Green Urban Fables

The role of speculative fabulations in co-creating more-than-human urban visions

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Abstract

Climate change is affecting cities globally, requiring cities to reimagine urban development. Significant attention goes to using nature-based solutions (NbS) for climate mitigation and adaptation. However, like other planning interventions, NbS have been critiqued for their anthropocentric valuing of non-human entities. Planning theorists have increasingly been looking at incorporating post-human understandings into planning and applying a more-than-human approach to planning. Art-based narrative participatory approaches have been getting attention outside of planning to provide this shift. One of these methods is speculative fabulation, a method in which the boundaries between real and imagined are blurred to allow for new imaginaries to emerge. However, planning literature has only just begun to look into shifting anthropocentric thinking, and little research has been done into the role art can play in planning processes. Through a workshop as practice methodology, participant observation, and semi-structured interviews, this exploratory research has aimed to understand further the role speculative fabulations can play within NbS planning processes to imagine more-than-human urban imaginaries. By doing so, this research aimed to contribute to the growing literature base on more-than-human approaches in planning and the role of art within planning processes, which in turn could potentially shift planning practices to include more-than-human ontologies and aid in climate mitigation and adaptation. It was found that speculative fabulation has the potential to contribute to bringing in more diverse values, experiences, and forms of knowledge into participatory planning processes, in part because it allows participants to use their creativity, sit with the not-knowing, and reflect on their own values and dreams. By applying the Nature Futures Framework (NFF), five key themes emerged from the workshop to give direction to NbS planning and theory, namely accessibility of natural spaces, locality of NbS, transformative change through NbS, social-ecological memory to take care of NbS, and community-focused NbS.

Keywords: *Speculative Fabulations, more-than-human, urban visions, human-nature connectedness, Nature Futures Framework*

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1. Introduction

1.1 Literature review

Cities worldwide are having to deal with a myriad of complex challenges, including the numerous effects of climate change, such as a loss of biodiversity, urban heat islands, and flooding and draughts due to extreme weather events (Hughes, et al., 2018). However, urban areas not only have to deal with the effects but are at the same time the main contributors to climate change (Kemmerzell, 2018) through the increased pace of urbanization, overconsumption, increased globalization, and numerous other anthropocentric activities (Yigitcanlar, et al., 2019). With urban populations expected to grow from making up 56% of the total world population at the time of writing to nearly 70% in 2050 (World Bank, 2023), new urban developments are necessary to provide for this population growth (McPhearson, et al., 2023). This, together with the growing effects of climate change, requires us to reimagine how we develop our cities for both urban climate change mitigation and adaptation (Lee, et al., 2020). Furthermore, it has been argued that the way we have planned our cities has rested on the belief that we as humans are superior and stand above non-human entities (Houston, et al., 2018). This has led to a disconnect between humans and nature, which has further perpetuated the human impact on the climate crisis, thus requiring a reimagining of urban planning outside of this anthropocentric ontology.

In the context of climate change, cities have increasingly been looking at nature-based solutions (NbS) when dealing with its effects (Frantzeskaki, 2019). The term *Nature-Based Solution* came into use towards the end of the 2000 decade as a term to cover different methods using nature to deal with societal problems (Cassin, 2021), with Sowińska-Świerkosz & García (2022) arguing that it was first used by the World Bank in a report from 2008. Numerous definitions of NbS exist, however, no consensus has been reached about what constitutes a NbS and what does not (Sowińska-Świerkosz & García, 2022). This partly stems from the fact that NbS are used and researched by various disciplines, each using it in their own context and from their own viewpoint. It is thus essential to be clear about the definition of NbS used in this thesis. As mentioned before, NbS combat both environmental and societal issues (Sowińska-Świerkosz & García, 2018), however, as Frantzeskaki (2019) pointed out, they also provide several benefits for the economy. Furthermore, Seddon et al. (2021) argued that NbS can only function well if biodiversity is included at the core. This ensures short-term benefits and long-term benefits through resilient ecosystems. A definition of NbS thus must include the triple-fold benefits for the environment, society, and the economy, as well as biodiversity at the core. For the remainder of this research, the definition used by the *International Union for Conservation of Nature* (IUCN) will be used:

> [Nature-based solutions are] actions to protect, sustainably manage and restore natural
> or modified ecosystems, which address societal challenges … effectively and
> adaptively, while simultaneously providing human well-being and biodiversity
> benefits. (Cohen-Shacham, et al., 2016, p. xii)

This definition thus points out that NbS are not solely meant to benefit humans but also our non-human surroundings. However, they have also been critiqued for the often-underlying anthropocentric thinking in which nature is solely used to improve cities for humans and other human-focused benefits such as economic and cultural benefits (Maller, 2021).

The Anthropocene is a term that has gained popularity within the academic community, indicating the end of the Holocene geological epoch because of intensified human interference (Lewis & Maslin, 2015). Geological epochs are defined through "global-scale changes to Earth's status" (Lewis & Maslin, 2015, p. 171), typically caused by natural events such as tectonic movements causing earthquakes and volcanic eruptions. However, the current 'global-scale changes' are caused by human behaviour as opposed to these natural events (Ruddiman, 2013). Although the start of the Anthropocene is still debated, as Lewis and Maslin (2015) argue, human activities have moved away from solely being local and have shifted to a global scale, including the impacts which they argue will make its mark on geographical stratigraphic records far into the future. Next to the environmental impact the Anthropocene has had on the earth, this epoch is also characterized by a change in worldview (Boyd, 2017). The terms *Anthropocene* and *anthropocentric behaviour* stem from the "ethical belief that only humans possess intrinsic value" (Boyd, 2017, p. 300). This means that non-human entities derive their value solely from their value to humans, for instance, the added economic value through their consumption. Numerous academics have pointed out that this idea has led to a disconnect between humans and the world around them (Riechers, et al., 2021; Ghijselinck, 2023; Welden, et al., 2021; Boyd, 2017).

In response to the hierarchical view of humans as superior to nature and the value of nature deriving from its value to humans that is also present in NbS, posthuman theory aims to break with this view (Bolter, 2016). Posthuman theorists have moved away from the initial focus of posthuman theory on art and philosophy to focus on human-technology relations, such as Haraway in her influential text on the concept of cyborgs (1991). Posthumanism shifts the idea of a human as a singular being to understand our world as a complex web of relations of both culture and nature, thus doing away with the idea that humans can be understood in isolation (Bayes, 2023). Recent years have seen an increase in attention being paid within posthuman theories to urban entities and posthuman theories being used in urban studies, as argued by Bayes (2023). She continues to argue that posthuman views of cities can shape more inclusive socio-

ecological cities, in which humans stand in relation to both culture and nature, and in which non-humans' agency has been recognized. Such views of our cities would allow us to imagine more-than-human urban futures. This is important in the context of combatting the effects of climate change through NbS because of the anthropocentrism that has been argued to plague NbS as mentioned before (Maller, 2021). However, as argued by Jon (2020), there is an urgent need for spatial and urban planners to develop posthuman approaches to also serve non-human entities and place the environment front and center in planning.

As mentioned, due to the growing urban population and the imminent threat of climate change, we need to reimagine what the development of our cities looks like. Urban development has long focussed solely on humans and has regarded cities as separate from the natural environment (Houston, et al., 2018). Nature in cities has mostly been well-kept, only being present in forms that suit our needs or our aesthetic requirements, which has led to a homogeneity in urban nature across urban regions that often differs significantly from the bioregion surrounding cities (Pincetl, 2012). This has in some cases actually done more harm than good for non-human life forms as they are artificially placed in, for them, unsuitable habitats. Moving away from this anthropocentric view of cities to a more-than-human understanding has been seen as a beneficial shift (Houston, et al., 2018). A more-than-human consideration of the city by planners would blur the present dichotomy between humans and non-humans as it would foreground the dependencies of humans but also cities with the natural environment (Jon, 2020). This thus requires new narratives about our cities and the future of cities, as the anthropocentric narrative has led us to this disconnected state (Nijs, et al., 2020). These new, more-than-human narratives are needed to break with our current ontological views and thus redirect urban development, including NbS, to consider non-human nature as valuable co-creators of urban life (Edwards & Pettersen, 2023). Shifting these narratives plays an important role in transforming our ontologies and transitioning into a more sustainable and just future, as argued by Edwards & Pettersen (2023). Urban visions are one way of doing this as they can inspire and motivate people to change and imagine new ways of developing our urban spaces. However, this would require us to additionally reimagine how we have gone about imagining these urban futures as they have often perpetuated our current and past anthropocentric behaviour and urban development. It furthermore requires reflectivity on our current and past planning practices (Pitt, 2017).

Urban visions throughout time have shaped the way our cities look and function currently (Medina & Monclús, 2018). Visions can be defined in multiple ways but following McPhearson et al. (2016), they can be defined as "a desirable future state" (p. 34). This means that visions are necessarily based upon forecasts or trends, but are more based on what a person, group, or society wants the future to be like. Creating these visions is not only important for moving towards a more-than-human future through traditional city

planning, as they do underlie most if not all, current strategic city planning, but they can furthermore be used to create inspiration and motivation to start a change in a wider context than just by city planners (McPhearson, et al., 2016). Some visions focused on sustainability and justice issues have become more widely used in urban planning over the years such as the *Eco-city* (Joss, et al., 2013), the *Smart City* (Anthopoulos, 2017), and the *Circular City* (Williams, 2019). To shift the practice of urban visioning towards a more-than-human ontology, Edwards & Petterrson (2023) have argued for using co-creation methodologies in which trans-disciplinarity plays a bigger role in expanding the voices that are heard within these processes. Even more progressive approaches would also give agency and power in these processes to non-human entities. Furthermore, Wyborn, et al. (2020), argue that participatory processes are needed "to envision radically different and positive futures to overcome the limitations of technocratic approaches in motivating action" (p. 1092). Thus, calling for research to reimagine how we have gone about planning for the future.

Stemming from communicative approaches in planning theory, co-creation can take numerous forms and can be used for a multitude of purposes, for example differing in the target audience, phase in the planning process, or bottom-up or top-down initiation (Leino & Puumala, 2021). Co-creation techniques can be used to include a more diverse group of parties in urban development processes to get their lived experiences and get their knowledge and input to create more inclusive plans (Choi, et al., 2023). It, as argued by Leino & Puumala (2021), "emphasizes innovation and creativity" (p. 783). Recent years have seen a growing interest in the use of art-based practices in urban planning as a tool to reshape the way planning has been done (Wiberg, 2022). As argued by Muhr (2020), art flourishes with imagination and innovation, two things that are needed to reimagine urban development. The future is unknown and uncertain and art-based methodologies can help urban planners accept this unknown and allow for unexpected outcomes, as noted by Wiberg (2022). However, art-based co-creation moves beyond how other foresight techniques also deal with this uncertainty, by allowing multiple sensory experiences to be brought into the process, which could aid in bringing up alternative ideas and experiences than those that are exposed through a more traditional way of planning (Herrmann-Pillath, et al., 2023). It is important to understand that art in this sense moves beyond how we in the West generally think about art and who an artist is. In this sense, it can include anyone and anything in which creativity and imagination play a role and does not have to be a recognized 'masterpiece', as argued by Lydon, et al. (2023). Following Lydon, et al.'s (2023) argument, art in this sense is used as a tool to bring out imagination, creativity, and innovation in thinking about a more-than-human urban future while inviting diverse experiences and kinds of knowledge.

As mentioned, there are a multitude of different ways of co-creating, including several art-based co-creation methodologies, ranging from using theatrical techniques (Reinsborough, 2020), to public exhibitions (de Ridder-Vignone, 2012), and public interventions (Koro, et al., 2020). Although spatial planning research does pay attention to how art can be used for planning, little research is done into art's role in planning processes (Wiberg, 2022). However, as mentioned previously, to reimagine urban development new narratives are needed, in which art can play a role. Fenske & Norkunas (2017) have argued that narratives not only tell us something about how we currently see the world but also how we want it to be. Storytelling as an art form helps us to create these new realities. Together with the call by Wyborg, et al. (2020) that narratives may instigate meaningful movement, it could be argued that narrative art forms are a suitable place to start understanding how they help us do this. One narrative art form is that of *speculative fabulation*, which, as argued by Salazar (2017), could be useful to think through future imaginaries, his research focussing on the context of Antarctica. Nijs et al. (2020), argued that this art form is promising in imagining more-than-human futures as it allows for new and alternative ways for human and non-human interaction. Stemming from environmental humanities, literary studies, and anthropology, the concept of speculative fabulation is nowadays often attributed to Donna Haraway (2011; 2013), which she has described as:

> … stories in which multispecies players, who are enmeshed in partial and flawed
> translations across differences, redo ways of living and dying attuned to still possible
> finite flourishing, still possible recuperation. (Haraway, 2016, p. 10)

This description highlights the possibility of reimagining how we live currently in tune with other ways in which our world can prosper and recover what we did to the earth. The concept derives from Science Fiction and fable making, in which the boundaries between what is considered as 'real' and what is made up, or 'fictional', are blurred (Nijs, et al., 2020). This would potentially allow us to break with the current human-nature dichotomy and imagine possible more-than-human futures, with the emphasis on *possible* as these fabulations are still in part grounded in the 'real' world. Although within Science Fiction storytelling often takes a dystopian turn, take Margaret Atwood's *MaddAddam* trilogy, in which the human species has almost gone extinct wherein rewilding happens, and non-human nature is taking over (Vieira, 2020). However, as Haraway (2016) argued, speculative fabulation entails imagining futures that flourish from a multispecies perspective. Thus, potentially being used as a tool to imagine urban futures in which anthropocentric thinking is replaced with a more-than-human understanding of urban development.

One of the main aspects that differentiates speculative fabulations from other visioning methodologies is its focus on relationships and entanglements (Søndergaard, et al., 2023). This method aims to foreground

social relations by putting those forms of knowledge and experiences that are often left out or forgotten about at the center. It does so by opening imagination beyond current understandings of the world, relationships, and power struggles, and thus consequently allowing critical reflection on current relationships. Speculative fabulations are a way of worlding that allows those participating to think through their relation to other humans and non-humans, unconstrained by current social relationships (Søndergaard, 2023). It, furthermore, does not attempt to imagine a specific true reality, instead allowing for the imagined and fabulated to play with the boundaries between the real and the imagined and thus also allow for the use of alternative forms of knowledge, which will be elaborated on in 2.2.2, to be incorporated. This allows for situated knowledge, and thus an understanding of the plurality of knowledge, to reveal experiences and creativity otherwise not included in the creation of visions, as argued by Søndergaard (2023). Starting from this understanding means that individual experiences and narratives get a place in planning practices, thus opening space for often unheard and underrepresented voices.

There is no one strict methodological approach to speculative fabulation, however, the focus lies in storytelling and worlding (Haraway, 2016). In this research it will be applied to bring to the foreground individual narratives, containing individual experiences and knowledge, while simultaneously allowing participants to create new future narratives free from current relationships by focussing on new entanglements, in this case between human and non-human entities. Furthermore, it aims to bring a reflective element into thinking through these futures by allowing participants to also hear about each other's narratives and perspectives. The specifics of how the concept of speculative fabulation was applied in the workshop will be discussed in Chapter 4.

1.2 Research gaps

Four research gaps (as summarized in Table 1) have been identified that this research has aimed to cover in part. Firstly, planning as a practice has been critiqued for its inherent anthropocentric thinking that the world is malleable to our human needs and wants (Houston, et al., 2018). Houston, et al. argue that planning theory should further develop the relation with more-than-human thinking, thus pointing out a theoretical gap as further explained by Miles (2017). Secondly, research on NbS and NbS implementation has been critiqued for the often-underlying anthropocentric thinking, as mentioned by Maller (2021). Maller argues that new ways of conceiving of NbS in urban development are needed to overcome this anthropocentric thinking and move towards a more-than-human ontology. They thus point out a knowledge void gap (Miles, 2017). Thirdly, as argued by Wiberg (2022), urban planning research, when looking at art, often focuses on how art can be used in planning outcomes and the impact it can have on that, little research is done into the role art can play within planning processes. This is thus also a knowledge void gap. Lastly, the specific art-

based methodology, speculative fabulations, are, for the most part, used in more representational manners, thus requiring more effort to connect with the everyday experiences of people (Nijs, et al., 2020). As mentioned, reimagining urban development in a more-than-human way requires multiple forms of knowledge and experiences to be heard (Edwards & Petterrson, 2023). Nijs et al. (2020) have thus argued that speculative fabulations need to be brought into the realm of everyday experiences and thus include a wider variety of experiences. This thus points to again a knowledge gap (Miles, 2017).

Table 1.

Research gaps

Type of research gap (Miles, 2017)	Research gap
Theoretical gap	Embed more-than-human thinking in planning theory (Houston, et al., 2018).
Knowledge gap	Overcome the anthropocentric thinking in nature-based-solutions (Maller, 2017).
Knowledge gap	Urban planning research about art within planning processes (Wiberg, 2022).
Knowledge gap	Include more diverse experiences in reimagining urban development in a more-than-human way (Edwards & Petterson, 2023).

1.3 Research objective and questions

This research has aimed to explore and understand what role a narrative art-based co-creation technique such as speculative fabulations, can play in imagining more-than-human urban futures in the context of NbS. Following the research gaps and research aim, the following research question has been formulated:

> What can speculative fabulations as a co-creation methodology contribute to
> imagining more-than-human urban futures with nature-based solutions?

To aid in answering this question, the following sub-questions have been formulated:

1. How can speculative fabulations as a co-creation methodology help with involving a wider variety of experiences and knowledge forms2 in participatory planning?
2. How can the outcomes of speculative fabulation as a co-creation methodology be used in the context of nature-based solutions planning?

This research thus has a two-folded focus. Firstly, aiming to understand the learning outcomes of a speculative fabulation workshop, and secondly to understand how the outcomes of such a workshop can be used in the context of NbS planning.

2. Theoretical Framework

Post-human theory has long been related to more alternative, counter-culture attitudes of the 1970's new age movements (Jon, 2020). Recent years have seen an increase in the use of these theories in mainstream planning theory and practice (Biermann, 2014). As mentioned, art can be used as a tool in applying posthuman theories to urban planning, and to allow for more-than-human urban futures to be considered, as they allow for alternative forms of knowledge and experiencing the world to be heard. However, it is important to understand how these concepts relate to each other and the role art can play in imagining more-than-human urban futures because this forms the theoretical underpinnings of this research.

2.1 Post-human urban planning

Planning theory has long rested on the idea that humans are superior to all else in nature, consequently primarily focusing on human needs and worldviews (Houston, et al., 2018). This has led to the modernist idea that we as humans can shape our environment exactly to how we want and envision it to be without outside interference (Jon, 2020), take for example Le Corbusier's *La ville radieuse* plan from 1935. Urban exceptionalism, as a specific form of this superiority ontology, understands cities as being prime examples of how humans have discarded how nature has held us back and have risen above nature (Houston, et al., 2018). Outside of planning theory, the material turn in academia has brought back the understanding that the materials or non-human entities around us stand in relation to us and that we depend on them to act (Jon, 2020). This thinking has for instance produced the actor-network theory (ANT) by Latour, in which an event is seen as the result of a set of unique interactions between different actors, including non-human entities, seen as assemblages (Tummons, 2021). In this theory, humans are not necessarily the main actors with non-human actors also being able to fulfill this role (Rydin, 2010). Agency in this way is seen as a relational concept, which cannot exist in isolation (Jon, 2020). The material turn, and specifically ANT, has been applied to planning theory to understand that what we as humans plan and imagine stands in relation to non-human actors, and that these non-human actors can equally have agency in these processes and thus an influence on our environments.

It is important to point out that there is no definitive post-human theory, as argued by Wolfe (2010). Wolfe argues that it is rather a critique of the idealized understanding of a superior Western human, encouraging us to rethink our lifestyles, societies, and traditions. The aim of this research is not to provide a complete overview of post-human theories or to provide one definitive way of viewing post-humanism, but by taking a post-human perspective and more specifically a more-than-human view, the aim is to respond to the call for urban planning to shift away from anthropocentric thinking. It is however important to define posthumanism and specifically the concept of more-than-human in the context of this research. Post-

humanism within planning goes a step further than material theories in that it not only understands that non-human entities have agency and play a role in planning but recognizes the human dependency on our non-human environment and the relationships between us and non-human entities (Jon, 2020). It helps us understand that cities are co-created and influenced by and with non-human entities (Bayes, 2023). When developing cities, we are dependent on many natural factors such as plate tectonics, flood plains, and available materials. The concept of more-than-human has been adopted by post-human theorists to frame the interconnectedness between human and non-human entities (Souza Júnior, 2021). Stemming from the use by eco-phenomenologist Abram (1996), it "refers to a world that includes and exceeds human societies, thereby associating them with the complex webs of interdependencies between the countless beings that share the terrestrial dwelling" (Souza Júnior, 2021, p. 2). For planning, this means that the practice has to be understood as a co-creation with and for non-human species, thus asking planners to forego the malleability of our environments to our human will (Jon, 2020). For the remainder of this research, more-than-human will thus be understood as an understanding of the interdependencies in the world and a way to step away from human superiority thinking and understand that the world is created by more than just humans.

Cities have often been positioned in research as human-centred places in which human ideas thrive and innovations can happen (Prebble, et al., 2021). As Maller (2018) points out, cities are often approached in research in an exclusionary way towards non-human entities, focussing rather on individual humans and groups to understand city dynamics and planning approaches. However, this idea of 'urban exceptionalism' is disconnected from reality, as argued by Franklin (2017), as cities have always had to adapt and take shape around non-human entities and factor them in. He continues by stating that city environments create new assemblages for both humans and non-humans to adapt to and create a new dependence relation to each other. However, when considering urban areas the focus is for the most part on how humans can deal with this to benefit them, with less consideration of non-human entities (Maller, 2018). In thinking through why this often happens, Cooke et al. (2019), argue that this has to do with the idea of property in cities, as the idea of property in contemporary cities suggests that the owner, in most if not all a human, can do what they please with that area. This influences the power relationship between the owner and the owned, in these cases humans and non-humans. They argue that to think through the future of cities in urban planning in a more-than-human way requires thinking through these property relationships.

When discussing climate change and its effects in relation to cities, much of urban planning discourse is focused on frameworks such as 'resilience' and 'risk assessment' (Houston, et al., 2018). These approaches, however, are mostly focused on the social and economic impacts of climate change and how planning can

aid in minimizing the effects on these areas of urban spaces. Nature is, as mentioned before, often used to minimize these effects, and thus for the benefit of humans (Maller, 2021). Urban nature is, as argued by Pollastri et al. (2021), often limited to public, controlled spaces such as parks and green strips, which ignores the fast ecological, and often unkept, links necessary to keep these areas thriving. When thinking through the development of urban areas these essential links and the importance of these unkept parts of ecosystems should be considered they argue. The concept of bioregions as used by Tackara (2019), which defines a region not based on human-made borders but on non-human-defined borders such as topology and watersheds, is argued by Pollastri et al. (2021) as a way to develop cities with nature. The interconnection of both human and non-human entities is central to bioregions and shifts humans from a central position in this relationship (Tackara, 2019). This requires a shift in how urban planners and geographers approach urban places, which has also been argued by Robertson (2018) as being key in integrating more-than-human thinking in urban planning because of the wider view of interdependent relationships that shape a place.

Before continuing to further understand the more-than-human concept and the role art plays in this in spatial planning, it is important to position the concept of *more-than-human* in the context of First Nation and Indigenous knowledge. More-than-human understandings of the world cannot be credited to Western theorists as they have existed long before within Indigenous and First Nation worldviews (Maller, 2021). These worldviews, as there is no one single Indigenous or First Nation worldview, often find their grounding in the understanding and recognition that humans and non-human nature stand in relation with each other and that this relation is vital for all life on earth (Suchet-Pearson, et al., 2013; Kimmerer, 2013). In these ontologies, non-human nature is often referred to in personified forms, such as *they* and *them,* as opposed to the Western nonpersonal *it* (Kimmerer, 2013). It is important to acknowledge these ontologies so as not to further colonial practices of appropriation (Maller, 2021).

2.2 More-than-human and art in planning

More-than-human planning thus requires a shift away from the human-superiority complex, and thus also in the practice of planning or how we plan our cities. Art has often been considered to be separate from planning and science at large, in part because of the underlying belief that art is not something useful but just art (Metzger, 2011). To understand the role art can play in more-than-human planning, the difference between art and culture needs to be understood as these two are often used interchangeably, especially in policy documents (Otte, 2019). Culture here is understood "as a socially shared fund or repertoire of signs or meanings" (Otte, 2019, p. 4), which leads to people feeling like they either belong or do not belong to a certain group. Cities and landscapes are part of cultural expressions. Art, in turn, is often seen as another

one of these cultural expressions and is often understood in the *high culture* sense of the word (Belfiore & Bennett, 2007). This distinction between high culture Art and low culture art, as discussed by Adorno (1975), is one of the reasons why it is often shrouded in claims of elitism and exclusion (Belfiore & Bennett, 2007). The question of how to define *art* is still being discussed, and there might not be one definitive answer, however, as argued by Belfiore & Bennett (2007) defining the concept is important to understand the effect it can have, in this case on imagining more-than-human urban futures.

The definitions art has had throughout history are greatly tied to changing worldviews and politics (Belfiore & Bennett (2007). It is thus important to realize that any definition used in this research will also be subjective to these changes. As this research thus does not aim to position itself in the theoretical debate on what art is, the focus is shifted to art-based methods, which stems from discussions about the possibilities of research (Grenni, et al., 2020). In this context, art is used in combination with imagination and creativity to allow for alternative ways of conducting research and gathering data to be used in the research process. For the remainder of this research, the definition of art-based methods by Grenni, et al. (2020) will be used, namely that "… by arts-based methods, we refer to methods that engage participants in some sort of creative or artistic exercise" (p. 1362). This definition allows debates about high and low culture art to be put aside as the quality of the outcome of the exercise is not of importance, the focus instead is on the process itself and how it engages participants. It furthermore allows for a wide variety of creative and artistic practices to be used. Three aspects will be highlighted of how these art-based methods can play a role in the spatial planning practice.

2.2.1 Emotion

Art is often associated with feelings and emotions, with the criteria of good art often being accredited to art that makes you feel something (Noy & Noy-Sharav, 2013). In the literature on art-based participatory methods, this is often also discussed as affect (Haberl, 2021). However, as argued by Schuller et al. (2011), although often seen as separate, emotion and affect are mostly used interchangeably. Planning has for a long time been seen as requiring rational decision-making in which emotions are solely distractions (Fathullah & Willis, 2018). This cuts out empathy in the planning process, as empathy stems from being able to understand and feel someone or something else's emotional experience (Tschakert, 2020). Empathy, as argued by Tschakert (2020), is essential to step away from anthropocentric thinking to more-than-human understandings in our relationship with our environment. Including empathy in planning processes allows for the feelings and needs of both human-others and non-human-others to be considered when planning for the future. Art-based methodologies have previously been argued to have a positive effect on empathy-building in youth (Morizio, et al., 2021). Furthermore, Muhr (2020), argues that to improve the human-

nature connection, which is essential to a more-than-human approach, changing the emotional connection humans have to nature is fundamental as this plays an important role in changing the systemic view of nature. He continues to argue that since art can invoke emotional responses, art as a methodology can play an important role in changing our emotional attachment to nature and in turn our view of our connection with nature.

2.2.2 Knowledge

Tapping into our emotional connection with nature already leads to the second aspect in which art-based methodologies can play a role in a more-than-human approach to planning, namely including different kinds of knowledge in the planning process. As pointed out by Rydin (2007), the post-modern shift in planning led to the acknowledgement that knowledge is socially situated and thus that multiple types of knowledge exist. In the context of more-than-human research, allowing for other types of knowledge than solely the Western 'objective' understanding of knowledge is needed as it has the potential to shift the questions we ask and solutions we come up with (Harmin, et al., 2016). Ontological change needs new ways of learning and seeing the world, thus requiring this shift in understanding what knowledge is, as argued by Harmin et al. (2016). They point out that materialist approaches to knowledge production have excluded several types of knowledge, such as "affective, intuitive, artistic, dreaming, animistic and somatic ways of knowing" (p. 1491). Art-based methodologies allow for different types of knowledge to be included, as mentioned before the affective type (Muhr, 2020), but also more intuitive, and somatic or embodied ways of knowing (Foster, 2008). Furthermore, art has in itself been considered an alternative way of knowing and approaching the world (Harmin, et al., 2016). Muhr (2020) has argued that including arts can thus help to transform the way we approach sustainability to shift to a more-than-human approach by allowing these different ways of knowing to be considered. Lastly, art-based practices allow for the inclusion of imagination or dreaming in Harmin et al.'s typology mentioned above, in planning processes, which will be discussed next.

2.2.3 Imagination

The effects of climate change have required us to reimagine how we plan our cities, as mentioned before (Lee, et al., 2020). Val Plumwood, an eco-feminist scholar, even went as far as to say that "if our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth …" (2007, p. 1). Shifting towards a more-than-human planning approach requires us to imagine new ways of understanding our relationship with non-human entities (Metzger, 2016). It requires us to reimagine how we imagine our future urban environment to look like and the relationships that come with that. Art thrives with imagination, as mentioned before (Muhr, 2020). Art-

based methodologies allow this imagination to be used by inviting users to give themselves to the creative process and allow themselves to be surprised by unexpected insights and tap into imaginaries they otherwise would not (McNiff, 2007). Imagination has been argued to be based upon "…the thoughts, perceptions, feelings, and actions a person does to connect past and present, and what s/he believes should be" (Malk & Huss, 2023, p. 157). This means that imagination requires the use of emotions, lived experiences and thus subjectivity (Malka & Huss, 2023). Imagination through art allows users to use their emotions and the previously discussed other ways of knowing, to achieve a more holistic understanding of the world and its relationships (Gerber, 2022), something that following post-human theory is necessary to arrive at a more-than-human understanding of the world (Jon, 2020).

2.2.4 Reflectivity

Getting to a more-than-human approach to planning, not only requires thinking about the future but also rests upon critical reflection of the past and present and our situatedness as humans within this (Pitt, 2017). It requires us to reflect upon the power dynamics, hierarchies, and value systems we have set in place throughout history and currently, and thus reflect on the needs of not only humans but also non-human others. Art-based methodologies have been argued to open up spaces for reflectivity on current systems and beliefs because they allow for alternative ways of knowing, imagining, and feeling to be used (Heras, et al., 2021). Furthermore, because it opens up space for imagination outside of current boundaries, it allows us to step away from our current systems and reflect from an outside perspective on these systems. Additionally, because art-based methodologies can help us access different ways of knowing, they can raise questions we would not otherwise have raised, thus forcing us to reflect on these new insights. Thus, by allowing emotions, other types of knowledge, and imagination into planning processes, art-based methodologies can help us critically reflect on our current systems and imagine alternative urban futures.

2.3 Conceptual framework

Little research has been done into the connection between the use of art as a methodology and spatial planning as a profession (Wiberg, 2022). The aim of this research is to further understand the role a specific art-based method, namely speculative fabulation, can play in imagining more than human urban futures. Art-based methodological research has mostly been done in the context of climate change research with little being carried out in the context of urban nature (Heras, et al., 2021). Imagining urban futures is an essential part of spatial planning practice, as planning needs to adapt to changes due to climate change and needs to understand the important role cities play in battling the effects of climate change (Lee, et al., 2020). It has been argued that we need to step away from a human-centric way of planning, which is also present in NbS research and practice, to tackle climate change (Maller, 2021). Art-based methodologies play a role

in shifting our approach to a more-than-human one, in which we recognize the interdependencies between human and non-human entities. Four aspects through which art-based methodologies have been argued to help in this have been discussed above. Figure 1 shows the relation between art-based methodologies, through these four aspects, to the planning practice of imagining more-than-human urban futures. The figure shows how art-based co-creation methodologies, through emotions, alternative ways of knowing, imagination, and reflexivity, shift anthropocentric thinking in planning practice towards more-than-human thinking.
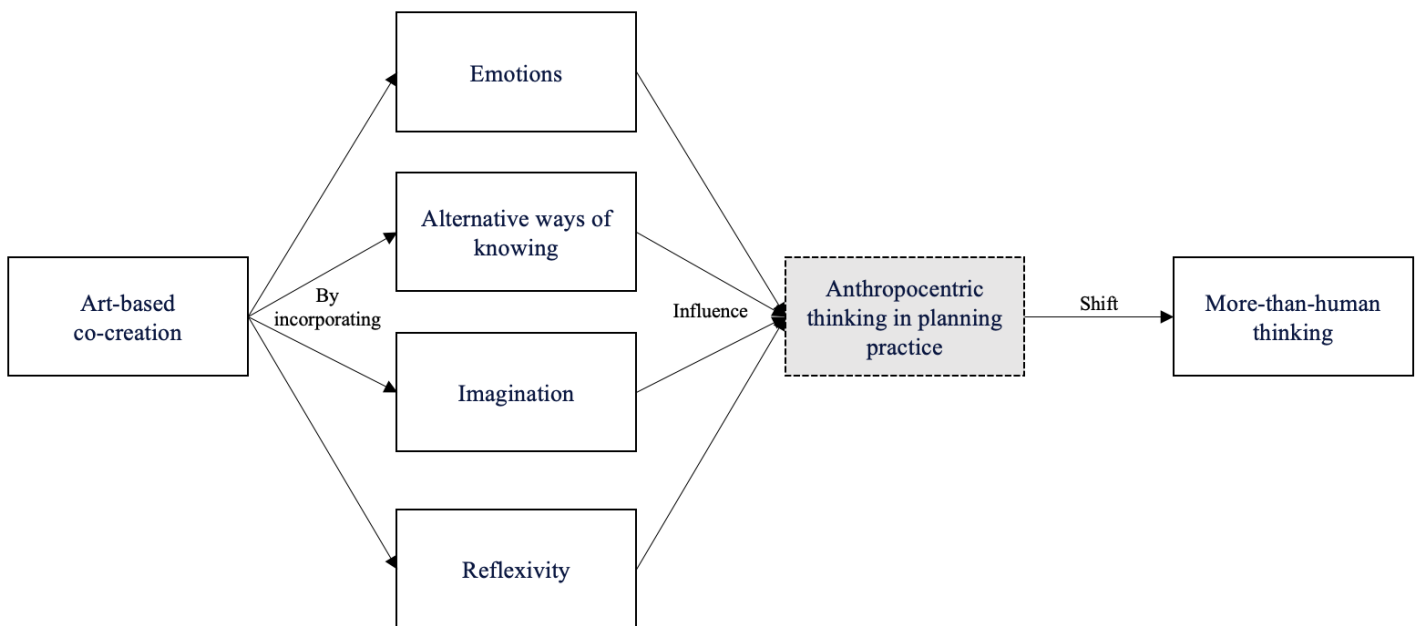
Figure 1. Conceptual framework visualizing that art-based co-creation, by incorporating four elements, influence anthropocentric thinking to shift to more-than-human thinking. (Author, 2024).

3. Methodology

Now that the research questions and theoretical framework have been discussed, it is important to understand how the research questions are aimed to be answered by making use of the theoretical framework. The methodology has been based on the speculative fabulation methodology, as the aim of the research is to understand the role this methodology can play in imagining more-than-human urban visions. The focus in the methodological design is two-fold. On the one hand this research aims to understand the learning outcomes that speculative fabulation as a co-creation methodology can offer in the context of urban futures, and secondly understand what the outcomes of such a methodology can offer to imagine alternative urban futures. This has thus informed the research design.

3.1 Research design

To answer the main research question, this research has employed a workshop as practice methodology. A workshop as practice methodology, as discussed by Ørngreen & Levinsen (2017), can be used to further understand the interaction between the form of the workshop, in this case, speculative fabulation, and the outcomes of the process. Within these workshops, participants develop something and can generate input for how the form can be used and improved for future contexts. To be able to shape the workshop optimally, three interviews have been conducted with researchers who have researched imaginative transformative practices, more-than-human narratives in urban contexts, and/or future imaginaries of nature. These researchers were recruited through a snowball technique. Next to the expert interviews, optional preparatory interviews with seven workshop participants were held to understand their relation to nature better and consequently shape the workshop better for the particular group of participants. Based on these interviews the workshop was shaped.
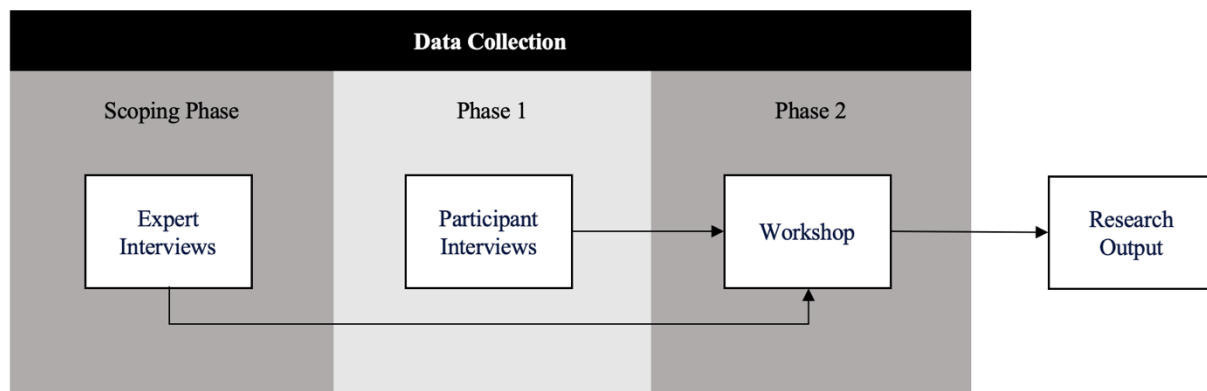

Figure 2. Data collection scheme. (Author, 2024).

3.2 Data collection

Based on the theoretical framework, a mixed-method approach has been used to answer the research question, namely as seen in Figure 2. The data collection has been conducted in two phases which was preceded by a scoping phase. These three phases will now be further discussed.

3.2.1 Scoping phase

As mentioned, the two phases of the data collection were preceded by a scoping phase. This consisted of three expert semi-structured interviews. These were conducted to shape the workshop optimally. The expert interviews were held to understand how to foster imagination, creativity, and more-than-human thinking among the workshop participants. It is important to learn from these experts in the context of this research as this is a still growing area of research within planning theory, thus learning from what has already been done helps to set up the workshop. It is furthermore important to align the workshop and its outcomes with existing research to contribute to this growing research base adequately. Three expert interviews were held, each with experts with a different research focus to focus on different methodological aspects of the research as can be seen in Appendix A. The three interviews respectively focus on:

- How to imagine alternative futures and foster imagination in workshop participants
- How to shape the workshop to step away from and question anthropocentric thinking
- Understanding the Nature Futures Framework to use it as the analytical framework

The interviews were recorded and transcribed anonymously. However, they were not analyzed in-depth in the research findings section of this thesis as they were not used to directly answer the research questions but to shape the other phases which in turn have been used to answer the research questions. The interview guide used for these interviews can be found in Appendix B.

3.2.2 Participant interviews

The first phase of the data collection was seven semi-structured interviews with participants of the workshop. These were conducted with the purpose of understanding where the individual participants stand in their relation to non-human entities and the future of the case study, the city of Utrecht. The interviews were held in the weeks leading up to the workshop to furthermore let the participants get to know the topic and already allow them to start thinking through the topic. These interviews however were optional, and participants could opt out of participating in an interview. To those participants who opted out of an interview beforehand an email was sent to these participants to get them acquainted with the topic of the workshop already, similar to those participants who agreed to participate in an interview. The criteria and recruitment of the participants for the workshop and thus also the participant interviews will be discussed in Chapter 3.2.3. The participant interviews were recorded and transcribed anonymously. They are

discussed in Chapter 3.3, to explain the workshop design and how these interviews helped shape it. The interview guide used for the participant interviews can be found in Appendix C.

3.2.3 Workshop

During the second phase, the speculative fabulation session was organized and held as a workshop as practice methodology. This workshop was shaped through the outcomes of the expert semi-structured interviews and participant semi-structured interviews. The workshop was focused on using speculative fabulation as a method within the context of NbS and more-than-human urban futures. Seeing as speculative fabulations are in part used in this research to bring individual narratives to the foreground, the focus of the workshop was on fostering individual speculative fabulations. However, as pointed out by Søndergaard, et al. (2023), bringing these narratives together can also be beneficial in bringing out narratives in participants and can help foster creativity in participants. Thus, part of the workshop was dedicated to discussing the individual narratives and co-creating new narratives with the participants. The detailed workshop design is further discussed in Chapter 3.3 based on the outcomes on the two types of interviews. 13 Participants were recruited for the workshop to allow for manageability, 10 of which ended up participating in the workshop as can be seen in Appendix A. The recruiting of the participants for the workshop, and thus consequently also the semi-structured interviews in the first phase, was done through a snowball technique, based on specific requirements which in turn were based on the literature review and the theoretical framework. The criteria have been intentionally left to allow for a wide diversity of people to be able to participate as has been discussed in Chapters 1 and 2. The criteria were as follows:

- Are working on the sustainable future of the case study, the city of Utrecht, in one way or another
- OR, live in the city of Utrecht and are concerned with the sustainable future of the city

Participant observation was applied during the workshop, as this enables the researcher to study the activities of the participants in the moment (Kawulich, 2005). Although participant observation is often used as an ethnographic tool to study people's daily life's, it has increasingly been used to understand specific participatory processes, such as in Vougioukalou et al.'s 2019 study on co-design in intensive care units in the UK. Observation furthermore allows the researcher to further understand nonverbal communication, interactions between participants, and the context in which participants operate (Kawulich, 2005). As such, it was used in this research to understand how participants act within the studied participatory method. The observations were collected through notetaking. Furthermore, the last half hour of the workshop was used for an optional discussion moment. The discussion served the purpose of hearing first impressions and reflections from the participants to allow for further reflection on the participatory method in the research. The discussion was recorded and transcribed anonymously. This together with the

participant observations and the participant interviews beforehand were used to understand the learning outcomes of the workshop. The participants also produced narrative outputs during the workshop. These have been analysed to understand how the specific methodology can help to co-create alternative urban futures.

3.3 Workshop design

Before diving into the data analysis, it is important to explain the workshop and how it was designed. The purpose of the workshop was to understand what role speculative fabulation as a narrative art-based participatory methodology can play in imagining more-than-human urban imaginaries. To shape the workshop a literature review was carried out, complemented with three expert interviews and eight interviews with the participants of the workshop. When signing up for the workshop, participants were asked if they were willing to and had time to participate in an interview beforehand. These interviews were optional, resulting in eight of the thirteen people who signed up for the workshop participating in an interview, as can be seen in Table 3. As mentioned in section 3.2.1, the expert interviews were carried out with experts on three different topics related to this research, namely imagining alternative futures, non-anthropocentric thinking, and the Nature Futures Framework, as can be seen in Appendix A. Whereas the expert interviews focussed on discussing techniques and understanding these topics in relation to the workshop, the participant interviews were focussed on understanding the participants' relation to two topics, namely nature, or the more-than-human, and personal future visions. The participant interviews served two additional purposes, namely getting to know the participants beforehand to make it easier to create a safe space which stems from the interview with expert 2. It additionally served to get the participants familiar with the topic of the workshop and allow them to ask questions beforehand. Participants who did not participate in an interview beforehand were informed further about the topic of the workshop and given the chance to ask questions leading up to the workshop via text or email.

The workshop was held on a Friday afternoon, the 22nd of March 2024, at Utrecht Science Park, from 14:00-16:30. Three people who had signed up for the workshop dropped out last minute due to various personal reasons, thus ten people eventually participated in the workshop as can be seen in Appendix A. Even though the workshop had been organized in English, since all 10 participants were comfortable speaking in Dutch, together with the participants it was decided to do the workshop in Dutch. The workshop started out with a quick introduction round so everyone knew a bit about who else was in the room participating. The participants were also asked to share how they were feeling going into the workshop. This was done based on the three expert interviews from which attention to the emotional state of participants was deemed to be important. It acknowledges that emotions are welcome in the workshop and

brings attention to the fact that everyone brings their own energy and emotions to the workshop. Next, I introduced the workshop itself and the research it is based on and allowed for questions to be asked. The remainder of the workshop was divided into three parts, namely an individual diary exercise, a collective story exercise, and a reflection round at the end. The reflection gave the participants the chance to share their main takeaways and reflect on their experiences during the workshop. The design of the first two parts will be discussed next.

3.3.1 Individual future diaries

The first exercise of the workshop was a future diary that the participants did individually. This exercise stems from speculative fabulation as a methodology to foreground individual narratives by allowing time to reflect and tap into individual experiences and knowledge (Søndergaard, 2023). The specific form of a future diary was inspired by the work of Gloerich & Ferri (2023) on speculative fabulation. However, whereas they used it as a technique to produce first-person narratives in a dystopian future, in this research it was used in the context of producing first-person narratives in an ideal, or utopian, future. This was in part chosen because of time constraints, as adding an extra step to first imagine dystopian futures which could be reflected on and serve as a base for positive future imaginaries would have taken more time. From the first two expert interviews, it was noted that getting people to start imagining takes time. With the goal of the workshop being to create collective, positive, more-than-human visions of Utrecht, the limited available time was needed to start this positive imagining early in the workshop. Secondly, the focus on positive imaginaries additionally stems from Haraway's conception of speculative fabulation as a chance to imagine flourishing futures from individual narratives (2016). This led to the individual future diaries being centered around an ideal future instead of on dystopian futures.

To introduce and set the scene for the individual future diaries a short example of a diary entry in an ideal future was given. To not interfere with the purpose of the exercise, namely, to foreground individual narratives, the example was completely unrelated in topic to the topic of the workshop. After this the specifics of what the participants were going to do was explained. The prompt of the exercise was: "Utrecht as a well-functioning urban environment." It was explained that what a well-functioning urban environment meant and looked like was completely up to the participants themselves, thus aiming to bring out the participant's own ideal future. They were then asked to take 20-25 minutes to write a diary entry from a first-person perspective about what a day in this future would look, smell, and feel like, and how they interacted with their surroundings. Within their diary entry, they were asked to include at least one non-human entity. To give some guidance for this, cards of examples of non-human entities were put on the table which they could choose from. However, they were free to choose any other non-human entity

they related to, as long as at least one non-human entity was incorporated in some way in their diary entry. This was done as speculative fabulation as a methodology focuses on relationships (Haraway, 2016), in this case, human and non-human relationships. The examples given were in part based on the participant interviews and how the participants viewed nature as can be seen in Appendix D.

3.3.2 Collective Future Narratives

After the individual future diaries exercise, the participants were divided into smaller groups. Two groups of three and two duos were formed, with attention to mixing students and working people. Because the workshop was moving ahead of schedule, instead of starting the collective future narratives after a short break, it was decided collectively to already make a start before the break. The participants were asked to share their individual future diaries with their group and already try to find some key elements in each other's diaries. They took between fifteen and twenty minutes for this, after which we held a short break. Afterwards, we regrouped to explain the remainder of this exercise. The participants were asked to create one collective story within their groups about what Utrecht as a well-functioning urban environment would look like to them. This story would be made up of the elements from their individual diary exercise and would include the non-human entities they included in this. They were free to choose in what type of format they wanted to tell this story, whether that would be again in a diary form or another form they, as a group, felt best suited their story. Which was based on expert interview 2, as it emerged from this interview that it can be helpful to the imagining to give people some freedom and flexibility in applying their creativity. They were again prompted to describe what this future would look, feel, and smell like, and how people would interact with their surroundings. They were furthermore prompted to step away from the idea of what is possible towards how they imagined these new worlds. It was made clear that the outcomes of the workshop did not have to be realistic in the sense that it would fit into our contemporary way of seeing and functioning in the world. They were encouraged to create new imaginaries. This is based on the premise of speculative fabulations as a methodology to move away from current ways of thinking and approaching the world, towards new imaginaries (Haraway, 2016; Rusca, et al., 2023). The groups were given about 40 minutes for this exercise. Afterwards, the four groups shared their stories and questions could be asked.

3.4 Data analysis

Three types of data have been collected from the three phases of the data collection. From both the scoping phase and phase 1 qualitative data was collected. This data served an instrumental purpose to shape the workshop and have thus not been analysed in depth. From phase 2, two types of data were gathered. The narrative data output, both consisting of individual and collective fabulations, were analyzed based on the Nature Futures Framework (Pereira, et al., 2020). This framework allows for the plotting of the created

narratives on a value-based plot. This framework will be further explained in section 3.4.1. The participant observation during, and discussion after the workshop resulted in qualitative data. This data has been coded in Atlas.ti based on the theoretical framework. The codes for the participant observations and discussion, as can be seen in Figure 3 have been created deductively from the theoretical framework, however, the sub-codes and end themes have been created inductively. The sub-codes were created inductively from the data output while the end themes were created inductively based on the data analysis from the workshop data and outcomes. These different methodological phases contributed to answering the two sub-questions and thus consequently the main research question.
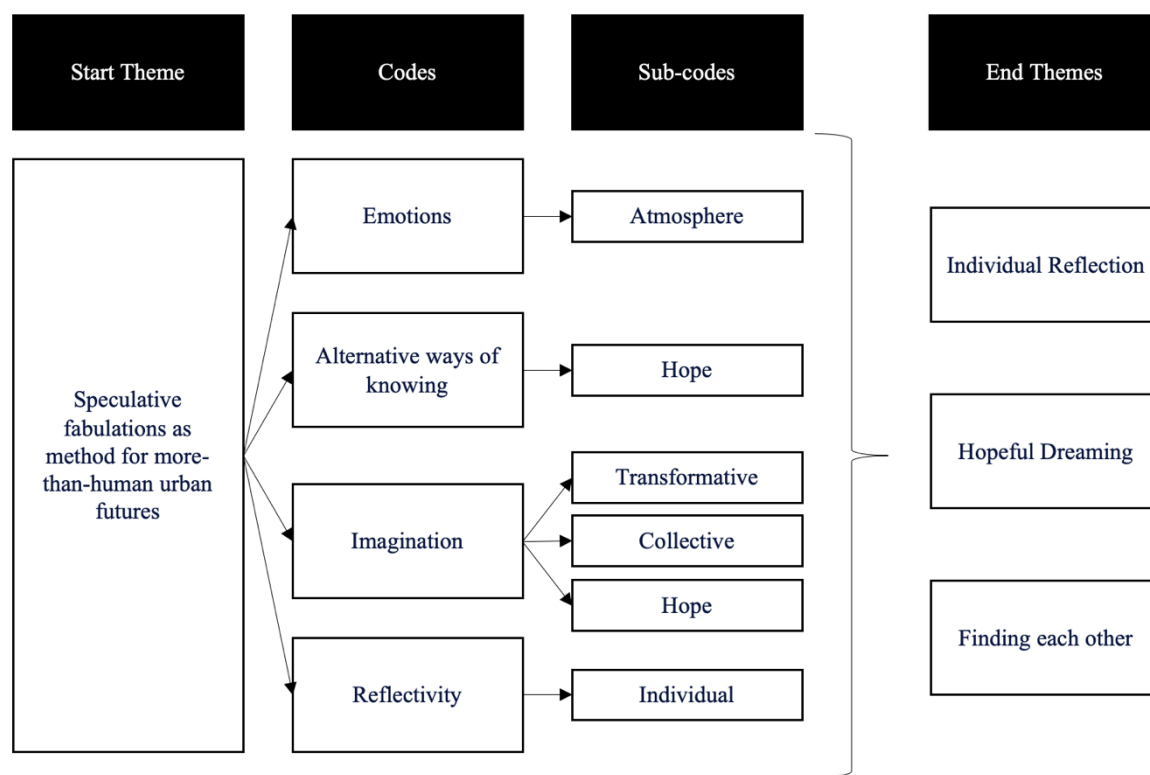
Figure 3. Coding scheme. (Author, 2024).

3.4.1 Nature Futures Framework

As mentioned, the narrative outputs of the workshop have been analyzed and organized based on the Nature Futures Framework (NFF). The NFF is a framework based on the outcomes from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) scenarios and models expert group (Pereira, et al., 2020). The IPBES recognized that human-nature relationships needed to be transformed to reach a sustainable world for which new visions need to be created that can help in this transformation. The NFF is defined as

> … a heuristic tool based on the diverse, positive relationships that humans have with
>
> nature, whilst at the same time offering a structure for consistency in the scenarios
>
> and models that use it. (Pereira, et al., 2020, p. 1173)

From this definition, it becomes clear that the NFF is a tool to be used that aims to accommodate the plurality in relationships that humans can have with nature. It furthermore highlights that the framework focuses on positive ways of relating to nature. The framework builds on previous work by the IPBES about different values that can be attributed to nature, namely intrinsic, instrumental, and relational values (Pereira, et al., 2020). The first of the three value types that make up the NFF is the (1) Nature for Nature (NN). This first type of value centers around the intrinsic value that nature holds, with a focus on the protection and preservation of biodiversity and natural functions. In this category, nature is thus valued solely for what it is. The second type is the (2) Nature for Society (NS). This category represents the instrumental value that can be attributed to nature. Nature is valued for the benefits and uses it can have for humans. The third identified value type is the (3) Nature as Culture (NC) one. This value type centers around the relational value between humans and nature. Humans are considered to be part of nature in this category, thus bringing forward the dependency between humans and non-humans. The three types of perspectives or visions that make up the NFF are visualized in a triangle, signifying the overlap that is within each of the three, as seen in Figure 4. It is important to point out that these three value types in the corners are starting points, with the plurality of positive values that can be ascribed to nature forming the rest of the triangle (Durán, et al., 2023). The framework does not claim either of the three corners to be
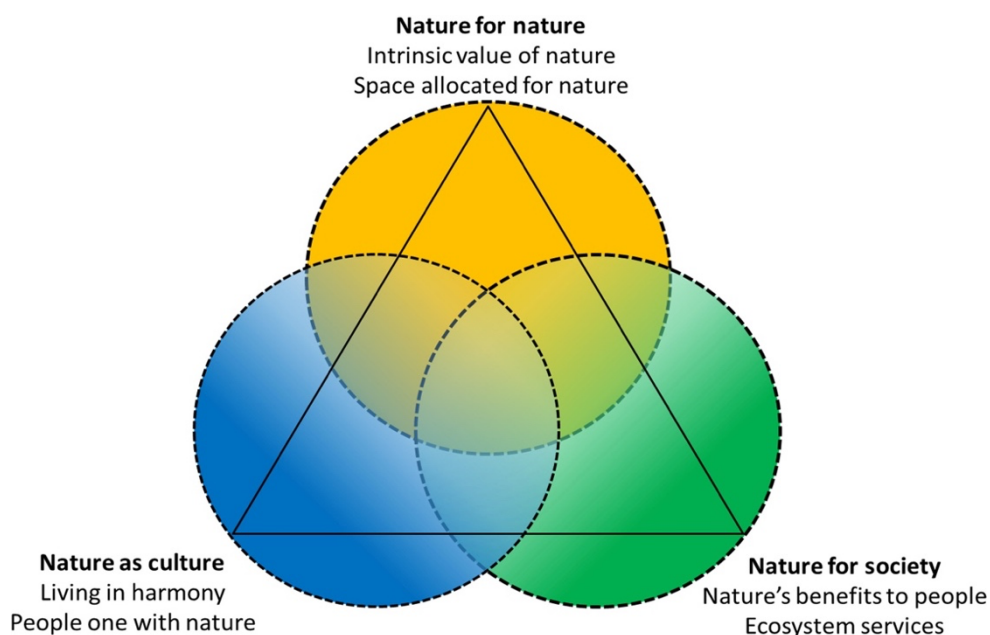

Figure 4. Nature Futures Framework. (Pereira, et al., 2020).

better than the other, rather it symbolizes the multitude of positive values that fall in between (Pereira, et al., 2020). The framework was chosen to be used in this research because it deals with underlying values and focuses on different human-nature relationships, which this research has aimed to analyze.

The NFF has since its development in 2020 been applied in different contexts to envision nature-centred futures such as at a local scale (Kuiper, et al., 2022) and at the continental scale (Lahoti, et al., 2023), but also to focus on specific societal groups (Rana, et al., 2020) and specific natural habitats (Kramer, et al., 2023). The framework has also been adapted to the urban context into the Urban Nature Futures Framework (UNFF) by Mansur et al. (2022). This framework uses the same three corners as the NFF, however, it applies them to urban contexts. As this research focuses on urban visions, the descriptors of the three corners from the UNFF have been used to assess the four narratives from the workshop. For the NN corner, this leads to nature being valued for what it is "through conservation, protection, and restoration of blue-green nature spaces and biodiversity to allow natural and ecological processes to occur with little to no human intervention within the city" (Shaikh & Hamel, 2023, p. 3). The city is designed to facilitate connectivity between habitats to let biodiversity thrive, and the effects of anthropocentric behaviour is kept to a minimum (Shaikh & Hamel, 2023). For the second corner, NS, nature is valued because of what it provides for humans, such as "resource provision, improvement of health and well-being, environmental regulation, and risk reduction" (Shaikh & Hamel, 2023, p.3). NbS are often placed within this corner as they are used in cities to tackle different urban problems (Shaikh & Hamel, 2023). In the third corner, NC, nature is valued because of the "reciprocal and harmonious relationship between people and nature" (Shaikh & Hamel, 2023, p. 3). Humans are part of the natural ecosystem and nature is essential in how people view themselves and their culture (Shaikh & Hamel, 2023). Nature has an effect on how people view places and how they connect with each other and with nature. Paradigm shifts take place in which humans aim to take care of nature and actively want to connect with their non-human surroundings. These descriptors can be found in Table 2. This has served to analyze and organize the narrative outcomes from the speculative fabulation workshop.

Table 2.

Urban Nature Futures Framework descriptors

Nature value	Descriptors
Nature for Nature	- Intrinsic value of nature. - Human actions focussed on thriving of nature with as little human interference as possible, e.g., through conservation, protection, and restoration. - City is designed for habitat connectivity for the purpose of improving biodiversity. - Impacts of human behaviour on nature are kept to a minimum.
Nature for Society	- Instrumental value of nature. - Nature is used by humans for a multitude of purposes, e.g., food, risk reduction, well-being. - NbS implemented to tackle urban problems.
Nature as Culture	- Relational value of nature. - Nature makes up part of people's identity and culture. - Nature plays an important role in people's perception of places and of their community feeling. - Paradigm shift to wanting to take care of nature and fostering a connection with nature.

Note: Adapted from Shaikh & Hamel (2023).

3.5 Ethics

When carrying out research with human participants it is essential to think carefully through the ethical aspects related to the research (Guillemin & Gillam, 2004). Both the participants of the expert interviews and the participants of the workshop and the subsequent interviews were asked to read through a consent information form and asked to sign this form. Three different consent forms were created. One for the expert interviews, one for the workshop participants who also took part in an interview, and one for those that only took part in the workshop. These three consent forms can be found in Appendix E. Several ethical considerations were explained in this form. Firstly, it has been explained that the data will be anonymized, thus anything the participants have stated will not lead back to them. This was done to ensure that participants feel safe to participate fully. Secondly, the form explains that the data that is collected, including recordings, transcripts, and notes, has been stored in an encrypted folder on the researcher's computer.

Thirdly, it will explain that the data will be used in the context of this research, including in possible future publications or conferences. The participants will be asked to read through this document, ask questions if anything is unclear, and if they agree, to sign the consent form. Both in the consent form and orally it will be stated that participants can revoke their consent at any time before, during or after the data collection period without explanation. Acquiring informed consent is not just a formality but is essential to ensure that participants know what they are taking part in and what their input will be used for. It was furthermore be communicated that the participant, both of the expert interviews and the workshop, will be sent the research in full once the research is finalized.

It is furthermore important to consider my own positionality as a researcher in relation to the participants and the research topic. Firstly, it is important to acknowledge that, as mentioned before, more-than-human ontologies can be traced back to and found in a variety of Indigenous and First Nation cultures. As a white, Western student it is important to acknowledge the legacy this research is built on. Through this research, I do not aim to appropriate these ontologies but rather learn from them and understand how they can contribute to battling the effects of climate change. The historical power imbalance and misuse are important to think through throughout the research. Next to this power issue, has been important to keep on reflecting on my own power as a researcher in relation to the participants throughout the research. By checking in at different moments during the research with myself, but also by checking in with the participants during the interviews and the workshop I have tried to embed this reflexivity throughout the research process. Furthermore, during expert interview 3 I reflected on this together with the expert.

4. Research Findings

Now that the methodology and analytical approaches have been discussed, the research findings will be discussed. This chapter follows the twofold focus of this research, namely by first discussing the outputs of the workshop to understand what role speculative fabulation as a methodology can play in imagining more-than-human urban imaginaries. The outputs, the individual diaries and the four collective stories have been analyzed based on the descriptors of the UNFF in Table 2. These have been categorized based on the three value categories of the framework, namely the Nature for Nature, the Nature for Society, and the Nature as Culture values, as can be seen in Appendix F. This led to three narrative emerging, one for each of the value categories, based on the individual and collective story outputs from the workshop. The three. narratives will be discussed respectively. Additionally, the key overlaps and differences between the narratives will be discussed. Secondly, the workshop techniques that were used will be discussed in relation to the theoretical framework. This will thus focus on what the specific techniques used contributed to shifting from a more anthropocentric way of imagining to a more-than-human way of thinking.

4.1 Future Narratives

As mentioned, now the future narratives that can be constructed based on the workshop outputs will be discussed. The outputs have been analyzed, finding the key elements from each collective narrative and positioning them on the NFF based on the value descriptors of the UNFF. Firstly, the narrative that has been created based on the key elements that are positioned in the Nature for Nature corner will be discussed, followed by the narrative that has been created from those elements in the Nature for Society corner. Lastly, the narrative created from the Nature as Culture corner elements will be discussed. This is followed by a discussion of the main similarities and differences within the narratives. The key elements that were used to create the narrative can be seen in Appendix F. It is important to note that neither of the narrative is better than the other, they are based on different value understandings and thus lead to different outcomes. However, they are all rooted in positive nature futures. Figure 5 shows the three to be discussed narratives on the NFF.
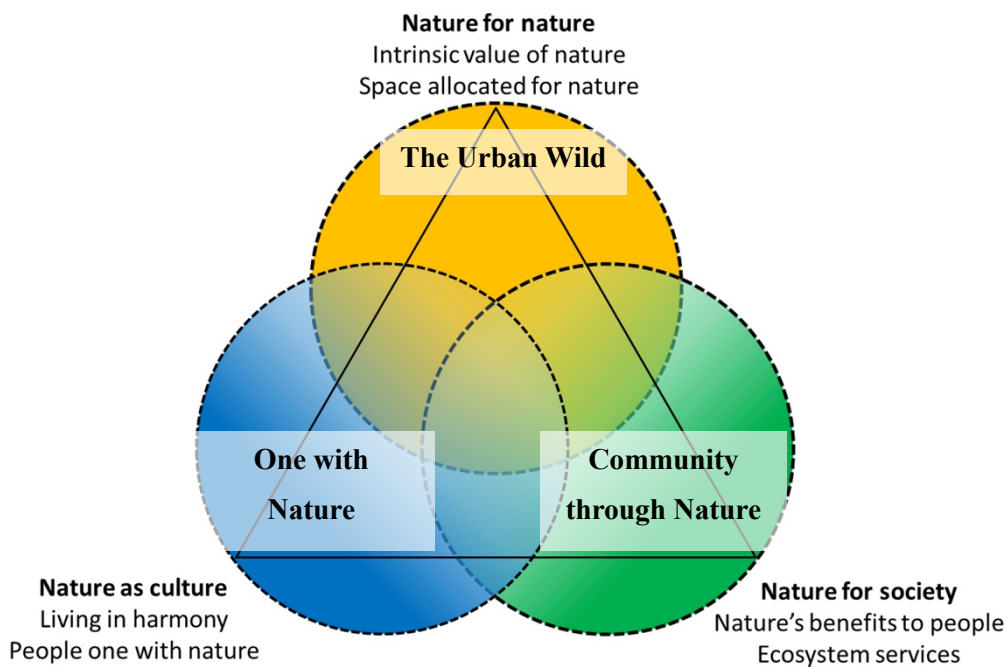
Nature for nature
Intrinsic value of nature
Space allocated for nature

The Urban Wild

One with Nature

Community through Nature

Nature as culture
Living in harmony
People one with nature

Nature for society
Nature's benefits to people
Ecosystem services

Figure 5. Three narratives on the Nature Futures Framework (Adapted from Pereira, et al., 2020 by author, 2024).

4.1.1 The Urban Wild

The first narrative that will be discussed is based on those elements of the outputs that sit within the Nature for Nature value category. These elements thus all signify an intrinsic valuation for nature. It is based on elements A2, B2, B3, B4, C1, C2, C3, and D5, as can be seen in Appendix F. A visual representation of what this narrative could look like can be seen in Figure 6.

The narrative that emerged has been called The Urban Wild and goes as follows: Nature is central in the city of Utrecht. The city is a natural landscape. Nature has been given the space to grow freely where it wants to go. The people of Utrecht do not interfere with the growth of their natural surroundings as Utrecht is a city where it is not people who can choose what is best for all the nature in the city. They can live within the natural city, but they listen to all the non-human entities to understand what is best for them. All around native plant and tree species can be observed. This has created many habitats for animals to create a home in. People are actively working on listening to nature, for instance, they try to understand what the soil around them needs in order to thrive and how their actions have an impact on the soil. This results in people becoming attuned to the needs of nature and has required them to become flexible within their ways of life. People have become so flexible in their livelihoods that they can move easily, which they also do relatively often in order to give the soil on which they live the rest it needs to regenerate and thrive again. This requires

them to live minimally. The houses are small and made from light, recycled materials so that they are easily moveable within the city. The materials come from other products that were used before in the city by people, such as cars which were removed since they had a negative impact on nature which does not fit into the vision of the city to minimize the impact humans have on nature. It has both freed up space for nature to grow uninterruptedly and has lowered the overall human-induced greenhouse gas emissions of the city. Animals and plants have taken up these former streets and have moved up onto the existing buildings of the city to create new habitats. Humans have taken it up as their job to protect the emerging biodiversity and where they can help to conserve and promote the biodiversity in the city. The people of Utrecht thus actively work to give nature what it needs and try to be as flexible as possible to achieve this. But even though people are so flexible and because of that move around a lot within the city, people still feel at home and connected to the city. This is in part because of the circular nature of Utrecht, as everything in the city has been reused and thus is recognizable to the citizens. They can see the products they formerly

Figure 6. Utrecht rewilded – Image showing Hoog Catharijne. (Edited image by author, 2024).

used but no longer needed within the materials used to contract their homes and through that feel connected to the wild city of Utrecht.

Within this narrative, there are a few important elements to be highlighted. These characterize the narrative as symbolizing the intrinsic value of nature. The first one being the desire of humans to minimize their impact on the non-human entities in the city. This can be seen in the freedom nature gets to grow within the city without human interruption. H However, it is important to point out that not every element that can be positioned in the NN corner advocates for a future where non-humans take over the city. For instance, element D5 highlights that this can also take the shape of intentionally giving more space to nature, while still keeping this to a certain extent contained. Nevertheless, the overall narrative that emerged from the workshop output is one in which Utrecht is rewilded and the non-human entities get the chance to thrive without much human interference. The second element to be pointed out is that the city is in a way ruled by non-human entities in the sense that their needs and what they need to thrive is central in the decision-making in the city. It can be argued that this stems from the intrinsic valuation of nature in this narrative as it values nature not for how it relates to humans but for what it is itself. Thirdly, an important element in this narrative is the fact that humans actively work on preserving and promoting the biodiversity within the city. Not only by letting nature roam freely but also by removing roads to create more habitats for non-human entities and by being flexible within their lifestyles to adapt to the needs of nature. This signifies a desire to help nature not for the sake of anything other than to want nature to thrive and flourish. Thus, the elements in the Nature for Nature corner create a narrative in which non-humans are in the lead, with humans working to create space and environments in which nature can thrive while minimizing the impact they have on non-human entities.

4.1.2 Community through Nature

The second narrative derived from the outputs of the workshop is based on the key elements that sit within the Nature for Society corner, namely A1, A3, B5, C4, D3, D4, as can be seen in Appendix F. In this narrative nature thus is valued mainly for its contribution to society. Figure 7 shows a visual representation of what this future could look like.

This second narrative is called Community through Nature and goes as follows. Utrecht is a city where people rely on each other. Numerous diverse communities of people have formed that live life together and help each other where they can. People share lots of products such as cars, bikes, and tools. Life in Utrecht is centred around these communities. The city has been designed in such a way that people can spend time together with their communities, but also get to meet other people. By integrating many public and freely

accessible green spaces in the urban mesh the city has slowly been designed in such a way that people's sense of community is promoted. But it is not just the city that has created ample public green space, on the outskirts of the city many old estates have been restored and new estates have been created. For instance, the old Amelisweerd estate has been protected and restored to become a biodiverse place where people can come from the city to spend time together but also to relax and enjoy the non-human lives around them. When moving back into the city, all-around community gardens can be found. The citizens of Utrecht share the food that they produce in their crop gardens during their picnic meals in the many green spaces around the city. People live off of what the local lands can provide, not just in terms of food, but also in terms of materials for building and designing. Everything that has been newly built and designed is made from locally available materials, thus changing the design process from fitting the materials to the design to fitting the design to the available materials. Life in Utrecht is thus dependent on not only the human community but also on what the non-human entities in and around the city can provide. Utrecht has become a socially oriented city, where people get to spend time together and create bonds with those around them.

There are several key elements to point out that make up this narrative and position it in the NS value corner. Green spaces in and estates around the city are key in this narrative for what they provide for humans. They provide spaces for people to meet and form communities that can help each other. The city is thus actively designed in such a way that people can make use of green public spaces, promoting both a sense of community feeling and relaxation to the humans living in Utrecht. In this way, nature provides a social benefit for humans. People live life together more than individually as they are focused on spending time together and helping each other out where they can. But the non-human entities in and around the city also provide food and materials for humans, thus creating a material and well-being benefit for humans. This element stems in part from a more fantastical image of the future, namely element C4, one in which it does not rain water but wool, however, it still symbolizes the value of living off of what is provided by nature. In the output from group C, the wool is used to build houses and design products, it could thus be argued that this signifies the desire to build and design from locally available materials. Thus, the narrative that can be constructed based on the key elements in the Nature for Society corner, envisions Utrecht as a city in which there is plenty of freely accessible green space to meet and build communities, which promotes relaxation, but also a city that is locally focused and dependent on nature when it comes to food and material resource provision.

Figure 7. Utrecht providing benefits for humans – Image showing the Oudegracht. (Edited
image by author, 2024).

4.1.3 One with Nature

The third narrative that can be generated from the key elements of the workshop outputs sits in the Nature
as Culture corner. This is mainly based on key elements A1, B1, C1, D1, and D2 from Appendix F. The
focus is here on the value attributed to nature through the relationship between humans and non-humans.
Figure 8 shows a visual representation of what this future could look like.

The One with Nature narrative, centring around connections between humans and non-humans goes as
follows. There is again plenty of green space in the city, which people can freely use. This leads to people
forming a connection with nature around the city and in their neighbourhood, which in turn fosters a sense

of responsibility in humans to take care of the nature around them. Furthermore, humans connect actively with non-human entities, for instance by physically getting in touch with trees and actively trying to listen to the soil. This already starts from a young age in this future narrative. As kids, people are being taught about the natural world around them, such as the plants, the insects, and the soil around them. Instilling an awareness of the non-human life around them and interacting consistently with it from a young age to foster a sense of responsibility. It not only teaches people when they are still young about how to take care of nature and how to listen to the needs of nature but also shows them and lets them interact with the beauty of their natural surroundings. This leads to people, when they grow up, to want to take care of the non-human entities around them because they care for these entities and have built a connection with them. This furthermore leads to a specific type of pride that people feel for the nature around them, in part because they help take care of it but also because they have built a connection with these non-human entities. Humans and non-humans form communities within the city. This has also led to people living their lives based on the rhythms of nature. For instance, during wintertime people retreat more and take more rest, listening to how non-human entities around them also live. Humans and non-humans have become one community making up the city.

There are several key elements that make up this narrative to point out. This narrative centers around people forming and maintaining a relationship with the non-human entities around them which in turn informs their behaviour. It could thus be argued that the non-human entities have become part of how people identify themselves and how they would identify their community. It is thus the relationship between humans and non-humans that leads to people valuing and wanting to take care of their natural surroundings. Next to fostering a relationship with and a sense of responsibility for the surrounding non-human entities, humans in this narrative also live and structure their lives based on the rhythms of nature. It could be argued that this signifies that cultural norms and values, such as productivity during different seasons, are in part defined by the non-human entities that humans have formed a community with. The key elements within the Nature as Culture value corner thus create a narrative in which humans and non-humans have created communities, in which people are taught about how to take care of and listen to nature, and one in which life is more structured around these human and non-human relational bonds.
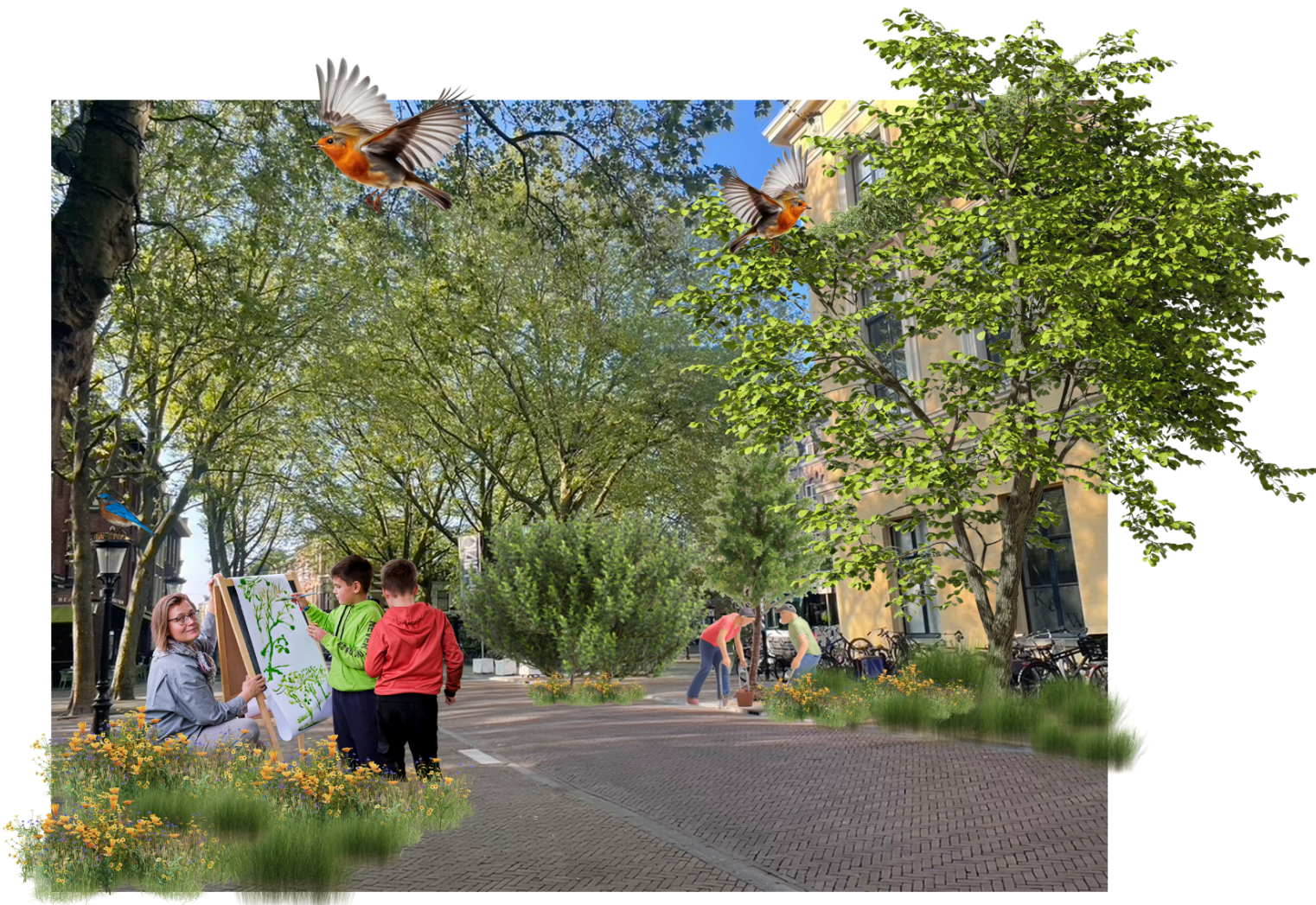
Figure 8. Utrecht as human and non-human communities– Image showing the Mariaplaats.
(Edited image by author, 2024).

4.1.4 Overlaps and Differences

Now that the three narratives have been discussed, some of the key overlaps and differences in the narrative will be discussed. These overlaps and differences have been summarized in Table 3. Across all the narratives nature can be found everywhere, on buildings, in the streets, in the clean canals, and animals are all around. This is the primary overlap in the three narratives, as they all to some extent discuss more ambiguous boundaries between humans and non-humans. Whether that be a mostly blurring of the boundary as in the One with Nature (ON) narrative in which humans and non-humans form one community, or in the Community through Nature (CN) where a separation can still be observed as nature facilitates

human communities, but nature is actively allowed to be all around. The city of Utrecht and its surroundings are a place where nature can thrive, and people actively work on giving it space to flourish. However, where a potential conflict can be observed within the narratives is in the flexibility of humans to adapt to the non-human entities around them. In the Urban Wild (UW) narrative humans are as flexible as moving relatively regularly if the soil needs it, while the CN narrative is more focused on creating a community where you live in which you can help and support each other. Although the CN narrative does not directly mention moving, forming a community takes time. Furthermore, both the CN and ON narratives discuss the design of the city, which is more permanent. Where all narratives overlap though is in their willingness to live more according to what nature can provide, ranging from building materials to crops. This means that cities function more locally based on what can grow in that environment, for instance, the materials that homes are built with are those that are found in and around the city. The designs of the houses are then adapted to what is available instead of adapting the materials to what the design requires. Nature is thus not only present within the city through the non-human entities living there but also in the physical design of the city.

Furthermore, in all narratives natural spaces are freely accessible to everyone. These green public spaces do not require anything from anyone to enter and are in all three narratives cared for by community members. These green spaces have several effects on life in the city in the different narratives. In the UW narrative, it makes people more aware of the needs of their non-human surroundings by offering opportunities to connect and listen to nature. The CN narrative focuses more on the benefits of having these public green spaces on the human community. These spaces allow people to meet each other, spend time with their community, and as they are all around the city, for neighbours to meet each other there. The ON narrative adds to this by not only highlighting the effect it has on human communities but emphasizing the effect it can have on building and maintaining human and non-human communities. The three narratives thus add different layers to the importance of having plenty of public and accessible green spaces. When bringing them together, Utrecht in this future thus has plenty of freely accessible green spaces, whether that be estates such as Amelisweerd or newly created green areas in the city center because roads have been converted into green spaces. However, these natural spaces are not just green spaces, the canals in Utrecht have also been cleaned and new water structures have been created. These, together with the green spaces have in part been created for human recreation and relaxation, as apparent in the CN narrative, but also for the sake of benefitting nature and wanting to take care of non-human entities around the city, as apparent in the UW narrative. However, a potential conflict in how these green and blue spaces are created as from the UW narrative these non-human entities are freely given the space to grow and move, whereas this is becoming less apparent from the other two narratives in which humans more actively play a role in shaping

their surroundings. Nevertheless, space is created for nature areas within the city, creating a city benefiting both humans and non-humans.

Table 3.

Main overlaps and differences in the three narratives

Overlaps	Differences
Nature has space to thrive, and humans actively aim to promote the thriving of nature	Flexibility of humans to adapt to the needs of nature
Live more according to what nature locally can provide	The freedom nature gets to take over the city or not
Freely accessible natural spaces, which allows people to meet and create communities	

4.2 Learning Findings

Now that the workshop outputs have been analyzed based on the NFF, it is important to discuss the findings about the workshop process and how speculative fabulation as a methodology contributed to shifting anthropocentric thinking about the future of cities towards a more-than-human way of thinking. This is based on participant observations during the workshop and on the reflection afterwards. These have been coded based on the theoretical framework, following the coding scheme in Figure 3. Three themes emerged from this, as can also be seen in Figure 3, namely (1) individual reflection, (2) hopeful dreaming, and (3) finding each other. These three themes will now be discussed in more detail.

4.2.1 Individual Reflection

The first theme that emerged from the reflection and the participant observation is that the method gave the participants time to individually reflect upon their own values and their own ideal future. The workshop started, after a short introduction, immediately with the individual diary exercise as explained in section 3.3.1. Participants thus did not have time beforehand to discuss the topic and prompt with each other before diving into what their own ideal future would look like. Participants also took this time to think for themselves as could be observed. Some immediately started to write while others took longer to think before diving into writing their diary entry, but no one conversed during this exercise. They thus did not have the chance to influence each other as most participants also did not know each other. As participant 5 pointed out:

> "What everyone wrote down can never have been influenced by others. The influence
> of others on this has been cancelled out."

Furthermore, participants 3,5, and 12 all indicated that this was different compared to previous participatory projects they have been involved with. Instead of immediately starting to converse or respond to someone or a document, this gave them the chance to investigate their own hopes and dreams about the future. They got the chance to start with what they would want and how they see Utrecht in an ideal future. As participant 12 indicated:

> "I think it is very important to have a moment of individual reflection, as stated by
> [participant 5]. I have worked within a political context for a long time and am used to
> receiving a document and then responding to that. This time, I got to start with myself
> and I found that pleasant to do."

Because they got the chance to first think for themselves, it also shifted the focus from a very practical focus to thinking through values. As participant 3 indicated, this gives the chance to move away from immediately diving into specific solutions but gives the chance for people to first think through what they themselves dream about and what is important to them. In the planning practice, they indicated that it gives the chance to shift conversations away from solution-oriented to a focus on the dreams and hopes that people have based on underlying individual values. It could thus be argued that starting from individual narratives and allowing participants time to think through this is important to bring personal values and dreams into the conversation, thus potentially allowing for more diverse ideas in planning practices.

4.2.2 Hopeful Dreaming

In the previously discussed theme, it was already mentioned, but one of the main things coming out of the workshop is the ability for speculative fabulation as a methodology to bring about a sense of hopeful dreaming. Participants indicated that the methodology helped them to dream and open possibilities they perhaps would not have considered or thought about otherwise. With both exercises, the focus was on what they would wish for and what their ideal future could look like, which intrinsically shifts the focus towards positive visions of the future. Furthermore, they were not told that they would have to stick to current rules or structures that make up the city or the way we think about and plan our cities. As participant 1 mentioned:

> "I am very used to thinking realistically and within existing frameworks, and then it
> already starts with the first exercise that you have to let go of that, which can also be
> difficult. … It did not have to be logical; we rather could just start and see where we
> would end up. It led to an explorative mindset."

This indicates that the methodology allowed participants to dive in without needing and feeling like they needed to have a perfectly thought-out plan, but that it allowed them to also explore their own ideas about what the future of Utrecht would look like. This furthermore allowed creativity to get involved in thinking about the future, as stated by participant 11:

> "… the creativity that I felt as a child and how unconstrained and fantastical
> imagining could be, I tasted that here as well. Fantasizing without constraints but also
> through that being able to form a sort of realistic frame together."

Furthermore, the methodology and the unconstrained imagining that it brings led to the feeling of hope for change and a different world. Multiple participants indicated that the session felt hopeful and that meeting other people who also want to think about alternative ways of thinking about the future inspired them to hope that these futures could also become reality. Participant 5 indicated that for them this was in part due to the idea that imagining is powerful because it step towards building these alternative futures, stating that:

> "… if you can't even imagine it, it for sure won't come true. At the end of the day,
> this is the way in which we can shape the world. If you try to imagine an ideal world
> you're already building this ideal world."

During this workshop the setup and the unrestrained nature of the methodology thus helped the participants to imagine freely and gave a sense of hope that change can happen.

4.2.3 Finding Each Other

The third theme that emerged from the analysis of the participant observation and the reflection session at the end of the workshop is that by starting individually and then working in smaller groups helped to find each other and the similarities in hopes and ideals that they share. This relates back to the value-based exploration that this methodology offered, as people can have different starting points and perspectives within their diaries, by focusing on the underlying values and facilitating that conversation, shared ideals and values could be found. Participant 1 pointed out how this helped bridge diverse backgrounds:

> "You have people from all different backgrounds but in the end, you see that a lot of
> our values are shared."

This could for example be seen in the collective narrative created by group 3. As they mentioned, they started from different scale levels and initially thought this would mean there would be a lot of differences, however, it turned out that the underlying values were similar but the way in which they translated

individually differed. Not only was this made apparent within the four groups, it also showed when the groups shared their collective narratives, as pointed out by participant 6:

> "[Within our group] we started individually with a story, but we saw that for us two
> we had quite some overlap, even though we approached things from a different
> perspective. And then when we shared [our collective narratives] with the other
> groups that they approached it very differently, but that there is also a lot of overlap."

However, participants not only found that there were quite some similarities between each other's diaries and collective narratives, they also stated that the methodology gave them the chance to explore these alternative futures together. As mentioned in 5.2.2. the unrestricted imagining gave participants the chance to explore their hopes and dreams, but they furthermore also indicated that this helped with exploring together and through that finding each other and connecting. Furthermore, by focusing on underlying values rather than practical implementation of these values, conversations could be held and common ground between participants with different backgrounds could be found.

5. Discussion

Now that the research findings have been discussed they will be related to the research questions and positioned within the current body of research to understand what this research can add. The main research question that has guided this research is to understand what speculative fabulation as a co-creation methodology can contribute to imagining more-than-human urban futures with nature-based solutions, with the research focus on the city of Utrecht. Two sub-research questions had been drawn up to help answer this question. The first sub-question focuses on what the methodology can bring to the participants' learning experience, while the second sub-question focuses on how the outcomes of a speculative fabulation workshop can be used in the context of NbS planning. This discussion chapter will discuss both sub-questions, by zooming out from the research findings in the context of the city of Utrecht to answer the main research question.

The first sub-question, as mentioned, centred around the learning experiences that the speculative fabulation methodology can offer, focusing on how it can aid in involving a wider variety of experiences in participatory planning. Planning has been argued to hierarchical view of humans and non-humans, placing humans above non-humans in terms of importance (Bolter, 2016). This has influenced the way in which cities have been planned, with non-human entities often being incorporated into the urban fabric solely for the benefit of humans. Jon (2020) has argued for the necessary and urgent shift in planning theory and practice to develop more-than-human ways of approaching the city to blur the dichotomy between human and non-human. However, this requires new narratives about the future of our cities, which in turn requires planning practice and theory to incorporate a wider diversity of experiences and knowledge forms (Edwards & Petterson, 2023). Speculative fabulation as a methodology has been considered to be promising for this because of its focus on incorporating individual narratives in thinking through, in this case, urban futures (Nijs, et al., 2020).

Four aspects were identified in Chapter 2 in which an art-based co-creation methodology such as speculative fabulation can help in shifting towards more-than-human thinking, namely incorporating emotions, alternative forms of knowledge, imagination, and reflexivity. Through the data analysis, this research aims to further understand how speculative fabulation as applied in the workshop could help incorporate a wider variety of experiences in the planning process. Firstly, what was found is that the focus within the speculative fabulation methodology on individual narratives has helped participants to reflect on what they want to bring in individually leading to them bringing in individual values and thus taking a less reactive stance within the process. By allowing participants to start from their own knowledge, experiences, and values, it helped participants to add their own views on the future of human-nature relations in the

urban context. However, whereas the research pointed out in Chapter 2 mainly focused on how art-based participatory methods can help to reflect on current systems and beliefs (Heras, et al., 2021), it was found in this research that it also helps participants to reflect on what their own values, hopes, and dreams are. Furthermore, because of the narrative approach of the methodology, it shifts the focus from practical solution-oriented thinking to allow for deeper held values to come to the fore. For instance, the common held value of accessible green spaces that emerged from the workshop, came to the foreground because the narrative form allowed participants to not solely have to focus on solutions but also on what life ideally looked like to them in the future. It could thus be argued that a focus on individual narratives through more art-based participatory methodologies can be beneficial for participants to reflect on their own personal beliefs and thus allow them to start co-creating by starting with their personal experiences and values. Thus, potentially allowing for more diverse experiences to be incorporated in the planning process. Additionally, it emerged from the data analysis that speculative fabulation as a methodology has foregrounded values about urban futures. This fits into previous research about creative practices in participatory planning allowing value-based discussions to be held (Mackay, et al., 2021), but also with previous research into speculative fabulation (Preda & Matei, 2023, Nijs et al., 2020). It could be argued that this was in part because of the ability of participants to step away from what is possible, as could be seen in the outputs of the workshop, where hopes and dreams translated into stories that might otherwise be waved away or may not even have come up as they would be deemed impossible. This highlights the potential of speculative fabulation as a methodology in urban participatory planning to allow for often unheard input to be heard and used.

Next to the more individual reflexive space that the speculative fabulation methodology offered participants, it also allowed them to explore both individually and together. From the data analysis, it was found that participants found that this methodology allowed them to explore their own ideas about the future of Utrecht into realms they otherwise would not have done. With less focus on what is possible and more on these hopes and wishes, participants were able to tap into their creativity and also learn about their own wishes for the future of the city. This sits in line with previous research on the speculative fabulation methodology as allowing people to tap into this often unincluded creativity in visioning processes (Søndergaard, 2023), but also with other research on art-based participatory methods (McNiff, 2007). However, it adds to this by pointing out the shared exploration that can happen in these processes. As pointed out by participants, the speculative fabulation methodology helped them to explore ideas, dreams, and hopes together and inspire each other. Participants got to connect with each other through exploring their urban imaginaries together. It could thus be argued that the speculative fabulation methodology can help uncover shared knowledge through the explorative nature of the methodology. This can be related to

art-based research being carried out, in which the creation of knowledge through creative practices has increasingly gotten attention (Serengina, 2019), however, less focus has been on the creation of shared knowledge through art-based participatory planning practices in urban planning contexts. It furthermore nods to a state of not-knowing and not shying away from this, as this is part of such explorative work. This potential for speculative fabulation to give room to the not-knowing responds to the call of researchers such as Wiberg (2022) for planning to get comfortable with not knowing, thus opening up space for alternative forms of knowledge in planning practices. Urban planning is often more focused on dealing with this uncertainty instead of sitting with it, which could open up new and alternative ways to move forward (Wiberg, 2022).

The second sub-question that has guided this research deals with the outcomes of speculative fabulation co-creation and how this can be used in the context of NbS planning. The outcomes of the workshop in this research were analyzed and categorized through the NFF, a heuristic tool accommodating the multitude and diversity in human-nature relationships (Pereira, et al., 2020). Through this, three future narratives were created based on the elements generated in the workshop, both in the individual diary exercise and the collective stories. The three narratives do not just incorporate physical suggestions for NbS, they also indicate value changes and how NbS are approached in urban planning. Five overarching themes will be discussed and how they can be used in NbS planning, namely accessibility, locality, transformative change, social-ecological memory, and community based NbS.

The first overarching theme is the accessibility of nature in urban areas. In all narratives to different extents, accessible nature within the city was incorporated and deemed important. In the CN narrative, this was an essential element of the narrative as it provided spaces for humans to meet and form a community, which was taken further in the ON narrative in which it also allowed humans and non-humans to form communities. Whereas in the UW narrative, it was more implicitly woven through allowing non-human entities to take over the city more freely. The issue of accessibility of NbS interventions and social inclusiveness have increasingly been getting attention within NbS research (e.g., Borelli, et al., 2021; Haase, et al., 2017; Cousins, 2021). This thus points to the necessity for NbS solutions in urban planning to take the accessibility of these solutions into account. But accessibility should not just be considered on the individual NbS level, it should be taken into account on the entire urban level, as emerged from the three narratives. In all three narratives, natural spaces are accessible throughout and outside the city. Previous research on the accessibility of green spaces in urban areas has pointed out that they are often disproportionally divided within cities, meaning that certain communities have easy access to green space while others do not (Borelli, et al., 2021). The outcomes of the speculative fabulation workshop point to

the importance of considering NbS on a city level to ensure freely accessible nature throughout the city for all inhabitants.

The city-level consideration of accessibility points to a second overarching element that emerged from the analysis of the workshop outcomes, namely the locality of the different futures. The outcomes of the workshop were all locally focussed on the city and its surroundings. This is perhaps in part because of the prompt of the workshop to imagine the city of Utrecht in the future, however, some outcomes explicitly stated the local focus of life in their futures, for instance by mentioning that work focuses on the local biodiversity of the city and communities being centred around those in proximity to each other. The locality within these narratives points to focus on what is necessary locally and how for instance using native plant species that can thrive there. Understanding the local environmental specificities, both the opportunities and the risks, and the landscape context is important to successfully implement NbS in any context (Collier, et al., 2023). It also requires an understanding of the societal and environmental challenges faced locally to adequately respond to and deal with. However, this can differ not only between cities but also within cities, for instance because of different landscape characteristics or socio-economic segregation within a city. Recent research has focused on understanding how local-specific implemented NbS can be up-scaled and connected city-wide (Collier, et al., 2023). This sits in line with the above-discussed outcome from the speculative fabulation workshop to take a city-wide perspective to ensure the accessibility of natural spaces across the city. These first two themes together are thus in accordance with the research focus on both implementing locally adequate NbS while also understanding the city-wide connection between NbS.

The third theme revolves around different forms of transformative change that was apparent in the different narratives. Ranging from becoming flexible in where we live and so shifting away from owning a lot of products to sharing more, to living more locally as our jobs have become taking care of the biodiversity within the city and our neighbourhoods. This theme thus signifies a desire for transformative change to happen in the way in which we live our lives, as for instance a more locally oriented lifestyle requires a systemic shift away from the current global orientation. This fits into recent research on NbS and the potential of NbS urban planning in aiding transformative change (e.g., Adams, et al., 2024; Kauark-Fontes, et al., 2023; Paloma, et al., 2021). However, it not only points to changes in lifestyle but also ontological changes as the narratives all in some way signal a shift away from a dichotomic view of humans and non-humans. This points towards a more-than-human view of the urban future. This overarching element thus points towards a potential research focus in NbS planning research, namely, to further understand the role NbS can play in realizing transformative societal change and to work together with the planning practice to implement NbS in such a way that it works towards transformative change. The outcomes of a

speculative fabulation co-creation session thus do not solely have to point towards physical interventions and directions for NbS planning but can also point towards research avenues for NbS planning research.

The fourth overarching theme, namely the social-ecological memory theme. Social-ecological memory entails the transfer and adaptation of ecological management (Barthel, et al., 2010). It thus includes how people gain, transfer, and add to the knowledge of how to take care of their natural environment. In all three narratives understanding the needs of the non-human entities within the city was important and dealt with to different extents. This thus requires some form of education, whether that be a formal education or through getting in contact with these non-human entities and learning about their needs in that way or through learning from other humans about ecological management. Learning and understanding how humans can help non-humans thrive is thus an important part of these urban futures, which also includes sharing knowledge about how to do this best both intragenerational and intergenerational. This connects to the research of Barthel et al. (2010) on social-ecological memory and how this knowledge and understanding can be preserved and passed on. The outcomes of the speculative fabulation workshop point to the importance of thinking through the maintenance and transfer of knowledge about how to take care of the non-human entities involved in NbS planning, as the collective forgetting of how to do this could have significant negative effects on these non-human entities (Barthel, et al., 2014). It is important to point out that the three narratives do not all point to humans needing to actively take care of the non-human entities around them, as in the UW narrative the focus is more on minimizing the impact humans have on non-humans and learning to listen to non-human entities to adapt our lifestyles. However, they all share an underlying transformative change in society towards a sense of responsibility and wanting to take care of its non-human surroundings.

Lastly, a theme that also came through in all three narratives is that of creating communities, both of humans and of humans and non-humans, and in part commoning. In all narratives humans in some way created a community with those around them, ranging from living life together and depending on each other for food and other products but also through connecting with the non-humans in the city and forming diverse communities of humans and non-humans as in the ON narrative. This relates back to the accessibility of natural spaces in the city, as they were important in the narratives to create these strong communities. Furthermore, the community-led management of the natural environment comes through within the three narratives. It is thus in part about how communities can together take care of non-human entities around them, but also about the role NbS can play in forming communities and shifting mindsets to also include non-human entities in these communities. As Frantzeskaki (2019) pointed out, NbS often create new green urban commons when co-created with these communities. The future narratives point to a desire to create

these spaces, with both space for non-human entities to thrive but also for people to come together and work together on managing these places. This thus requires a governance perspective when planning these NbS, by shifting away from top-down planning and instead working together with these communities or even giving them room to experiment themselves with creating green urban commons. There is thus a two-sided community desire that emerges from these narratives. On the one hand, the desire to shape communities through careful urban planning of NbS, but also the involvement of communities to work on creating a sustainable urban future.

From the data analysis it thus emerged that speculative fabulation can help in incorporating more diverse experiences by starting from the personal experiences and allowing people to incorporate their dreams and hopes combined with their factual knowledge and experience when thinking through the future of urban areas. It furthermore allows for creativity by allowing participants to sit with the not-knowing and encouraging the imagination that comes from this. This can lead to more-than-human urban futures which signal both explicitly and implicitly potential focus points for NbS research and practice. It can thus be used within the context of NbS planning to understand the hopes and dreams of the communities and thus more adequately be applied. They can provide NbS planning directions based on local values to base future developments of urban areas and research on.

6. Conclusion

Urban areas worldwide have to and will increasingly continue to have to deal with the effects of human-induced climate change. The climate crisis has been argued to have been caused, in part, due to a growing disconnect between humans and nature, viewing humans as superior to non-human entities. This has also had an impact on the way we plan our cities. With the share of the urban population expected to increase in the next decades it has been argued that the way in which we develop and view our cities has to be reimagined to deal with and limit the effects of climate change. Increasingly, cities have turned to NbS to deal with these effects. NbS entails a diverse set of actions which includes nature and its natural capacities to combat a myriad of challenges, both societal and environmental. However, NbS have been critiqued for the often underlying anthropocentric focus, to use nature to solely benefit humans. Outside of planning research, posthuman theories have increasingly been getting attention. Posthuman theories aim to shift the understanding of humans as being isolated, superior beings, to understanding the dependencies with non-human entities. It has been argued that urban planning should develop a posthuman theory to move away from the superiority view of humans in planning. Such a more-than-human view would understand the city as a place of complex entanglements, both between humans and non-humans but also between the city and its environment. However, this would require us to reimagine the way in which we imagine the future of our urban areas. Art-based co-creation techniques have been argued to play a role in this, as it sits with the uncertainty of the future and allows participants to bring in alternative forms of knowledge, emotions, and creativity.

In particular, the use of narrative art-based participation methodologies has been pointed to as potentially playing a role in the reimagining of urban futures as they allow alternative narratives of the future to emerge. One of these methodologies that has increasingly been getting attention outside of planning research is that of speculative fabulation. Stemming from the humanities, it has been deemed promising to reimagine cities in a more-than-human form as it focuses on entanglements between entities. Furthermore, its blurring of what is 'real' and what is 'fictional' are blurred, allowing participants to play with these boundaries and use their creativity and personal experience and knowledge to create new future narratives. This research has aimed to contribute to dealing with societal and environmental challenges by further understanding how more-than-human ontologies can be incorporated in planning practice and theory in order to overcome anthropocentric thinking, also within NbS planning, by adding to the research base on incorporating art within planning processes to aid in bringing in more diverse experiences and forms of knowledge in planning. The focus of this research has been to understand what speculative fabulation as a co-creation methodology can contribute to imagining more-than-human urban futures with nature-based solutions.

The theoretical framework that has shaped this research focuses on how art-based co-creation can shift anthropocentric thinking in planning to a more-than-human ontology by incorporating emotions, alternative forms of knowledge, imagination, and reflexivity in the planning process. This, and speculative fabulation, has shaped the methodological approach for this research, by applying a workshop as practice methodology. To shape the workshop, semi-structured expert interviews were held with three experts in different areas relating to the research. After that semi-structured interviews with seven workshop participants were held, to understand their relationship to nature better but also to already introduce the topic of the workshop and to help shape the workshop. The workshop itself was held with ten participants, focusing on the imagining the future of the city of Utrecht. Starting with an individual diary exercise, in which participants got the time to individually start to imagine what Utrecht as a well-functioning environment would look like to them. After this they were placed into four groups to discuss their individual diaries and together create a future based on their diaries. These outcomes of the workshop were analysed based on the NFF, as it allows for the categorization of futures based on different positive value relationships between humans and non-humans. This led to three distinct future narratives. Firstly, the Urban Wild narrative based on the intrinsic value of nature paints a picture of a future in which nature is in the lead and has taken over the city. Humans life according to the needs of nature and are flexible to adapt in order to minimize their impact on non-human entities in the city. The second narrative, the Community through Nature one, based on the instrumental value of nature, shows a future in which humans create tightknit communities through the opportunities that nature provides. The city is a place with plenty of accessible natural environments to meet but also to live off of what nature can locally provide, in terms of food but also in terms of materials. Leading to the third narrative, the One with Nature narrative, which sits in the relational value category of the NFF. This narrative reimagines Utrecht as a city in which humans and non-humans form bonds and create communities. In which humans have become attuned to and are continuously learning to understand the needs of their non-human community members, fostering a cultural identity around these diverse human and non-human communities.

The analysis points toward the added benefit a speculative fabulation methodology can offer NbS planning to incorporate more-than-human thinking. By allowing participants to reflect on their own values and hopes, it provides opportunities for incorporating alternative experiences and forms of knowledge. Furthermore, by give participants the chance to explore freely, it allows them to sit with the not knowing and use it to foster creativity beyond what is often deemed as possible. The three emerged narratives also point towards directions for NbS planning, but also highlights the use of speculative fabulation as a way to understand the local area and the community and its values better. The narratives point towards the importance of thinking through accessibility of natural environments throughout cities, the necessity adapt

solutions to the locality, the orientation towards fostering transformational change, the importance of thinking through social-ecological memory and the retention of ecological knowledge, and lastly the desire to foster communities through NbS but also to be involved in the planning and management of NbS. Future research can take these five themes as guides to further understand the relation between NbS to them individually but also in conjunction with each other. Furthermore, more research is needed on understanding the role speculative fabulation can play in different contexts and while incorporating different techniques to find best practices. This research was limited in experimenting with the form of the workshop due to both monetary and time constraints. It is thus important to continue experimenting with this methodology within planning research. Building a set of case-studies can help with this. This should also lead to a more diverse set of people to be involved, as this research could have a biased sample. The participants were all already thinking about sustainability and the human-nature relationship, it would thus be interesting and necessary to understand what the methodology can bring to more diverse groups of people in which not everyone is already thinking through these issues. Furthermore, more research is needed on understanding what a more-than-human approach of planning would entail and how this can be fostered, both through planning theory and practice. This explorative research has aimed to provide a start for future research within the NbS planning context to understand the role of speculative fabulation in shifting anthropocentric thinking. As was found, by co-creating new and alternative futures, allowing people to bring in their own creativity, experiences, and knowledge, blurring the boundaries between what is 'real' and 'imagined', futures benefitting both humans and non-humans with an appreciation of the natural environment and biodiversity can be created to inspire and guide future urban development.

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Appendix A

Expert and participant interviews

Table A1.

Workshop and interview participants

Participant	Criteria met	Interview	Workshop
1	- Interested Utrecht resident	Yes	Yes
2	- Interested Utrecht resident	Yes	Yes
3	- Interested Utrecht resident - Working on making Utrecht green	Yes	Yes
4	- Interested Utrecht resident	Yes	No
5	- Working on making Utrecht green	Yes	Yes
6	- Interested Utrecht resident	No	Yes
7	- Interested Utrecht resident	No	Yes
8	- Working on making Utrecht green	Yes	Yes
9	- Working on making Utrecht green	Yes	Yes
10	- Interested Utrecht resident	Yes	No
11	- Interested Utrecht resident	No	Yes
12	- Interested Utrecht resident - Working on making Utrecht green	Yes	Yes
13	- Interested Utrecht resident	No	No

Table A2.

Expert interviews

Expert	Topic(s)
1	-Imagining alternative futures -Nature Futures Framework
2	-Imagining alternative futures

3	-Non-anthropocentric thinking

Appendix B
Expert interview guide

Introduction

Welcome! Thank you for partaking in this interview. Before starting with the interview, I need to ask for your consent of taking part in this interview. Your answers will help me in answering my research questions for my master thesis. It is about a narrative art-based participatory method (Speculative Fabulation) and the role it can play in imagining more-than-human urban futures in the context of nature-based-solutions. You can stop the interview at any point during the interview and withdraw your consent at any point during or after the interview. Your answers will be confidential and will be anonymized.

I also need to ask for your consent regarding recording this interview. The recording will solely be used to help in transcribing the interview, which will help me in answering my research questions later on. As with your previously given consent, you can withdraw your consent about the recording of this interview at any point during or after the interview.

If you have any questions, you can ask them now, or at any point during the interview.

Positionality Questions

Before diving into the questions relating more specifically to my research questions, I want to ask you two questions regarding your positionality in relation to the topic. It is up to you to decide how much you are willing to share, and if you are not comfortable with sharing anything, you do not have to share anything.

1. What is the focus of your own work?
   a. Guiding questions:
      i. Imagining alternative futures?
      ii. Non-anthropocentric thinking or more specifically more-than-human thinking?
      iii. Nature-Futures-Framework?
      iv. Other?
2. What experience do you have with applying art-based methodologies in your work and to what extent does your work involve non-academic actors?
   a. Guiding questions:
      i. What types of methods?

  ii. Why do you work with these methods?

Imagining alternative futures

[If work includes imagining alternative futures]

1. When cultivating an imaginative mindset, what are key elements you take into consideration?
    a. Guiding questions:
        i. Do you use specific methods/tools?
            1. If yes, what type and why?
            2. If not, why not?
        ii. Do you consider the space you are in when you imagine? If so, in what way?
2. When involving non-academic actors in imagining alternative futures, how do you engage with them in triggering their imagination?
    a. Guiding questions:
        i. Do you phrase questions in a specific way? If so, in what way?
        ii. Do you pick specific contexts when imagining alternative futures?
        iii. Do you find specific methods and tools more fitting for that?
3. How do emotions play a role in imagining alternative futures?
    a. Guiding questions:
        i. If so, how do you get participants to tap into their emotions when thinking through alternative futures?
        ii. How important do you consider emotions in imagining alternative futures?
4. How far in the future do you think when imagining alternative futures?
    a. Guiding questions:
        i. Do you make it specific or leave it more open?
        ii. How important is the temporal scale in thinking through alternative futures?

Non-anthropocentric thinking

[If work includes non-anthropocentric thinking or more-than-human thinking]

1. How is nature represented in your imaginary work?
    a. Guiding questions:
        i. How does it relate to culture (human) (in the nature/culture divide way)?
        ii. What role does it take up?

2. How do you cross that nature/culture (human vs non-human) divide?
   a. Guiding questions:
      i. What methods and/or tools to represent/position nature do you use?
3. What, according to you, are key elements to think through non-anthropocentric imagining (or more-than-human)?
   a. E.g., dependencies, positionality, power?
4. How can you challenge a potential divide between human vs non-human in participants/people's thinking?
   a. Guiding questions:
      i. How do you phrase your questions?
      ii. Are there aspects you put more emphasis on?
      iii. Methods or approaches that you use?

Nature-Futures-Framework

[If work includes the Nature-Futures-Framework]

1. Could you describe the Nature-Futures Framework briefly in your own words?
   a. Guiding questions:
      i. What is the main focus?
      ii. How do you use it or think it can be used?
2. How do you see the NFF to be used for analyzing more-than-human urban futures?
   a. Guiding questions:
      i. What kind of framing is needed for these imaginaries to be analyzed with the NFF?
3. How can the NFF be used to assess the useability of urban imaginaries in planning practice?
   a. Guiding questions:
      i. What can it assess and what not?
      ii. What can it say about urban imaginaries?

Closing

These were the questions I had prepared to ask. If you want to share anything else or want to ask any questions, feel free to do so now, or you can always contact me later.

For now, I want to thank you for participating in my research. Your input is very valuable for my thesis!

Appendix C
Participant interview guide

Introduction

Welcome! Thank you for partaking in this interview. Before starting with the interview, I need to ask for your consent of taking part in this interview. Your answers will help me in answering my research questions for my master thesis. It is about a narrative art-based participatory method (Speculative Fabulation) and the role it can play in imagining more-than-human urban futures in the context of nature-based-solutions. You can stop the interview at any point during the interview and withdraw your consent at any point during or after the interview. Your answers will be confidential and will be anonymized.

I also need to ask for your consent regarding recording this interview. The recording will solely be used to help in transcribing the interview, which will help me in answering my research questions later on. As with your previously given consent, you can withdraw your consent about the recording of this interview at any point during or after the interview.

If you have any questions, you can ask them now, or at any point during the interview.

Positionality Questions

Before diving into the questions relating more specifically to my research questions, I want to ask you two questions regarding your positionality in relation to the topic. It is up to you to decide how much you are willing to share, and if you are not comfortable with sharing anything, you do not have to share anything.

1. What do you do in your daily life work- or study-wise?
   a. Guiding questions:
      i. What type of work do you do?
      ii. What volunteer work do you do?
      iii. What do you study?
2. What is your experience with urban planning activities?
   a. Guiding questions:
      i. Have you participated in urban participatory projects?
      ii. Do you work in the urban planning field?

Relation to more-than-human thinking

3. How do you view your relation to nature?
    a. Prompting questions:
        i. Is there more of a utility relationship?
        ii. Do you try to be of service to nature? Do you take part in activities for protecting or restoring nature?
        iii. What does nature mean to you as a person and as a professional?
4. To what extent do you consider nature in what you do?
    a. Guiding questions:
        i. Do you reflect on your own impact?

Relation to urban imaginaries

1. Let's think about the future – when you imagine yourself in the future (for example 2050), how do you imagine the city of Utrecht?
    a. Guiding questions:
        i. What does it look like? Very different from now or not?
        ii. What is the role of nature (non-human actors) in the city?
        iii. If you find it difficult to imagine this, why is this?
2. What, according to you, would be important aspects to consider when thinking through the future of urban areas concerning human and non-human relations?
    a. Guiding questions:
   i. What we need more in the future that we do not have now
        ii. E.g., green/blue areas, human-animal relations, soil quality.

Closing

These were the questions I had prepared to ask. If you want to share anything else or want to ask any questions, feel free to do so now, or you can always contact me later.

For now, I want to thank you for participating in this interview. I look forward to seeing you at the workshop, this information is already very helpful!

Appendix D
Workshop supplies

⬤ Water	⬤ Soil	⬤ Canal	⬤ Sun
⬤ Fox	⬤ Rabbit	⬤ Snake	⬤ Cat
⬤ Dog	⬤ Mouse	⬤ Rock	⬤ Horse
⬤ Chicken	⬤ Lion	⬤ Fish	⬤ Whale
⬤ Daffodil	⬤ Lily	⬤ Frog	⬤ Tree
⬤ Flower	⬤ Grass	⬤ Fly	⬤ Tulip
⬤ Bird	⬤ Coral	⬤ Spider	⬤ Turtle
⬤ Hedgehog	⬤ Rat	⬤ Crow	⬤ Pigeon
⬤ Cockroach	⬤ Raccoon	⬤ Squirrels	⬤ Bedbug
⬤ Wasp	⬤ Bee	⬤ Seagull	⬤ Skunk
⬤ Cow	⬤ Deer	⬤ Chameleon	⬤ Capybara
⬤ Shark	⬤ Sheep	⬤ Goat	⬤ Donkey

● Daffodil	● Corn	● River	● Fungi
● Roots	● Gravel	● Dirt	● Forest
● Bacteria	● Elephant	● Mold	● Jellyfish
● Bear	●	● Rooster Stork	● Snail
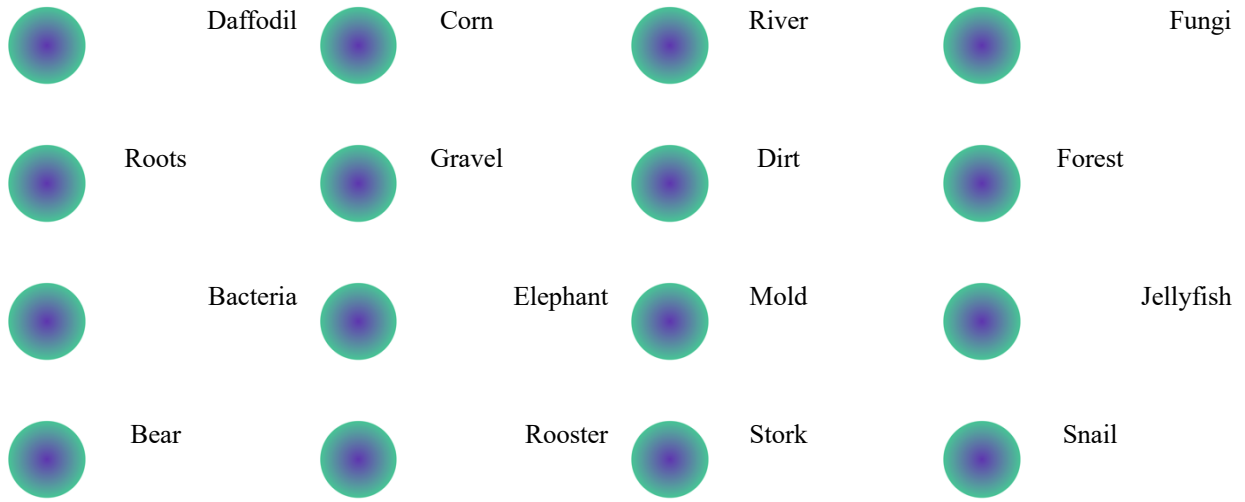
Appendix E
Consent forms

E1 Expert interview consent forms

Consent form expert interview **Version date: 08-01-2024**

Research project: *"Green Urban Fables: The Role of Speculative Fabulations in Imagining More-Than-Human Urban Visions"*

Master thesis *– Msc Spatial Planning at Utrecht University*

Student: *Wouter Helmholt*

Supervisor: *Niki Frantzeskaki*

Consent

By signing this form, I agree that:

- I have been informed about the topic of this research;
- I have been able to ask questions before participating, and if so, my questions were answered to my satisfaction;
- I was given enough time to decide to participate in this research;
- My participation is completely voluntary and I understand that I can withdraw from the research at any time, without having to give a reason;
- I give my permission for the interview data to be used anonymously for the following purposes: *master thesis, possible future publishing in the context of this research;*
- I give my permission for this interview to be recorded, solely for transcription purposes, with the recording being deleted once the research is finished;
- I agree to participate in this interview;

Name and signature of research participant *Date*

-- ------------------

Researcher consent

I declare that I have informed the research participant about the research and their participation. I will notify the participant about matters that could influence their participation in the research.

Name and signature of researcher *Date*

-- -------------------

Contact information

In case of any questions or concerns at any point before, during or after the research, you can contact:
Wouter Helmholt – w.m.helmholt@students.uu.nl

E2 Participant interview and workshop consent form

Consent form participant – Workshop and Interview   **Version date: 20-02-2024**

Research project: *"Green Urban Fables: The Role of Speculative Fabulations in Imagining More-Than-Human Urban Visions"*

Master thesis *– Msc Spatial Planning at Utrecht University*

Student: *Wouter Helmholt*

Supervisor: *Niki Frantzeskaki*

Consent

By signing this form, I agree that:

- I have been informed about the topic of this research;
- I have been able to ask questions before participating, and if so, my questions were answered to my satisfaction;
- I was given enough time to decide to participate in this research;
- My participation is completely voluntary and I understand that I can withdraw from the research at any time, without having to give a reason;
- I give my permission for the interview and workshop data, including what I produce during the workshop, to be used anonymously for the following purposes: *master thesis, possible future publishing in the context of this research;*
- I give my permission for the interview and part of the workshop to be recorded, solely for transcription purposes, with the recording being deleted once the research is finished;
- I give my permission for observatory notes to be taken during the workshop, to be used anonymously for the following purposes: *master thesis, possible future publishing in the context of this research;*
- I agree to participate in the interview;
- I agree to participate in the workshop on 22-03-2024;

Name and signature of research participant   *Date*

Researcher consent

I declare that I have informed the research participant about the research and their participation. I will notify the participant about matters that could influence their participation in the research.

Name and signature of researcher   *Date*

Contact information

In case of any questions or concerns at any point before, during or after the research, you can contact:
Wouter Helmholt – w.m.helmholt@students.uu.nl

E3 Participant workshop consent form

Consent form participant – Workshop **Version date: 22-03-2024**

Research project: *"Green Urban Fables: The Role of Speculative Fabulations in Imagining More-Than-Human Urban Visions"*

Master thesis *– Msc Spatial Planning at Utrecht University*

Student: *Wouter Helmholt*

Supervisor: *Niki Frantzeskaki*

Consent

By signing this form, I agree that:

- I have been informed about the topic of this research;
- I have been able to ask questions before participating, and if so, my questions were answered to my satisfaction;
- I was given enough time to decide to participate in this research;
- My participation is completely voluntary and I understand that I can withdraw from the research at any time, without having to give a reason;
- I give my permission for workshop data, including what I produce during the workshop, to be used anonymously for the following purposes: *master thesis, possible future publishing in the context of this research;*
- I give my permission for part of the workshop to be recorded, solely for transcription purposes, with the recording being deleted once the research is finished;
- I give my permission for observatory notes to be taken during the workshop, to be used anonymously for the following purposes: *master thesis, possible future publishing in the context of this research;*
- I agree to participate in the workshop on 22-03-2024;

Name and signature of research participant *Date*

Researcher consent

I declare that I have informed the research participant about the research and their participation. I will notify the participant about matters that could influence their participation in the research.

Name and signature of researcher *Date*

Contact information

In case of any questions or concerns at any point before, during or after the research, you can contact:

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Appendix F
Data analysis table – narrative outcomes

Table 5.

Workshop narrative outcomes and nature perspectives

Group	Participant	Individual diary	Collective narrative key elements	Nature Perspective	Reasoning
A	1	- Interaction with other human beings who are in proximity (neighbours, colleagues). - Mutual dependency on other human beings. - Nature is enjoyed and considered to be relaxing. - Awareness of the non-human entities around. - Local scale is central.	A1. Community feeling is built through collective green spaces providing freely accessible places to meet and connect with nature. This fosters care and responsibility for nature. A2. Nature is given the space to take over the city and grow (rewilding). There is not as strict of a divide between the human and the non-human in the city. A3. Sharing crops with your neighbourhood or community through collective picknicks. A4. Accessible and clean water in the canals, both for non-human entities and for human recreation.	A1. Nature for Society & Nature as Culture A2. Nature for Nature A3. Nature for Society A4. Nature for Society & Nature for Nature A5. Nature as Culture A6. Nature for Society	A1. Nature provides spaces for people to meet each other, thus creating benefits for society (NS). But it also creates a sense of responsibility, so people care for nature, thus NC. A2. Humans try to interfere with nature as little as possible, thus valuing nature for what it is (NN). A3. Nature provides food for society, thus NS. A4. The water (nature) is kept clean for the sake of non-human entities (NN), but also for the human benefit of recreation (NS). A5. Humans built a relationship with their natural surroundings (NC). A6. Humans use their natural surroundings for their well-being (NS).
	2	- Non-human entities and humans living side by side (animals having space to live in the city, plants taking over buildings) - Connecting with non-human entities (crows) in a familiar way. -Accessibility for humans and community identity of the city. - Clean and accessible water for recreation (canals)			

	3	- Neighbourhood level focus – which is diverse and multicultural. - Sharing products (food, transportation modes) and skills. - Forming a community with the surrounding neighbours and animals. - Taking care of nature while considering what is good for non-human entities. - Enjoying nature.	A5. People form a community with their neighbours but also with the non-human entities around them. A6. People use nature to relax and for recreation purposes.		
	4				
2	5	- Biodiversity and nature inclusiveness as a main characteristic of the city. - Human inhabitants of the city live in a symbiotic way with their surroundings. - Food is locally produced. - People actively work on protecting the biodiversity in the city and maintaining the nature inclusive characteristic of the city.	B1. City is nature and people's jobs are to take care of the biodiversity and work on connecting with nature. B2. Nature is given space to thrive. B3. Circular, everything is recyclable and reused.	B1. Nature as Culture B2. Nature for Nature B3. Nature for Nature B4. Nature for Nature B5. Nature for Society B6. Nature for Nature	B1. The city's identity is derived from its nature and people are actively connecting with nature to take care of it (NC). B2. Nature is being left alone by humans, valuing nature intrinsically (NN). B3. Humans aim to minimise their impact on their natural surroundings (NN). B4. Humans aim to protect and improve the nature around them for nature's sake (NN).

	6	- Nature as relaxing factor in the city and enjoyed. - Technological advancements play a role in working together globally to protect and restore biodiversity (Great Barrier Reef). - Office jobs to protect and maintain nature around the world.	B4. Working on protecting and improving the biodiversity of the city. B5. The city is designed in such a way that people can meet. B6. Canals are clean and are kept clean.		B5. The non-human part of the city is designed in such a way that it is beneficial for people's community feeling (NS). B6. Nature is being kept clean because it is deemed important to minimise negative human impacts (NN).
3	7	- Water has been given the space it needs through de Ruimte voor de Rivier projects. - Humans live around water and adapt to this. - There are no floods, because water has gotten the space it needs, and it doesn't rain water anymore as now it rains wool. The wool can be used again.	C1. People listen to and understand the soil and can adapt to it and help take care of it. C2. The houses are built from felt, this makes it easy to move as humans adapt to the climate and the surroundings. If the soil needs time to heal, people can move to give it that space.	C1. Nature for Nature & Nature as Culture C2. Nature for Nature C3. Nature for Nature C4. Nature for Society & Nature for Nature	C1. People both want to connect with and listen to nature to care for it (NC), but also through that aim to minimize the impact they have on nature (NN). C2. People want to adapt to nature, not for human's sake but for the sake of allowing nature to thrive by itself (NN). C3. The story revolves around the needs of nature (NN).
	8	- Nature has taken over the city (after an ecological revolution). - Living with the rhythm of nature (waking up with the sun). - Non-human entities got power (birds are in power of Utrecht),	C3. Nature is central in this story. C4. The rain is wool, which sustains a lot in the city.	C5. Nature for Nature C6. Nature as Culture C7. Nature for Nature & Nature as Culture	C4. Humans use what is provided by nature, namely wool (NS), but also do this so as to minimize their impact on their surroundings (NN).

	but everyone has a say in decisions through expert sessions. - Interacting with non-human entities as a daily practice.	C5. Nature has taken over the city. C6. People connect with the non-human entities around them and create relationships with them. C7. People live according to the seasons.		C5. Nature has been given space to thrive uninterruptedly (NN). C6. Humans and non-humans have built a relationship, nature has become part of people's culture (NC).
9	- Trees are central in Utrecht, as they are places where people recharge (also by physically interacting with trees). - Humans' jobs are taking care of the surrounding nature (the soil). - Much attention is being paid to energy connections with non-human entities. - People take care of their immediate surroundings. - Living with the seasons (meaning humans also retreat inwards more in the winter). - Attention is being paid to others and the surroundings.			C7. People try to leave nature alone and only use what it naturally provides (NN), but they also structure their lives through their relationship with their natural surroundings (NC).
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4	11	- Harmonious living together with nature. - All humans have and take responsibility to protect nature. - Food is produced locally and shared with each other. - Roads have made space for bike paths and walkways. - Native non-human entities are given the space and chance to grow and thrive (fish, plants, trees). - Female trees are kept because the fruits can be picked and eaten. - Community feeling is present which helps with the shared responsibility of taking care of nature and growing food. - Repurposing of buildings to creatively find housing for all.	D1. People are being taught from a young age about nature and how to care for it, this instills a responsibility to take care of and see the beauty in nature. D2. People feel pride for the green around them. D3. People share crops and produce and live more with the seasons. D4. There are plenty of shared green spaces for people to meet and relax, including estates outside of the city. D5. Streets are mostly car-free, the added space is made green and back to local plants and bushes. This creates habitats for insects and other non-human entities. D6. Buildings have been repurposed creatively to not	D1. Nature as Culture D2. Nature as Culture D3. Nature for Society D4. Nature for Society D5. Nature for Nature D6. Nature for Nature D7. Nature as Culture	D1. People are being taught to care for nature and how to connect with nature, it becomes part of their culture/identity (NC). D2. Nature has become part of the culture of the city, leading to pride (NC). D3. Nature is used to produce food for the community (NS). D4. Natural areas provide spaces for communities to form and connect (NS). D5. Humans try to minimise their impact on non-human entities and aim to provide habitats for them (NN). D6. Humans try to minimise their physical footprint on natural areas (NN). D7. Humans and non-humans have formed a community (NC).
	12	- Plants and trees all around, taken care of by the neighbourhood. - Lots of car free roads.			

| | | - Life is less hectic because we don't strive for material wealth anymore.
 - Renaturing and watering based on old natural structures.
 - Ecological farming at nature estates.
 - More insects because there are more trees and bushes, which is because of the principle that our surroundings are green unless it is really necessary to remove green.
 - People are aware of natural cycles because its taught in each neighbourhood.
 - You can meet your neighbours in the green space around you. | infringe too much on the limited available space.

 D7. People live harmoniously with non-human entities around them. | | |

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