysis methods and process are also explained in more detail here.

3.1 DATA COLLECTION AND PARTICIPANTS

In this study, there are three sets of empirical data: interviews, written essays and literature (see Charmaz 2006; Anttila 2006). The data collection began with interviews. The purpose of the interviews was to analyse how sustainable craft is presented in practice among professional practitioners, craft makers who make crafts for a living. It was considered important to explore these conceptions in order to understand the empirical expressions of sustainable craft. The purpose of the written essays as narratives was to analyse student craft teachers’ – future craft educators – conceptions of sustainable craft (see also Chase 2005; Trahar 2009). Student craft teachers will pass on their knowledge of sustainability to their future pupils. But how structured is the concept of sustainable craft among student craft teachers? The literature data presents previous research from around the world. Literature was selected as texts for the analysis in order to present the global and multidisciplinary field of craft and the ways in which the concept of sustainable craft is perceived in general. Table 3 summarises the methodologies and data collection.

Table 3. Summary of research methodologies and data collection.

<table>
<thead>
<tr>
<th>Study</th>
<th>Methods of data collection</th>
<th>Participants</th>
<th>Research questions</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Interviews</td>
<td>16 Professional craft practitioners making sustainable crafts</td>
<td>What kinds of conceptions do professional craft practitioners have of sustainable craft?</td>
<td>Grounded theory analysis</td>
</tr>
<tr>
<td>II</td>
<td>Written essays</td>
<td>41 Student craft teachers</td>
<td>What kinds of conceptions do student craft teachers have of sustainable craft?</td>
<td>Grounded theory analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>What kinds of relationships do the elements of sustainable craft have?</td>
<td>Quantitative description Fisher’s exact test</td>
</tr>
<tr>
<td>III</td>
<td>Literature review</td>
<td>42 Research articles</td>
<td>How is sustainable craft described in the literature?</td>
<td>Concept analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>What kind of relationships does sustainable craft have?</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>How can sustainable craft be defined?</td>
<td></td>
</tr>
</tbody>
</table>
3.1.1 The interviews

The interviews were conducted with professional practitioners. The practitioners selected for this study were a discretionary sample. The participants were selected from the internet using the key words ‘sustainable craft’, ‘sustainable’, ‘ecological craft’, ‘ethical craft’, and different techniques of craft, for example, ‘goldsmith’, ‘pottery’/‘ceramic’ or by materials, e.g. ‘recycled materials’, ‘recycled textiles’, in Finnish. The description of the craft company or the maker guided the selection of the participants. In order to be selected for the study, the company or maker had to have some focus on sustainability in their craft production, for example, using recycled materials or ecological methods.

For this study, 16 craft practitioners were selected, including six male and ten female participants. All of them came from different geographical and cultural parts of Finland. The type of practice varied in terms of methods and materials. The participants specialised in both textiles and “hard” materials such as goldsmithing, carpentry, basketry and textile design (see Appendix 1 for further details). These participants had worked in the industry from two to 40 years and worked as full- or part-time entrepreneurs.

The interviews took place from August 2014 to June 2015. The first five participants were interviewed in person, and the remaining 11 were interviewed by phone. Since the interviewees were located in different cities and due to the long distances in Finland, it was more efficient to conduct the interviews by phone. The phone interviews may have been more anonymous for the participants than those interviews performed in person (Creswell 2007; Chase 2005). New participants were sought until when the several points in the data started to repeat and reached saturation (see also Charmaz 2006).

During the semi-structured thematic interviews (see Fontana & Frey 2005), questions were asked about sustainable craft in reference to the product and practice perspectives, as well as questions about attitudes, values and meanings (see Appendix 2). The questions were asked in each interview but not necessarily in the same order, as room was left for other themes arising from the interviews (see Saaranen-Kauppinen & Puusniekka 2006). The participants were asked to provide some background information, for example, education, years in the industry etc., and were promised anonymity throughout the research process.

3.1.2 The essays

The essays for this study were collected as a discretionary sample from university-level students of craft science from October to November 2014. The students were asked to write about sustainable craft as a narrative from their own perspectives (Polkinghorne 1988). Some assistive questions were included in order to direct the answers towards addressing the issue at hand (see Appendix 3 for the call for participation). However, the questions were not biased towards any theories on sustainable craft, as we wanted the responses to be as authentic as possible. It was considered that anonymous responses through writing informal essays would provide authentic responses as the participants would have time to consider and reflect on their essays without time constraints or the need for social approval (see Charmaz 2006). The students were
assured that their participation would not affect their course grade and that they would retain their anonymity throughout the research process.

A total of 41 essays were received: 21 from students who studied crafts as their main subject and 20 from students for whom the subject was a minor. The length of these essays varied from a few sentences to four pages in Word documents. The essay contents were regarded honest descriptions of the students’ ideas, as some of them admitted that they didn’t understand what sustainable craft meant, while other students provided long, detailed descriptions about the subject from their personal experience. The students also attached their concept maps as requested, which were not included in the analysis. However, it should be mentioned that the concept maps could have positively affected the essay writing, as the students were able to focus more easily (see also Ålhberg 1998).

3.1.3 The literature

The literature review is a significant part of the research as well as the concept development in general. In this study, the specific concept of sustainable craft is viewed through research literature. There are several different ways of writing a literature review, from a short, abbreviated review a meta-analysis, depending on the purpose of the research (Broome 1993). For this study, a systematic literature review (Paré & Kitsiou 2017; Thomas & Harden 2008) was chosen as a method of gathering literature from databases such as Google, Google Scholar and FINNA (Finnish National Library Database).

The literature (for Study III) was selected as a representative sample of contemporary research of sustainable craft for the purpose of concept analysis. Because the nature of concept analysis is iterative and on-going (Puusa 2008; Rodgers 1993), the literature review became more focussed and analytical towards the end of this research, although relevant literature was also read in order to provide background to the concept. There is a logical explanation for this approach (empirical first, literature second). The theoretical analysis of the concept is considered stronger after the literature has been read and viewed from multiple perspectives; the empirical evidence is tested and compared to the existing literature (see also Risjord 2009; Dey 2007). This is considered to be theoretical approach that supplements the concept development that started with the empirical data (see also Glazer 2007; Rodgers 1993).

The literature was reviewed systematically and analysed using the concept analysis method. The conclusions were drawn from empirical, peer-reviewed research articles. In Study III, the concept analysis of the literature was focused on in greater detail. Figure 9 visualises the increase in the number of research publications from 2004 to 2017.
3.2 THE ANALYSIS METHODS

Töttö (2000) explains that analysis is either theoretical or empirical, the latter being qualitative or quantitative, or mixed methods, which uses both qualitative and quantitative approaches and analysis (Teddlie & Tashakkori 2010). This study is a mixed-method study with three main analysis methods complementing each other: grounded theory, quantitative description and analysis, and concept analysis. Thus, the type of mixed-method study is qualitative dominant, with most mixed methods being applied in the data analysis phase (Johnson, Onwuegbuzie & Turner 2007).

3.2.1 Grounded theory analysis

In this study, the interviews and essays were analysed using grounded theory, the GT method. In principle, grounded theory aims to generate theory from data, thereby creating an understanding of the requisite phenomena. This study generated theory from the data and compared, modified and elaborated existing theories for grounding the rising theory (see Strauss & Corbin 1994). The GT method has evolved since Glazer and Strauss’s (1967) *The Discovery of Grounded Theory* (see also Strauss & Corbin 1994; Bryant & Charmaz 2007; Creswell 2007). As a process of analysis, grounded theory does not differ greatly from content analysis. However, the iterative cycles of GT make
the process more intense than content analysis (Cho & Lee 2014). Pöysä (2017) argues that GT is actually a deeper form of content analysis.

This study applied the model by Charmaz (2006). In short, GT has five initial stages in the analysis process. These stages are: 1) data collection, 2) coding and categorising, 3) memo writing, 4) sampling, saturating and sorting and 5) reporting (see Figure 10). As Charmaz (ibid.) indicates, the GT process begins with rich data collection from multiple sources. The data collected in this study were coded by using initial and focused coding. Initial coding means line-by-line coding; focused coding means the data is coded into larger segments. Theoretical coding describe potential connections; focused coding generates and takes the data in a theoretical direction (see Charmaz 2006). Following this procedure in this study, the data (interviews and essays) were collected, coded and categorised (see Study I for an example of the coding process). The data fell into the categories of practice, product and immaterial craft, each with more specific details.

The third stage, memo writing, allows for a break from the analysis and a maturation of the rising theories (Charmaz 2006; Lambert 2007). This stage is important in GT as it enables the actual theory to be elevated to the most abstract level (Morse 2007). The memos in this study were both written and visual (see example in Appendix 4). The visualisation of the categories through concept mapping and viewing the relationships formed figures that display these connections (see Study I). The fourth stage of the study comprises data sampling, saturation and sorting (Charmaz 2006). In this study, saturation was reached after ideas started being repeated the interviews. However, the analysis took time because the categories also needed to be grounded in theory.

In this study, the theoretical comparison between previous and emerging theories and data was abductive: this category is similar to this theory, but different in this way. According to Dey (2007) the researcher rarely works in a vacuum, indicating that the researcher is allowed and encouraged to compare emerging theory with previous theories (see also Charmaz 2006; Bryant & Charmaz 2007; Morse 2007). As Charmaz (2006)
explains, the logic of GT is abductive because it contains reasoning that is produced by making theoretical connections and then verifying them. This abductive back-and-forth movement enables the development and modification of new and existing theory (Awuzie & McDermott 2017). However, during the process, discrepancies were identified, and these were further investigated with the quantitative methods that can be used with GT (see also Glazer and Strauss 1967, 18).

3.2.2 Quantitative methods – description of data and analysis

For the quantitative description and basic quantitative testing, the data generated from the essays (N41) were collected from the student craft teachers. Initially, the student essay data were first read and analysed according to the grounded theory procedure (Charmaz 2006). Through this qualitative analysis, it became evident that the students’ responses were not uniform. Thus, the data were then transformed into a quantitative form. The primary purpose of the quantifying the qualitative data was to describe and analyse the data in order to improve theorisation. This type of coding has echoes in the origins of GT (Glaser & Strauss 1967; see also Creswell 2007), in which categories could be assigned a numerical form.

The essay data were read and evaluated (see Appendix 5) then confirmed by a peer researcher. Points were assigned as variables appeared in the data, and the points were collected in an Excel spreadsheet. In practical terms, if a student described craft practice from a skills perspective, one point was assigned (1 = mentioned/0 = not mentioned). The concept had three elements: practice, product and immaterial craft, each with their own subcategories, for example, the practice with aspects of skill, knowledge and ideology (attitudes and values) attached to it. The main categories – practice, product and immaterial craft – became scale variables and their subcategories were dichotomous and were either present in the data or not (see also Nummenmaa, Holopainen & Pulkkinen 2014). The subcategories had further qualitative descriptions. The main categories were then arranged as scale variables (practice 0–3 points, product 0–8 points, immaterial aspects 0–8 points, total points 0–19 points) (see Study II).

Evaluating the structure

The structure of the essays was evaluated after the descriptive statistics presented a pattern of variation in the main categories and subcategories. The purpose of evaluating the structure was to identify the differences between the responses. These differences were easier to detect in numerical form and the data were categorised according to how many participants identified the different aspects. The total points received in the evaluation of the student essays (min. 6 points – max. 19 points) formed the framework of the structure (see also Kaasinen 2014; 2017; Lepistö 2004). The total points were divided into four categories: unstructured (6–9 points), fairly structured (10–13 points), structured (14–17 points) and completely structured (18–19 points). By evaluating the structure of the student responses, the core concept of sustainable craft was revealed. The level of confidence increased with the peer evaluation of consensus (89%) in the results (see also Stemler 2004; Jonsson & Svingby 2007). The secondary benefit of the quantification of data and quantitative analysis was that it enables the researcher to develop a hypothesis for further data collection and analysis in a larger data set (Nummenmaa et al. 2014).
Quantitative description and Fisher’s exact test of dependencies
After quantifying the qualitative data, the variables were examined quantitatively via a description, for example, of which categories and variables had been identified most often by the participants. The frequencies, distributions and correlations of these categories were described and viewed (Nummenmaa et al. 2014). Spearman’s correlations suggested that immaterial craft aspects are positively dependent on practice and product properties, yet product and practice dependency was statistically indicative (see Nummenmaa et al. 2014). The basic statistics are presented in Appendix 6.

Because the sample size was too small for standard statistical analysis, the data were viewed using some basic non-parametric tests (see Nummenmaa et al. 2014; Welkowitz, Cohen & Lea 2012). Rowe (2016) explains that Fisher’s exact test detects the exact probability of two dichotomous variables. The $P$ value created from cross-tabulation is the probability of independence and the statistical significance. The purpose of cross-tabulation is to observe whether two variables share the same distributions in the data and offers a basis for understanding the connection between them. In this study, all the dichotomous variables were cross-tabulated, and the statistical significance was detected. These connections were collected according to the main categories, revealing unique patterns between the variables (see Study II for further details).

3.2.3 Concept analysis
Because the concept of sustainable craft is relatively new to the field of science, it was essential to learn what has previously been said and studied about the phenomena. In this study, the literature was reviewed through concept analysis method. Concept analysis as a simultaneous analysis strategy of context, is aimed at the features and attributes of the concept (Walker & Avant 1988; Rodgers 1993; Nuopponen 2010a; 2010b). Rodgers (1993) explains the evolution of concept development and argues that concept analysis focuses on the essence of the concept. We all have an idea of what a concept is in our minds, but to express it, we need language. The language that expresses a concept, used in different contexts, may have different meanings. Concepts can be abstract or concrete. Concrete concepts are directly measurable through observations, while abstract concepts are difficult to measure (Mateo & Forman 2014). Either way, concept analysis is important for forming theory, while theory itself facilitates communication, develops and sorts ideas, refines and details the observations, describes the diversity of the research problem, and creates models and connections between factors (Puusa 2008; Johnson 2014).

The method of concept analysis has eight essential points, from choosing the concept, analysing how it has been used, identifying antecedents and consequences and cases that present the concept in question (Walker & Avant 1988; Nuopponen 2010a). Rodgers (1993) considers the last point as hypothesis formulation for further concept development and models the cycle of knowledge development, how time increases knowledge, its application, usability and significance similarly to the hermeneutics cycle. Figure 11 visualises the concept analysis process and the steps needed for the analysis that was used in this study.
The relevant literature was narrowed down to contemporary research in 42 academic publications. The literature was sought from Google, Google Scholar and FINNA (Finnish National Library Service). The literature selected for this study included ‘sustainable craft’, or ‘crafts’ (or a method of craft) and ‘sustainable development’ or had ‘sustainability’ in the title, abstract or keywords. The literature was published in English from 2004 to 2017.

It was concluded that the literature presented the development of the concept from the initial focus points to contemporary meanings (see also Rodgers 1993). By examining research articles from various backgrounds, different cultural and social presentations of the concept could be investigated. The research articles reviewed for this study examined sustainable craft from multiple perspectives, and the content of the articles dealt with empirical data. Thus, this type of concept analysis will consider a broad variety of contexts, aiming to clarify the basic concept with a basic definition for further concept development in practice.

However, Rodgers (1993) also reiterates that concepts change over time and have different meanings in different contexts. Thus, it is important to consider the context in research. In turn, Puusa (2008) explains that concept analysis only forms the basis of theory that must be consolidated through further investigation of the relationships between concepts. Risjord (2009) clarifies that concept analysis has two forms, theoretical and colloquial. Theoretical concept analysis bases argumentation on literature, but may lead to a different conceptual understanding among practitioners, whereas colloquial concept analysis is based on practical qualitative research and relates to grounded theory, phenomenology and ethnography.

This study combines three methods of analysis: GT, quantitative description and analysis and concept analysis. These methods are seen to complement each other and will bring triangulation to the study (Shenton 2004; Johnson et al. 2007). Unlike conventional research processes, in which the literature first directs data collection, in this study, the literature analysis follows the process and is reported at the last stage of the process, in reference to Rodgers’s (1993) and Puusa’s (2008) understanding of
the hermeneutic cycle. This method also has practical basis; the information regarding
the concept was insufficient. However, this does not mean that the literature was not
taken into consideration until the empirical study had been completed, as it was often
referred to during the process. Furthermore, the concept of sustainable craft comprises
two quite large concepts. Thus, it is important to understand both concepts fully in
order to compare the new concept.
4  MAIN FINDINGS OF THE STUDIES

The main findings of this study indicate that sustainable craft is a multidisciplinary, global phenomena. This chapter summarises the main research results from Studies I, II and III. The three articles form a continuum of knowledge from the empirical findings to a theoretical and conceptual understanding.

In Study I, the concept of sustainable craft was described as a system of three fundamental elements that all interacted. These elements were craft as practice, product and immaterial craft. Craft practice had three stages: skills, knowledge and ideology. Skills were described as essential in performing technically good- or high-quality work, in design and in the ability to use materials and their properties to make an aesthetically appealing product. The knowledge aspect was described as knowledge of the materials and their life cycle, as well as the kind of environmental effects of the product and practice. Ideology was the combination of attitudes and values that depicted the sustainability of actions, the ecological and ethical aspects of making.

The product was described as having eight properties, from the life cycle, materials, techniques and design used in making, to the quality and aesthetics, the product relationship and need. The life cycle and materials were the environmental aspects of the product. The techniques and design related to skills and knowledge, whereas the quality, aesthetics, product relationship and need were more abstract and connected to the immaterial aspects of craft.

The immaterial aspects identified in the interviews were environmental, economic, social, psychological, societal, philosophical, cultural and communicational. The environmental aspect was the most self-evident aspect of sustainable craft. The practitioners fully underlined this in their products and actions. Being entrepreneurs, the economic aspect gave them value in craft, as they were able to employ and provide for themselves and, in some cases, for their employees. Sustainable crafting also brought other kinds of well-being, as the entrepreneurs felt that they were doing the right thing. This was in connection with the philosophical aspect of immaterial craft. This then led to the social, cultural, communicational and societal aspects of sustainable craft. Being masters of their trade, they also gave lectures, conducted workshops and other kinds of teaching in order to spread traditions and renew their culture.

All in all, sustainable craft as described by the practitioners was systemic; all elements affected, motivated and shaped each other. In the following Figure 12, the manifold system is visualised. The main conclusion of this part of the study is that it is the immaterial aspect of sustainable craft that gives the practice meaning and form for the actual product.
In Study II, the concept of sustainable craft was firstly confirmed as a system of practice, product and immaterial craft. The conceptions became more detailed in this analysis process. Once viewed quantitatively, the practice was a key category that linked the product’s properties with the immaterial aspect of sustainable craft. There were also a number of links between immaterial and product categories, similarly to Popper’s Worlds 1 and 3 (cf. Popper 1972; Niiniluoto 1996). The relationships between these categories were also revealed: the practice is key to sustainable craft, for example, skills that connect to design and technique, knowledge to aesthetics. Further, aesthetics connect to the psychological and philosophical aspects of immaterial craft.

Secondly, we noted that not all students had the same conceptions, and the structure of their descriptions of sustainable craft varied from technical product descriptions to deeper and more holistic views of sustainable craft. Thus, it was concluded that students approach sustainability in a craft context differently, through product, practice, immaterial and holistic approaches, depending on the craft practice. It was concluded that students who were more engaged in their craft had a holistic view, as opposed to beginners and students who approached it from a product or practice perspective. This was apparent in the structure and depth of the description of practices.

Thirdly, it was concluded that in light of the SD literature, there are four approaches to sustainability: 1) material/environmental, 2) individual, 3) socio-cultural and 4) holistic. The first two approaches are concrete material approaches to understanding sustainability; the remaining two require more abstract thinking and are the goals of
craft practice in a sustainable context (see Figure 13). The main conclusion is that craft is a powerful tool for understanding sustainability and developing it into a holistic view.

In Study III, the core concept was identified together with relationships of the related concepts, antecedents and consequences of sustainable craft. The concept of sustainable craft was manifold, as mentioned in the Materials and Life cycle, Markets and Economy and Policies and Practices categories. It was concluded that the Materials and Life cycle category had the most impact on the environment. However, in craft, materials have always been recycled, and the consumption footprint of materials is by far smaller than in industrial processes. Although materials are currently cultivated and produced industrially, their life cycle should be transparent to the craft makers with regards to ecological and ethical principles.

The Markets and Economy category was the economic aspect of the craft industry and entrepreneurship, the business models and the marketing strategies. Craft practice was connected to artisanal production and design. Design intervention and branding as a business strategy was seen to elevate craft and artisanal production. Mentoring and collaboration was used for developing entrepreneurial and business skills. Marketing was used for sharing and communicating craft values.

The Policies and Practices category describes sustainable craft on personal, societal and cultural levels. The personal level combines skills, knowledge and consciousness, the societal level highlights the importance of craft education through
the developmental aspect, and the cultural level concerns fading skills and knowledge and is aimed at reviving traditions.

Sustainable craft relates to sustainable design and elevates conventional craft to another level through conscious reflection on the impact of crafting and consuming, the ideology. Attitudes and values are ecological and ethical by their nature, they are a concern that calls for actions. The antecedents and consequences of craft were derived from the general discussion of SD and offered an alternative method of production and consumption.

In Study III, sustainable craft was defined by the first author as follows:

[S]ustainable craft is directed by the imperative of sustainability and a concern for fading traditions. It is multi-faceted and concerns physical, social, cultural and psychological sustainability. Sustainable craft practice occurs on personal, societal and cultural levels and aims to revitalize craft, add value to products, elevate artisanal production, safeguard and balance culture and the environment. At the centre of sustainable craft is the craft practice guided by the maker’s values and attitudes. The practice is a conscious activity aimed at creating a sustainable lifestyle and increasing well-being. Sustainable craft is the purposeful use of materials and methods in local environments. As a field of industry, sustainable craft offers business practices that rely on collaboration, social capital and shared values.

All together, these findings form a practical, theoretical and conceptual understanding of the phenomena. On a practical level, attention should be paid to the products and their effects on the environment. Also, on a personal level, the values that reflect sustainability through self-made products came after the interaction with the materials and methods. Thus, it can be concluded that practice makes perfect. The aspirations of the global market transitioned into slow production and consumption, with the craft and artisanal industry requiring actions on a cultural, societal and personal level. The creative craft industry would benefit from value demonstration, collaboration and branding in the business.

On a theoretical level, craft formed a system and a holistic picture of sustainable craft. The theory was derived from practice and is therefore applicable to practitioners. On a conceptual level, the findings suggest that it is a powerful tool for understanding history and the present and future of humankind in the ecosystem.
5 THE CONCEPT OF SUSTAINABLE CRAFT

This chapter synthesises and grounds the initial research results with previous theories. It begins by describing the system of sustainable craft by its elements and relationships that were uncovered in Studies I and II. These results showed that sustainable craft was an intertwined system comprising three main elements: practice, product and immaterial craft. Later, in Study III, the concept analysis showed evidence that sustainable craft is a global phenomenon and discussed this from various perspectives. As a conclusion, a concentric framework for sustainable craft is presented. To finalise this dissertation, this chapter concludes with the methodological reflections and possibilities for future research.

5.1 SYSTEM OF SUSTAINABLE CRAFT

5.1.1 Practice

The empirical part of this study examined the concept of sustainable craft through the conceptions of practitioners. The two participant groups (professional practitioners and student craft teachers) shared the same conceptions. The practice element was divided into skills, knowledge and ideology.

**Skills** refer to technical skills and manual dexterity (Dormer 1994; Shiner 2012). Skills grow through practice and develop the individual holistically, from neural systems to cognitions (Pöllänen 2008; Seitamaa-Hakkarainen et al. 2016; Groth 2017; Huotilainen et al. 2018).

**Knowledge** develops from practicing skills and techniques (Dormer 1994; Anttila 1999). The knowledge may be tacit or tangible (Ihatsu 2002; Anttila 2006), but it enables refined decision-making during the practice.

**Ideology** is a combination of attitudes and values and the name stems from a combination of two aspects. In Suojanen’s model (2001, 2), the values reflect nature, culture and craft education. The values and attitudes emerge through reflection and consciousness (Ferraro et al. 2011; Kojonkoski-Rännäli 2014).

Regarding sustainable craft, practice was key to the whole system. Everything depended on the makers’ decisions, for example, how to use materials, where to buy components, what can and cannot be done. The designers are the key composers in the management of the sustainability aspect (Sherburne 2009), since they make the decisions that affect the life cycle of the product: from the materials, design, production, usage, to disposal or reuse. Papanek (1995) described this ethical challenge through the tasks of industrial designers: design what you are asked to design, even a weapon of mass destruction, or let someone else design it, but always wonder, whether your ethics might have affected the design of that destruction.
5.1.2 Product

Eight sustainable craft product properties were identified in the interview and essay data (Studies I and II). These were: materials, life cycle, technique, design, quality, need, product relationship and aesthetics. The sustainable craft product was a category and aspects that were the most tangible were identified in the data (see also Yair 2010).

Materials discussed by the participants were authentic, often natural, but most definitely functional; in other words, suited for the purpose of the product. Some participants preferred and made a living out of recycled materials, some chose the by-products of other products (i.e. fish leather), and for some others, it was domestic natural materials grown nearby (cf. Nugraha 2012; Papanek 1995). The materials were linked to the life cycle of the product and were considered from start to finish and beyond (also Sherburne 2009).

The techniques described concerned the manual labour or fabrication of the objects and the practice itself. The participants believed that technique is essential in making good-quality products as discussed in similar a vein by Koskennurmi-Sivonen and Anttila (2008).

In this study, design was understood as the ability to design, as a verb of the action and a noun of the plans (cf. Fry 2009; Papanek 1973). Similar to technique, design as a noun and an action is crucially important to composing everything together (cf. Koskennurmi-Sivonen & Anttila 2008). Design also extends the responsibility of the maker to evaluating the life cycle, methods and materials of the product (cf. Sherburne 2009; Papanek 1995). Nugraha (2012) also viewed shape as the design.

Quality was strongly attached to the sustainable craft product in the participants’ descriptions (see also Koskennurmi-Sivonen & Anttila 2008) concerning the essence of SD. Luutonen (2007a; 2013) saw it as a competitive advantage for professional craft practice and entrepreneurship.

Need was described from psychological, social and physical perspectives, as a need for self-expression or cultural preservation. In the post-industrial society, there might be no physical need to make crafts (Pöllänen & Kröger 2000); the need may be more holistic. However, the physical need or necessity should be understood as being global and environmental, as suggested by Fletcher (2008) and Ehrenfeld (2014). In Nugraha’s model (2012), the need is attached to utility, and Papanek’s model (1973) identified the need as psychological, biological, cultural and social. Today, the need may also be individual, i.e. developing skills and improving cognitions (Dissanayake 1995; Pöllänen 2015a; Huotilainen et al. 2018).

The product relationship was mentioned in the personal stories in both the student and the professional practitioner data (see also Luutonen 2007a). The stories were materials or technique survival stories or how people became involved with their meaningful making processes. The product relationship is a psychological state (Csikszentmihalyi & Rochberg-Halton 1981), and becomes meaningful during the making, transforming into what the person can make with the materials (Kouhia 2016; cf. Sen 1985; Shiner 2012).

Aesthetics was brought up in the data in many cases. It was described in terms of shape, colour, actions (see also Risatti 2007; Varto 2001). Also, timelessness, functionality and durability were attached to aesthetics, as in the case with Zafarmand et al. (2003). Nugraha (2012) uses the term icon in reference to aesthetics, but it is found in Papanek’s model (1973). Interestingly, in this study, Fisher’s exact test using cross-
Studies I and II identified eight aspects of sustainable immaterial craft: economic, social, psychological, societal, philosophical, communicational, cultural and environmental. It has been said that craft is intrinsically sustainable (van Koten 2009; UNESCO 2003) because it safeguards cultural traditions (Dillon 2011; Kokko & Dillon 2011). However, even in craft practice, materials and product life cycle, from raw material cultivation to production, use and disposal (e.g. Fletcher 2008; Sherburne 2009) have environmental effects, and the industrial relationship to nature has been instrumental in valuation (Singer 1993). However, Papanek (1995) describes the harmony in the crafted product relationship with nature.

The economic aspect obviously has to do with the finances of craft. Craft practitioners make crafts for a living, and the teacher students view economy through their student budget. Either way, the economy was also about quality over quantity. The economic aspect mattered to the professional practitioners and their incomes, whereas for the students it was an expense. The participants considered the economic aspect to be the responsibility and ethics of production and part the life cycle of their products (see also Fletcher 2008; Schwarz & Yair 2011; UN 2015).

The social aspect was observed when practitioners and teacher students discussed the people in their lives, for example, as customers or family members. Students were more concerned about the exploitation of human labour in distant countries and making crafts locally was about ensuring things were done right. The social aspect also meant collaboration and a social network through business associates (see also Salonen 2010; UN 2015). The social perspective was also seen in the collaboration (see also Padovani & Whittaker 2015), which was described as interaction with colleagues, contractors, networking, clientele and also among practitioners.

The psychological aspect was individual well-being as a source and an end to craft practice (cf. Pöllänen 2013; 2015a; 2015b; Csikszentmihalyi 2014). Several participants from both groups described this connection openly. One participant was able to decrease their medication for depression because of a career change from sales to crafts, another participant enjoyed the flow, escaping family life to have time to themselves or sorting out their emotions during craft making. These findings are in accordance with the findings of Pöllänen (2013; 2015b) and Pöllänen and Voutilainen (2017). The practitioners also described their satisfaction in making things right; they were doing their part in reducing the environmental burden on humanity and offering a sustainable solution to a contemporary need.

The societal aspect included craft policies and many participants discussed the suppressed position of craft because of mass production but regarded craft as being a superior because of its ethical and environmentally-friendly production. The societal aspect included education, which was discussed in both participant groups, focusing on craft education traditions being transferred and preserved (see also Wals 2009; Leal Filho et al. 2015; Salonen 2010; Cox & Bebbington 2014). In some cases, craft practice was described as a political statement against mass production and consumption (cf. Hackney 2013; Shiner 2012). The UN goal in the context of sustainable craft is of utmost important, especially the notion of technical skills. Technical skills do not develop
without practical training; they require constant repetition, trial and error (Dormer 1994; Sennett 2008). For example, in craft education, there are alarming reports that craft skills are not given sufficient room in the curriculum (Metsärinne & Kallio 2014; Muya, Price & Edum-Fotwe 2006) and this is impacting society at large (Pöllänen 2009; von Busch 2013; Kraatari 2016). Thus, craft education, including technical skills, is a far-reaching investment for the future.

The philosophical aspects touched upon the ecological and ethical questions regarding craft practice. These included the fair and just treatment of employees, production methods, etc. The practitioners in this study emphasised their ethical and ecological motivations for their work (see also Burns et al. 2012), and these practices were deliberate, not mandated by anyone other than the craft maker. The data put the ethics into practice (cf. Norton 2015; Singer 1994). The philosophical aspect may also be considered to be the spiritual aspect of sustainable craft, as being spiritual could be a technological kind of a belief (Zhan & Walker 2018; cf. Stead & Stead 2014; or Carroll 2004).

The communicational aspect was not easily detected but was described through the design and artefacts. Craft practice was shown through the communicational perspective of immaterial craft. Craft was either sold, presented or even taught online, at craft fairs, courses and lectures (see also Na 2012; Luutonen 2013; Lith 2017). Design and objects are symbolic and are a form of communication (Walker 1989) and we express ourselves through these symbols (Csikszentmihalyi & Rochberg-Halton 1981; see also Kaiser 1990).

The cultural aspect was the DIY culture in the student data, the entrepreneurial culture of the professional practitioners, but more importantly, it was the continuity. These were the cultural presentations of craft. Nugraha’s (2012) primary concern was the extinction of traditional Indonesian coconut products used in housework and the plastic replacements breaking down and being thrown away. By transforming traditions to the needs of contemporary society, culture can be preserved and renewed without compromising traditional practice. A similar concern of lost traditions was expressed in studies by Ciftci and Walker (2016), Kokko and Kaipainen (2016) and Botnik and Raja (2011). Officially, the United Nations is safeguarding traditional craftsmanship (UNESCO 2003), and only time will tell if the traditional abilities can be restored.

The environment was described through materials, design techniques and life cycle. Yair (2010) states that craft makers are making a difference in an environmental sustainability context in their sustainable business practices, i.e. the innovative development of products that embrace sustainability in the materials or techniques being used. Craft products sold directly to the consumer take one loop off from the chain of the life cycle and enhance ethical trading in local communities. Craft education by craft makers raises awareness of materials and challenges people to reconsider their consumption patterns.

5.2 APPROACHES TO SUSTAINABILITY THROUGH CRAFT

The description of approaches to sustainability though craft will help to further explore the concept. As the empirical data of this study revealed, students approached sustainable craft from different perspectives (Study II) and, the same kind of division was seen in the literature (Study III). Firstly, an almost intuitive approach is the material
**approach.** It is the most concrete way of reducing and evaluating the environmental impact of a product.

Secondly, after the maker has familiarised themselves with the materials, the reflection turns to the maker, what kind of maker they are, how they finish a project, if they have the necessary skills, the difference they can make, and so forth. This is called the individual approach, and internal reflection is its most important characteristic. Thirdly, interaction with the materials and skilful making leads to other factors beyond the product and the individual being taken into account. As Sen (1985) states, the properties of an object are functional when it comes to the usefulness of those properties; the more knowledgeable and skilled the maker, the better they can utilise these properties (see e.g. Dormer 1994).

Yet the positive attitudes towards SD do not necessarily result in the makers’ behaviour, as noted by Salonen (2010). Similarly, in Study II, materials, life cycle and environment were the most recognised factors of sustainable craft, although it was the advanced practice that brought the finest details to the surface. For example, skills were the result of technique and design and knowledge was attached to the product relationship that was further connected to the psychological aspects of immaterial craft.

After gaining sufficient skills, it becomes clear that craft is more than the practice of craft or the products, but the community, the well-being, the historical and cultural paths, and this is considered to be the socio-cultural approach. Understanding the relationship of craft to different areas of life in a broader sense than just individual circumstances is key to this approach (e.g. Nugraha 2012; Papanek 1995; Walker 2013; Bayliss & Dillon 2010). This was seen in the teacher student data, yet similarities could also be drawn from the professional practitioner data.

The holistic approach to sustainable craft means that it is possible to make deep and wide connections in craft making in all areas of life. There was a clear interconnection of craft making with society and culture, the commons, although performance craft as a chosen life-style, meaningful making process, also questions the contemporary madness of the world, and has its roots in nature (see also Martusewicz et al. 2014; Kouhia 2016; Papanek 1995; Zhan & Walker 2018), showing how much effort it takes to make something aesthetic, meaningful, yet enjoy the process of stepping outside of the ‘madness’ and just being alone with your own thoughts (Pöllänen 2015b; Pöllänen & Voutilainen 2017).

### 5.3 THE CONTINUITY OF CRAFT

The continuity of craft was discussed in Study III, in the concept analysis of sustainable craft. There are several theories of practice, but practice must exist. Although the academic discussion raises new theories to guide and understand craft practice better, it is the actual making that causes the change (cf. Norton 2015). Sustainable craft, as a concept, was presented in the literature through policies and practices, markets and economy, materials and life cycle. Although the action points are presented separately here, the elements form a holistic system that is resilient by its nature (cf. Bayliss & Dillon 2010; Manzini 2014; Niinimäki 2015; Ceschin & Gaziulusoy 2016).
5.3.1 Revitalising craft

Study III examined the policies and practices through the literature and identified three main domains for revitalise craft: personal, societal and cultural levels (see Figure 14). These levels are similar to Csikszentmihalyi and Rochberg-Halton’s (1981) levels of interactions of meaningful things. The guidelines for sustainable craft drafted by Cox and Bebbington (2014) were based on the general agenda of sustainability viewed in a craft context. These guidelines included different aspects of craft, for example, the environmental impacts of production and consumption, entrepreneurship, education and social and cultural aspects. These are concrete statements that guide the performance of the abstract concept of sustainable craft.

Figure 14. Revitalising craft on personal, societal and cultural levels.

Personal level

As acknowledged in the previous chapter, craft practice is key to the sustainability context. The practice was divided into skills, knowledge and ideology that reflect contemporary culture (Studies I and II). Thus, the revitalisation of craft begins on a personal level. A person could take a stand and produce their own goods for a reason, for example, relaxation, own time, activism (Pöllänen & Voutilainen 2017; Kouhia 2015; Garber 2013). Practitioner activities were seen as being connected to skills and expertise gained from tactile work, resulting in the well-being of the maker (Luutonen 2007a; Pöllänen 2013; 2015a; 2015b). Most importantly, the change is seen to begin with ourselves, the individuals, the well-Being of craft making. Crafting capabilities have the most liberating power to keep humankind flourishing and to sustain-abilities in order to confront future issues with a creative and innovative understanding of the material world (cf. Bayliss & Dillon 2010; Ehrenfeld 2014; Fry 2009).

The philosophical aspect of craft, as argued by Risatti (2007), Sennett (2008), Papanek (1971, 1995), Shiner (2012), and Kojonkoski-Rännäli (2014), combined with
the neo-Aristotelian capabilities approach by Nussbaum and Sen (2011a; see also Steen 2016; von Busch 2013) mean that craft is projected as a human value (see also Niedderer & Townsend 2014) and a necessity for survival (Risatti 2007; van Koten 2009). Translating Sen’s (1985) capabilities into craft terms – yarn is just yarn. It has properties of its own, like the fibre it is made of, its durability, and so forth. But it is the maker, the person, who gives it form and meaning (see also Csikszentmihalyi & Rochberg-Halton 1981). Thus, it is an extension of a person’s function, what the person is able to create out of that yarn. We might have a utility (cf. Nugraha 2012) in the said yarn, but ultimately, it is our capability of making something out of an artefact of importance (see also Fletcher 2016, 225–226).

Societal level

On a societal level, craft education is one of the most important factors (Ferraro et al. 2011; Cox & Bebbington 2014). The reports concerned fading traditions, craft skills and knowledge, all of which call for policies that support craft education (Kokko & Kaipainen 2015; Ciftci & Walker 2018). Although craft education is unique in Finland on a global scale, Finland is not the only nation to be intimidated by fading craft traditions, skills and knowledge. Studies show evidence of a low appreciation of crafts compared to white collar jobs in all over the world (Akinbogun & Ogunduyile 2009; Muya et al. 2006; Botnik & Raja 2013; Parts et al. 2011). The Finnish craft policy in the context of sustainable craft and cultural heritage is enriched and adapted for the contemporary needs of society (Luutonen 2007).

Craft education in Finland is a part of traditional institutional policy to keep craft in the curriculum (Porko-Hudd et al. 2018). There are concerns that craft education is regarded as less important than STEM education (cf. Kangas 2014) and is not as popular among students as it used to be (Niiranen 2016; Metsärinne & Kallio 2014). Also, it is unclear what should be sustained in the craft education as historically craft education does not appear uniform, either (Hofverberg, Konlid & Östman 2017). As we understand it, the surrounding culture in general has changed and may have reduced the appeal of formal craft education. In fact, craft education in Finland is an institutional example and unique globally (see Porko-Hudd et al. 2018), and craft in basic education is included in the safeguarding list of Intangible Cultural Heritage (cf. Kojonkoski-Rännäli et al. 2018; Marsio 2017; UNESCO 2003).

Reviewing general craft education (Marjanen & Metsärinne 2019), it appears that in Finland, craft education has responded to the themes of sustainability before they became imperative. These societal themes were well-being, poverty alleviation, democracy, equality and participation and cultural knowledge, which were intended to develop the students’ economic thinking, ethics, planning, and ecology, for example (ibid. 64).

However, education is more complex; it includes other variables, for example, group dynamics, teacher-student relationships, curricula, designed tasks, etc. The FNBE (2016) emphasises the student-centred approach in designing and making crafted products, as well as multi-material experiments with the goal of preparing students for the 21st century (Porko-Hudd et al. 2018; cf. Binkley et al. 2012). Another form of education was the post-war cottage industry in Finland which provided meaningful making processes and additional income for home economics (Kraatari 2016).

The societal level of sustainable craft also intersects with the commercial aspect and is seen as a viable method of production and a cause of well-being. For a long time the trend has been to prefer global monoculture and reject own traditions. However,
new areas of craft-produced products are being discovered (Strong 2016; Luckman 2015; Jakob 2012; Hughes 2011). Also, supporting the makers through education and funding is considered to contribute to sustainability in general (Yair 2010). Through another example, Zhan and Walker (2017) envisaged a design intervention for the Yangtze River Delta area in China, including the inheritance of craftsmanship, culture and tradition, which could be revitalised. Crafts should open up to the world with an exchange of knowledge; technique and innovation relate to quality over quantity and expanding the life cycle of a product, through repairs and upgrades, but also new technologies, collaborative innovations and entrepreneurship; value creation and entrepreneurial skills development by exploring the intrinsic value of craft and resulting in a high value crafts.

The concerns raised by Wilkinson and Pickett (2011) about consuming crafts or artisanal products may just be a means of presenting a person’s social status and creating consumerism. However, Na (2012) makes no distinction between sustainable luxury craft and sustainable craft, since they both aim for a sustainable lifestyle through ecological consumption (also Fletcher 2008). As Yair (2010) points out, when products are sold to consumers, people can be educated on how to take care of the product and their awareness can be raised about materials while also respectfully challenging them to reconsider their consumption patterns. Csikszentmihalyi and Rochberg-Halton (1981) stress that the relationship between a person and an object is more complex than just presenting one’s status and we have always had a relationship with our objects. However, it is understandable that concerns about the decay of lived cultures will lead to more destructive rather than sustainable behaviour patterns (Thackara 2014) with the rise in populations and the consumption of natural resources.

Cultural level
The non-commercial side of sustainable craft presents itself as cultural craft. Cultural craft was seen as a continuation of traditions, DIY and hobby craft and craft activism. The concerns of fading traditions are the drivers for their transferral (see Kokko & Dillon 2011; Nugraha 2012; Ciftci & Walker 2017; Aktas & Alaca 2017; Kokko & Räisänen 2019), as there is a clear need to safeguard traditions (e.g. UNESCO 2003; Dillon 2011). Although Walker (1989, 39) asserts that there is no need to panic as craft revivals take place periodically as a consequence of reactions against cheap, standardized, machine-made consumer goods, and craft is attractive to consumers, exhibitors, makers and their protectors in the form of councils. Dormer (1997b, 157) supports the idea that crafts will not disappear because of the intellectual, imaginative and sensory pleasures they provide.

Traditions passed down through oral expressions are endangered due to the lack of practice (Belaram 2010). However, they can be kept alive through transformation (Nugraha 2012). Then again, crafts (purpose, design, methods and materials) have always adapted to the surroundings and were influenced by, for example, commercialisation in South and South East Asia (Chutia & Sarma 2016). Yet Nugraha’s (2012) concern is more to do with the globalisation and shift from crafted items to plastic replacements, and in practical terms, typical traditional craft items are updated and transformed to meet the needs of the current crafter.

Cultural necessity also refers to the change of consumption culture into DIY culture (Thackara 2014; Garber 2013; Hämäläinen 2013). Thus, it is important to cherish the cultural knowledge of traditional craft methods and products (Howe & Dillon 2001; Kokko & Dillon 2011; Kojonkoski-Rännäli 2014; Kokko & Kaipainen 2016) but also to embrace craft in basic education (UNESCO 2006; Cox & Bebbington 2014), as has
been the case in the Finnish context for over a century (Garber 2002; Pöllänen 2009a; von Busch 2013; Marjanen & Metsärinne 2019).

Craft activism and DIY culture are contemporary cultural aspects of craft linked to sustainability in the sense of making something yourself as opposed to buying from a shop, also acting as a social phenomenon, connecting like-minded people with social change (Garber 2013). The vibrant DIY culture (Watson & Shove 2008; Hackney 2011; Haveri 2013) and the maker (Na 2012) seek relaxation, escape or coping methods in order to balance the demands of working life, and offer an alternative for meaningful making process in a leisure context (Pöllänen 2013; 2015a; 2015b; Kouhia 2016; Pöllänen & Voutilainen 2017). The values materialise in artisanal production; the crafted products are designed with honesty towards the surrounding ecological, economic and social environment (Study II; also Aakko 2016; cf. Papanek 1995). Sustainable craft values are both extrinsic and intrinsic (Zhan & Walker 2018). Extrinsic values negotiate the economic, environmental aspects, and intrinsic values reflect on social, local-cultural and spiritual aspects.

Because the concept of culture is vast and can be viewed from multiple perspectives (cf. Goldsmith 2003; Marsella 2004; Hofstede & Hofstede 2005), craft culture is not uniform. Thus, the concept is manifold and can be understood from each viewpoint differently. Yet, all efforts are aimed at the common goal of a sustainable lifestyle, production and consumption. For example, Walker (1989) was concerned with individualistic culture (cf. Hofstede & Hofstede 2005), i.e. putting the individual designer on a pedestal, even though the work was done in collaboration and as a team. One answer to this would be DIT (do-it-together) as von Busch (2013) suggests, making the collaboration worthy of the spotlight.

5.3.2 Protecting the environment

The most evident and concrete way of understanding sustainable craft is the inseparable union of materials, methods and life cycle. ‘Hardcore’ craft makers would produce their own materials and make the life cycle apparent through their products and practice (Study I). This process, however, is time consuming, and practitioners take advantage of the systems that exist in production: networks and collaboration, buying materials from markets and shaping them into the desired outcomes. This system calls for transparency.

In the literature, materials, methods and life cycle were described in great detail from the start of the process, from fibres to their manipulation (e.g. Sharda & Rastogi 2013) or as a system of practice and intervention (Le et al. 2016a; 2016b). A number of studies also presented ways of reusing materials or prolonging an object’s usefulness through maintenance (e.g. König 2013; Sung & Cooper 2015). There were indications that research was shifting its focus towards integrated and systemic views (Ceschin & Gaziulusoy 2016). Thus, evaluating the life cycle may lose its importance. Regardless, the life cycle is most concretely connected to the environment, and it requires time and effort to evaluate practices, so that they meet the criteria of sustainability throughout their life cycle (see also Study II). The criteria involve the checkpoints that are visualised in Figure 15. The life cycle begins with the production of materials and, touches upon critical aspects concerning people, animals and nature (Fletcher 2008; Sherburne 2009; cf. Salonen 2010), which involve tools and methods used in production. After obtaining the raw materials, they are mechanically and chemically treated in order to make
them usable for product production (Talvemaa 2002). This mechanical and chemical treatment may be conducted in home-based facilities on a local scale (i.e. felting, wood turned into planks) or in industrial factories on a global scale (e.g. cotton yarn/fabric production). Ideally, the materials in craft production are local in order to reduce transportation costs (Wood 2011; Tung 2012).

When a craft product is made, the product’s qualities increase the appeal, usage and maintenance of the product (Koskennuurmi-Sivonen & Anttila 2008). These aspects can already be noted in the craft design phase and, choices made to increase the physical, psychological or social durability of the product (Zafarmand et al. 2003; Sherburne 2009; Chapman 2009). For professional practice, these are more important than for the home crafter, because if the product does not fulfil the needs of the market, it becomes waste sooner rather than later. However, professional products are usually made to order and therefore have no shelf life (e.g. Yair & Schwartz 2011), although smaller craft items, for example, jewellery, could be distributed through retailers (Study I).

Once the product is finished, it is used and maintained according to the product’s qualities. All products have a life span. The life span depends on the materials; it can be up- or down-cycled as raw material or repurposed for some other use (cf. Hurme 2017). Efficient recycling calls for consumer/user/producer responsibility for recycling these materials. However, it is society’s task to look after the infrastructure of recycling (Dahlbo et al. 2013). This is also where craft has proven itself in creativity and innovativeness over time and ought to be considered a predecessor of the circular economy (cf. Suojanen 1997). Collaboration between makers, producers, designers and organisations is critically important in order to create an alternative economy.
for sharing materials and knowledge (Tung 2012; Ciftci & Walker 2017; Chudasri & Sakrisathaporn 2017). Hence, one person’s waste is another person’s treasure. For example, Mirka Pukine Oy, based in Varpaisjärvi, Finland, is using the offcuts of material from forest harvesting machines to create winter clothing such as coats for women (http://www.mirkapukine.fi/in-english).

In comparison to the life cycle of an industrial product, the life cycle of a craft product is more ecological, because the volume of production is closer to the maker who is also the designer, marketer, producer, customer care specialist, accountant, distributor and seller (cf. Lith 2005). These values should be made transparent to the potential consumers and users (Moorhouse & Moorhouse 2017). In contrast, a product that was not created with sustainability in mind is made from materials that do not fulfil the functional purpose of the product, is of poor quality, produced industrially, and/or the maker has not been adequately compensated, or the working conditions were questionable (see Study III).

5.3.3 Change on the economies

Firstly, the markets and the economy reflect the craft industry, entrepreneurship and artisanal production. These are global-scale manufacturing methods, although some of the traditional practices have shifted to industrial practices. Nevertheless, the craft industry was seen as a competitive form of production. Research has emphasised the role of craft and artisanal production in the transition to sustainability (Fletcher 2008; Aakko 2016). A concrete example of this transition is a filter created and announced in December 2018 by Weecos, an online store comprising 270 small eco-producers shops and sellers (further information: https://www.weecos.com/). For example, consumers are able to filter products according to materials, vegan suitability or by place of production.

Secondly, craft business practices rely on design and branding, collaboration and mentoring (Farrer & Watt 2015; Zhan et al. 2017). Design extends from a plan and the form of a product to designing practices. Branding is something that craft people need to learn and adopt from the market in order to keep up with the competition. By branding the business with narrative, demonstrating the values of the maker and methods, the user/consumer can make an informed decision to purchase (cf. Tung 2012). Branding can take place through social media, which presents the third important foundation of a successful business – marketing strategies (Ciftci & Walker 2017). Marketing strategies involve value creation or demonstration and finding contemporary market spaces for product distribution (Study III). Although, there are practitioners who feel that the quality of the craft product is a market strategy itself (Study I), in today’s overwhelming media and market jungle, it is important to stand out in order to succeed and make a living, otherwise, success is subjective.

Hurme (2017b) sheds light on the new terms of pre-consumer waste, zero waste and presale. Pre-consumer waste is post-industrial waste, the waste caused by production; post-consumer waste is waste created by consumers after the product has outgrown its usefulness to the consumer; zero waste is a design technique in which no waste (or as little waste as possible) is created during manufacturing process. Hurme (2017b) also explains the business and marketing strategies of sustainable design and artisanal production in terms of mass upcycling and presale. Mass upcycling takes pre-consumer waste and creates new products, whereas presale is based on orders
from customers before the products have even been made, which is a new type of business model, especially in the textile and fashion design industry. These should not be confused with bespoke tailoring and the haute couture culture (e.g. Kaipainen 2008), in which clothes are produced according to the client’s measurements.

On an abstract level, the relationship between design, craft and art have been negotiated towards sustainability (see Figure 4 in Study III). The foundation of this idea is Ihatsu’s (1998; 2002) theory of contemporary craft and its dimensions. In sustainable craft, craft-design, ordinary craft and art-craft are elevated to sustainable craft through consciousness, values and ideology. Although, consciousness is placed alongside industrial design, consciousness refers to reflection and efforts for improvement in all practices in making sustainable crafts meaningful (see p.27; Rauhala 2005; Kojonkoski-Rännäli 2014). Values become apparent with artisanal production, conscious efforts to improve the life cycle, materials and other attributes related to the product and its function. These occur on a concrete level. But on an abstract level, cultural traditions and techniques are kept alive and transferred simultaneously (e.g. Dillon & Kokko 2017). Sustainable craft offers a safe haven to relieve stress or engage in activism against a global grievance (cf. Pöllänen & Voutilainen 2017; Greer 2014). This study (Studies I and II) discovered that sustainable craft has elements of well-being attached to the practice: economic, social and psychological. All in all, sustainable craft means inspection, reflection and reconciliation of values and actions.

5.4 FRAMEWORK FOR SUSTAINABLE CRAFT

Even though we are faced with the challenge of globalisation, its destructive powers and cultural change, hope remains. Political and economic policies are changing, people are looking for meaningful ways of passing their leisure time and discovering what matters most in their lives. Sustainable craft is one way of dealing with the issues of sustainability. The concentric sustainability framework (adapted from Tavanti 2010) in a craft context (Figure 16) has immediate implications for sustainable craft. To clarify the concept of sustainable craft in a nutshell, the theoretical concentric sustainability framework is fitted in a craft context. The framework draws action plans for future research and reflects in practical terms on ways of including sustainable craft in our actions. Although practice is needed for a product to be made, it is the immaterial craft that gives form to the sustainable craft product.

Even though the concentric framework may appear to be a hierarchical system, it is an intersecting continuum. The concentric framework in sustainable craft presents the layers of policies and practices in the field of craft. The very nature of sustainable craft is multi-faceted and intertwined, but at the same time unique. Thus, the framework does not offer a singular solution applicable to all (cf. Norton 2015). However, this model refers to a holistic view of human-environment-interaction (cf. Attfield 2003) in strengthening sustainability in crafts on the many layers on which it connects.
The most important concern remains. The environment enables our existence and we need to do our part in protecting it. In a craft context, this is seen as the deliberate use of certain materials and their life cycle. As explained in the previous chapter, environmental sustainability is addressed through the materials and life cycle (see Yair 2010; Sherburne 2009). Because we co-exist in natural ecosystems, we are also responsible for the well-being of the commons and sentient non-human animals (see Singer 1993; Nussbaum 2011a; Martusewicz et al. 2014; Keto 2017). In this discussion, even though we use natural resources for craft making, it comes to Equilibrium – harmony, knowing when too much is too much, when too little is not enough. As human beings, we are able to direct our attention to the things that need attention it and make a change (Csikszentmihalyi & Rochberg-Halton 1981).

Social responsibility lies in collaboration and ethical working conditions in the commercial craft sector, the change, the maker movement, DIY culture, and anything that motivates people to peacefully work together for the same sustainable goals (e.g. Ehrenfeld 2014; Bornstein 2007; Greer 2014). The social aspect, referring to responsibility to others, in relation to craft, means transparency in material production, but also collaboration with others, while driving for change. As von Büsch (2013) argues, the craft capabilities are not individual abilities but collective, educational tasks in developing humankind (cf. Marjanen & Metsärinne 2019). This echoes the cottage industry’s initial task of utilising rural people in meaningful making process (Kraatari 2016).

The economic aspect in a craft context is artisanal production and entrepreneurship. From a global perspective, this means the distinction in the freedom to choose – whether to offer your skills to mass-production or craft entrepreneurship (cf. Nussbaum 2011a). The economic aspect in the general framework of sustainability calls for justice. However, in a craft context, this justice is given back to the people, whereby artisanal production and entrepreneurship are supported by people and society (see
also Fletcher 2008). Also, the new economy is based on the principles of circularity in materials and the economy of affection (Pantsar & Herlevi 2016; Stahel 2016; Martusewicz et al. 2014).

Societal and institutional policies have two main arenas: legislation and education. Transparency in material origins and methods can be resolved through legislation in protection of the environment (see also Nussbaum 2011a; Attfield 2003). Societal and institutional policies support craft education by seeing the true value of craft making (cf. Kojonkoski-Rännäli 2014), not only the ability to read and write. Due to the developmental effect of crafts on people (Dormer 1994; Kojonkoski-Rännäli 2014), the safeguarding of crafts should be included in the societal and political agendas of the civilised world (cf. UNESCO 2003; Dillon 2011; Cox & Bebbington 2014). This viewpoint is supported by new evidence in neuro-cognitive research (Huotilainen 2016; Seitamaa-Hakkarainen et al. 2017; Groth 2017; Huotilainen et al. 2018). If the creative minds of humans are replaced by artificial intelligence, and we do not exercise our memory, the mind becomes underdeveloped, affecting technical skills and the ability to think and perform.

In the organisational culture, for example, in education, the necessity of craft education should be given the same value as other STEAM education (Science, Technology, Engineering, Arts and Mathematics; see p. 41; see also Huotilainen 2019). Sharing knowledge of the best practices in craft education is part of this and could be used in a similar way to the social media world of shared work (cf. Kröger 2003; Gauntlett 2011; Vartiainen 2014; Vilhunen 2018). Although organisation is limited to culture in the original framework of Tavanti (2010), culture is more than organisational behaviour and values. Culture is visible through social interaction, organised or unorganised, and this is culture’s greatest benefit – accepting differences and varieties through communication and interaction (Dillon & Kokko 2017). Cultural craft forms ecologies that are resilient systems, important for human-environment development and growth (Kokko 2018; Dillon 2018), and ought to be safeguarded as cultural and lived tradition (UNESCO 2003; Kokko & Kaipainen 2015; Marsio 2017).

Furthermore, we turn to individuals, person’s psychological relationship to the self, others and the commons (see Csikszentmihalyi & Rochberg-Halton 1981; Martusewicz et al. 2014) for the sources of well-being that become questions of philosophy, morality and ethics, and how we place ourselves in the environment (e.g. Attfield 2003), as we used to through our crafted objects (Papanek 1995; Nugraha 2012). Craft alone has been described as increasing well-being (Pöllänen 2015; Pöllänen & Weissmann-Hanski 2019), and this study reported that sustainable craft also support well-being (Studies I and II).

However, there are exceptions. Because children are on a stage of developing their skills, it is more important to develop craft skills and further knowledge than abide by the imperative of sustainability. As the results of this study indicate, an understanding of sustainability begins through material interaction between the maker and the product, deepens through reflection (see Study II; cf. Bennet 2015; Nimkulrat et al. 2015). For example, it is more important to serve sustainability by developing skills and knowledge of materials than satisfy the imperative of SD with the demand of product properties (e.g. aesthetics or quality). Yet, these aspects can be narrated through stories to children and youths. The principles of product properties and understanding interconnectedness can be viewed as a goal and not as a principle of making, although, children can be educated in how to apply economic and environmental thinking and techniques when they handle materials, for example, cutting fabric from the middle vs. the edges, or the measure twice, cut once mentality.
Besides, as *Our Common Future* (1987) emphasises the need for food, clothing, shelter and work as being the basics of human survival, crafts have been a part of this for centuries (Moran 2006; Kojonkoski-Rännäli 2014) and continues to do so. The future of humanity depends on our actions. Having a meaningful relationship with a product reduces the environmental burden because the need for a new product decreases, meaning less consumption of energy, water, materials and so forth. Culturally, knowledge and skills are passed on, traditions are kept alive and, more importantly, a stance is taken against the contemporary culture of fast fashion, consumption and production. As policymakers, we need to protect the capability that once made us masters of the universe. However, it is time to return to our roots – to a simple life, in the means of production. Food, clothing, shelter and work, are they all we need?

5.5 METHODOLOGICAL REFLECTIONS

The role of the researcher was significant in collecting, analysing and interpreting the data (see Creswell 1994; Charmaz 2006). The researcher is an active knowledge seeker and processor and is affected by previous theories on the matter. However, during the analysis, the data were allowed to ‘speak’, although in the grounding of theory, the data were compared to previous theories (Glaser 2007; Dey 2007; see also Creswell 1994; Mayring 2007). The openness and sensitivity of the researcher to the subject matter was crucial in interpreting the data, as well as the analysis. Throughout the research process, it was necessary to exclude the presumptions and biases of the radical literature on sustainability. This was possible through the feedback from cycles of external (peer) reviewers.

The process of this study has been hermeneutic (see also Rodgers 1993; Anttila 2006; Risjord 2009). This would not have been possible if the research had not been given time to mature the concept relationships and to clarify the underlying concepts of craft and sustainability from the philosophical perspectives to the aims and goals of the object-human-nature development. The process began with viewing and understanding the descriptions of practice, which were theorised to be used in practice. As a result of this hermeneutic process, the research questions have been answered both holistically and in great detail.

For this study, rich data were collected from multiple sources: interviews, essays, literature sources (see Shenton 2004). The phenomena has been previously identified. However, the knowledge was fragmented across studies. A conceptual clarification was needed in order to update the theories and highlight the discussion on sustainable craft. Conceptualisation was important because at times it appeared that the results were unfairly biased towards sustainability (cf. Wals 2009). This study provided a framework of sustainable craft by revealing the elements of it, comprising its consequences and providing new holistic information on the phenomena.

The first data source, thematic semi-structured interviews, were considered a good method of obtaining in-depth information on certain topics (Fontana & Frey 2005). The interviewees were representative of sustainable craft practices on a practical level. They were from different geographical and cultural regions of Finland and practiced various crafts in relation to materials and methods. The sample was discretionary. However, the selection and questions were discussed in seminars beforehand. The second data source, the student craft teachers writing the essays, were directed to answer similarly themed questions to the professional practitioners. Writing an essay
was considered an effective way of gathering multiple thoughts in reference to a specific topic, and it gave time for the participants to respond without the pressure of accuracy (Charmaz 2006). The data varied in length and quality but revealed a holistic picture of the phenomena (cf. Niiniluoto 1996). To assist in writing, the students were given the task of drawing a concept map (cf. Ålhberg 1998), and this may have assisted in the conceptualisation of their thoughts. However, these concept maps were not analysed in this study. Both participant groups were promised anonymity throughout the research process and the legislation regarding personal data (EU 2016/679 and 1050/2018) was enforced after the interview and essay data had been collected. The assessment of personal data protection has been conducted to ensure that the personal data remains anonymous. The third data source was the research literature that was selected for a focused analysis of the concept (Walker & Avant 1988; Rodgers 1993; Nuopponen 2010a).

The research methods used in this study, the combination of grounded theory and concept analysis, enabled a deep and holistic inspection of the concept (see Charmaz 2006; see also Walker & Avant 1988; Rodgers 1993). Grounded theory analysis is an intensive iterative form of analysis that begins with collecting data, coding, categorising, comparing, memo writing, and ends in reporting (Charmaz 2006). The GT analysis in this study began at the same time with the interview and essay collection. Coding (initial, focused, theoretical) was performed after careful reading of the data, and memos were written and drawn during the process (see Charmaz 2006). The emerging theory was grounded after comparison of data with data, codes with codes, categories with categories, until saturation was reached (Dey 2007; see also Fusch & Ness 2015; Sauders et al. 2018). The codes were transformed into quantitative description and testing (see Nummenmaa et al. 2013). Fisher’s exact test is considered to be viable analysis method for cross-tabulation of dichotomy variables and is often used for nonparametric materials (Rowe 2016). These quantitative methods were used for the triangulation of analysis and to find relationships between variables (see Creswell 1994, 184–185).

Triangulation can be viewed by theory, data and internally (Creswell 1994, 158; Shenton 2004). This study combined craft and sustainability in the theoretical framework. The literature offered background theories that were utilised in order to make sense and create an understanding of the phenomena in question. In this study, three main sources of data were collected in different forms, which therefore increased the triangulation of data. Using both qualitative and quantitative methods of analysis further increased credibility by adding detail and confirming the relationships between the elements of the results (Teddlie & Tashakkori 2012; Charmaz 2006; Pitkäniemi 2018). The anonymised essay data were peer evaluated for structure, and the rubrics were calculated to confirm the accuracy of the codes and the interpretation of the analysis (Stemler 2004; Jonsson & Svingby 2007; see also Creswell 1994). The theory that emerged from the practice of the craft makers involved in the study presented the realities of relevant craft makers (see Walker & Avant 1988) and was qualitatively interpreted by the researcher (Creswell 1994). Naturally, not all participants discussed the issues in the same way, but the themes that emerged in this study are the generalised conceptions of all the participants. This also means, that in another cultural and societal setting, the results could have been different (see also Creswell 1994). However, the triangulation of data offered similar themes and indicated saturation of both data analyses.
The credibility of this study has been addressed by bringing forth the phenomena under investigation and the use of mixed methods of data collection, analysis and interpretation, including peer evaluation, which also affected the dependability and confirmability of the study and has been explained in the description of the research design and implementations (see Shenton 2004). The credibility of the data, analysis and interpretation was brought to the readers’ assessment as quotations of participant data in the original publications (see also Charmaz 2005).

The transferability (see Shenton 2004) and usefulness (Charmaz 2005) of the results originate in data in a Finnish welfare context, describe the phenomena of sustainability from entrepreneurial, educational and cultural settings and are viewed in contrast to contemporary literature. This study describes original research that has been analysed in depth and brings novel information about the concept of sustainability, as well as related approaches, and identified levels of environmental intervention in craft practice on personal, societal and cultural levels (see Charmaz 2005). The study resonates with the general discussion of SD by claiming that understanding sustainability can be either specific or abstract. Abstraction is possible though concrete examples and practice. Even though this dissertation has taken a practical example on a conceptual level (cf. Bayliss & Dillon 2010), the illustrations in the study can be used to draft the core concept and its relationships to the surrounding world graphically. This study should support an understanding of this complex phenomenon.

The concept was studied from multiple perspectives using multiple approaches and methods, and the theory formed originates from empirical expressions of the craft makers (Rodgers 1993; Charmaz 2006; Shenton 2004). The present results were based on the conceptions of craft makers and were viewed in comparison to previous theories (e.g. Ihatsu 2002; Papanek 1973; 1995; Nugraha 2012). This study created a holistic picture of sustainable craft by explaining the systemicity between the elements of sustainable craft. This study revealed approaches to and provided a definition of sustainable craft. The study also presented attitudes and values connected to sustainability, entrepreneurship and the role of craft in society. On a more general level, it is hoped that the study will offer new practical examples of sustainability and ways of learning from it (cf. Norton 2015; Leal Filho et al. 2015).

The frameworks can be utilised in craft, design and technology or engineering education in higher or basic education, once they have been deconstructed, starting with materials and methods. On cultural and societal levels, this study emphasised the need for craft education from the developmental aspect in order to safeguard living traditions and understand the material world. The framework may also be used in a similar vein among professional craft practitioners when transitioning towards sustainability. This study allows for detailed reflection and improvement of practices. More significantly, the study emphasises the importance of supporting craft as an industry and the role of craft as a subject in education.

### 5.6 Future Research

The research task was to conceptualise sustainable craft, understand what it means, and how it is understood among makers. However, much has been left outside the scope of this study, for example, analysing sustainable craft artefacts, social media and marketing and different cultural backgrounds. This complex phenomenon was studied from a Finnish perspective, a Western welfare country. It would be interesting
to study the phenomena from a different cultural perspective, how it is conceptualised in developing countries, how environmental issues are perceived elsewhere, and the roles that values play in a global context. How do these elements affect global responsibilities on a local level? How are we able to make the change happen, if not for the present generation, at least for future generations? In an educational context, it would be important to study, the kind of results that planned craft intervention would have on pupils or students.

This study grounds a path for statistically investigating the relationships between variables in larger group of craft makers. The variables from this study could be transformed into statements of attitudes and values regarding sustainable craft that could be measured and analysed and further theory could be developed and tested. This type of study could bring insights into sustainable patterns of practice, for example, from craft hobbyists, online craft communities or consumers, even practicing teachers of craft. Once combined with theories of well-being, values and motivation, we could discover new and unexplored areas of craft that could reinforce the importance of sustainable craft.

Another interesting research topic would be animal rights in the context of sustainable craft. Traditionally, craft has used animal fur, skins/leather and hair as materials. Is this justified? In the framework of ethical sustainability, there are no satisfactory ground. The two main arguments are 1) animals are sentient beings and should be intrinsically valued (Singer 1993; Nussbaum 2011; Aaltola 2017), 2) cultural traditions in hunter-gatherer communities valued and respected the animals that they killed. We have no reason to use animal fur or skin because of our traditions as we now have access to other materials that can be used as substitutes. Is craft still authentic if the materials are substituted? Yes – craft methods are considered a part of crafts and no – if viewed from a material perspective. Having said this, the rights and means of living of indigenous people, for example could be sorted with plural set of laws (cf. Bunikowski & Dillon 2017). In this regard, the methods are more important than the materials that comply the principle of less harm and animal rights.

Also, as long as we consume animal products in our diets, animal skins, a by-product, will always be available. In a vegan world, this would not be an option, but in the ethical debate, is it better to waste the material or make something useful out of it? Pre-historical crafters would use it to protect themselves from the weather, but post-material crafters often search for alternatives (cf. Salonen 2010). For example, wool as a traditional craft material has many essential properties in offering protection from the weather in cold conditions (Taylor 1989; Branson & Sweeney 1991). However, it is sheep-shearing methods and the use of pesticides that have gained a lot of activist attention, research and, ultimately codes of conduct for the fibre industry (e.g. Fletcher 2008; Sormunen 2018). Empathy for such animals could work as an emotional barrier to purchasing yarn, yet the substitute for yarn has poor properties. Thus, research should focus on producing environmentally-friendly and animal welfare-friendly substitutes with adequate properties.

Material studies have shown that on an experimental level we are able to 3D print cellulose (Tenhunen et al. 2018), fabricate materials from fungi and bacteria (Camene & Karana 2018) or use mycelium composites for acoustic panels, for example (Appels et al. 2019). The current DIY culture extends to experiments including new DIY materials or new DIY identities for conventional materials (Rognoli, Bianchini, Maffei & Karana 2015), possibly due to the democratisation of personal fabrication technologies and personalised products. Fox (2014) calls this the Third Wave DIY,
driving for innovation, entrepreneurship and pro-sumption. The cultivating bacteria as materials for textile production presents a moral and biological concern about the right to interfere with living organisms (Kääriäinen 2018).

From a product durability and life cycle perspective, products that last longer, are maintained, valued and looked after, are made from natural, biodegradable (even animal) materials and with properties of their own are a sustainable solution. This is because such products reduce the need (utilitarian or emotional) to buy a replacement product, thereby reducing consumption (see Raghavan 2010). In small-scale production, this means looking after animals, giving them proper care, food and the ability to pursue their own goals. Thus, it is more relevant to find a balance between things. After all this weighing discussion, a stable conclusion can be drawn: the future is in our hands.
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APPENDICES

APPENDIX 1.

Figure 17. Craft practitioners interviewed for the study.

Figure 18. Practitioners age demography.
Figure 19. Practitioners’ field of practice

Figure 20. The materials used by practitioners.
APPENDIX 2.

Avoimet kysymykset

Oma toiminta

Miten kestävä kehitys näkyy tuotteessasi?
Miten kestävä kehitys näkyy toiminnassasi?
Millaisia arvoja tai asenteita on toiminnan taustalla?
Mikä asiat ovat merkityksellisiä omassa toiminnassasi?
Millaisia asioita muuttaisit, jotta työsi vastaisi paremmin kestävän kehityksen haasteisiin?
Millaisia sosiaalisia vaikutuksia käsityötoiminnallisuus on?
Millaisia taloudellisia vaikutuksia käsityötoiminnallisuus on?
Millaisia ympäristövaikutuksia käsityötoiminnallisuus on?
Miten oma työsi vastaa kestävän kehityksen haasteisiin?

Käsitteen määrittelyä

Millaisia näkökulmia liittäisit kestävään käsityöhön?
Mitä mielestäsi kestävä käsitöö tarkoittaa?
Millainen on mielestäsi eettisesti valmistettu käsitöö?
Millainen on mielestäsi ekologisesti valmistettu käsitöö?

[Open questions

Own practice

How is sustainable development visible in your products?
How is sustainable development visible in your practice?
What values and attitudes are behind your practice?
What is important in your practice?
What would you change to make your practice respond better to the challenges of sustainable development?
What social effects does your craft practice have?
What economic effects does your craft practice have?
What environmental effects does your craft practice have?
How does your work respond to the challenges of sustainable development?
How well do you know the origins and life cycle of your product?

Defining concept

What views would you attach to sustainable craft?
What does sustainable craft mean in your opinion?
What is ethical craft like?
What is ecological craft like?]
APPENDIX 3.

Kirjoitelmapyyntö

Käsityötieteen opiskelijoiden käsityksiä kestävästä käsityöstä


Millaisia näkökulmia liittäisit kestäväksi käsityöön?
Millaisia arvoja liittäisit kestäväksi käsityöön?
Mitä mielestäsi kestävää käsityö tarkoittaa?
Miten oma käsityötoimintasi vastaa kestävän kehityksen haasteisiin?

Kerro lopuksi vielä ikäsi, sukupuolesi, asuinkunta, monennenkoko vuosikurssin opiske-lijaa olet ja millainen on aiempi koulutuksesi. Vastaajan henkilöllisyyys ei tule julkituuteen missään tutkimuksen tekovaiheessa.

Kirjoitelma pyydetään sähköisessä muodossa Word-tyyppisellä tekstinkäsittelylehjelmalla tehtynä. Skannaa ajatuskartta tai käytä kuvankäsittelyohjelmaa ja lähetä yhdessä kirjoitelmasi kanssa: niinavaa@student.uef.fi

[Craft science students’ conceptions of sustainable craft

First of all, draw a concept map, where you sketch what sustainable craft is. Next, write an essay, in which you think about the following questions in addition to your concept map. The format is not limited. You can reflect on a general level and/or from your own perspective. There are no right or wrong answers, so please do not hesitate to express your opinions.

What viewpoints would you attach to sustainable craft?
What values would you attach to sustainable craft?
What does sustainable craft mean in your opinion?
How does your craft practice respond to the challenges of sustainable craft?

Enclose your age, gender, location, student year, and your prior education. The identity of the respondents will not be published at any point of the study.

The essays are asked to be delivered in Word format. Please enclose the concept map either scanned or photographed and send in with your essay to niinavaa@student.uef.fi.]
Visual memos on building theory.

Figure 21. An evolution of a concept: from data to theory.
### APPENDIX 5.

Table 4. Evaluating the structuredness.

<table>
<thead>
<tr>
<th>Concept</th>
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<td>Design</td>
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<tr>
<td><strong>Total</strong></td>
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APPENDIX 6.

Figure 22. Descriptive statics of craft practice (Study II).

Figure 23. Craft product properties (Study II).

Figure 24. Immaterial craft aspects (Study II).
ORIGINAL RESEARCH PUBLICATIONS

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III The Version of Record of this manuscript has been published by Taylor & Francis Group and is available in the Design Journal in 6.2.2020. https://www.tandfonline.com/doi/full/10.1080/14606925.2020.1718276

Sustainable craft is a multi-layered concept of practices and products and their relationships on the surrounding world. This dissertation study opens up the concept of sustainable craft on practical, theoretical and conceptual level. The results of the study show how the system of sustainable craft is formed and how sustainability can be approached through craft. Furthermore, the study shows the concept of sustainable craft is one solution in achieving flourishing and well-being.