Repositioning Craft and Design in the Anthropocene: Applying a More-Than-Human approach to textiles

Berilsu Tarcan[1], Ida Nilstad Pettersen[2], Ferne Edwards[3]

Department of Design, NTNU – Norwegian University of Science and Technology, Norway
Correspondence: [1]berilsu.tarcan@ntnu.no*, [2]ida.nilstad.pettersen@ntnu.no, [3]f.edwards@surrey.ac.uk
ORCID: [1]https://orcid.org/0000-0001-8675-9648, [2]https://orcid.org/0000-0003-3979-9772, [3]https://orcid.org/0000-0003-0389-193X
*Corresponding author

Abstract

As a part of industrial mass production, the field of design has been deeply involved in the exploitation of natural resources. In design, better ways to approach the nonhuman-human relation are needed. In this article, we contribute by exploring how more-than-human perspectives can be used to engage with this relationship, and more specifically, by focusing on how the fields of design and craft relate to more-than-human worlds. Crafts are relevant as they are practices of making that preceded and exist beyond mass production. In design studies, more-than-human notions and posthumanist frameworks are still new. Although recent studies mention design in the context of more-than-human, they do not thoroughly integrate it within relationships between craft and design.

Through positioning a more-than-human approach within the craft-design relationship, the design field can learn from and shift to a more equal understanding between humans and nonhumans. The article addresses this by describing emerging craft and design practices, and by providing textile examples. Non-western textiles and their motifs are given as example artefacts that consider traditional and Indigenous knowledge in more-than-human worlds. By looking at these motifs from more-than-human perspectives, we suggest that design and craft can deliver a new approach for addressing nonhumans in human-made things.

Keywords: More-than-human worlds; craft and design; motifs; textile design; felting; decolonising design

Introduction

The geological age known as the Anthropocene was declared because of humans' irreversible exploitation of the planet, which in turn has created significant problems that have impacted nature and triggered climate change. It is argued that the start of the Anthropocene traces back to the consequences of the Industrial Revolution, such as the change into mass production, industrialisation, and the irreversible exploitation of natural resources (**Crutzen, 2002**). According to Crutzen (**Ibid: 23**), the age of the Anthropocene, or the `human age', `could have started in the latter part of the eighteenth century, when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane'. Crutzen also notes that this date coincides with `James Watt's design of the steam engine in 1784' (**Ibid**).

With the age of the Anthropocene, it is clear that humans should reconsider their relationship with the environment. This reality implies that design studies should find ways to question and help redirect the development by rethinking what design practices and processes can include (**Tarcan et al., 2022**). Furthermore, design studies have a moral imperative to rethink relationships with the world. Turning to design's relation to crafts is then relevant, as crafts are making practices that existed before and are performed beyond industrialisation and mass production **(Tonkinwise, 2022)**. In this article, design and craft fields are discussed through their relationship in history, and how this relationship relates to more-than-human approaches. The notion more-than-human, first introduced by Abram **(1996)**, refers to the elements of the earthly nature and environment. We refer to more-than-human as a term that aims to overcome the current modern dichotomies between nature and culture (**Souza Júnior, 2021**), and understanding the world from broader perspectives, such as living with nonhumans. Here, we argue that design and craft, largely understood as Anthropocentric or human-centred practices and activities, should be rethought from a more-than-human perspective.

Decentralising humans in design studies would help address problems caused by the Anthropocene as it would encourage positive and reciprocal human and more-than-human ecological relations of co-existence. Consequently, in this article we discuss how design can turn into a more-than-human practice through several approaches, including craft. We suggest that looking through more-than-human ways of knowing could contribute to the decolonisation of design (**Abdulla et al., 2019**), an emerging movement that suggests designing for anti-oppressive futures, listening to Indigenous experiences and challenging Eurocentrism (**Tunstall, 2013**).

The article first clarifies the significance of design in the Anthropocene, and why a more-than-human approach is needed in design and craft studies. Next, textiles and their motifs are introduced as more-than-human entities and are discussed as an example to reconsider more-than-humans in everyday life through artefacts, continuing the design and craft relationship. Textiles provide a starting point for a wider reconceptualisation of the human-nonhuman relation and more-than-human design, contributing to a future research agenda related to more-than-human worlds and design. Afterward, the article explores how design and craft concepts are related to each other. By investigating possibilities for employing more-than-human perspectives and decolonial practices in design through the example of textiles, we seek to find out how we can better approach the nonhuman-human relationship in the field of design, and how we, as humans and nonhumans can better coexist in the Anthropocene epoch.

Design in Relation to the Anthropocene and More-Than-Human Worlds

Design as a field is placed prominently under the influences of Eurocentrism and anthropocentrism (**Escobar, 2018; Forlano, 2017, Fry, 2009**). As humans, we live in an artificial world, surrounded by objects. Nevertheless, we should reconsider the creation of artificial things or artefacts that add to the artificial, non-natural world we co-inhabit. The Anthropocene and more-than-human influences become important for defining future conditions.

Non-anthropocentric understandings of practices and more-than-human worlds can be approached from different perspectives. In this article, the terms 'more-than-human', 'nonhuman', and 'other-than-humans' refer to all things that are not human, such as nonhuman natures, environment, animals and materials. More-than-human research consists of contributions from different fields, such as multispecies research, animal geographies, ecofeminism, environmental humanities, human-animal studies, new materialism, queer ecologies, science and technology studies, and more (**Bastian et al., 2017**). As Tsing (**2013: 27**) writes, we 'are made in entangling relations with significant others'. While many studies consider these approaches, there remains a need to address the Anthropocene and more-than-human research further from craft-design relationships, and through non-Eurocentric perspectives.

Design as an act of making and remaking is a 'world-shaping force' (**Fry, 2009**). As Fry (**Ibid: 3**) states, 'we have become too dependent on the artificial worlds that we have designed, fabricated and occupied'. As designers are involved in creating artificial artefacts with various processes

and techniques, a way to rethink how designers deal with designing and making objects could be through non-anthropocentric and non-Eurocentric approaches, such as the usage of natural materials, or rethinking design processes from different worldviews such as ancient cultures or non-Western frameworks. There are many movements and opportunities that can challenge human-centred design approaches.

As one of these challengers, the more-than-human concept helps humans reposition themselves within a network of others and acknowledge the interdependencies. This can potentially help address the problems caused by the Anthropocene and shift the field of design towards more responsible, ethical, inclusive and environmentally friendly approaches. Approaches that decentralise humans in design, can also decolonise practices. For instance, through the decolonising design movement (**Tunstall, 2013**) designers' roles could be reframed, such as being facilitators for alternative modes of being and becoming (**Schultz et al., 2018**), which could lead to more equal practices in design.

Human-centred design (sometimes referred to as user-centred design) has been the core theory in design since the 1980s, although one might argue that humans have been prioritising their own needs long before that. Bringing more-than-human perspectives into design methods and processes could help reconsider design's human-centrism. The different sides that challenge human-centeredness in design involve technology or environment-related approaches. For instance, design studies related to posthumanism (**Forlano, 2017**) primarily focus on technological issues and how they relate to more-than-human perspectives, or non-anthropocentrism (**DiSalvo & Lukens, 2011**).

Although design is mainly human-centred, recent studies discuss how design can be more-than-human as a practice, as a field or an activity, and claim that a shift towards more ecological and sustainable approaches are necessary (**Roudavski, 2021**). Many studies focus on technology-based factors and how they are leading to a more-than-human design field (such as Internet of Things, Human-Computer-Interaction). Some studies also draw on philosophies related to placing objects at the centre, such as animism, Object Oriented Ontology (OOO), or focus on the environment, nature and sustainability. Involving more-than-human actors in design can lead to a more equal agency when positioning humans and nonhumans in the field. Giaccardi and Redström (**2020: 9**) state that the future of design practices may be different to how they emerged 'as a response to industrialization', if we take designing as making 'some-thing for some-one'. They emphasise the need to go into a 'more-than-human design practice', by suggesting that 'in a more than-human world of design and designing, outcomes and experiences are the result of dynamic interplay

between people and networked computational things, as well as between things and other things' (**Ibid: 10**). These points relate to making-with and learning from the natural world, material or other entities, as they all signify a relational aspect and equal positioning of the actors.

Challenging human-centred design could be possible by placing the object or artefacts in the centre of the practice. As it leads to alternative ways of thinking, thinking of objects as equals to others could trigger more-than-human thinking in design studies. OOO is a philosophical theory that takes every entity as equal (**Harman, 2015**). Therefore, humans are elements of philosophical interest, but are not the sole elements (**Bogost, 2012**). Bogost (**Ibid: 6**) in 'Alien Phenomenology' states that 'OOO puts things at the centre of being. We humans are elements, but not the sole elements, of philosophical interest. OOO contends that nothing has special status, but that everything exists equally—plumbers, cotton, bonobos, DVD players, and sandstone, for example'. In other words, according to Bogost (**2012: 11**), 'everything equally exists' but 'things do not exist equally'. For example, we as humans and nonhuman animals equally exist, but as humans, we place ourselves superior to them, and because of this hierarchy, we don't exist equally. For design and craft studies, this signifies the importance of acknowledging non-binary approaches when rethinking how design processes can change.

Some other notions, such as animism also have objects as a central interest. Animism is the notion that nonhumans have a personhood, which is an emergent property of them having an inner soul or spirit (**Marenko, 2014**). These notions are employed in design studies. For instance, Marenko gives the example of smartphones to describe how animism relates to human's relationship with objects, claiming that animistic tendencies are apparent**:**

> *In a sense, the smartphone has morphed into a trusted friend, with its own presence, voice, and distinct personality…Our smartphone becomes an extension of our own cognition and emotions. Because of this animated and responsive presence, we often end up treating our smartphone as if it is alive.* (**Marenko, 2014: 221**)

However, there is a difference between animism/Amerindian perspectivism and OOO/speculative realism. In their article 'Design Research and Object-Oriented Ontology', Lindley, Akmal et al. (**2020**) show how flat ontologies, rather than distributing spiritual qualities to things as in animism, can be used by design studies scholars. They explain how design research can employ OOO, through some case studies that involve design projects of tarot cards, an app, a board game, a living room and a kettle. Through all these projects, they aimed to develop a new understanding of the smart technologies through their relations, often

called the Internet of Things, and to encourage further discussions on how OOO relates to design. While their approach is from socio-technical design research, they emphasise that OOO encourages experimentation. They demonstrate how OOO can be combined with different ways of seeing and thinking.

Textiles as a Way to Communicate – Symbols as More-Than-Human Entities

In this section, we take textiles as an example of craft-design relationships and discuss how they can be reconsidered through more-than-human worldviews. Textiles have a rich and long history in design and craft studies and provide relevant frameworks to discuss emerging topics of decolonising design and post or non-Anthropocentrism.
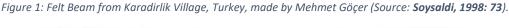
We take design not as a consumer-centric practice to sell products to users, but as meaning-making or 'making sense of things' (**Krippendorff, 1989: 9**), and a practice that affects our daily life and experiences. The emphasis is not on whether the following textile examples are made for other humans or other living beings, it is about how design can be a facilitator to change worldviews. Designers 'co-create the world with others (humans and non-humans) with whom we live in co-existence' (**Escobar, 2012: 18**). Therefore, it is possible to approach more-than-human perspectives through design and craft, from multiple perspectives. Furthermore, we emphasise that design and craft are changing, holistic and reflective practices (**Schön, 1992**).

Of all the crafts, Dormer (**1997**) claims that textiles are the least marginal, referring especially to the woven cloth**.** He offers two reasons for this outcome: one is the basic technology of textile crafts, the other lies in the continuation between craftsperson, production designer, amateur and professional (**Ibid**). He defines a `fluidity' in the art, design, and practice of woven textiles (**Ibid: 168**). Fluidity in craft-making through more-than-human worlds is also apparent through the practice itself.

The more-than-human relationship is apparent within the textiles themselves. An example of how ancient cultures manifested their relationship with other-than-humans (such as the natural world, trees or birds, and a plurality of ecologies) was through symbols used in textiles. These symbols are a way of communication and language, which emphasises a more-than-human relationship with nature. We believe that ancient artefacts with symbols from old tribes and traditional culture can be investigated further through more-than-human approaches to see how this relationship can be revived or taken back to life. As symbols in textiles were used as a communication method, we suggest that they can be applied to communicate a more-than-human relationship in

contemporary culture. Looking from these ways of knowing can inform studies in decolonising design, which we interpret as moving away from Eurocentrism. These textiles, motifs and symbols have been studied in craft and design fields, but studies that interpret them through non-Anthropocentric and non-Eurocentric perspectives are not common. In this study, we are thus interpreting textiles, motifs and symbols through non-anthropocentric and non-Eurocentric perspectives. The examples included here were selected through a literature review on textiles and supplemented with a field study. The review was made to find examples of felt made and woven carpets, which have an importance in Turkish textile history. Turkish textile history was relevant as it provides examples on human-nature-culture relationships, and Berilsu Tarcan's field study was conducted in Turkey. Furthermore, we think that this can provide further thought to discuss more-than-human worldviews through decolonisation of design.

The initial aim was to find artefacts that could exemplify human-nonhuman relationships. In the examples, we focus on the interpretation of motifs, which communicate visually through nature-related symbols such as birds, the tree of life and the sun. These examples can be studied further, or designers and makers can be encouraged to re-explore the motifs from more-than-human and multispecies perspectives.

*Figure 1: Felt Beam from Karadirlik Village, Turkey, made by Mehmet Göçer (Source: **Soysaldi, 1998: 73**).*

When the fibres and patterns are interwoven with each other, for instance in felting, the practice and process can be considered as a more-than-human activity, with the wool material and different stages of patterns coming together on the felted or woven surface. Consequently, we show some examples of textiles with felting, a craft technique that is mostly made by compressing wool fibres with pressure. As a craft-design relationship example, this practice can be a way to re-engage with environmental influences among us, referring to the symbols from old

cultures and nature. For example, Figure 1 shows a felt beam example from Karadirlik, a Yoruk (Turkic nomads, a term that is derived from `yörümek' in Turkish, which means `to walk') village in Turkey. The felt beam is a master feltmaker's work and contains several motifs. In the middle, a circular medallion with the sun, its rays, and the expression of rotation in an orbit can be seen. There are rectangular medallions in the direction of the two short sides of the middle coin. The rhombus in the middle of these medallions is surrounded by four-petalled, flower-like shapes with filled corners (**Soysaldi, 1998: 76**).

*Figure 2: Patterns from Arif Cön's felting workshop in Turkey, that signify a more-than-human relationship through symbols such as birds that refer to nomadic culture, from a field study (Source: **Tarcan, 2021**).*

Similarly, images in Figure 2, taken in feltmakers craft workshops in Tire, Izmir, demonstrate motifs that give reference to nomadic culture and more-than-humans. The bird motif, according to the feltmaker who owns the workshop, is a Yoruk symbol that had been used for ages. It is known that the bird motif has been a common symbol in the geography of Anatolia. For instance, in the pre-Islam period of Turkish art, the bird was the symbol of the soul (**Eycil and Us, 2019**). It is also known that shamans knew birds as helpers and as protector souls (**Ibid**). The age of this symbol goes back to many ancient societies such as Hittite, Urartu, Lydia, Pergamon and is used as decoration in carpets and pottery (**Yozgat, 2019**). The bird motif references the human-nature relationship.

Figure 3: An example analysis of patterns from an 18th century carpet from Konya, Turkey.
The carpet is held in Vakiflar Hali Muzesi, Istanbul, as inventory nr. 102. (Source: ***Kültür ve Turizm Bakanlığı, No: 81, 2006****).*

Likewise, many handwoven carpets demonstrate more-than-human motifs. In Figure 3, an example carpet from the Konya region in Turkey is shown, with motifs (ordered from top to bottom in Figure 3, left image) of burdock, dragon, carnation, tulip, bird, rose, the tree of life and running water. These motifs all have different meanings and relations, which have been analysed and discussed from fields such as craft and art history. The tree of life is an example of an element that is known in many cultures, and can mean fertility, immortality, luck, abundance, health, and getting rid of illness (**Agac and Sakarya, 2015**). It is apparent in many rugs from Turkey, such as the example in Figure 3 (left and right). Other motifs such as bird, dragon, burdock, tulip, rose, carnation, and running water are also elements of nature and can be taken as more-than-human entities in relation with humans. We suggest that these motifs can be considered as more-than-human entities and emphasised as elements that bring back nature in artefacts we use.

Design and Craft Relationship

In this article, we argue that a way to challenge the dominant human-centeredness and anthropocentrism in design could be through re-exploring craft and design relationships. Having introduced examples of textiles made through feltmaking and weaving, we next turn our attention to how more-than-human and decolonial perspectives can help position design and craft studies in de-anthropocentric discourses more broadly. This discussion is thus not limited to textiles, but centred on the craft-design relationship, and how certain assumptions about design and crafts

could be questioned through different ontological conceptions of things and agencies. The terms design and craft are ambiguous and understood in different ways in different cultures and time periods. In this section, we clarify how this relationship has shifted through time and changing discourses.

According to Dormer (**1997: 219**), `to write about', or even to talk about craft with `clarity and coherence' is difficult. Oakley (**2014: 114**) states that using the word craft always carries a risk for misinterpretation, as craft can be used for 'a small group of defined activities and their outcomes', instead of a specific approach to making. Similarly, design as a term is often a challenge to describe. However, there are many attempts to describe both of these terms. Although the primary aim of the article is not to compare definitions of craft and design in history, some relevant descriptions are briefly outlined in this section to clarify their relationships, and how these relations relate to the Anthropocene and to more-than-human worlds.

Adamson refers to craft as a 'way of doing things' (**2009: 4**), and a `process of making' (**Ibid: 2**). Dormer (**1997**) defines craft from two different angles. First, it could mean studio crafts, which he refers to as anyone working with a craft medium. Second, he refers to the process of craft, which is the process 'over which a person has detailed control' (**Ibid, 1997: 7**). Sennett (**2008: 9**) describes craftsmanship as a basic human impulse, the 'desire to do a job well for its own sake'. Campbell (**2005: 27**) points to the fact that it is a shortened version of handicraft, which draws attention to the contrast between producing objects by hand and with the aid of a machine. Broader definitions suggest craft as 'a dynamic process of learning and understanding through material experience' (Gray and Burnett, 2009: 12), 'a form of embodied knowing that involves materials, tools and social communication' (**Groth et al., 2013: 4**), or an essentially `human and humanising process' (**Bunnell, 2004: 5**).

Design, traditionally referred to as a plan or problem-solving (**Simon, 1969**) is also a diverse field, including unique and creative disciplines. Heskett (**2005**) states that a wide spectrum of the terminology and practice of design creates confusion. He claims that activities such as nail design, floral design or funeral design serve as an appropriation of the word, to create an `aura of competence' (**Ibid: 4**). Heskett (**Ibid: 5**) defines design as 'the human capacity to shape and make our environment in ways without precedent in nature, to serve our needs and give meaning to our lives'. Glanville (**2006**) and Jonas (**2007**) claim design can be considered as the primary human activity, while Krippendorff (**1989: 9**) describes it as 'making sense of things'**.**

When describing design as a term, Margolin refers to The Oxford English Dictionary, which states that design first appeared as a term in the mid-16th century as 'a plan or scheme intended for subsequent execution' (**Margolin, 2015: 17**). He states that consequently, what humans were doing before the 16th century, which led up to the activity called design, was known by other names (**Ibid**). Adamson (**2015**) criticises that Margolin does not mention other words in many other languages that approximate to the concept of design. However, as Suchman (**2021: 25**) suggests, this can be understood as careful attention to define the genealogy of the term design, 'specifically located within 16th century Europe, as part of a process of decolonising the histories and geographies of making practices'.

The Separation and Entanglement of Craft and Design

Design and craft-making are related creative concepts. More-than-human perspectives can challenge how craft and design are related, for instance through challenging what 'industry' means today, and this can lead to lifestyles more inclusive of the environment. Collaborations between the design and craft fields today demonstrate that these terms suggest new possibilities for the future of sustainability. To better understand how craft and design terms entangle with each other, it is important to briefly discuss the separation of craft from design. This separation is defined as `one of the phenomena of the late-twentieth-century Western culture', and its outcomes are defined as `startling' (**Dormer, 1997: 18**).

Craft's separation from design is directly linked to the emergence of the Industrial Revolution, starting in Britain around 1770. Before the Industrial Revolution, objects were produced with traditional production methods such as handcrafting, using local resources. For example, textiles were commonly made from wool and were hand spun to yarns. With the spinning wheel and loom invented, cotton became more popular as it was quicker to produce. Afterward, machine production and the development of industrialisation took over for the artisanal production and some handicrafts, which also led to the emergence of the industrial design profession (**Heskett, 1980**). The Industrial Revolution is mainly defined as the transition from an agrarian society to an industrial one, as an 'economic phenomenon' that led to dramatic changes in the world (**Hartwell, 1971; More, 2000; Olson and Kenny, 2015**).

Craft and Making from Contemporary Perspectives

Today, movements in craft-related practices are emerging under the influences of sustainability, participatory approaches, social practices and community. These contemporary approaches related to craft making, such as Do-it-Yourself (DIY), craftivism, repair culture, and the maker movement all strengthen interdisciplinary relations.

DIY craft originates `from a culture that does not seek professional validation within traditional art methodology but rather is motivated by joining with others socially in shared, creative activity' (**Stevens, 2009: 52**). Other extensions such as DIT (Do-It-Together) and DIWO (Do-It-With-Others) (**Fernandez & Iazzetta, 2015**) are recent and related terms used to define relevant activities. Many other movements related to craft `making', such as maker and craftivism has emerged since. Craftivism as a word is made from the combination of craft and activism. This movement creates happy, cheerful products in the urban setting. The movement is influenced by DIY, and focuses on projects such as teaching knitting lessons, crocheting hats for the less fortunate, and sewing blankets for abandoned animals (**Greer, 2007**). In craftivist practices, the process is more important than the product itself, and the community participants work towards a common goal (**Buzsek & Robertson, 2011**).

Design and craft-making both refer to a creation process. The practice of making, explained by Hawkins and Price (**2018: 14**), fabricates our relationships to ourselves and others, 'weaving the textures of our individual and collective identities'. Furthermore, making is described as fundamental to our being by Carr and Gibson (**2016: 297**), as 'we make bodies, homes, identities and memories every day'.

The maker movement emerged with the development of new technologies with an influence of DIY, and with a network of people who were interested in electronics, coding, 3D printing or other post-industrial production methods. With Make magazine starting in 2005, and following the introduction of technology-related fairs, the movement created an impact in the world. Dougherty, the founder of Make magazine, notes that he tries to stay away from the word inventor, and defines maker projects as 'creative applications for new and old technologies, combining mechanical, electronic, and digital systems' (**Dougherty & Conrad, 2016: 48**). Although the movement is primarily associated with its relations to technological tools and inventions, he also remarks that as humans we have always been makers `as cooks preparing food for our families, as gardeners, as knitters' (**Dougherty, 2012: 11**), or as toolmakers, storytellers, tinkerers (**Dougherty & Conrad, 2016**).

There are scholars who explore making and craft as a `critical and political mode of engagement' (**Lindstrom & Stahl, 2014: 152**), with slightly different agendas and visions. Critical Making (**Ratto, 2011; Hertz, 2015**) is one of the approaches that tackle these issues, which aims to `turn the relationship between technology and society from a "matter of fact" into a "matter of concern"' (**Ratto, 2011: 259**). Ratto, who initiated critical making labs in Europe and Canada, aims to 'use material forms of engagement with technologies to supplement and extend critical

reflection and, in doing so, to reconnect our lived experiences with technologies to social and conceptual critique' (**Ibid: 253**). He suggests that people's lived experiences with technologies often do not 'match descriptions of technological effects, which tend to be either overly optimistic or pessimistic' (**Lindstrom & Stahl, 2014: 152**). Matt Ratto and Garnet Hertz state that critical making is capable of preventing the world from repeating itself as it is now (**Hertz, 2015**), and they stress the difference between critical making and making that comes across as depoliticised: 'Cleansing making of its politics takes away this amazing opportunity to better understand and exist in the world. It turns the making movement into just another way to create an industrial workforce' (**Ibid: 51**).

Some studies in craft and making started to consider posthuman, new materialist and more-than-human related approaches (**Vennatrø & Høgseth 2021**). Foote and Verhoeven (**2019**) describe how the maker movement claims to promote meaningful change and challenge asymmetric power structures, but that it still puts the maker as the controller of the material and technological tools. To respond to issues related to this, they use 'new materialist and posthuman theories to reposition the maker amongst their materials, tools, and environment' (**Ibid: 73**), so that the maker can be an equal partner in the process. They refer to the interrelation between human and nonhuman, as a reaction to humanist frameworks. They criticise such limiting frameworks for failing to critically address the influences of late capitalism and its ecological consequences. They also point out that the 'Maker Movement' is a Western movement and often anthropocentric. Consequently, there is still potential for addressing making and maker culture from non-anthropocentric and non-western approaches. The same goes for design, craft, and other related practices. While craft and the maker movement provide a strong basis in which to develop a more-than-human perspective (**Tacchetti et al., 2021**), the engagement of design with the more-than-human still needs further exploration. Studying design and craft relationships can facilitate exploring more-than-human perspectives in the design field from environmental and ecologically oriented approaches.

Nature-Culture Divide and Applying Theory to Practice in Design and Craft Making

In this section, we discuss the nature-culture divide with respect to textiles and how design and craft could embrace a posthumanist framework. Many rational approaches separate humans and nature, and reflect and reproduce the nature-culture divide, referred to as 'bifurcation of nature' (**Latour, 2005; Stengers, 2006; Whitehead, 1920**). Humans have however always lived in an environment, and many 'nonhumans' are part of

humans' lives. This leads us to agree with others (**Braidotti, 2019; Haraway, 2016; Tsing, 2013**) that we cannot separate humans from the natural world (the global ecology), which also consists of nonhuman entities such as trees, nonhuman animals, and geological formations. As nonhuman entities form the natural world, we should be treating humans as a part of the natural world, instead of separating them. Here, we claim that we need a more-than-human approach to design so we can come to terms with the Anthropocene and better co-exist with nonhumans and that a more-than-human design/craft could overcome the bifurcation of nature. When we look at ancient cultures and traditional knowledges, we see that there is already a relationship between humans and nature that is not binary: by listening to non-binary definitions of nature, we can learn to shift our relationship with materials, craft-making and design. For instance, the 'making-with the environment' approach employed in the Phenomenal Dress project (**Smitheram & Joseph, 2020**) exemplifies how posthuman theory from Māori perspectives can relate to materials thinking in design studies. In their study, Māori knowledge is listened to, together with making-with approaches, by taking the wind not as an inspiration but as an entity in the design process.

Design and craft fields are particularly significant and appropriate for challenging dichotomies between culture and nature. For instance, posthumanist research is primarily theoretical. There is a particular challenge in decentring the human when it emerges out of theoretical studies, and this should not be underestimated, especially when posthumanist research is used or applied in the field (**Pacini-Ketchabaw et al., 2016**). As the nature/culture divide in Western humanism provides the structuring logic for human-centric and anthropocentric practices, it is a challenging task to find innovative ways for putting concepts into practice (**Ibid**). Even though there is significant research in the theory of craft and design, parts of these fields are based on application and practice. Craft and theory, according to Dormer (**1997**), are like oil and water. Similarly, putting the concept of posthumanism into craft, means a practice-based approach might be challenging but also necessary in order to put the concepts into application. We believe that design and craft-making as practices are an opportunity to bridge the theory and practice in posthumanist approaches.

When we take design's meaning as 'making sense of (things)' (**Krippendorff, 1989: 9**), our relationship with things we create come into a different understanding, signifying the importance of any object or thing that we are surrounded with. Therefore, looking at more-than-human elements and relations can bring out many possibilities for design studies to make sense of the environment and human-nonhuman interdependencies. We have brought up the example of textiles and their

motifs to demonstrate how they can be rethought through posthumanist approaches such as the more-than-human. These textile motifs demonstrate a way to make us consider how we can further a human-nature relationship that existed for a long time, through non-Western perspectives.

A Future Research Agenda for Craft and Design in More-Than-Human Worlds

In this study on more-than-human perspectives in design, we have focused on textiles, and more specifically weaving and feltmaking. However, we propose that this perspective can be employed to study and work with other crafts, as well as other domains. For instance, more-than-human frameworks from decolonised perspectives could be employed to engage with other materials, or even to develop materials. Such frameworks based on flat ontologies could be employed in design studies that relate to relations between humans, materials, societies, and natural worlds. For future research, textiles and traditional motifs can be researched further to see how they relate to more-than-human worlds, and how this relation can be employed and engaged within design and craft. Exploring their relationships can help rethink the processes and assumptions within design and craft theory and practice, to reconsider what they could mean in a more-than-human world. In this article, we have shown examples from historical textiles; however, a practice-based study on these motifs could provide a bridge between posthuman theories and practical studies. We hope to encourage designers and makers to develop further examples by considering the more-than-human meanings of motifs.

Although recent studies explore textile design through similar frameworks, textile making is not often researched through non-anthropocentric or post-anthropocentric approaches. In this article, we have presented a more-than-human approach focusing on textile making and motifs, and symbols used in woven or felted products. For this, we have provided examples of the sun, the tree of life, and bird motifs in textiles. Nonetheless, there are countless traditional motifs that consist of nonhuman entities and human-nonhuman relations that could be rethought from more-than-human frameworks. Many traditional motifs relate to animals and plants, and many others relate to culture, religion, and so on. Further studies on different motifs could be made by reflecting on how their meanings can be rethought from more-than-human perspectives.

Furthermore, other aspects also have importance in shaping the meaning and interpretation of textiles and their motifs. For instance, the craftsmanship, the colours, the positioning of the motifs, and the usage of materials provide different contexts and symbolic meanings to textiles. These meanings have not been explored in the article but could be discussed by drawing on more-than-human perspectives in future research.

While there are many opportunities to explore craft-design relations through a more-than-human lens, we proposed to employ this for textiles, with traditional motif examples. However, we acknowledge that there is more to explore in this relationship than looking at the motifs. For example, the entanglement of patterns and wool fibres could also be explored through more-than-human approaches. The process of making the felted artefact also involves a non-hierarchical agency between fibres and patterns, and the result of the process is blurry, meaning it is not certain what will come out of the process, especially in handcrafting processes. This could be a starting point for makers and designers to involve posthumanist frameworks into the practice of making.

Additionally, many other case studies could be introduced for future research – within and beyond the category of textiles, employing posthumanist frameworks in craft-design relationships. Exploring human-nonhuman collaborations through different elements such as patterns, materials, or landscapes, could provide further suggestions to design for the post-Anthropocene.

Concluding Remarks

In the age of the Anthropocene, this article has highlighted how designers should question and rethink what design practices and processes can include, and how these can be shifted. A way to deal with this could be by considering more-than-human worldviews. In the article, we have explored craft-design relationships through non-Anthropocentric and non-Western frameworks. From Turkish textiles, we exemplified this through a handwoven rug, a felted beam and felted cushions that demonstrate human-nonhuman relationships. As these textiles and motifs have references from nature, we discussed how they can be reconsidered through more-than-human worldviews. From the practice and process of making, we gave examples from nomadic culture, of motifs with symbolic meanings, and how the interweaving of fibres and patterns can be considered a more-than-human activity. Furthermore, we have encouraged designers and makers to re-explore such motifs from more-than-human and multispecies perspectives. Against the background of these textile examples, we addressed the issue of human-nonhuman relationships in design, concentrating on two points. Firstly, we introduced

more-than-human perspectives and approaches as a possible way forward to answer how humans and nonhumans can better coexist in the Anthropocene epoch. Secondly, we suggested more-than-human approaches and decolonial design as ways of better approaching the nonhuman-human relation in craft-design relationships.

The study relates to textiles and sustainability issues and proposes a future research agenda for furthering such work. It could however also be applied to other fields. For example, flat ontological perspectives from non-Western approaches could be applied in other domains, such as in further developing technology-related studies. Things around us that are designed by people influence daily life just like natural entities do. How we perceive the world and conceive of natural entities could not only affect our treatment of the natural world, but it could also change our relations with other humans and nonhumans, including the earth, the materials and other beings.
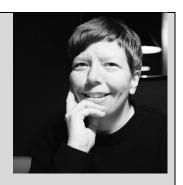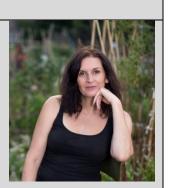
Acknowledgements

Berilsu Tarcan is a designer and researcher from Turkey, based in Norway. Currently she is researching more-than-human and design connections as a practice-based PhD candidate at NTNU, Department of Design. Previously, she worked in academia in Turkey and holds bachelors and MSc. degrees in industrial design. She is a part of design and posthumanism network. Her research interests include posthuman frameworks, craft-design relationships, handicrafts, material culture, traditional knowledge, decolonizing design.

Ida Nilstad Pettersen is associate professor at the Department of Design, Faculty of Architecture and Design, NTNU – Norwegian University of Science and Technology. She holds a PhD in design for sustainability, and her research addresses everyday practices and the role of design in climate- and environment-related societal transformations. Her research interests include consumption, human-nature relations, and participatory design.

Ferne Edwards is a cultural anthropologist who has conducted research on sustainable cities, food systems and social change across Australia, Venezuela, Ireland, Spain, Norway and the UK. Her books include the edited volumes, 'Food for Degrowth: Perspectives and Practices' and 'Food, Senses and the City' (both Routledge, 2021) and the monograph, 'Food Resistance Movements: A Journey into Alternative Food Networks' (Palgrave, 2023). Ferne is based at the University of Surrey, UK, where she contributes to the EU IA project, FoodCLIC.

List of Illustrations

Figure 1: Felt Beam from Karadirlik Village, Turkey, made by Mehmet Göçer (Source: Photo reproduced by kind permission of Soysaldi).

Figure 2: Patterns from Arif Cön's felting workshop in Turkey, that signify a more-than-human relationship through symbols such as birds that refer to nomadic culture, from a field study (Source: Photograph from author's personal collection).

Figure 3: An example analysis of patterns from an 18th century carpet from Konya, Turkey. The carpet is held in Vakiflar Hali Muzesi, Istanbul, as inventory nr. 102. (Source: Photo reproduced by kind permission of Kültür ve Turizm Bakanlığı).

References

Abdulla, D., Ansari, A., Canlı, E., Keshavarz, M., Kiem, M.; Oliveira, P.; Prado, L.; and Schultz, T., 2019. A Manifesto for Decolonising Design. *Journal of Futures Studies 23* (3), pp. 129–132. DOI: 10.6531/JFS.201903_23(3).0012 [Accessed: 2 February 2023].

Abram, D., 1996*. The spell of the sensuous: Perception and language in a more-than-human world*. New York; Vintage Books.

Adamson, G., 2009. *Thinking through craft.* London: Bloomsbury Academic.

Adamson, G., 2015. Review of World History of Design (vol. 1) (vol. 2), by V. Margolin. *West 86th: A Journal of Decorative Arts, Design History, and Material Culture*, 22 (2), pp. 223–226. Available at: https://www.jstor.org/stable/26466665 [Accessed: 1 February 2023].

Agac, S. and Sakarya, M., 2015. Hayat ağacı sembolizmi. *Uluslararası Kültürel ve Sosyal Araştırmalar Dergisi (UKSAD),* 1 (1), pp. 1-14.

Bastian, M., Jones, O., Moore, N. and Roe, E., 2017. Introduction: More-than-human participatory research contexts, challenges, possibilities. *In* Bastian, M., Jones, O., Moore, N. and Roe, E., eds., *Participatory Research in More-Than-Human Worlds*. London: Routledge, (pp. 1–15).

Bogost, I., 2012. *Alien Phenomenology, or What It's Like to Be a Thing.* Minneapolis: University of Minnesota Press.

Braidotti, R., 2019. A theoretical framework for the critical posthumanities. *Theory, Culture & Society*, 36 (6), pp. 31–61.

Bunnell, K., 2004. *Craft and digital technology.* World Crafts Council 40th Anniversary Conference, Metsovo, Greece, 31 May–2 June. Available at: http://repository.falmouth.ac.uk/537/1/craft%20and%20digital%20technology.pdf [Accessed: 1 February 2023].

Buszek, M.E. and Robertson, K., 2011. Craftivism. *Utopian Studies* 22(2): pp. 197–340.

Campbell, C., 2005. The craft consumer: Culture, craft and consumption in a postmodern society*. Journal of Consumer Culture*, 5 (1), pp. 23–42. DOI: 10.1177/1469540505049843 [Accessed: 2 February 2023].

Carr, C. and Gibson, C., 2016. Geographies of making: Rethinking materials and skills for volatile futures. *Progress in Human Geography*, 40 (3), pp. 297–315. DOI: 10.1177/0309132515578775 [Accessed: 2 February 2023].

Crutzen, P.J., 2002. Geology of mankind. *Nature,* 415 (6867), pp. 2–23.

DiSalvo, C., and Lukens, J., 2011. Nonanthropocentrism and the nonhuman in design: possibilities for designing new forms of engagement with and through technology. *In* Foth, M., Forlano, L., Satchell, C., Gibbs, M. and Donath, J., eds., *From social butterfly to engaged citizen urban informatics, social media,*

ubiquitous computing, and mobile technology to support citizen engagement. Cambridge: MIT Press, (pp. 421-436).

Dormer, P., 1997. *The Culture of Craft: Status and Future*, Manchester: Manchester University Press.

Dougherty, D. and Conrad, A. 2016. *Free to make: How the maker movement is changing our schools, our jobs, and our minds*. Berkeley, CA: North Atlantic Books.

Dougherty, D., 2012. The maker movement. *Innovations: Technology, governance, globalization,* 7 (3), pp. 11-14.

Escobar, A., 2012. Notes on the ontology of design. Retrieved from http://sawyerseminar.ucdavis.edu/files/2012/12/ESCOBAR_Notes-on-the-Ontology-of-Design-Parts-I-II-_-III.pdf [Accessed: 31 January 2023].

Escobar, A., 2018. *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds*. Duke University Press.

Eycil, A. and Us, Ü. 2019. İslamiyet Öncesi Türk Tarihinde Sanatı Etkileyen Unsurlar, *Asia Minor Studies Journal,* 7 (1), pp. 81-94

Fernandez, A.M. and Iazzetta, F., 2015. *Circuit bending and DIY culture*. In Keep it simple, make it fast, pp. 17-28. Available at: http://www2.eca.usp.br/nusom/sites/default/files/KISMIF-Alexandre%20Fernandez%20e%20Fernando%20Iazzetta.pdf [Accessed: 31 January 2023].

Foote, G. and Verhoeven, E., 2019. Tactics for a more-than-human maker culture. In Bogers, L. and Chiappini, L., eds., *The Critical Makers Reader: (Un)learning Technology*. Amsterdam: Institute of Network Cultures, (pp. 72-85). Available at: https://networkcultures.org/wp-content/uploads/2019/11/CriticalMakersReader.pdf [Accessed: 31 January 2023].

Forlano, L., 2017. Posthumanism and design. *She Ji: The Journal of Design, Economics, and Innovation,* 3 (1), pp. 16-29. DOI: 10.1016/j.sheji.2017.08.001 [Accessed: 2 February 2023].

Fry, T., 2009. *Design Futuring: Sustainability, Ethics and New Practice*. Oxford: Berg.

Giaccardi, E., & Redström, J. 2020. Technology and more-than-human design. *Design Issues,* 36 (4), pp. 33-44. https://doi.org/10.1162/desi_a_00612

Glanville, R., 2006. Design and mentation: Piaget's constant objects. *The Radical Designist,* (0). Available at: http://unidcom.iade.pt/radicaldesignist/wp-content/uploads/2015/07/000_05.pdf [Accessed: 31 January 2023].

Gray, C., and Burnett, G. 2009. Making sense: An exploration of ways of knowing generated through practice and reflection in craft. *In* Kaukinen, L. K., ed., *Proceedings of the Crafticulation and Education Conference*. Helsinki: NordFo, (pp. 44-51).

Greer, B., 2007. Craftivism. *In* Anderson, G. L. and Herr, K. G., eds., *Encyclopedia of Activism and Social Justice*. Thousand Oaks, CA: Sage, (pp. 401–402).

Groth, C., Mäkelä, M. and Seitamaa-Hakkarainen, P., 2013. Making sense: What can we learn from experts of tactile knowledge? *FORMakademisk*, 6 (2), pp. 1-12. DOI: 10.7577/formakademisk.656 [Accessed: 2 February 2023].

Haraway, D., 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press.

Harman, G., 2015. Object-Oriented Ontology. *In* Hauskeller, M., Philbeck, T. D. and Carbonell, C. D., eds., *The Palgrave Handbook of Posthumanism in Film and Television*. London: Palgrave Macmillan, (pp. 401–402).

Hartwell, R. M., 1971. *The Industrial Revolution and economic growth.* London: Methuen & Co Ltd.

Hawkins, H. and Price, L., 2018. Towards the geographies of making: An introduction. *In* Price, L. and Hawkins, H., eds., *Geographies of Making, Craft and Creativity*. London: Routledge, (pp. 1-30). DOI: 10.4324/9781315296937 [Accessed: 2 February 2023].

Hertz, G., 2015. *Conversations in Critical Making*. Vancouver, Canada: University of British Columbia. Theory Books. Available at: https://journals.uvic.ca/index.php/ctheory/article/view/15123/6206 [Accessed: 31 January 2023].

Heskett, J., 1980. *Industrial Design*. New York: Oxford University Press.

Heskett, J., 2005. *Design: A very short introduction.* Oxford: Oxford Press.

Jonas, W. 2007. Research through DESIGN through research. A cybernetic model of designing design foundations. Kybernetes 36 (9/10), pp. 1362-1380. DOI: 10.1108/03684920710827355 [Accessed: 31 January 2023].

Krippendorff, K., 1989. On the essential contexts of artifacts or on the proposition that 'design is making sense (of things)'. *Design issues*, 5 (2), pp. 9-39. DOI: 10.2307/1511512 [Accessed: 2 February 2023].

Kültür ve Turizm Bakanlığı. 2006. *Turk El Dokumasi Halilar* – [Turkish Handwoven Carpets Catalogue, Vol. 1. T.C. Ministry of Culture and Tourism]. ISBN: 9751731992

Latour, B., 2005. What is Given in Experience? A Review of Isabelle Stengers' Penser avec Whitehead'. *Boundary 2,* 32 (1), pp. 222-237.

Lindley, J., Akmal, H.A. and Coulton, P., 2020. Design research and Object-oriented ontology. *Open Philosophy*, 3 (1), pp. 11-41.

Lindström, K. and Ståhl, Å., 2014. Patchworking publics-in-the-making: design, media and public engagement (Doctoral dissertation, Malmö University).

Marenko, B., 2014. Neo-Animism and Design. *Design and Culture*, 6 (2), pp. 219–241.

Margolin, V., 2015. *World History of Design*. London: Bloomsbury Publishing.

More, C., 2000. *Understanding the Industrial Revolution*. London; New York: Routledge.

Oakley, P., 2014. Crafting with Digital Technologies: issues in practice *Making Futures,* 3 (1). Plymouth College of Art. pp. 113-119.

Olson, J. S. and Kenny, S. L., 2015*. The Industrial Revolution: Key Themes and Documents.* Santa Barbara, CA: ABC-CLIO

Pacini-Ketchabaw, V., Taylor, A. and Blaise, M., 2016. Decentring the human in multispecies ethnographies. *In* Taylor, C. and Hughes. C., eds., *Posthuman Research Practices in Education.* Hampshire: Palgrave Macmillan, (pp. 149-167).

Ratto, M., 2011. Critical making: Conceptual and material studies in technology and social life. *The information society*, 27 (4), pp. 252-260.

Roudavski, S., 2021. Interspecies Design. *In* Parham, J., ed., *Cambridge Companion to Literature and the Anthropocene*. Cambridge: Cambridge University Press, (pp. 147-162).

Schön, D., 1992. Designing as Reflective Conversation with the materials of a design situation. *Research in Engineering Design*, 3 (3), pp. 131-147.

Schultz, T., Abdulla, D., Ansari, A., Canlı, E., Keshavarz, M., Kiem, M., Martins, L.P.D.O. and JS Vieira de Oliveira, P., 2018. What is at stake with decolonizing design? A roundtable. *Design and Culture*, 10(1), pp.81-101. DOI: 10.1080/17547075.2018.1434368 [Accessed: 2 February 2023].

Sennett, R., 2008. *The Craftsman*. London: Allen Lane.

Simon, H.A., 1969. *The sciences of the artificial*. Cambridge, MA: MIT press.

Smitheram, M. and Joseph, F., 2020. Material-aesthetic collaborations: making-with the ecosystem. *CoDesign*, 16 (4), pp. 293-310. DOI: 10.1080/15710882.2020.1841796 [Accessed: 2 February 2023].

Souza Júnior, C. R. B. D., 2021. More-Than-Human Cultural Geographies Towards Co-Dwelling On Earth. *Mercator-Revista de Geografia da UFC,* 20(1). Available at: https://www.redalyc.org/journal/2736/273665153007/html/ [Accessed: 31 January 2023].

Soysaldi, A. 1998. 'Toros Türkmenlerinde Keçecilik'. *Türk Arkeoloji ve Etnografya Dergisi*, 78: pp. 71-78 Available at: https://dergipark.org.tr/tr/pub/arkeolojiveetnografya/issue/67098/1047919 [Accessed: 3 February 2023].

Stengers, I., 2006. Whitehead and science: From philosophy of nature to speculative cosmology. Montreal, Canada: McGill University. Available at: https://www.mcgill.ca/hpsc/files/hpsc/Whitmontreal.pdf [Accessed: 1 February 2023].

Stevens, D., 2009. 'DIY: Revolution 3.0-Beta', *American Craft,* 69 (5), pp. 50-52. Available at https://www.craftcouncil.org/magazine/article/diy-revolution-30-beta [Accessed: 26 October 2022].

Suchman, L., 2021. Border Thinking about Anthropologies/Designs. In Murphy, K. and Wilf, E., eds., *Designs and anthropologies: Frictions and affinities.* Albuquerque: University of New Mexico Press, (pp. 17-34).

Tacchetti, M., Quiceno Toro, N., Papadopoulos, D. and Puig de la Bellacasa, M., 2021. Crafting ecologies of existence: More than human community making in *Colombian textile craftivism. Environment and Planning E: Nature and Space*, 5 (3), pp. 1383-1404. DOI: 10.1177/25148486211030154 [Accessed: 2 February 2023].

Tarcan, B. 2021. A Messy Autoethnographic Documentation of Making with the Environment. CA2RE Ljubljana, Artefact presentation. Available at: https://ca2re.fa.uni-lj.si/proceedings [Accessed: 1 February 2023].

Tarcan, B., Pettersen, I.N., and Edwards, F. 2022. *Making-with the environment through more-than-human design*, *In:* Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J., Lloyd, P., eds., *DRS2022: Bilbao, 25 June - 3 July 2022,* Bilbao, Spain. DOI: 10.21606/drs.2022.347 [Accessed: 2 February 2023].

Tonkinwise, C., 2022. Before Design, More-than-Design: Elucidating "Ontological Design". *Design and Culture*, 14 (3), pp. 341-359. DOI: 10.1080/17547075.2022.2105529 [Accessed: 2 February 2023].

Tsing, A., 2013. More-than-human sociality: a call for critical description. *In* Hastrup, K., ed., *Anthropology and nature*. New York: Routledge, (pp. 27-52).

Tunstall, E., 2013. Decolonizing Design Innovation: Design Anthropology and Indigenous Knowledge. In Gunn, W., Otto, T. and Smith, R., eds., *Design Anthropology Between Theory and Practice*. London: Berg Publishing, (pp. 232–250).

Vennatrø, R. and Høgseth, H. B. 2021. Craft as More-Than-Human: Practice-led research in a posthumanist perspective. *FormAkademisk-*, 14 (2), pp. 1-13. DOI 10.7577/formakademisk.4205 [Accessed: 2 February 2023].

Whitehead, A. N. 1920. Theories of the Bifurcation of Nature. In *The Concept of Nature*, Cambridge: Cambridge University Press (pp. 26–48).

Yozgat, S., 2019*. Türk mitolojisindeki grafik sembollerin günümüz logo tasarımlarına yansımaları: Kuş figürü örneği*. Master's thesis, Sosyal Bilimler Enstitüsü). Ordu Universitesi Sosyal Bilimler Enstitusu, Turkey. Available at: http://earsiv.odu.edu.tr/xmlui/bitstream/handle/11489/398/84-Sema_Yozgat.pdf [Accessed: 2 February 2023].