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What comes to count as sustainable in Rosendal?

A study of how sustainability is being reproduced in an urban sociomaterial assemblage

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What comes to count as sustainable in Rosendal? A study of how sustainability is being reproduced in an urban sociomaterial assemblage

Abstract

Urban districts around the world are increasingly developed to be sustainable. In this thesis I explore what comes to count as sustainable in Rosendal, a developing urban district in Uppsala, Sweden. I view Rosendal as an example of contemporary urban sustainability. In light of how urban sustainability initiatives tend to reproduce the status quo, my aim is to question taken-for-granted meanings of sustainability and open up for alternative perspectives. I explore which everyday practices residents of Rosendal associate with sustainability, by drawing upon practice-theoretical approaches. Additionally, I analyse the *Sustainability in Rosendal* discourse by focusing on the perspectives of Uppsala Municipality and property developers. I approach Rosendal as an urban sociomaterial assemblage, constantly in the process of being made. This perspective helps account for the various practices, discourses and 'more-than-humans' shaping what comes to count as sustainable, while decentring humans and bringing forth human interdependency with 'the environment'. Additionally, the emergent character of assemblages points towards the possibility for urban environments to be developed differently. My findings show that prevailing sustainability meanings reproduced within practices and discourses, do not initiate the type of transformation often called for. Much of what currently comes to count as sustainable in Rosendal is underpinned by a neoliberal growth logic where attractive districts are developed for the chosen few. I show how more-than-human actants, including allotments, cars and wooden panels, contribute to what comes to count as sustainable in Rosendal. By paying attention to the effects of these actants, I envision alternative trajectories for the urban assemblages making up Rosendal. Finally, I suggest that integrating feminist care ethics into urban development can foster more just and transformative sustainabilities.

Keywords: urban sustainability, sociomaterial assemblage, practice theory, material-discursive, policy analysis, more-than-human, Rosendal, Sweden

Vad anses hållbart i Rosendal? En studie om hur hållbarhet återskapas i ett urbant sociomateriellt assemblage

Abstract

Stadsdelar och städer runtom i världen utvecklas allt oftare med syfte att bli hållbara. I den här avhandlingen undersöker jag vad som uppfattas som hållbart i Rosendal, en stadsdel som för närvarande tar form i Uppsala, Sverige. Jag betraktar Rosendal som ett exempel på samtida urban hållbarhet. Eftersom urbana hållbarhetsinitiativ har en tendens att återskapa rådande omständigheter, är mitt syfte att ifrågasätta vedertagna uppfattningar om hållbarhet och öppna upp för alternativa synsätt. Jag undersöker vilka vardagspraktiker boende i Rosendal associerar med hållbarhet, med hjälp av teorier om sociala praktiker. Utöver det analyserar jag diskursen *Hållbarhet i Rosendal* genom att fokusera på Uppsala kommuns och en grupp byggherrars perspektiv. Jag förhåller mig till Rosendal som ett kontinuerligt framväxande sociomateriellt assemblage (sammanfogning). Detta perspektiv möjliggör en redogörelse av de olika praktikerna, diskurserna och det 'mer-än-mänskliga' som tillsammans skapar det som uppfattas som hållbart. Perspektivet flyttar även fokus bortom människan och framhäver människans ömsesidiga beroende med "miljön", djuren, naturen och materiella element. Det sociomateriella assemblagets framväxande karaktär öppnar upp för alternativa idéer kring hur urbana områden skulle kunna utvecklas. Enligt mina resultat leder de rådande uppfattningarna om hållbarhet, som reproduceras inom praktiker och diskurser, inte till den samhällsförändring som ofta efterfrågas. Mycket av det som uppfattas som hållbart i Rosendal underbyggs av en neoliberal tillväxtlogik där attraktiva stadsdelar utvecklas för vissa utvalda. Jag visar hur vissa mer-än-mänskliga element, däribland pallkragar, bilar och träpaneler, bidrar till att skapa det som uppfattas som hållbart i Rosendal. Genom att uppmärksamma effekterna av det mer-än-mänskliga, föreställer jag mig en alternativ utveckling för de sociomateriella assemblage som skapar Rosendal. Avslutningsvis föreslår jag att en integrering av feministisk omsorgsetik i stadsutvecklingsprocesser kan främja rättvisare och mer transformativa hållbarheter.

Keywords: urban hållbarhet, sociomateriellt assemblage, sociala praktiker, materiell-diskursiv, policy analys, mer-än-mänsklig, Rosendal, Sverige

For those who paved the way,
for those who never made it,
and those who will come after me.

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List of publications

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I. Bäckman, M. (2023). (Un)sustainable everyday practices Sociomateriality shaping sustainability in an Urban district. *Journal of Consumer Culture*, [Epub ahead of print] Aug 29.

II. Bäckman, M., Pettersson, K. & Westberg, L. Tracing sustainability meanings in Rosendal: interrogating an unjust urban sustainability discourse and introducing alternative perspectives. (manuscript submitted to *Local Environment*)

III. Bäckman, M. Foregrounding the background. Reflecting on what participant-generated photos made me see, grapple with and reconsider. (manuscript submitted to *Qualitative Research*)

Papers I-III are reproduced with the permission of the publishers.

The contribution of Malin Bäckman to the papers included in this thesis was as follows:

I. Bäckman, M. is the sole author of this article.

II. Bäckman, M. is the first author of this article, the idea and text was developed in collaboration with Katarina Pettersson and Lotten Westberg.

III. Bäckman, M. is the sole author of this article.

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1. Introduction

1.1 Setting the scene: re-visiting Rosendal

I have been following the development of Rosendal, and grappled with what it is that makes this district sustainable, since early 2019. This new and developing urban district with a sustainability profile, is located in Uppsala, Sweden. Below is a description of one of my many visits to this district, along with reflections prompted by the visit.

Today, November 10th 2022, I visited Rosendal for the first time since August 2022. In August I walked around the area with my main supervisor Katarina. I told her what I knew about some of the houses, and about the area in general. This was at a time when Katarina, my co-supervisor Lotten and I had just started analysing material describing the district, produced by Uppsala Municipality and property developers[1] involved in the district. I remember Katarina saying how she likes Rosendal, and is almost tempted to move there. I have had similar feelings throughout the research process. The district does have an attractiveness to it. At the same time, I have a complicated relationship with this 'sustainable' district. I often think about when one of the residents I interviewed in 2020 said something along the lines of: "Well, if you say you are building sustainably, does that simply mean you have some solar panels on the roof?" This person was not convinced of the area's sustainability profile, although there were many aspects of Rosendal that she appreciated.

When I visited the area today, I thought about some of the advantages of the district: the varied and interesting architecture, elegant parks and

[1] I use property developer, and sometimes simply developer when refering to the profit-driven companies involved in the development of Rosendal. Equivalent to the Swedish word byggherre.

Figure 1. Rosendal's storm water managemet system taking shape.
Photo: Bäckman, M. 2023.

Figure 2. Fences and signs guiding pedestrians and cyclists. Photo: Bäckman, M. 2020.

closeness to the nature reserve called City Forest, but still with easy access by bicycle from Uppsala city centre. These traits are also found in Uppsala Municipality's and property developers' descriptions of Rosendal (see, for example: Uppsala kommun 2023a; Byggvesta 2023; SKB 2020), and were traits several of the residents I interviewed brought up and appreciated. Despite these traits – generally perceived as positive, the type of sustainability portrayed in Rosendal does not seem quite genuine. It is not that I think the actors involved in the development of Rosendal are conspiring to call the district sustainable while deliberately doing something else. It is the way sustainability is used as an adjective to promote the district and increase its attractiveness that makes me uncomfortable. Like the resident quoted above, I have often asked myself: what is really so sustainable about Rosendal? Does the area have a sustainability profile simply because new urban districts often do? It is certainly easy to be critical, while it seems far too easy to dismiss what is taking place in Rosendal as greenwashing. I think there is much more to this.

Developing an urban district with a sustainability profile is complicated and therefore deserves attention for several different reasons. The first of these relates to what I have come to call "Sustainable this, Sustainable that", which is the title of an article by Alaimo (2012). I have returned to this text several times throughout my doctoral education, and it still resonates with my line of thinking. Like Alaimo, I am intrigued by how sustainability is linked to many different topics. In Rosendal it is mainly urban sustainability that is at stake. Sustainability seems to mean different things depending on in what context it is used and by whom. Some see the concept as valuable due its fluidity, others are frustrated by the difficulty of pinning down its meaning. Personally, I find it important to inquire into which meanings are attached to sustainability, due to it being in frequent use. This frequency becomes especially apparent in relation to 'the urban'. When I started getting to know Rosendal, I was driven by the question: *If sustainability can mean so many different things, what are the myriad understandings of sustainability in Rosendal?* I was convinced there would be many different types of sustainabilities at stake. However, I have come to gradually realise that there is a rather uniform understanding of what sustainability means in Rosendal, and this understanding of sustainability is shared among the residents as well as by the municipality and developers. I have come to call what is associated with sustainability in Rosendal the 'usual suspects',

including aspects such as bicycles, cultivating vegetables, recycling, resource efficiency and closeness to nature.

During my visit to Rosendal today, I stopped by a café where I often have coffee during my field visits. When I parked my bicycle outside the café, I saw a cargo bike which I know residents living in the apartment building called Grindstugan (Eng. 'The Gate House') can borrow. This building also has at least one car for communal use, a roof terrace and solar panels. After drinking my coffee, I cycled through the inner yard of Grindstugan and saw their insect hotels. All these material elements – the cargo bike, the shared car, the roof terrace, the solar panels and the insect hotels – are in the property developers' and Uppsala Municipality's descriptions of Rosendal, mentioned with reference to sustainability. Materiality has had a central role in my research since starting out, although my understanding of materiality has shifted. I have been interested both in how material elements guide residents into performing certain types of everyday practices, as well as what kind of material elements are associated with 'sustainability'. In addition to finding it important to interrogate meanings attached to sustainability, a second reason for being interested in Rosendal due to its sustainability profile relates to how materiality is intervowen with everyday life. I have been interested in how specific material elements in Rosendal are shaping everyday practices – many of which are resource intensive.

During my visit today, I thought about the material elements associated with sustainability that I encountered. I suppose I appreciate that certain buildings have communal items and spaces, that there are insect hotels and solar panels. It is not that I think these material elements should be removed. Yet, I often question what difference these elements make in the light of the resource consumption going into both building the district and performing everyday practices within it. Is this what urban sustainability looks like? Does urban sustainability mean building a district resembling other contemporary districts and ensuring there are some features commonly associated with sustainability? When I continued cycling I saw a building being advertised with banners saying "Your natural choice in Rosendal. Carefree, unique and certified with the Nordic Swan[2]." (Swedish original: "Ditt naturliga val i Rosendal. Bekymmersfritt, personligt och Svanenmärkt"). I also saw the park with the water basin, part of the district's "innovative"

[2] The Nordic Swan Ecolabel is "an environmental labelling scheme certifying that a product or service complies with the requirements for the label." (Nordic Swan Ecolabel 2023).

storm water management system. This park has long been closed off by fences, but now the fences were no longer there. The water level was quite low, so I wonder if some of the problems related to the basin which resulted in keeping the park closed have now been solved, or whether it has only been opened temporarily. Every time I visit Rosendal, I feel like much has happened since last time. New building-projects have begun, streets are opened, paths are closed off by fences and new signs showing how to navigate the area are posted. Despite the material changes, my mixed feelings towards the district's sustainability profile remain.

Many of the themes introduced above, such as everyday practices, meanings of sustainability and materiality will reappear throughout this thesis summary and in the articles forming part of this compilation thesis. Likewise, many of the material elements introduced; the basin part of the storm water management system, the parks, the City Forest, Grindstugan, roof terraces and solar panels will return throughout the thesis to different degrees. One of Alaimo's (2012) arguments relates to how sustainability tends to be heavily human-centric. By introducing some of the many more-than-humans, such as nature reserves, solar panels, and cargo bikes, which in different ways are involved in shaping Rosendal and its sustainability profile, I deliberately grant them attention from the outset of this thesis.

1.2 Aims and objectives

Throughout this thesis, I explore what comes to count as sustainable in Rosendal. I do so by first exploring residents' perspectives on sustainability, by studying what everyday practices a group of people living in Rosendal associate with sustainability. Next, I consider Uppsala Municipality's and a group of property developers' perspectives on sustainability in Rosendal, based on their plans for and descriptions of the district. Additionally, my own perspective has influenced this thesis in different ways, for instance through my interest in the different ways sustainability can be understood, along with a concern for resource consumption taking place as part of everyday life in affluent urban environments. I depart from an understanding of the researcher as always connected to one's field of study (Davies 2008), where the researcher's values and experiences influence the research (Ramazanoglu & Holland 2002). Acknowledging my own influence on the research process,

has prompted me to make myself visible in the text in order to take responsibility for the claims I am making.

Aims: In this thesis, my aims are (1.) to explore what comes to count as sustainable in Rosendal, and (2.) to explore how urban sustainability is being reproduced within a district, which I approach as an urban assemblage, with a sustainability profile. Additionally, (3.) I aim to question taken-for-granted meanings of urban sustainability and open up for alternative perspectives as a way to foster more just and transformative urban sustainabilities.

Objectives: I acknowledge how Uppsala Municipality and property developers active in the area are developing Rosendal with the intent to create a sustainable district. Therefore, I view the district as an example of contemporary urban sustainability. I explore what comes to count as sustainable in the everyday lives of residents, as well as in the plans outlined by Uppsala Municipality and a group of property developers active in the area. I approach the district as an urban sociomaterial assemblage, to account for the various practices and discourses shaping what comes to count as urban sustainability in Rosendal. Further, I build upon more-than-human thinking, where humans are decentred and agency understood as being distributed across various elements forming part of, and shaping, the urban assemblage. Such perspectives have potential to foster an understanding of human interdependency with 'the environment' and disrupt human-centred and economic growth-oriented development, while the emergent character of assemblages points towards the possibility for urban environments to be developed differently.

Overview of how Article I–III contribute to the aims of this thesis. In order to clarify how each of the articles in this compilation thesis contributes to the overall aims of this thesis, I give an overview of Article I–III in Table 1. I account for the aim, objective and research questions (RQ). Additionally, I present the methodology and analysed material for each article. In Article I, I contribute to the overall aims of this thesis by exploring what comes to count as sustainable and how urban sustainability is reproduced in the urban assemblage (first and second aim of thesis), by focusing on residents' perspectives. In Article II, I contribute to these same aims by focusing on Uppsala Municipality's and a group of property developers' perspectives.

Table 1. Overview of Articles I–III.

ARTICLE	AIM	OBJECTIVE	RQS	METHODOLOGY	ANALYSED MATERIAL
I	To understand what comes to count as sustainability in everyday life among residents, and how the living environment contributes to shaping certain everyday practices.	Studying what everyday practices residents associate with sustainability and paying specific attention to material elements forming part of these practices.	-*What everyday practices do residents associate with sustainability?* -*How are the practices enabled and/or restricted by material elements in the living environment?*	Semi-structured photo-elicitation interviews, analysed with Shove et al.s' (2012) practice theoretical framework.	Data generated with a group of people living in Rosendal including interview transcripts and participant-generated photos.
II	To critically interrogate the sustainability meanings reproducing the *Sustainability in Rosendal* discourse. To question taken-for-granted ideas and introduce alternative perspectives.	Studying property developers' and Uppsala municipality's perspectives on what sustainability means in Rosendal. Question prevailing ideas and emphasize alternative approaches centred around justice and care.	-*What are the taken-for-granted ideas of urban sustainability?* -*What perspectives could foster more just and transformative urban sustainabilities?*	Policy analysis with Bacchi's (2009) What's the problem represented to be? (WPR) - approach, where policy is approached as discourse.	Found material describing Rosendal and its sustainability profile, produced by Uppsala Municipality and a group of property developers active in the district. The material includes text and images.
III	To open up the process of using photo-elicitation and to share insights gained about the role of photographs in this method, as well as the role of materialities in practices.	Reflecting on the insights gained in terms of what a photo can be understood as, and what the participant-generated photos portray. I share reflections on what the photos made me grapple with and reconsider.	-*What are the roles of photos and the elements they portray in photo-elicitation projects?* -*How can photo-elicitation support an analysis of sustainability meanings?*	Methodological reflection on the use of photo-elicitation and the roles of photos and material elements portrayed within them.	Participant-generated photos and the material elements portrayed within them.

Additionally, by questioning prevailing ideas on urban sustainability and emphasizing alternative perspectives, this article also contributes to the third aim of this thesis: to question taken for granted meanings of urban sustainability and open up for alternative perspectives as a way to foster more just and transformative urban sustainabilities. In the methodological reflection (Article III) I contribute to the second aim of this thesis: to explore how sustainability is reproduced in the urban assemblage, by reflecting upon how participant-generated photos helped me reconsider the role of material elements in practices. By doing so, I was better equipped to account for the role of more-than-human actants and their effects as part of the urban assemblage in chapters 4 and 6. These two chapters contribute to all three aims of this thesis.

1.3 Thesis Outline

After this introductory chapter, I situate this thesis both thematically and theoretically. In chapter 2, I start by presenting Rosendal and its role within Uppsala Municipality's sustainability policies and ambitions. Next, I tie the thesis to broader discussions and research about urban sustainability. I then situate my research theoretically, by explaining what approaching the urban as a sociomaterial assemblage signifies in this thesis. I view assemblages as existing of various elements including everyday practices, as well as discourses. Therefore, I explain my view of consumption as embedded in everyday practices following how meanings of sustainability reproduce, and are reproduced in, discourses with lived effects. Viewing the urban as sociomaterial assemblages consists of including the more-than-human in what makes up the urban, which leads me to explain why non-humans need to be taken into account within sustainable urban development. Taking a more-than-human perspective on urban sustainability is one way to disrupt the status quo. For urban sustainabilities to be transformative, however, I argue a feminist ethics of care, where justice is embedded, needs to be at the core of what it means to strive towards urban sustainabilities. In the last sections of chapter two, I therefore discuss perspectives on justice and care of relevance in this thesis.

In chapter 3, I present the research methodology in the form of a research journey. This chapter is divided into two parts. Both parts give an account of what influenced me to make certain decisions regarding methods and

theories, as well as how these methodological choices guided the research process. In the first part, I describe what guided me to study residents' perspectives on what comes to count as sustainable in Rosendal, as well as how data was generated and analysed about everyday practices research participants associated with sustainability. The first part of the research journey led me to an interest in the meanings of sustainability involved in the development of Rosendal. In the second part of chapter 3, I account for my study of what comes to count as sustainable in Rosendal, according to Uppsala Municipality and a group of property developers involved in the district. I give an overview of the theoretical perspectives behind the chosen approach to policy analysis, in addition to explaining why I chose this particular approach and how I applied it in my study. In chapter 4, I return to what considering Rosendal as one or many sociomaterial assemblage(s) signifies in this thesis and how this understanding can open up for less human-centred urban development. I draw together selected parts of my research journey and bring forth a set of more-than-human actants that in different ways shape what comes to count as sustainable in Rosendal. My aim is to draw attention to their effects within the urban assemblages and how they contribute to what comes to count as sustainable in Rosendal. In chapter 5, I present summaries of the articles forming part of this compilation thesis. In chapter 6, I discuss three interconnected topics, all of which relate to the three articles and this thesis summary, in that they draw together my main arguments and findings while discussing alternative trajectories for the urban assemblages making up Rosendal. In chapter 7, I conclude by linking back to the overall aims of this thesis and make suggestions concerning how to move beyond contemporary examples of urban sustainability.

2. Situating my research

In the following sections, I situate my research both thematically and theoretically. I first present Rosendal and discuss the district's role as part of Uppsala Municipality's sustainability agenda and as an example of contemporary urban sustainability. I then go on to situate my thesis theoretically by explaining how and why I have come to understand Rosendal as an urban assemblage made up of various elements, including sociomaterial and material-discursive practices, as well as more-than-human actants. Lastly, I present theoretical perspectives for advancing more caring, and hence more just and transformative sustainabilities.

2.1 Rosendal: part of Uppsala Municipality's sustainability agenda

My research focuses on an urban district called Rosendal (in English, 'Valley of Roses'), located in Uppsala, Sweden. Uppsala is often described as one of Sweden's fastest growing cities and is located about 70 kilometers north of Sweden's capital, Stockholm. Currently, Uppsala has a population of 230 000, estimated to grow to 380 000 by 2050 (Uppsala kommun n.d.a). Housing, transport, schools and workplaces are needed to cater for the growing population, and as a result new urban districts are being developed (Ibid. n.d.a). The city hosts two universities: Uppsala University and the Swedish University of Agricultural Sciences, in addition to several large employers. Uppsala has in recent years made significant efforts to be recognised as a sustainable city. The municipality's policy for sustainable development includes statements around the municipality's role as a forerunner both nationally and internationally, as well as how Uppsala ought to be associated with sustainability (Uppsala kommun 2017). Uppsala's

work in this area is attracting attention; Uppsala was the global winner (2018) and national winner (2020) of the One Planet City Challenge, a competition organised by the World Wide Fund for Nature (Uppsala kommun 2022a).

Uppsala's environmental awards and climate work are presented along with the slogan: "Uppsala shows the way to a sustainable future." (Uppsala kommun 2023b). The climate work includes an Environmental and Climate Programme with goals related to energy consumption and production, carbon emissions, food production and urban development, to name a few (Uppsala kommun 2022b). The programme includes a goal to be 'climate positive' by 2050, meaning more carbon will be captured than is produced (Uppsala kommun 2022b). In addition, there are a range of projects and investments intended to be part of solving "sustainability challenges" (Uppsala kommun 2023b). One such initiative is to develop innovative neighbourhoods, where especially sustainable mobility is central (Uppsala kommun 2023b). Rosendal is one of the neighbourhoods within this category and is part of a larger area called Södra Staden (in English, 'The Southern City'). In this area, existing districts are expanding and new ones are developed with the intention that Södra Staden will become a driving force within the municipality's work around sustainable development in the city and the region (Uppsala kommun 2018). It is worth noting that municipalities and regions are central within Sweden's democratic governance, where both types of local authorities consist of citizen-elected politicians (SKR 2021a). Municipalities are responsible for local services such as childcare, schools and care of the elderly, education, water and sewers, waste management, planning and housing (SKR 2021b). There are currently 290 municipalities in Sweden (SKR 2022). Services extending to geographically larger areas such as health care and regional development are the responsibility of Sweden's 21 regions (SKR 2022; 2021c). Public transport is a compulsory service to be provided collaboratively by municipalities and regions (SKR 2021c).

Rosendal forms part of the municipality's ambition for Uppsala to become a more sustainable city (Uppsala kommun 2016:10), and according to the municipality significant efforts have been made to create a sustainable district (Uppsala kommun 2022c). The plans for Rosendal included shaping a living environment where leading a sustainable lifestyle is not solely dependent on an individual's active choices, but where options for sustainability in everyday life

are enabled through the district's structure and content (Uppsala kommun 2016:10). Rosendal is described as a sustainable living environment by the municipality of Uppsala and consultancies, architect firms and companies involved in the development of the area (see, for example: Uppsala kommun 2022c; JM 2023; Genova n.d.a). It is the sustainability profile of Rosendal that intrigues me and has led me to focus on this district, as it exemplifies contemporary urban sustainability. What is of interest in this thesis is not to evaluate whether Rosendal fulfils measurable parameters of urban sustainability, but rather what comes to count as sustainable in Rosendal. Therefore, the statements made about Rosendal being sustainable are seen as part of Rosendal's sustainability discourse, interrogated in Article II. Additionally, it is against the backdrop of Rosendal as an example of contemporary urban sustainability that I explore, in Article I, what residents of Rosendal associate with sustainability in everyday life.

Figure 3. The southern part of Rosendal. Photo: Bäckman, M. 2019.

2.1.1 What kind of area is Rosendal?

Rosendal is located a few kilometres south of Uppsala city centre. The map below (Figure 4) portrays the district's location in relation to Uppsala central railway station; this same map is also included in Article II. Prior to the development of Rosendal into a district where "sustainability and innovation" are keywords (Uppsala kommun 2022d), the land upon which the district is now being constructed was used for a military practice field and a golf course (Uppsala kommun 2022e). Rosendal is located between two nature reserves (Uppsala kommun 2019a) and is repeatedly described as being "close to nature" (Swe. 'naturnära') (see, for example, Uppsala kommun 2016; SKB 2020; Serneke 2023). It is often mentioned how the location of Rosendal makes it easy for people living in the district to reach central parts of Uppsala by walking or cycling (Uppsala kommun 2016; JM 2023). Rosendal is intended to be a district where most services can be reached by walking (Uppsala kommun 2016) while the city's work towards being a cycling city (Uppsala n.d.b) are echoed in the plans and development of Rosendal. Enabling sustainable travel has been a priority in Rosendal from early phases of the project, where cycling, in particular, is emphasised (Uppsala kommun 2023c). Meanwhile, the plans and descriptions underline that Rosendal is not a car-free district, and so-called mobility houses are built to ensure "sustainable parking" (Uppsala kommun 2016; 2022f).

The plans for Rosendal include 3500 apartments, a new university campus area, schools, kindergartens, commercial spaces, offices, a sports hall and a library (Uppsala kommun 2022g). One of the first buildings to be constructed as part of the Rosendal project, is a sports centre, completed in 2012, with a distinctive wave-shaped sedum roof (Uppsala kommun 2022e). The sports centre was built in the first of five phases in the construction plans for the area (Uppsala kommun 2023d), with the first residential buildings in this first phase being completed between 2015 and 2017 (Uppsala kommun 2022e). At the time of writing (2023) only the first phase has been fully completed, while the other phases are at various degrees of completion (Uppsala kommun 2023d). It is estimated that construction of all phases will be complete by 2027 (Uppsala kommun 2021).

Figure 4. Maps: 1. Rosendal's five phases. 2. The district's location in relation to Uppsala city centre. 3. Distance from Stockholm.

Additionally, the development of Rosendal has been included as a pilot project within a nationwide initiative called City Lab (Uppsala kommun 2016), led by the Swedish Green Building Council where a certificate for sustainable urban development in a Swedish context has been developed (see SGBC 2023). City Lab developed the certificate scheme with reference to both national and international urban sustainability policies (SGBC 2019), such as the United Nations (2015) Sustainable Development Goals and the Swedish environmental quality objectives (Sveriges Miljömål 2020). It is important to note that the development of Rosendal is influenced by both national and international sustainability policies and discourses. This strengthens my claim that Rosendal is an example of contemporary urban sustainability.

Another aspect that has influenced the development of Rosendal is the so-called Uppsala model (Swe. Uppsalamodellen), where property developers have been invited to compete for land use allocation by proposing plans where cost has not been the only criteria (Uppsala kommun 2022e). Previously, one large property developer has commonly been given responsibility for a whole district, which often resulted in uniform architecture (Ibid. 2022e). In contrast, by letting property developers compete by proposing solutions rated by their "quality and sustainability", as stated by the municipality, smaller actors have been able to enter the housing market by proposing compelling plans (Uppsala kommun 2022e) for smaller areas than a complete district. This has resulted in more varied and playful architecture than in other new districts in Uppsala (personal observation). The varied architecture is something the municipality describes as a specific characteristic of Rosendal (Uppsala kommun 2016).

2.1.2 The district's vision and goals

The backbone for the policy analysis conducted in Article II was a document entitled *Rosendal Quality Programme – Design and Sustainability* (Swe. *Rosendal Kvalitesprogram – Gestaltning och hållbarhet*) produced by Uppsala Municipality (Uppsala kommun 2016). The programme was intended as a communication tool among involved stakeholders involved – such as the municipality, property developers involved in the area and companies providing water and electricity - to ensure important values would not be lost during the process (Ibid. 2016:6–9). The programme presents a vision that was outlined in 2014 when so called zoning plans for the district were made (Uppsala kommun 2016:4). The vision includes three main principles (the translation of these principles are the author's own):

I. *Rosendal is in close proximity to everything* (Swe. I Rosendal är det nära till allt). Future residents are imagined to work close by, and are therefore able to walk to work, while they can cycle to the city centre. Stockholm and Arlanda airport are located within commuting distance from the district. Grocery shopping can be done in the area and possibilities for recreational activities are located both within the district and close by.

II. *Everyone is welcome to Rosendal* (Swe. Till Rosendal är alla välkomna). The area is envisioned to attract people from different parts of Sweden and the rest of the world. The architecture is varied and there are different types

of housing options so that different people can feel at home. The area is designed so that anyone can easily find places they enjoy.

III. *Rosendal is a smarter district* (Swe. Rosendal är en lite smartare stadsdel). This relates to smart solutions and the consideration of environmental aspects, but also to the district's location in-between Uppsala University, Uppsala University hospital and the Swedish University of Agricultural Sciences. Several other large employers have their offices within walking or cycling distance of Rosendal.

In addition to the vision, four specific goals are laid out in the quality programme. The goals are developed as guiding principles for the various actors involved in the development in the district and are to ensure the area becomes sustainable (Uppsala kommun 2016:15–30):

1. *Rosendal is safe and liveable* (Swe. Rosendal är tryggt och trivsamt)
The first goal is to be achieved mainly through physical features in the living environment, where the spaces between houses are to attract different age groups. Features such as art, vegetation and technology will attract curiosity towards the living environment and thus invite residents to spend time in the area. Moreover, the public spaces are to be planned from the perspective of pedestrian and cyclists to ensure safety.

2. *Rosendal is close to nature* (Swe. Rosendal är naturnära)
It is stated that closeness to nature contributes to diversity and variation. The already existing natural environments are to act as starting points for the design of parks in the district. Wherever one lives in Rosendal, nature is to be close by. This goal includes features such as storm water management, ensuring biological diversity, environmental pedagogy and urban gardening.

3. *Rosendal is varied/diversified* (Swe. Rosendal är variationsrikt)
The goal is described by stating how Rosendal is to become a multifunctional urban district where variation and diversity are taken into account in different ways. It is stated that the varied types of buildings, including accommodation, services and education will ensure the district becomes attractive and everyone can feel welcome. Features included in the above goals, such as art, vegetation and existing natural environments are seen as ensuring the district's varied nature.

Figure 5. The building on the right is a sports centre and one of the first buildings completed as part of the Rosendal project. Photo: Bäckman, M. 2023.

Figure 6. Cycling infrastructure is pointed out as a central part of Rosendal's development by Uppsala Municipality. Photo: Bäckman, M. 2019.

Figure 7. Construction in the northern part of Rosendal. Photo: Bäckman, M. 2019.

Figure 8. One of the district's parks under progress. Photo: Bäckman, M. 2019.

4. *Rosendal is resource efficient* (Swe. Rosendal är resurseffektivt)
Materials and resources will be used with care and consideration. There will be innovative and efficient technical solutions and environmental awareness will prevail in domains such as energy, waste management and storm water management. Sustainable transport is included within this goal and the bicycle is brought forth as an integral part.

Although the vision and goals were outlined before the construction of housing in the area begun, they have remained central for the development of the area: many of these features are mirrored in the property developers' descriptions of their housing projects as well as their descriptions of the area (see, for example: JM 2023; Wallenstam 2020). Meanwhile, when following the development of the district through the Rosendal project's website (Uppsala kommun n.d.c) and the newsletters produced by Uppsala municipality, aspects such as the greenery, parks, public art and sustainable travel reoccur. Without making a strict comparison between Rosendal and other districts in Uppsala, it is noteworthy that housing in Rosendal tend to be more expensive than in both older and other newly built districts consisting mostly of apartment buildings. This applies to both rental and privately owned apartments. Further, several landlords of rental apartments have inserted a minimum wage limit, to ensure only individuals or families with a certain level of income can access their apartments.

2.1.3 What is being done in the name of sustainability?

Throughout my work with this thesis I have been attentive to the initiatives in Rosendal that are being implemented with reference to sustainability. The table below is an elaborated version of Table 2 in Article II. The original table was an overview of the sustainability initiatives found in the written and visual material analysed in Article II. The table below includes somewhat elaborated descriptions, including not only the property developers' and Uppsala municipality's descriptions, but also insights gained from interviewing residents and from spending time in the district. The column titled 'Feature / Characteristic' includes the concrete 'sustainability solutions' planned and implemented, while the column titled 'Description' accounts for what the 'solutions' include and how they are seen to contribute to urban sustainability.

Table 2. Overview of sustainability features in Rosendal.

Feature / Characteristic	Description
Rosendal's location	Strategic. Allows inhabitants to cycle to the city centre, walk to work, be close to nature and services. Seen to be beneficial to both the 'environment' and the individual.
Energy efficiency	Solar panels, sedum roofs, 'passive houses', buildings with heating recycling system. Certain buildings have environmental certificates relating to their energy efficiency.
Places for different activities	Playgrounds, parks, tennis and padel courts, sports centre, meeting places and opportunities for cultivation. Seen as ensuring there is something for 'everyone' while especially opportunities to exercise are linked to personal wellbeing.
Lighting	For safety and comfort.
Transport	Focus on pedestrians and cyclists, while ensuring private cars remain an option, described in terms of 'sustainable mobility', safety and liveability. So-called mobility houses with 'smart' solutions.
Building materials	'Environmentally friendly' and long-lasting. Wood is seen as a 'sustainable' material, certain houses are made mostly or partly of wood. Certain buildings have environmental certificates where the building materials are taken into account.
'Blue-green' storm water solutions	To prevent flooding, enhance greenery and protect the water reserve underneath Rosendal.
Greenery	To enhance biodiversity and the area's attractiveness. Certain species are protected.

2.1.4 The urban as a sustainability solution?

The prevailing idea of urban environments as 'sustainability solutions' has prompted me to study what comes to count as sustainable in Rosendal. Further, that recurring urban sustainability traits are attracting affluent groups, makes Rosendal an example of how coupling the *urban* with *sustainable* tends to reproduce urban injustices. Rosendal is by no means unique, as there are many examples of urban areas being planned under the umbrella of sustainability in Sweden and other parts of the world. Urban planning has gained a central role within sustainability initiatives (Angelo & Wachsmuth 2020) as cities and urban areas are increasingly seen as sites where sustainability transformations are to occur (Barnett & Parnell 2016; Castán Broro et al. 2019; Miller & Mössner 2020). According to Angelo and

Wachsmuth (2020) this perspective of the urban as a 'sustainability solution' has however not always been prevailing. They account for the development of the discourses around urban sprawl, informal settlements and climate change, describing how all of these framed processes of urbanisation as environmental problems in the 20th century. However, this perspective has gradually shifted, and the urban is now seen to represent solutions to environmental, social and economic problems (Ibid. 2020). The perspective of cities and urban areas as sustainability solutions is approached as common sense across a diverse range of actors, from policymakers and urban planners to environmental activists and social movements (Angelo & Wachsmuth 2020). In the light of urbanisation being a global trend with over 50% of the world's population already living in cities, and with this proportion estimated to increase to 68% by 2050 (United Nations 2018), the perspective of urban areas as sustainability solutions is rarely questioned. Rather, urban sustainability is often put forward as an imperative, as noted in the European Environmental Agency's take on the issue: "As many of us live in cities, ensuring a sustainable urban environment is vital" (European Environment Agency 2023).

Cities and municipalities seem to have embraced their role as change-makers, with urban sustainability initiatives flourishing. Some examples of cities claiming a sustainability label are: Freiburg (called Green City) in Germany (Green City Freiburg n.d; Miller & Mössner 2020); Sustainable Calgary in Canada (Sustainable Calgary n.d; Miller & Mössner 2020); Dakar in Senegal, part of several networks for cities taking action in the name of climate, sustainability or resilience (see for example C40 2023; Resilient Cities Network 2023); and the Tianjin Eco-City in China, a collaborative project between China and Singapore (Sino-Singapore Tianjin Eco-City 2021; Zhan et al. 2018). In their study on local sustainability action, Castán Broto and Westman (2017) analysed so-called flagship initiatives spread across 200 cities in different parts of the world; they included cities with low-income levels as well as wealthy ones, and examples characterised as megacities along with smaller urban areas. This goes to show how coupling urban and sustainability is not taking place in any particular type of city or municipality in any particular part of the world. In Sweden, municipalities and regions are seen to have a central role in implementing the global sustainability goals (SKR 2023) outlined as part of Agenda 2030 (United Nations 2015). Additionally, Sweden has gained international recognition

for certain urban sustainability initiatives, such as Hammarby sjöstad (Hult 2015) and Royal Seaport in Stockholm, as well as Western Harbor in Malmö (Bibri & Krogstie 2020). Uppsala municipality's Rosendal project is yet another attempt by a Swedish municipality to gain recognition for its work towards creating an "sustainable and innovative" (Uppsala kommun 2022c) urban district.

Although urban sustainability is often discussed from a local perspective (see, for example: Nieminen et al. 2021; Turcu 2013; Bulkeley & Betsill 2003) as initiatives need to be adapted to their particular context, Wachsmuth and Angelo (2018) bring attention to the similarities displayed across contemporary 'sustainable' cities located in different parts of the world. They describe these similarities as 'green and grey urban nature' and view them as expressions of two opposing but mutually supportive ideologies. 'Green' refers to a focus on bringing nature back into the city by establishing urban parks, planting trees along city-streets and supporting urban agriculture, whereas 'grey' nature includes high-tech solutions such as energy-efficient buildings, solar energy and transport related development (Wachsmuth and Angelo 2018). Similar characteristics are present in Rosendal, both when it comes to the plans and ambitions for the area (see especially, Uppsala kommun 2016; 2022c), as well as how these plans are materialising (based on personal observations made in the district).

In light of the many urban development initiatives taken under the umbrella of sustainability, several studies have shown how such initiatives tend to reproduce and aggravate already existing injustices in urban environments (see, for example: Checker 2011; Rice et al. 2020; De Rosa et al. 2022). For example, green infrastructure projects intended to build climate resilient urban environments tend to be marketed to, and attract, high-income residents (Anguelovski et al. 2019). When housing prices rise as a result of the districts' attractive character, less affluent groups risk displacement (Ibid. 2019). These green infrastructure projects include features such as green roofs, parks and storm water management systems, all of which are to be found in Rosendal. Additionally, densely built urban districts with similar characteristics to Rosendal, including energy efficient housing, easy access to public transport or possibilities for residents to conveniently cycle or walk, are attracting sustainability aware mid- and high-income residents (Rice et al. 2020). While housing prices in such areas are rising, so are carbon emissions due to the correlation between consumption

and income, despite so-called low-carbon lifestyles (Ibid. 2020). Similarly, in a study conducted in one particular part of Stockholm, Bradley (2009) found that those who were socio-economically advantaged and strived to live 'environmentally friendly' lives, consumed more resources compared to groups who were less wealthy and placed less emphasis on 'the environment'. This goes to show that consumption-related environmental impact strongly correlating with high levels of income (Middlemiss 2018:20-39; Wiedmann et al. 2020; Bjelle et al. 2021) is not only relevant from a global perspective when comparing nations to one another, but that differences also occur within nations. According to Oxfam (2020), the richest 10% of Swedes are responsible for 24% of the country's household related CO2 emissions. There are many different methods used for calculating consumption-related environmental impact, but regardless of method Sweden tends to be among the 15-20 highest ranked countries in the world. For instance, WWF considers Sweden as one of the 15 high income nations in the world with the highest ecological footprint per capita (see WWF 2023). Creating possibilities to lead less resource intensive ways of life has indeed been taken into account within contemporary urban planning, in Sweden and elsewhere. Nevertheless, consumption levels remain high, especially among socio-economically privileged groups.

Although Rosendal is a new district and its attractive characteristics will not lead to displacement of vulnerable groups living in the district prior to the implementation of green and grey urban nature (Wachsmuth & Angelo 2018), it is worth noting how many of Rosendal's sustainability characteristics are both attracting, and being marketed to, mid- and high income sustainability aware groups (Anguelovski et al. 2019; Rice et al. 2020). At the same time, less affluent urban districts are being ignored when climate-adaptation projects are carried out (De Rosa et al. 2022).

2.2 The urban as sociomaterial assemblage

Through the research I have conducted, my perspective on the role of materiality as part of everyday life and the urban environment has changed. I started out with a perspective where I held material elements in urban environments central for the type of everyday practices performed within them. Despite their central role, I treated material elements as static entities, mainly of interest for what humans do with them or as a result of them.

Gradually, I have started to question this perspective and started understanding matter as vibrant and dynamic (Bennett 2010). To underline the importance of non-human actors in urban environments, I have chosen to use the term more-than-human (see, for example, Puig de la Bellacasa 2017). To better account for this shift in perspective, where humans are no longer centre-stage, I refer to the urban environment as a sociomaterial assemblage (see also, Durose et al. 2022). Assemblages can be conceived in many different ways. My understanding is based upon certain strands of assemblage theory that build on the work of Deleuze and Guattari (1987 in Bennett 2010); of particular interest for me is the work of Bennett (2010) and Anderson and McFarlane (2011). According to Bennett (2010:23), assemblages are "…groupings of diverse elements, of vibrant materials of all sorts.". Anderson & McFarlane (2011:124) define assemblages as: "…composed of heterogeneous elements that may be human and non-human, organic and inorganic, technical and natural". They also stress how assemblage is "…often used to emphasize emergence, multiplicity and indeterminacy" (Anderson & McFarlane 2011:124). When concerned with urban environments, assemblage thinking entails understanding the urban as constantly in the process of being made by a variety of interdependent elements. In using the term sociomateriality, I denote how I view the world as simultaneously social and material (Woodward 2020). This conception rejects an understanding of the social and material as separate, but views them as entangled and co-constitutive (Gherardi 2017). I thus view the urban district Rosendal as emergent, and as being made up of multiple socio-materialities which together form assemblages.

Cities are, according to McFarlane (2011), made up of multiple assemblages; following this perspective, I view Rosendal as one of many assemblages making up the city of Uppsala – while Uppsala in turn is part of other assemablages. Likewise, Rosendal can be understood as consisting of different sociomaterial assemblages which together make up the district. Assemblages can be thought of as grouped together or considered separately, depending on focus, and I find thinking of 'zooming in' or 'zooming out' helpful when referring to Rosendal as one urban assemblage made up of many assemblages. I thus approach 'the urban' as a sociomaterial assemblage, while simultaneously claiming that Rosendal is made up of multiple assemblages. To avoid confusion, I sometimes use 'assemblage(s)' to underline how a

particular urban environment can be understood as one assemblage as well as being made up of many different assemblages.

Foregrounding the often taken-for-granted mundane materialities entangled with everyday life (Hall & Holmes 2020; Woodward 2020) may help unpack far-reaching consequences of this entanglement (Orlikowski & Scott 2008). In this thesis such consequences concern in particular how the urban sociomaterial assemblage enables certain types of everyday practices while restricting others. Further, the sociomaterialities play into what comes to count as sustainable in Rosendal. I view everyday practices as forming part of, and contributing to, reproducing and altering urban assemblages (Durose et al. 2022), while sociomateriality holds practices together (Gherardi 2017). This reflects Pink's (2012) notion of everyday practices always holding potential for both stability and change, while material elements in practices both enable and shape them (Reckwitz 2002; Shove et al. 2012). The urban assemblage is also shaped and made up by discourses, in that discourses have lived effects (Bacchi 2009). Discourses are here understood as material-discursive (Barad 2003), as material and discourse, much like sociomateriality, are mutually constitutive. The taken-for-granted meanings of urban sustainability contributing to shaping Rosendal's development are, following Bacchi (2009), approached as discourses. The policies are both part of, and contributing to, shaping the (sociomaterial) urban assemblage, and as a consequence influencing what everyday practices are performed in Rosendal. Assemblages consist of humans and their social systems – where I include practices and discourses – as well as non-humans (Bennett 2010). The non-humans in Rosendal, co-constitutive of both (sociomaterial) practices and (material-discursive) discourses reproducing and altering the urban assemblage, include preserved pine-trees, cycling-lanes, cars and the water basin forming part of the storm water management system – to name a few. Some of these were presented in the introduction and will be further discussed in chapter 4, where I further develop and discuss my thinking around the urban as sociomaterial assemblage(s) and what such a perspective can contribute with.

In the following sub-sections, I discuss in more detail how discourses, practices and more-than-humans relate to what comes to count as sustainability in the urban assemblages making up Rosendal. First, sustainability circulates widely in popular, scientific and policy discourse, while the concept holds different context-dependent meanings. This makes it difficult

to discern exactly what sustainability means. However, its frequent use calls for continuous consideration of what comes to count as sustainability – not least due to how certain understandings of sustainability guide what initiatives are realised with reference to sustainability. Therefore, I begin by situating this thesis within discussions on how the multifaceted nature of meanings associated with sustainability can be approached. Second, how urban living environments are configured, plays into the ways in which everyday practices within them are shaped, sustained and altered. As many affluent living environments are organised in ways that contribute to shaping resource intensive everyday practices, I have been interested in how everyday practices are entangled with certain material elements. These perspectives are connected with practice theoretical approaches to consumption. Third, approaching the urban as sociomaterial assemblages brings forth the non-humans – here referred to as more-than-humans, within them. I therefore discuss what a more-than-human perspective on urban environments might contribute with.

2.2.1 Sustainability discourses with lived affects

I started out from an understanding of sustainability as a contested (Frank 2017; Connelly 2007), elusive (White 2013) and socially constructed concept and set out to examine in what ways sustainability is understood and enacted in Rosendal. As described above, I hold the urban assemblage to consist of different elements, some of which are discourses. Following Barad (2003), I view discourse as material-discursive in that material and discourse are co-constitutive. Due to the entangled relationship between discourse and material, what comes to count as sustainable in Rosendal relates to meanings associated with sustainability, how these meanings materialise, as well as material elements reproducing these meanings. In Article II, I therefore interrogate the sustainability meanings shaping the *Sustainability in Rosendal* discourse.

Although sustainability is often coupled with the urban, the term is used extensively in relation to other domains, such as agriculture, tourism and consumption. The popularity of sustainability has grown alongside concerns about excessive resource consumption (Wynveen 2015; Middlemiss 2018), social inequalities (Aygeman 2008; Walker 2012) as well as pollution, environmental degradation and climate change (Denegri-Knott et al. 2018). This has resulted in a plethora of initiatives attempting to steer development

of human societies in what is often referred to as sustainable directions. As a result, sustainability circulates widely in public, policy and academic discourse (see, for example, Brown 2016). Since sustainability is associated with different and contradictory meanings (McDonogh et al. 2011; Mensah 2019) it has been suggested the use of this term should be abandoned (see, for example, Benson & Craig 2014). However, I argue in line with Brown (2016) that since sustainability is a term circulating widely, one cannot simply abandon it altogether. On the contrary, since discourses have lived effects (Bacchi 2009), the meanings reproducing sustainability discourses need to be interrogated – not least due to how sustainability, despite the concept's transformative potential, is often appropriated by hegemonic discourses keeping up the status quo, and reproducing injustices (Gottschlich & Bellina 2017; Castán Broto & Westman 2019).

Like Castán Broto and Westman (2019), I suggest that meanings of sustainability are always situated, in that sustainability means different things within different practices, discourses and assemblages. Further, Gottschlich and Bellina (2017) suggest understanding the concept as "sustainability to come", implying an ongoing process. Seeing sustainability as open-ended means the concept is open to appropriation by dominant economic and political discourses, while simultaneously being open to re-appropriation with potential to generate more just sustainabilities (Castán Broto & Westman 2019). I will elaborate on how urban sustainability could potentially become more just, caring and transformative, as opposed to keeping up the status quo, in the sub-chapter 2.3.

2.2.2 Consumption as part of everyday practices

The resource intensive nature of many ordinary everyday practices (Pink 2012; Jack 2020) as well as their environmental consequences, led me to begin this research process by exploring everyday practices associated with sustainability among residents of Rosendal (Article I). In Sweden, 60% of consumption-related emissions are a result of household consumption (Naturvårdsverket 2021:31) and as a consequence both national and municipal policies have focused on increasing awareness related to how households can decrease their consumption, departing from what individuals can do in their everyday lives (see, for example: Edman 2005; Naturvårdsverket n.d; Uppsala kommun n.d.d). However, household consumption is largely inconspicuous (Jack 2020), meaning that consumption takes place as part of specific practices

(Warde 2005), many of which are carried out unconsciously in everyday life (Gram-Hansen 2014:94). Since resource consumption is embedded in everyday practices, consumption tends to be a result of convention as opposed to individual choice (Jack 2020).

A growing body of research on sustainable consumption focuses on resource consumption in daily life as embedded in particular practices (Welch & Warde 2015; Middlemiss 2018; Jacobsen & Hansen 2019). This field of study, which has been called the sociology of sustainable consumption (Welch & Warde 2015) builds on practice theoretical approaches and considers changes in consumption patterns to be contingent on changes in everyday practices (Shove & Spurling 2013). The material world is often emphasized when studying consumption as part of ordinary everyday practices (Jacobsen & Hansen 2019). Practices are understood as held together by different elements, some of which are material (see, for example: Reckwitz 2002; Shove et al. 2012). Therefore, the ways in which urban living environments are configured influence how everyday practices within them are shaped, sustained and altered. This does not mean individuals are pre-programmed to act in specific ways, but that elements within everyday practices shape how practices are performed. Additionally, performing practices in specific ways always holds potential for both stability and change (Pink 2012). As consumption is seen to take place as part of everyday practices (Warde 2005), elements, including material ones, are entangled with household consumption.

As described earlier (see 2.2), I understand everyday practices as forming part of the urban assemblage. Everyday practices both change and reproduce the urban assemblage (Durose et al. 2022), depending on how the practices are being performed. Due to my interest in the role of material elements in practices, I have come to understand practices as sociomaterial implying the material and social are co-constitutive (Orlikowski and Scott 2008). Sociomaterial practices that residents of Rosendal associate with sustainability are entangled with specific material elements in the urban assemblage. These material elements contribute to how and what everyday practices are performed – and through that, to which resources are consumed as part of everyday practices, as well as to what comes to count as sustainability in Rosendal.

2.2.3 Urban environments as more-than-human habitats

Urban development tends to be largely human-centric, although cities and urban environments are made up of, and inhabited by, various non-humans, such as animals, materials, technologies, plants and fungi (Maller 2018). Many of these non-, or more-than-humans are commonly referred to as 'nature' (Ibid. 2018), implying a form of otherness and alienation from the urban. Feminist scholars have contributed to overcoming dualisms that create hierarchies such as nature/culture and human/nature (see, for example: Harcourt & Bauhardt 2019; Gibson-Graham 2011), where humans are seen to be 'above', rather than part of and interdependent with nature (Plumwood 2009). In viewing urban environments as sociomaterial assemblages and following Anderson and McFarlane's (2011) definition, more-than-humans are considered part of, rather than external to the urban. Maller (2018) follows a similar perspective when suggesting cities need to be approached as more-than-human habitats. Such a more-than-human perspective decentres humans and acknowledges the various non-humans forming part of urban environments (Maller 2018; 2021). Further, more-than-human thinking can cultivate awareness of the interdependency between various elements in urban environments, along with a reconsideration of who and what urban environments are for (Maller 2021). When arguing for the need to work against anthropocentric perspectives on societal development, both Tschakert (2022) and Maller (2021) point towards indigenous knowledges incorporating relational perspectives towards more-than-human others. Although more-than-human perspectives have entered western thinking only recently, they have a long history in indigenous ontologies (Maller 2021). More recently, the broad field of new materialisms – a catchphrase for perspectives bringing forth material agency, and often criticized for not being 'new' (Maller 2018) - has contributed to advancing more-than-human thinking across various fields. Like Maller (2018:6), I suggest traditional views on urban environments "struggle to account for complexity, emergence, dynamic temporal and spatial processes, and the materiality and performativity of everyday life". Ideas from new materialist strands of thinking can help disrupt the status quo (Maller 2018) and open up for new ways of thinking and dealing with challenges facing urban living environments. When turning towards new materialist ways of thinking, I draw mainly on the work of Bennett (2010) in viewing material as vibrant and as gaining agency through interaction with other elements within the

urban assemblage. The focus on the non-humans part of urban assemblages links to my interest in the role of material elements within assemblages. Throughout this thesis I refer to materialities as *sociomaterial* to describe the nature of practices and assemblages, *material-discursive* to denote how discourse is always entangled with the material, *vibrant matter* to account for material agency as part of assemblages, and *more-than-human actants* to underline how humans are not the only agents in the urban assemblage. Despite these names being suitable for slightly different purposes, they denote how humans are not alone in control of the assemblages of which they form part, while emphasizing the co-constitutive relationship between the social and material.

2.3 Towards more just and caring urban sustainabilities

Current urban development is, according to Rydin (2013), largely dependent on economic growth and therefore prevailing injustices are kept in place. Urban development done in the name of sustainability is no exception, as discussed in chapter 2.1.4. Further, as meanings of urban sustainability are materialising in ways that tend to reproduce already existing injustices (see, for example: De Rosa et al. 2022; Rice et al. 2020), these meanings require critical examination and alternative perspectives are needed. The notion of just sustainabilities, coined by Agyeman et al. (2003), stresses how justice should be at the core of sustainability. Building on this notion of just sustainabilities, Castán Broto and Westman (2019) discuss how sustainability is often appropriated by neoliberal discourses keeping existing circumstances in place, rather than working towards the societal transformation that is often called for. Neoliberalism, just like sustainability, is a term that has been criticised due to the ambiguity stemming from the different meanings associated with it (Venugopal 2015). Here, it refers to an ideology resting on the idea of a free, unregulated and competitive market as the ultimate form of socioeconomic development (Peck et al. 2009). This ideology is however always embedded, and takes different forms in different contexts and needs to adapt to other competing ideologies (Theodore et al. 2011). Despite differences in its expressions, neoliberalism has resulted in growing inequalities and harmful competition (Peck et al. 2009).

Moving away from human-centred urban development and viewing the urban environment as sociomaterial assemblages, can, as discussed above,

disrupt current circumstances. Maller (2021) suggests, more-than-human thinking can prompt a reconsideration of who and what urban environments are for. In the sub-chapters below I discuss two interconnected perspectives, namely a feminist ethics of care and a pluralistic view on environmental justice. These perspectives have heavily influenced my thinking around how to move forward from the types of urban sustainability that support the status quo and do not lead towards societal transformation. I differentiate between change and transformation, and in building upon theories of practice (Shove et al. 2012; Maller & Strengers 2015) I argue change is continuous. Transformation, on the other hand, is more profound, as it implies "…a fundamental redistribution and reconfiguration of power structures, and a restructuring of societal relations that produce inequality, oppression and deprivation." (Castán Broto & Westman 2019). I sometimes use the expression transformative change – which I see as a synonym for transformation, to denote the difference between 'ordinary' change taking place continuously and the type of transformative change that disrupts current circumstances. I do not view these two as opposing binaries, but rather as a continuum.

In their book *Urban sustainabilities and justice*, Castán Broto and Westman (2019) build upon Agyeman's work when discussing and developing a just sustainabilities framework for the urban context. They build on certain feminist perspectives, including Haraway's (1988) situated knowledges, when discussing examples of urban just sustainabilities taking place across the globe. They touch upon the notion of care, but do not develop their thinking around this concept further. Gottschlich and Bellina (2017) on the other hand have developed a framework where they propose putting care alongside a pluralistic view of justice at the core of sustainability transformations. In the following sections, I give some background for the complex concepts of justice and care. I conclude by briefly outlining what thinking with care about urban sustainability might imply.

2.3.1 A pluralistic view on environmental justice

Just sustainabilities (Agyeman et al. 2003; Agyeman 2013) have much in common with environmental justice – a movement and field of research that grew out of a discontent with how disadvantaged and vulnerable communities are affected negatively by environmental burdens resulting from human activities (Schlosberg 2013; Gaard 2017). Such burdens include, for instance, air pollution and toxic wastes. Having started out focusing mainly on the

environmental burdens experienced by disadvantaged communities, the environmental justice movement and literature gradually started to broaden their focus to include other environmental injustices (Schlosberg 2013). For instance, the expression environmental 'goods and bads' (Walker 2009) implies how environmental justice is not only concerned with how certain groups are more burdened than others by environmental 'bads'. As touched upon earlier in this chapter, already advantaged groups tend to be prioritised when it comes to 'goods' such as climate adaptation initiatives and green infrastructure (see, for example: Anguelovski et al. 2019; De Rosa et al. 2022). This unequal distribution of environmental 'goods and bads' is both a global and local phenomenon. For instance, Srinivasan et al. (2008) show how low-income countries are burdened by environmental consequences of human activities to a much greater extent than mid- and high-income countries. All the while, the wealthier countries bear a greater responsibility for the activities resulting in consequences such as climate change, ozone depletion and deforestation (Ibid. 2008). However, there is also variation within nations and within urban areas in the consumption patterns that lead to such consequences and in who suffers the burdens thereof. A study conducted in the Skåne region of Sweden, showed how pregnant women of what was referred to as 'low socioeconomic status' were subjected to higher levels of air pollution than women of higher socioeconomic status (Flanagan et al. 2019). A similar trend was found in a study across nine European metropolitan areas, where higher levels of air pollution was found in areas described as 'deprived' (Samoli et al. 2019). If this trend holds for Uppsala, one can assume Rosendal is not an area experiencing high levels of air pollution, while as described earlier, green infrastructure is easily available to the district's residents.

The environmental justice movement coined the slogan that defined environment as "where we live, work and play" (Novotny 2000). This can be seen as a way to move beyond the nature/culture binary that many feminist researchers have attempted to overcome (Harcourt & Bauhardt 2019). Environment (or nature) is from this perspective not seen to exist 'out there', but is a vital part of everyday life and the quality of that environment shapes how everyday lives within it are lived. I interpret this perspective of environment as being connected to how more-than-human thinking, discussed in chapter 2.2.3, aims to disrupt the human/non-human and nature/culture binaries by viewing agency as distributed. However, the environmental justice movement is largely human-centric in that the concern

for the environment is mostly connected to how polluted air, land and water negatively affect human quality of life. As discussed earlier, a more-than human perspective decentres humans (Maller 2018; 2021), and from such a perspective justice too needs to be considered a multispecies concern (Tschakert 2022).

While environmental justice started out as a movement and field of research focusing foremost on distributive aspects, it has expanded to include recognition, participation and capabilities (Schlosberg 2007; Gottschlich & Bellina 2017; Coolsaet 2021). Therefore, Schlosberg (2007) has proposed a pluralistic view on justice, something Gottschlich and Bellina (2017) build upon in their framework for just and caring sustainabilities. In the next section, I elaborate on the notion of care, from a feminist ethics of care perspective.

2.3.2 A feminist ethics of care

The perspective on care taken in this thesis largely derives from Tronto's (2013) notion of a feminist ethics of care and Puig de la Bellacasa's (2017) work, where the notion of care is expanded to include more-than-humans. Like Tronto (2013) and Puig de la Bellacasa (2017), I take the perspective that care is an indispensable and vital aspect of any society, in that care sustains life. According to Puig de la Bellacasa (2017), care is present everywhere, as the absence of care becomes visible through its consequences. Feminist perspectives on care have often aimed at highlighting neglected and invisible care work in societies where care has historically been considered a private and feminine matter (Tronto 2013; Puig de la Bellacasa 2010; MacGregor et al. 2022). As many, especially western, societies have changed, with women and other groups who were previously excluded from public life, now having the right to vote and more often earning an income, the divide between public and private domains have blurred (Tronto 2013). According to Tronto (2013), care can no longer be considered a private matter, since care is professionalized and takes place largely outside the home in places such as hospitals, nursing homes and schools. Nevertheless, women and other disadvantaged groups still carry a larger burden of both unpaid and underpaid care work (Ibid. 2013). The consequences of an unequal distribution of care work, coupled with the vital nature of care for any society to function, makes the everyday practices of care into a political matter (Tronto 2013). Although much feminist research

on care has been concerned with a gender perspective (see, for example: MacGregor et al. 2022; Arora-Jonsson et al. 2019; Jonsson 2011; Gaudet et al. 2022) and without neglecting the importance of such work, I here focus on feminist ethics of care as a logic by which urban sustainability can become more just and transformative, as opposed to keeping existing injustices in place. Both Tronto (2013) and Williams (2016) bring forth the relation between justice and care. For Tronto (2013:30), a feminist ethics of care envisions caring practices striving towards enabling all members of a society to "live as well as possible". While Williams (2016) explains how caring needs to be just, and justice caring. These suggestions are made in light of injustices and neglect, where caring needs are unequally met, while burdens (and joys) of caring are distributed unequally. A feminist ethics of care is thus concerned with making societies as caring and just as possible.

Tronto and Fischer (1990 in Tronto 2013:19) suggest that care is viewed "…as a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web." This broad and widely quoted definition highlights both the vitality of care and the interdependency between humans, as well as between humans and more-than-humans (Puig de la Bellacasa 2017). Other scholars have criticized Tronto and Fischer's definition for being too broad and general (Tronto 2013); however, both Tronto (2013) and Puig de la Bellacasa (2010) underline that despite a broad understanding of care, the workings of care are always specific due to their situatedness. Neither of them therefore wants to specify how care is to be carried out, rather they stress the importance of thinking with care. For Tronto (2013) a feminist ethics of care takes into account how humans are above all relational and vulnerable beings, who all at some point in their life are in need of care. Additionally, she stresses how all humans need to be seen as both caring and cared for. This view on humans as relational beings, opposes that of a neoliberal market logic where humans are seen foremost as workers or consumers, and care is undervalued and neglected (Ibid. 2013). From a neoliberal perspective, care is largely considered in terms of care services to be chosen and consumed by individuals within a growth-oriented market economy (Tronto 2013). While Tronto (2013) does touch upon caring for animals and the environment, her perspective on care remains largely human-centered. Puig de la Bellacasa (see, for example: 2010; 2017), extends feminist

ethics of care to include more-than-humans more profoundly and holds that the "wounded state of the earth and its resources" (Puig de la Bellacasa 2010:166) requires caring relationships. In neglecting care for more-than-humans and viewing non-humans foremost as others there to serve human needs, both humans and more-than-humans are threatened (Ibid. 2010). In a similar vein, MacGregor et al. (2022) explain how the climate crisis is a result of neglecting human-nature interdependency. Due to the interdependent relationship between humans and more-than-human others, a feminist ethics of care including more-than-humans is imperative for sustaining life (Puig de la Bellacasa 2017). Much like Puig de la Bellacasa, MacGregor et al. (2022:16) acknowledge the importance of caring for more-than-humans by including care for the environment when conceptualizing different sorts of care work. For them (MacGregor et al. 2022:15), the environment includes "other species and living beings (e.g., trees), things, and places (e.g., water sources, common land, village spaces, and community activities)". Caring for these more-than-humans is categorized as "Local environmental care" and "Caring for the commons", including practices such as vegetable gardening, managing woodland and water resources, as well as community gardening (MacGregor et al. 2022:16). Puig de la Bellacasa (2010:160) uses the example of composting, as an everyday practice people living in urban environments can often do rather easily, and refers to composting as "caring for the earth".

When thinking with care in relation to Rosendal, I foremost consider care practices, including care for various more-than-humans, taking place mostly outside the home. Like Tronto (2013) and Puig de la Bellacasa (2010) I do not consider care an altruistic practice, rather care takes place through practices carried out due to the interdependency between all humans and more-than-humans. Tronto (2013) discusses how home used to be considered a place for comfort and care (however, there are certainly several feminist researchers who would oppose this view), whereas now houses and apartments are foremost seen as commodities through which economic profit can be made. She argues for a re-evaluation of societal values, where the importance of care ought to be at the core of political life, as opposed to a focus mainly on economic measurability. This, she argues, can lead to more equal societies (Tronto 2013). I am interested in how thinking with care could steer urban development into creating living environments that care and give comfort to humans and more-than-humans. Maller's (2018) suggestion of thinking of cities as more-than-human habitats is one way to

take on such a challenge, and I view such a perspective as a way to counteract the human-centric and profit-oriented ideals dominating much of the urban sustainability discourses and development. A more-than-human feminist ethics of care is here seen as a way to advance more just and transformative sustainabilities. In chapter 4 and 6 I return to some of the more-than-humans introduced in chapter 1.1 and consider how enabling relational caring could be fostered in the urban assemblage, as opposed to foremost focusing on creating attractive urban districts.

3. Methodology: A research journey

In this chapter, I present the methodology and methods in the form of a research journey. As the methods used to generate and analyse data are closely connected with certain theoretical perspectives, I include these here. Like Pink (2012) I understand methodology as being concerned with understanding various aspects playing into the process of knowledge production, where theory and methods need to be engaged with simultaneously. By describing the research process, I provide insight into the decisions made. The decisions are not only guided by the interplay of certain theoretical perspectives and research methods, they are also guided by my research interests and changing circumstances beyond my control. In the first part, I account for my points of departure, and how these led me to conduct semi-structured photo-elicitation interviews with people living in Rosendal. In the second part, I explain why and how I studied taken-for-granted meanings of sustainability, by analysing found material produced by Uppsala Municipality and a group of property developers active in the district.

3.1 Part 1: Capturing residents' perspectives

3.1.1 Early days and points of departure

It is difficult to say exactly when this research journey started. Decisions made before and during the research process are always influenced by the researcher's *intellectual*, *emotional* and *political luggage* (Ramazanoglu & Holland 2002:148). My so-called luggage was, among other things, filled with an interest in the materiality of everyday life and how the built environment guides people towards certain resource-intensive everyday practices. Additionally, I had some experience in participatory, creative and visual

research methods - a vast field I was interested in exploring further. I was guided by ideals of what I thought research should be like. As this thesis focuses on a particular urban district, I wanted the residents of that district to be involved in shaping the focus of the research. Additionally, I wanted those who lived in the area to benefit from the research being done. These ideas were inspired by participatory action research (PAR), an umbrella term for approaches seeking to re-orient social research from extractive ways of researching towards models where the research participants benefit from the research (Kindon et al. 2007). This often means including participants in all stages of the research process, including the early phases where the aims and objectives of the research are outlined (Schubotz 2020). PAR processes are concerned with social change, rather than conducting research purely with the intent of producing new knowledge (Coghlan & Brydon-Miller 2014). Many principles from feminist theories, such as partiality and appreciating 'ordinary' people's experiences are echoed in PAR (Pain et al. 2007). Similarly, feminist perspectives have influenced my view on knowledge production. Viewing knowledge as situated and partial (Haraway 1988) has been an important corner-stone throughout this thesis. Further, I hold that knowledge production can never be value-neutral, as the researcher's position always influences their knowledge claims (Code 1996). Regardless of the research field, researchers are always to some degree linked to, or part of, their object of study; this becomes apparent especially within social science research where researchers cannot avoid influencing the social setting they are studying (Davies 2008). Further, research is one type of knowledge production where certain knowledge claims are accepted as truths (Bacchi 2009) while methods enact certain realities into being (Law 2009). Therefore, researchers need to be reflexive regarding their influence on the research setting, as well as how their decisions influence their knowledge claims and the realities produced as a result of these (Davies 2008; Ramazanoglu & Holland 2002; Bacchi 2009). Throughout this thesis, my ambition has been to be reflexive regarding my own role, as well as the choices I have made throughout the research process. Acknowledging that knowledge claims are always partial and making taken-for-granted perspectives visible, are here considered ways to open up for the possibility that things could be otherwise. In this thesis, the taken-for-granted perspectives concern urban sustainability, in particular how it is being reproduced in Rosendal. Recognising that how sustainability is being

reproduced could be different, is a first step towards introducing alternative perspectives.

3.1.2 From participatory ideals towards realisable plans

By the time my active phase of fieldwork was about to start, I had come to terms with some of the challenges and realities related to participatory research. Due to other commitments it was difficult to find the time to immerse myself in the research setting, something considered central when starting out fieldwork in social research in general (Leavy 2017:29) and within PAR inspired approaches in particular (Wilkinson 2017; Rix et al. 2021). Building trust is also a central element when looking to involve residents of an area as 'active participants' in a research project (see, for example, Schubotz 2020). Despite knowing some of the basics, I was unsure of how to get started. I did not want my research to be guided solely by my own agenda, yet I had started to accept that I would need to conduct research in a less democratic and collaborative way than had been my original intention. This acceptance was related both to the nature of PAR-inspired approaches, and to how I had gradually begun to frame my research topic. Participatory approaches can be seen as one type of 'engaged scholarship' where researchers are looking to make a 'real world difference'; however, such research tends to fit poorly within time frames and requirements of doctoral education programmes (Franklin 2022). Further, my interest in what comes to count as sustainability in Rosendal, had little to do with the interests of possible research participants and more to do with my own research interests. To keep somewhat faithful to my original ideas and ideals related to participatory research, I decided to start from the residents' perspectives and study what sustainability in everyday life means to people living in Rosendal. Inspired by participatory research methods, I wanted to consider the research participants as experts and co-researchers in the field of study (Pain et al. 2007; Schubotz 2020); in my case, that meant considering the residents as experts of their own experiences with, and understandings of, 'sustainability' in everyday life.

3.1.3 A practice theoretical perspective on what comes to count as sustainable in everyday life

My interest in what sustainability means to people living in Rosendal, how sustainability is enacted in everyday life, as well as how material elements in the built environment play into shaping everyday practices, aligned well with certain practice theoretical perspectives that I was familiarising myself with early on in the research process. Social practice theory is a cultural theory, but whereas other forms of cultural theories place 'the social' in domains such as discourse or interaction, practice theory views practice as the site of the social (Reckwitz 2002). It follows that one can leave out social and simply talk about practice theory. There are many different strands of practice theories (Reckwitz 2002; Shove & Spurling 2013; Welch & Warde 2015). Therefore, instead of *a* theory one might rather talk about practice theories in plural, as there exists no clearly defined theory of practice, but a variety of approaches which are brought together as they share certain traits (Nicolini, 2012). Despite differences in how practices are defined and what elements practices are seen to consist of (Gram-Hanssen 2011), it is primarily the focus on practices, instead of for instance individuals or structures that brings these theories together (Reckwitz 2002; Spaargaren 2011; Strengers & Maller 2015).

A practice can be defined as "a routinized type of behavior which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" (Reckwitz 2002:249). By departing from a practice-based understanding of consumption in everyday life, the routinized practices that residents of Rosendal perform in their daily lives, and in particular those practices they themselves associate with (un)sustainability became the unit of analysis. A practice can, for instance, be a way of cooking, where specific elements are needed for the practice to be performed (Reckwitz 2002:249–250). Mainly due to my interest in how material elements in the built environment play into shaping everyday practices, I decided to build upon Shove et al.'s (2012) conceptualisation of practice. They (Shove et al. 2012:10) have described their take on practice theory as a *materialised* version, as they include the material elements within the practice itself. This is in contrast to, for instance, Schatzki (see, for example, 2010), who discusses how material arrangements prefigure practices, and hold them to

influence practices but not as integral to them. In Shove et al.'s (2012) conceptualisation, practices consist of the following elements: *meanings*, *materials* and *competences*. This conceptualisation and how I have integrated it in my work will be further discussed later in this chapter in the subsections *The elements in practices: Materials, Competences and Meanings* and *Waste sorting: a practice associated with sustainability* part of 3.1.8.

A practice can be understood both as entity and performance. By now the expressions practice-as-entity and practice-as-performance seem to be taken as common knowledge in practice theory literature, as the expressions are often used without references. Warde (2005) builds on Schatzki (1996 in Warde 2005) when making this distinction in an article that is often seen to have paved the way for practice theoretical approaches in the field of consumption. It is through performance that practices come into being and continue to exist (Shove et al. 2012; Nicolini 2017). Practice-as-entity refers to how a practice can be discussed and reflected upon, both within and beyond performing the practice (Shove et al. 2012). Entity points towards a shared understanding of a practice - such as waste sorting - that makes it possible to discuss the practice despite it not being performed at that given moment. Nicolini (2017:21) has expressed concern about viewing practice as entity, as he finds it can lead towards treating practice as 'some-thing', when practices are primarily to be understood as performances. Such a tendency might indeed exist, however I regard the use of entity and performance in conjunction as a way to ensure practices are not demoted into static entities. I would rather like to think of entity as a practice frozen in time, while acknowledging that the practice needs to be performed in order for it to exist. Practices are neither static nor isolated entities, they are dynamic (Warde 2005) and linked together in what can be understood as a 'web of practices' (Schatzki 2010). Studying the different ways in which practices interlink has been described as a "configurational orientation", whereas my focus is rather a "situational" one (Nicolini 2017). I focus on the practices taking place in the everyday lives of a group of people living in the same urban district. While I take a situational perspective, I do acknowledge the interdependent character of the practices as they are "knotted together" (Nicolini 2017:28) in "space and time" (Nicolini 2012:4).

3.1.4 Agency, continuity and change in everyday practices

Contemporary practice theorists tend to build upon the "efforts to overcome the actor-structure dualisms" in the work of Giddens and Bourdieu (Giddens 1984; Bourdieu 1976 in Gram-Hanssen 2011:62). In line with Shove et al. (2012) I build upon Giddens (1984:1–40) in seeing structure and agency as mutually constitutive. From this perspective, change is not due to individual actions nor societal structure, but rather as always dependent on both as these continually shape one another (Arts et al. 2014:6). Everyday practices, which were central in this first part of the research journey, are understood to always hold potential for both stability and change (Pink 2012). In other words, depending on how practices are performed, they may both reproduce and alter current circumstances.

When studying everyday practices among people living in Rosendal, I have not only been interested in what opportunities individuals have to carry out certain practices in a specific built environment, but also how the residents choose to carry out (or not carry out) certain practices due to, or despite of current circumstances. Although practices are a routinized type of behaviour (Reckwitz 2002:249), and the people who perform practices may contribute to reproducing certain structures by performing practices, they are not 'dupes' (Jack 2020) pre-programed to perform practices in specific ways. People can choose to 'do otherwise' (Behagel et al. 2019) although depending on the practice at stake, the efforts needed to do otherwise vary. Shove (2003) shows how everyday practices such as showering, bathing and laundering are shaped by complex notions of norms and expectations related to comfort and cleanliness, in addition to convention and material elements allowing excessive resource consumption. Taking the various elements into account when considering how practices are shaped has led me to accept that people are not the only ones who have the capacity to act. I thus view agency as distributed across elements in practices (Sahakian & Whilithe 2014). I elaborate on my thinking around the agentic capacities of material elements in Article III and chapter 4. I also reflect on material agency later in this chapter (in the last part of 3.1.8).

3.1.5 Fieldwork plans and the pandemic

I had made plans to start the active phase of fieldwork in spring 2020. Some preparations had been made and the plans included setting up a Facebook group for discussing how to live 'sustainably' in Rosendal. The group was

to be a spring board for making connections with residents and getting the conversation started. The next step was to invite participants to meetings that would be a form of focus group interviews, around themes the participants wanted to explore further. The idea was that this group would learn about sustainability-related questions collaboratively while it would also allow a space for discussion. Despite having kept a flexible mind-set when planning fieldwork, as things tend to turn out differently than expected, the Covid-19 pandemic was beyond what these flexible plans could handle. In retrospect, the first weeks and months of pandemic life seem like a distant and somewhat surrealistic memory. At the time, it was indeed an unsettling interruption and period of disorientation, worry and at times despair. In the midst of turbulent times it seemed difficult to motivate to myself why I should be concerned with residents' perspectives on sustainability in everyday life, when bigger issues were at stake. Simultaneously, I needed to reconsider my fieldwork plans. Although I was based in Sweden and there was a period when international news media gave the impression that residents in Sweden continued with life as usual, this was not the case for most people. The advice was to avoid meeting people outside one's own household, and to work from home if possible. At the beginning of the pandemic, the official guidelines from my university were not very strict. However, from a research ethical perspective both my supervisors and I thought that it would be unethical to ask residents of Rosendal to meet me in person. Any plans of focus groups were put on hold, and I needed to find other ways to conduct fieldwork. When I re-considered my plans, it was with the impression that the restrictions would only be there for a few months and the re-considered plans would mainly concern early phases of the fieldwork. I thought I would be able to meet people, and possibly do something more collaborative at a later stage. This, however, proved not to be what happened. Little did I, or anyone else know that the restrictions would come and go in various forms over almost the two coming years (2020-2022).

3.1.6 Some degree of participation through a visual method

After some time of disorientation, re-orientation and regaining trust in my research ideas, I made a plan that was possible to follow through within the given circumstances. Inspired by, and as (at that time) a firm believer in participatory visual research methods, I decided to conduct online photo-elicitation interviews with participant-generated photos. My plan was to

invite people living in Rosendal to take part in my study by asking them to take photos in their homes and living environments of things and places that enable or hinder them in carrying out sustainable everyday practices. As I was interested in material elements as part of everyday practices, I saw the method as a way of framing specific objects that could prompt discussion.
Photo-elicitation is the practice of including photos as visual prompts in interviews (Harper 2002; Soaita & McKee 2021; Prosser & Loxley 2008) and one of many visual research methods that have grown in popularity during recent decades (Pink 2012; Rose 2013; Pauwels 2010). This popularity relates to what is often called the 'visual turn' in social sciences, which has been explained as a response to a previous strong focus on verbal and written data (Mannay 2010; Oxford Reference 2023). My interest in visual methods was partly linked to an unease towards research relying solely on text and speech, as there are many other ways one can make sense of most topics. There are two other 'turns' that also relate to my choice of method. First, the 'material turn', sometimes seen as a re-turn to matter, which has taken place in response to concerns of materiality being ignored across social sciences (Rose & Tolia-Kelly 2012). Some of the methods concerned with foregrounding material elements part of everyday life are indeed visual (Woodward 2020; Holmes & Hall 2020). Second, taking a practice theoretical perspective and focusing on the everyday is linked to the so-called 'practice turn' in social sciences, seen as a reaction to the previous focus on 'large events' and the extraordinary (Hall & Holmes 2020). Instead, the 'practice turn' focuses on routinized and recurring everyday practices.

Mannay (2010:108) has argued that creative research methods can help make "the familiar strange and interesting" when conducting research in a familiar setting. As the photos in the photo-elicitation method I applied were to be generated by the research participants, there was going to be a level of creativity and participation involved. According to Mannay et al. (2018), participatory and creative methods combined with interviews, allow participants to reflect on the research topic on their own before being interviewed. Photo-elicitation thus attracted me for several reasons: it was a way to ensure there would be at least some level of creativity and participation spanning beyond that of verbal-only interviewing; it was a way to ensure ordinary material elements often left in the background could be highlighted; and it allowed participants to reflect on the research topic on their own prior to the interviews. Additionally, as I was doing research in my

country of residence where people lived in apartments not too different to my own, I hoped the photos would, as Mannay (2010:108) puts it "make the familiar strange" and generate curiosity towards a rather familiar setting. Having explained what motivated me to choose a visual method including a level of participation and creativity, I will now zoom-in on the photo-elicitation method itself and how I went about studying what everyday practices a group of residents living in Rosendal associate with sustainability.

3.1.7 Semi-structured photo-elicitation interviews

Photo-elicitation can be carried out in different ways, with the main difference between approaches relating to the author of the photographs. Three main categories are usually mentioned – researcher-generated, participant-generated or found photographs – the last category referring to photos existing regardless of the research project (Drew & Guillemin 2014; Pretto 2015; Rose 2016:314). In asking participants to take photos prior to the interviews, the photo-elicitation technique I applied relied on participant-generated photos. Sometimes such an approach is referred to as participatory photography (Holm 2014; Byrne et al. 2016; Alam et al. 2018), indicating the active involvement of research participants.

Proponents of photo-elicitation often claim the method empowers participants; this view reoccurs across literature discussing experiences of using photo-elicitation with participant-generated photos (see, for example: Beilin 2005; van Auken et al. 2010; Richard & Lahman 2015; Rose 2016:316; Craig et al. 2020). The empowerment is seen to stem from participants' increased agency over what is to be discussed during the interview, in comparison to verbal-only interviews (Van Auken et al. 2010; Richard & Lahman 2015; Bates et al. 2017). Pretto (2015) explains how the interviews become guided by the participants' worldviews, as opposed to being guided by the researcher's perspective on the research topic. Further, the method is seen to decrease power imbalances between the researcher and the researched due to the research participants' active role in generating data (Bates et al. 2017; Rumpf 2017). Participants are often referred to as experts (Rose 2016: 316; Pyyry et al. 2021; Maitra & Coley 2022) and seen as collaborators in knowledge production (Auken et al. 2010; Rumpf 2017; Lewis Ellison & Enriquez 2021). These perspectives echo those of PAR discussed earlier in the chapter. Additionally, the method is often claimed to "give voice" to participants (Fairey 2018). Based on these perspectives,

photo-elicitation has both emancipatory and collaborative underpinnings. That photo-elicitation allows the perspectives of participants to guide the interviews, as well as the claim that the method empowers participants, were both aspects I was drawn to when planning the practicalities of data generation. Additionally, that photo-elicitation would allow insight into the materialities of participants' homes and living environments, even though I could not visit in person, was an important factor contributing to my choice of method.

Interviewing residents

In order to recruit research participants, I posted interview invitations in two local Facebook groups and in an application called Tmpl, which was used in certain housing cooperatives in the area. Using digital communication channels such as these included certain limitations regarding who the invitation reached. However, at the time of sending out the invitations these were, to my knowledge, the most commonly used way for residents in the area to communicate and share information with one another. Prior to the interviews I had asked participants to take 3-5 photographs in their home, or in their living environment, of things or places that either enable or hinder them in carrying out sustainable everyday practices. I explained that it was up to them to decide how to interpret what a sustainable practice is. I asked the participants to name their photos and write a short description of each photo when sending the pictures to me by e-mail. The photos taken by people living in Rosendal, were then included in semi-structured interviews focusing on what comes to count as 'sustainable' in the participants' everyday lives. I conducted the interviews during online video calls using the software Zoom. During each interview, I shared my screen and showed the pictures the participant in question had sent me. We went through the pictures one at a time, and I asked the participant to tell me about the picture, and to explain how the picture relates to sustainability in everyday life. In addition to being inspired by the benefits of photo-elicitation described above, I did this as a way to gain insight into participants' perspectives on sustainability in everyday life, starting out from the material elements forming part of everyday practices participants associate with sustainability. After having looked at and discussed the photos, the interview continued as a semi-structured interview where the intention was to engage in a conversation following pre-defined questions and discussion points, while allowing the discussion to deviate from the prepared outline. The questions

discussed after having looked at the photos, included whether there were everyday practices participants associate with sustainability that they for some reason find difficult to perform, and if so why. I also asked them what advice they would give to others who might be interested in performing more 'sustainable' practices in everyday life. Towards the end of the interview, all participants were asked whether there was something they would like to add, that had not been discussed during the interview.

How the interviews went

Although conducting interviews over Zoom had not been my original plan, the interviews carried out allowed me to gain insight into what everyday practices a group of people living in Rosendal associate with sustainability and what material elements enables and/or hinders these practices. Often, research projects applying some type of participatory photography consist of a rather small group of participants (see, for example: Allen 2012; Samuels 2004; Raby et al. 2018). I managed to recruit 13 participants and had follow-up interviews with 8 of these. A small data-set is not necessarily a weakness, as photo-elicitation is commonly seen to provide more in-depth and richer accounts (Bates et al. 2017; van Auken et al. 2010; Samuels 2004) in comparison to verbal-only interviews. I had been worried that asking people to take photos prior to the interviews might pose problems, and that all participants might not be willing to do so. However, all participants took photos and most of them seemed eager to show me their photos and discuss questions related to sustainability in everyday life. The interviews lasted from 40 to 80 minutes, with most being around an hour long. With the exception of one person, all photos were sent to me prior to the interviews, so I had time to have a look at the photos and read participants' descriptions of the photos before each interview. This gave me an idea of what topics would come up during the interviews, although in most interviews the discussion started from the photos and then moved on to other topics. One person sent her photos to me during the interview without any descriptions, which made the interview setting a little different compared to the other interviews. To start the conversation, I would usually refer to what the interviewee had written in the descriptions. With the interviewee who had not sent me the photos in advance, I started by asking something about one of the photos assuming I had an idea what the participant had in mind when taking the photo. It turned out I was wrong, and this proved how important it is to let the participants explain their photos and not rely on the researchers'

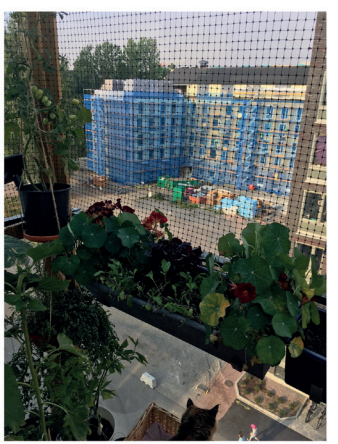
frame of the topic. Both Harper (2002) and Samuels (2004) have discussed how photo-elicitation can break frames of reference and help bridge the participants' and researcher's perspectives. My comment made the participant think of other topics related to the picture and we discussed both her as well as my interpretation of the photo.

During the follow-up interviews, which took place approximately 3 months after the first ones, I showed the photos to the participants again and asked them to tell me what came to mind when they saw the pictures. According to Drew and Guillemin (2014), participants' choices related both to what they have included and what they might have left out from their photos, should be carefully considered within participant-generated photo-elicitation studies. Therefore, I asked participants if there was something else that could have been included. In most cases, participants were fairly satisfied with their choices of what to portray in the photos, and said they would probably have included similar photos again. This might be due to the short amount of time between the interviews, or due to their understandings of what comes to count as sustainable in everyday life being established rather than emergent.

Table 3. Analysed material: Data generated with a group of residents.

Type of data	Amount
Interview transcripts	13 interviews + 8 follow-up interviews Each interview lasted 40-60 min.
Participant-generated photos	56

Figure 9. A selection of participant-generated photos portraying material elements part of everyday practices associated with (un)sustainability.



3.1.8 Analysing the interviews with a practice theoretical framework

When analysing the verbal and visual interview material, Drew and Guillemin's (2014) interpretive engagement method guided the analysis. This method is a form of thematic analysis developed specifically for participant-generated photo-elicitation interviews. Sometimes photos are used only as prompts during the interviews, whereas the interpretive engagement method allows to systematically include the photos alongside the verbal data. Drew and Guillemin's (2014) method for analysing data includes three phases consisting of: (1) meaning-making through participant engagement, (2) meaning-making through researcher driven engagement, and (3) meaning-making through re-contextualisation where the participant- and researcher driven engagements with the photos are located within the theoretical perspectives of the research project. As described earlier, my interest in consumption taking place as part of everyday practices, and the ways in which material elements influence such practices, led me to take a practice theoretical approach when exploring what comes to count as sustainability from residents' perspectives. When re-contextualising the data, I analysed the data generated in collaboration with people living in Rosendal by building upon Shove et. al's (2012) conceptualisation of practices, while focusing in particular on the role of material elements in practices.

The elements in practices: Materials, Competences and Meanings

In building upon Shove et al. (2012), practices are here seen to consist of the following elements: *materials*, *competences* and *meanings*. These are described as following (Shove et al. 2012:14):

> *materials* – including things, technologies, tangible physical entities, and the stuff of which objects are made;
> *competences* – which encompasses skill, know-how and technique; and
> *meanings* – in which we include symbolic meanings, ideas and aspirations.

It is especially due to how Shove et al. (2012) approach the material and make a point of its role within practices, that I have chosen to follow their practice theoretical approach. Nicolini (2017) has claimed that discussing

what practices are and what they are made of is only useful to a certain extent; for him the strength of practice theory lies in how it can be used in empirical studies. Instead of dwelling at length on the nature of practices and their elements, I go on to show how I made use of Shove et al.'s (2012) practice theoretical framework. What is presented below is the practice of waste sorting, one of the practices participants living in Rosendal associate with sustainability. (This text was written when working with Article I, but was later left out due to lack of space.) I first give an overview of how the practice was discussed in the interviews, and then account for the elements – *materials*, *competences* and *meanings* – in more detail.

Waste sorting: a practice associated with sustainability

Several participants had chosen to take photos of the places for waste sorting, consisting of rooms in their apartment buildings, and quite a few had taken photos of the waste sorting bins in their kitchens, as ways to highlight how their living environment enabled them to perform a practice they associated with sustainability. Sorting one's waste, making sure household waste was put in the right containers, was seen as both important and as something one is expected to do. The expectations related to waste sorting were also reflected through disappointment and irritation with other residents who did not sort their waste properly, by for example leaving the waste sorting room messy. While good opportunities to sort household waste, both in one's apartment and in one's own building, were appreciated by many, the lack thereof was flagged by certain individuals as disappointing and unsustainable. Again, this was related to expectations, as many of those who took part in this study seemed to assume there should be proper facilities for waste sorting in place, especially in a district promoting sustainability. Another expectation related to waste that was not met, was the lack of brown paper bags for food composting. In Uppsala and other parts of Sweden, food waste is supposed to be placed in brown paper bags. These are often provided by the municipality, the landlord or the housing cooperative. Certain participants were unhappy that these bags were not handed out as a matter of course in Rosendal. Several of the participants described the waste sorting rooms in their buildings as spacious and with separate containers for many different types of materials (metal, glass, cardboard paper, paper containers, plastic). One participant thought the very well-equipped waste sorting room in his building was one of the biggest differences to previous places he had lived when it came to sustainability. Some of the waste rooms portrayed in the

photos brought forth criticism due to being poorly organized. For instance, one person talked about how the waste sorting room in her building was constantly untidy. She lived in a building with a so-called green building label, and while she was not entirely sure what the label signified, she wondered how a building with such a label did not provide better facilities for waste sorting. It was not that the facilities for waste sorting did not exist, but it could have been made easier in order to avoid the "chaos" she thought it often was. By chaos she implied it was often messy and all waste was not put in the right containers.

Figure 10. Participant-generated photos related to waste sorting.

Materials, meanings and competences in waste sorting

In the practice of waste sorting, the *materials* include the containers for different types of waste in people's apartments, the waste sorting rooms in their buildings, and the brown bags for organic waste. These material elements are mainly seen as enabling factors for sorting waste. However, some residents highlighted limitations and thought that more could have been done in terms of material infrastructure to avoid messy waste rooms and to ensure residents have the opportunity to sort waste from the very start, when they move into their new homes. The fact that brown bags were not distributed in the district was restricting residents from doing what they

thought 'should be done'. Expectations related to the types of material elements that should be in place to enable residents to sort their waste properly and effortlessly are linked to the *meanings* of waste sorting. Within the practice of waste sorting, it became evident that *meanings* of this practice include how participants take waste sorting for granted. This is noted through the ways in which they expect there to be good facilities for waste sorting in place, while they expect others with whom they share the waste room to sort their waste properly. *Meanings* also include tidiness, which I interpret as a certain type of aesthetic linked to another practice discussed in many of the interviews, namely that of growing vegetables. This reflects how participants associate sustainability with green and tidy areas.

Within the practice of waste sorting, reasoning around the taken-for-grantedness of this practice, as a duty, while expecting there to be good opportunities for sorting waste, forms part of the *competences*. Additionally, I interpret the ability to think about what could be done in order to avoid the waste room ending up 'in chaos' as a type of *competence* strongly linked to the other elements in this practice. The practical embodied skills of waste sorting were barely mentioned in the interviews. Although knowing how to sort waste is indeed a crucial element within this practice, I interpret the fact that participants did not mention these types of competences as a reflection of such skills being taken for granted among the participants.

The role of material elements in practices – do they have agency?

The role of the material elements within practices is something I have grappled with throughout my research process. As discussed in Article III, the photo-elicitation method I used brought the material elements to the fore and made me think through how to understand their role, time and again. At some point around the so-called half-time seminar (where my thesis and article drafts were discussed with an external reviewer and other researchers, held in December 2021), I made up my mind and decided that despite finding the material elements important within practices, I do not think they 'do things'. Instead, I thought of material elements as being used within practices and therefore having an important role. At that time, I could not accept claims about matter having agency. Throughout my research journey this perspective has shifted. This is a result of the photo-elicitation method I used when researching what practices comes to count as (un)sustainable, as well as the literature I have read and re-read while working with my thesis.

When revising Article I, based on the journal reviewers' comments, I was advised to pay more attention to theorising the role of materials instead of "simply accounting for how the elements come together and shape practices". The text on waste sorting above is removed from the submitted article manuscript and was (apart from being edited and shortened to fit the thesis summary) written before I made the revisions with closer attention to the material elements within practices. As I revised the paper, I went back and re-read some texts while coming across new literature and gradually I started to give up my perspective on not granting agency to material elements. It was especially Shove's (2017) attention to the different roles materials play within practices and Gherardi's (2017) text *Sociomateriality in posthuman practice theory*, that helped me reconsider my understanding of material elements in practices. Gherardi (2017) builds upon Orlikowski and Scott (2008) when explaining how sociomateriaity implies the social and material are co-constitutive and that practices are always both social and material. These perspectives were further supported by re-reading texts where agency is seen to be distributed across elements in the practice – including those performing them (Shove et al. 2012; Sahakian & Wilhite 2014). As discussed in Article III, analysing the photos kept bringing the materials within them to the fore and made me reconsider their role. The materialities within the photos, just like the photos themselves, do things in that they provoke and have effects. Bennett's (2010) *notion vibrant* matter has significantly influenced my understanding of material agency: as distributed across elements in assemblages.

3.1.9 A common understanding of sustainability and a not-so participatory method

When starting out, my assumption was that the participants' perspectives on what comes to count as sustainable in everyday life would consist of many different perspectives. However, the practices brought forth during the interviews reoccurred to the extent that I have come to call them 'usual suspects' and consider participants' perspectives to reflect "a common understanding of sustainability" (see Article I). This common understanding among participants links closely to the type of practices brought forth in national and international sustainability policies and popular media. Practices such as cycling, recycling, growing vegetables, being outdoors and avoiding excessive use of water and electricity, kept recurring during the

interviews. The material elements part of these practices was portrayed in the photos taken by research participants. The photos thus framed the material elements part of practices participants associated with sustainability. The photos also guided the structure of the interview (van Auken et al. 2010), and was a way to gain insight into the participants' perspectives (Yates 2010) on sustainability in everyday life. However, when analysing the photos, I started to question whose perspective was actually in focus. As discussed in Article III, I consider the photos as being produced as part of a photo-elicitation study. Therefore, the content of the photos is influenced by them being produced within a particular setting where the topic, the way the task was articulated and my presence contributed to what was portrayed and how the photos were introduced and discussed. Other aspects such as the participants' socio-economic background and their prior knowledge of, and interest in sustainability related questions also influenced their responses. Additionally, as discussed at greater length in Article I, I consider imagination as situated in sociomaterial practices. Therefore, what comes to count as sustainable according to people living in Rosendal, is influenced by the meanings part of practices, shaped within a particular material setting. As certain sustainability policies contribute to how Rosendal is being developed, I went on to interrogate the sustainability meanings forming part of these policies to better understand why sustainability is materialising in particular ways. As will be discussed in part 2 of the research journey (chapter 3.2), I approach the sustainability policies as discourses that are always both material and discursive.

From the outset, one of my motivations to apply a photo-elicitation method with participant-generated photos related to my wish to conduct research with an element of participation. The method ended up being mainly researcher driven, as I decided on what to focus upon and outlined a rather narrowly defined task. Nevertheless, the photos allowed me to gain insight into everyday material environments that I was not able to access in person. The photos also allowed the participants to decide what to take photos of, although the task I had outlined was indeed guiding their decisions. The photo-elicitation method allowed participants to reflect upon the topic prior to the interview (Mannay et al. 2018) and gave them a level of agency over the interviewing situation (see, for example, Bates et al. 2017). However, I have grown increasingly sceptical towards the emancipatory claims made by many proponents of photo-elicitation and would rather like to think of photo-

elicitation as a method that can bring forth different types of topics (for example material elements) than those arising during verbal only interviews. Participant-generated photo-elicitation can, like most methods, be used in both oppressive and emancipatory ways, depending on how the research project in question is being conducted. Research with participatory elements does not overcome the power imbalances which are always at play within research projects where research participants are included (Mannay 2015; Yates 2010; Fairey 2018). Nevertheless, including participatory elements in some part of the research process can be a way to give up a small part of the researcher's control.

3.2 Part 2: Studying the municipality's and developers' perspectives

The idea of gaining insight into Uppsala Municiality's and property developers' perspectives on what comes to count as sustainable in Rosendal had been brewing for some time throughout the first part of the research journey. Despite my primary focus on a group of residents and what they associate with sustainability in everyday life, I was also following the development of Rosendal during this time. I did so by visiting the area, by reading newsletters produced by the municipality and by visiting the Rosendal project's website (Uppsala kommun n.d.c), in addition to the websites of property developers active in the area (see, for example: Genova n.d.a; Byggvesta 2023; JM 2023). I was intrigued by the ways in which Rosendal was portrayed in the written and visual material produced by the municipality and developers. Rosendal was illustrated as a sunny, green, cosy and comfortable urban district and the municipality (Uppsala kommun 2016:4) described it as an area where "everyone is welcome". As I had studied residents' perspectives on what comes to count as sustainable in everyday life with a focus on material elements within everyday practices, it was now time to focus on the discourse shaping what comes to count as sustainable in Rosendal, by turning to the property developers' and Uppsala Municipality's perspectives. I collected written and visual material found online, produced by Uppsala Municipality and a chosen group of property developers (see Table 4.), where Rosendal and its sustainability profile were presented. I then critically analysed the sustainability meanings, part of what I have chosen to call the *Sustainability in Rosendal* discourse.

3.2.1 Shifting focus from sociomaterial everyday practices towards material-discursiveness

Barad (2003; 2008) explains how discourse and materiality are co-constitutive; she has therefore introduced the notion of *material-discursiveness* to underline how discourse is not simply about language, while discourse and materiality are always entangled. I here use material-discursiveness to shed light on the connection between the material elements part of everyday practices and the sustainability discourse in Rosendal. The notion also helps clarify how materiality matters in relation to discourse, in that discourses have material effects, while materials are part of reproducing future sustainability discourses. This relationship is not one of cause and effect, but a co-constitutive one. Barad (2003) uses the word intra-action, to denote how the relationship between the material and discourse does not rely on the interactivity of already existing elements, but is a question of discourse and materiality constantly shaping one another. Building on this perspective, acknowledging how sustainability discourses are entangled with material elements of everyday practices associated with sustainability, I wanted to understand the meanings reproducing the *Sustainability in Rosendal* discourse. Due to my interest in the materialities entangled with sustainability meanings, as well as the silences within Rosendal's sustainability discourse, I decided to conduct a policy analysis guided by Bacchi's (2009) *What's the problem represented to be* (WPR) approach. This Foucault-inspired poststructural approach to policy analysis views policy as discourse (Bacchi 2009). Before explaining in more detail how I conducted the analysis, I account for how I understand a set of concepts that are central to the WPR approach. These include *discourse*, *policy* and *power*. I draw heavily upon Bacchi's interpretations of Foucault's work (especially: Bacchi 2009; Bacchi and Bonham 2014; Bacchi & Goodwin 2016). Like Bacchi and Goodwin (2016: 27-28) I do not see these interpretations as definite, but as explanations of how these complex and heavily debated concepts can be understood and made use of.

3.2.2 What is discourse?

Discourse and discursive practices are often associated with language, even in studies building upon Foucault's work, although Foucault distanced himself from linguistic understandings of discourse (Bacchi & Bonham 2014; Bacchi & Goodwin 2016). For Foucault, studying discourse means

studying knowledge (Bacchi & Bonham 2014) where knowledge refers not to what is true, but rather to "what is accepted as truth" (Bacchi & Goodwin 2016:35). Further, building upon Foucault's work, discourse is practice, and from this perspective discursive practices are practices that produce certain knowledges (Bacchi & Bonham 2014). Foucault's own distinction between discursive and non-discursive practices has been debated, and he is said to have found it unimportant to divide practices along these terms (Ibid. 2014). However, Miller (1990:119) in discussing Foucault's view on discourse and knowledge, gives the hospital as an example and explains how despite a certain medical discourse, certain practices, such as "the practice of amputating limbs", are non-discursive. Yet, following Barad's (2003; 2008) view of material-discursiveness, where material and discourse are co-constitutive it becomes difficult to think of a strict division between discursive and non-discursive practices. One could claim the practice of amputating limbs is part of reproducing a certain medical discourse. According to Bacchi and Bonham (2014), the discursive / non-discursive divide has been discussed along the material / non-material binary where Hekman (2010:48–64), like Bacchi and Bonham (2014) holds that for Foucault discourse is always material, whereas Barad (2003) finds Foucault's consideration of materiality in relation to discourse as insufficient. Therefore, Barad (2003) finds it central to discuss material-discursiveness. Bacchi and Bonham (2014) on the other hand find this unnecessary, as Foucault's perspective on discourse is, according to them, always entangled with the material. I have used Barad's notion of material-discursiveness foremost to underline that my understanding of discourse is not at its heart linguistic. The notion of material-discourse might indeed, as Bacchi and Bonham (2014) suggest, reproduce the binary between discourse and materiality and point towards an understanding of discourse as linguistic and material as non-discursive. However, as discourse analysis is often seen to be concerned with analysing language, I have found it important to point out that I have not been interested in analysing language use. Rather, I have analysed material-discursive knowledges.

Following Bacchi's and Bonham's (2014) interpretation of Foucault's view on discourse as knowledge and practice, I view discursive practices as practices that form or reproduce knowledges. As noted earlier, I hold that knowledges (discourses) are always partial and situated (Haraway 1988). And, importantly: "Calling something a 'discourse' means putting its truth

status into question." (Bacchi 2009:35). So, in analysing what comes to count as sustainable in Rosendal, I have studied what is claimed to be sustainable, rather than what is sustainable. Further, like Bacchi and Bonham (2014), I acknowledge that sayings and doings (practices) are always entangled with the material. Applying this to my study, I view the *Sustainability in Rosendal* discourse to have lived (material) effects (Bacchi 2009), while materialities in Rosendal play into reproducing a certain type of sustainability discourse. This relationship is not linear, nor interactive, but mutually co-constitutive in being, as Barad puts it (2003), *intra-active*.

3.2.3 Policy as discourse made up of problematisations

In line with the WPR approach I understand both policy and governance in broad terms. Policies are codes of conduct through which governance takes place (Bacchi & Goodwin 2016:34), while governance is all sorts of activities aiming to "shape, guide or affect the conduct of people" (Ibid. 2016:5). Policies are not produced only by government nor public bodies, but by all those involved in making codes of conduct, including a wide array of agencies and professionals (Bacchi & Goodwin 2016:34). I therefore included both Uppsala Municipality's, as well as a set of property developers' material in the analysis – as they are involved in producing sustainability policies in Rosendal. It is worth noting these are certainly not the only ones involved in shaping 'codes of conduct' around sustainability in Rosendal, but those whose material I have chosen to focus upon due to these actors' centrality in the urban development process.

That policies are seen to be made up of problematisations (Bacchi 2009) is central to the WPR approach. This implies policy is not about solving problems 'out there', but that problems are created as part of policy making processes, and it is through these problematisations that governance takes place (Bacchi 2009). The problematisations shape how people experience the world (Goodwin 2011) as they enable certain types of realities. In the context of Rosendal, policies guide what comes to count as sustainability and how sustainability is reproduced by problematizing urban unsustainability in specific ways. In building upon the WPR approach, I view policy as discourse, and as described above, discourses can be understood as knowledges. I thus approach the sustainability policies in Rosendal as knowledges which in Bacchi's and Goodwin's (2016:35) words are "accepted as truth". It is through the production of knowledges that policies exert power (Ball 1993), in that

they have lived effects (Bacchi 2009; Bacchi and Goodwin 2016). Since the knowledges upon which policies are based are never neutral, Bacchi and Goodwin (2016) regard all policies as political. Due to the scepticism inherent in the WPR approach directed towards taken-for-granted ideas and truth claims part of policies, I critically interrogated the meanings of sustainability which emerged through the analysis of written and visual found material.

3.2.4 Power as productive

The WPR approach follows Foucault's view on power as productive (Bacchi 2009) rather than being prohibitive or repressive (Fraser 1989). As opposed to the notion of holding power over others, and of power being some*thing*, this view is linked to doing and becoming, where relations of power are central (Bacchi & Goodwin 2016). Power is, according to Foucault, "capillary", and affects people through their everyday practices (Fraser 1989:25). It does not originate from any particular site, rather it circulates "in and through the production of discourses in societies" (Fraser 1989:20). Therefore, the WPR approach is concerned with analysing the processes and effects of power, rather than where power comes from (Bacchi 2009:38). Discourses, like policies, are embedded in and reproduce relations of power (Bacchi & Goodwin 2016) as discourses allow certain perspectives to be regarded as 'true' (Bacchi & Bonham 2014). As noted, the WPR approach interrogates problematisations produced as part of policy making processes (Bacchi 2009). Questioning the truth status of policies is a way of acknowledging that power relations are at play, and that perspectives beyond the taken-for-granted are possible (Bacchi 2009; Bacchi & Goodwin 2016). According to Bacchi (2009), undertaking a policy analysis with the WPR approach is a political act since it challenges truth claims and power relations, while opening up for alternative perspectives.

When analysing the interviews conducted with a group of people living in Rosendal, I was troubled by how the everyday practices and material elements part of them kept re-occurring across the interviews. There are indeed several explanations for this, including how the participants might have told me what they thought I wanted to hear, that the task provided to them prior to the interviews guided their responses and that it becomes difficult to imagine other types of sustainabilities as imagination is situated in sociomaterial practices (as discussed in Article I). From the perspective of discourses - here seen as material-discursive practices – and by building on

the WPR approach, the concept of power as productive becomes central. There could be many different ways to understand what comes to count as sustainability, yet the interviews reflected a common understanding of sustainability and brought forth practices which I have referred to as 'usual suspects'. From a WPR perspective, these usual suspects are located in certain sustainability discourses – one of which is the *Sustainability in Rosendal* discourse which I analysed. Bacchi (2009:33) explains how certain problem representations 'stick' due to the privileged positions of those involved in shaping policies. The productive nature of power thus plays out in what comes to count as sustainability, as the sustainability policies influence both the development of Rosendal and what residents of the district chose to present when being asked what they associate with everyday sustainability. I therefore found it important to question the taken-for-granted understandings of sustainability – or 'truth claims', to shed light on how certain problem representations prevail. Additionally, the WPR approach allowed me to reflect upon silences in the *Sustainability in Rosendal* discourse and to introduce alternative perspectives on urban sustainability.

3.2.5 Collecting and analysing found material

Troubled by the common understanding of sustainability reflected in the interviews with residents, and by how this understanding appeared to be entangled with the *Sustainability in Rosendal* discourse, I wanted to question the truth claims involved in Rosendal's sustainability policies. In questioning taken-for-granted ideas of sustainability, I view Rosendal's sustainability policies, as well as the practice of undertaking a WPR inspired policy analysis, as political (Bacchi & Goodwin 2016; Bacchi 2009; Goodwin 2011). By interrogating truth claims related to what comes to count as sustainability in Rosendal, I wanted to indicate that things could be otherwise (Bacchi 2009).

Collecting and selecting material

As I had been familiarising myself with the development of Rosendal, both by visiting the area and by reading the municipality's and property developers' descriptions of the area, I already had an unstructured data-bank to turn to. I went through the material I had collected sporadically since 2019 and made new searches online, mainly by using Uppsala Municipality's own search function on their website, using search terms like *Rosendal*,

sustainability, *sustainable development* and *urban development*. I also made web-searches with Google's search engine, using similar search terms and by looking up the webpages of property developers I had seen advertised when visiting the area. Gradually, my searches became more focused and I decided to use the material produced by Uppsala Municipality that was available through the Rosendal project's website and the material from property developers that were listed at this website in 2022 (Uppsala kommun 2023e). When searching for material produced by property developers, it was sometimes unclear at what stage the building projects were. Although this material did give an insight into how respective developers introduced Rosendal as an urban district with a sustainability profile, I wanted to ensure the material I analysed regarded building projects that had begun or that had at least been granted permission by Uppsala Municipality. In relying on the list of building projects displayed at the Rosendal project's webpages (Uppsala kommun 2023e), I could ensure the plans were most likely going to materialise. Additionally, the list provided a good mix of building projects (see Table 4), and thus represented a variety of examples of the type of buildings Rosendal consisted of at that time, as well as what was planned for the near future.

Table 4. The selected property developers and their buildings.

Property Developer	Name of building
Genova	Botanikern
Rosendal fastigheter	BRF Grindstugan
OOF	Prefektgatan 8
RAW Property	RAW Rosendal
JM	Rosalia 1 and Rosalia 2
Byggvesta	Rosendalsfältet
SKB	Docenten
Wallenstam	Tre vänner and Flanören
Skandia	Woodhouse Rosendal
Åke Sundvall	Kvarter E
Serneke	Eureka
Sveafastigheter	Rubeckia and Murgrönan
Botrygg	Rosendal
Akademiska hus	Aqualia
(co-housing project without property developer)	Byggemenskapen Gården

A document called the Quality Programme (Uppsala kommun 2016) had become an important point of reference for me, and I kept returning to this document whenever I needed to write a description of Rosendal when presenting my ongoing research. This document (also discussed in chapter 2.1.2) includes a vision for Rosendal, and a set of goals intended to guide the district's development. I had noticed how much of what was stated in the Quality Programme was mirrored in the property developers' descriptions and therefore this document became a backbone for the analysis. Using material found online provided me with insight into several different property developers' projects. However, the choice of using material found online was linked to the Covid-19 pandemic. As described in the first part of the research journey (see chapter 3.1.5), the pandemic restrictions had forced me to reconsider some of my initial plans. As I turned towards the municipality's and developers' perspectives, I could no longer afford major changes and therefore relied on analysing material I could access regardless of pandemic restrictions. My repeated visits to the area also helped me navigate the selection of material, as the visits provided me with insight into the district's characteristics. For a full overview of the material analysed in Article II, see Appendix 2.

Analysing and problematizing Rosendal's sustainability policies

When the material had been selected, I continued re-reading the texts and re-visiting the images. A selection of the questions introduced in the WPR approach guided the analysis. The WPR approach includes the following six questions (Bacchi 2009:2):

Question 1: What's the 'problem' (e.g. of 'problem gamblers', 'drug use/abuse', domestic violence, global warming, health inequalities, terrorism, etc.) represented to be in a specific policy?

Question 2: What presuppositions or assumptions underlie this representation of the 'problem'?

Question 3: How has this representation of the 'problem' come about?

Question 4: What is left unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

Question 5: What effects are produced by this representation of the 'problem'?

Question 6: How and where has this representation of the 'problem' been produced, disseminated and defended? How could it be disrupted and replaced?

The questions 1, 2, 4 and 5 guided the analysis presented in Article II:

(Q1) What's the problem represented to be in a specific policy?

(Q2) What presuppositions or assumptions underlie this representation of the problem?

(Q4) What is left unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?

(Q5) What effects are produced by this representation of the 'problem'?

Inspired by the WPR approach, I started out by identifying solutions outlined in the analysed material in order to understand how sustainability was problematized in the material. By clustering the solutions into topics, I gradually started to identify recurring themes, which I came to refer to as sustainability meanings. I also analysed the images included in the material, following Rose (2016) who explains that images, just like text, can be analysed as discourse in that they make certain aspects visible in particular ways.

Through the analysis, I identified four intertwined sustainability meanings: *Everyone is included*, *It's all about aesthetics*, *Closeness to nature*, and *Sustainability is easy*. Together, these meanings shape the *Sustainability in Rosendal* discourse. These meanings are discussed in more detail in Article II, and together with my co-authors, I argue each meaning has its own inherent problems and silences. 'Everyone' refers mostly to different age-groups and rends invisible injustices related to what socio-economic groups have the possibility to live in Rosendal. That sustainability looks a specific way in Rosendal gives certain aspects greater attention, while invisible features are often overlooked in the analysed material. Nature is described as something there to serve human needs and strengthens a human/nature divide often seen to justify a human-centred and extractivist mind-set towards 'nature' and 'the environment'. The last, and summarising sustainability meaning draws attention to how sustainability is presented as something easily achieved through consensus-driven solutions. Together with my co-authors, I argue sustainability needs to be understood as open-ended and full of contradictions. The most central problem and silence

underpinning the *Sustainability in Rosendal* discourse, in our opinion, is how the economic growth-dependent system within which Rosendal is being developed is never questioned. Following especially Gottschlich and Bellina (2017), a pluralistic view of justice coupled with a feminist ethics of care is proposed as a way forward when seeking to develop more just, emancipatory and transformative (Castán Broto & Westman 2019) sustainable urban environments.

3.2.6 Moving towards less human-centric and more caring urban sustainabilities

Based on the analysis, I argue the meanings within the *Sustainability in Rosendal* discourse are reproducing an unjust *material-discursive* urban environment within which certain sociomaterial practices are enabled, while others are less easy to perform. As I have argued in Article I, imagination is situated in sociomaterial practices, making it difficult to envision other types of sustainable everyday practices than the 'usual suspects'. As I view the sociomaterial practices entangled with reproducing specific understandings (or meanings) of urban and everyday sustainability, which do little to transform current circumstances, I will in the following chapters (4 and 6) elaborate on my thinking around the urban as sociomaterial assemblage(s). I do so as a way to bring forth that things could potentially be otherwise. I suggest alternative perspectives on urban sustainability that could ideally foster a less anthropocentric and economic growth-oriented mind set, when striving towards urban sustainabilities of a more caring – and through that, just and transformative nature.

4. More-than-human actants part of Rosendal's urban assemblages

In this chapter I account for some of my many field visits to Rosendal, and the reflections that emerged as a result of them. I draw together the insights gained during the visits with different parts of my research. I refer to the interviews made with a group of residents and the found material produced by Uppsala Municipality and a selected group of property developers (see Table 4). Further, I link aspects encountered during my visits with themes I have discussed in Articles I–III. Through the process of giving a selective account of my field visits, I apply the concept of assemblage and pay attention specifically to more-than-humans present in Rosendal. I draw on the different types of research data, including the interview transcripts, the participant-generated photographs, the found material analysed and my field notes, which include my own photographs. By connecting selected parts of my research, this chapter contributes to the aims of this thesis outlined in chapter 1.2 and acts as a bridge towards the discussion.

My visits to Rosendal, recurring irregularly and of varying durations since early 2019, amount to approximately 50. Sometimes I have simply cycled through the district on my way to SLU's Uppsala Campus in Ultuna, south of Rosendal. On other occasions, I have spent a few hours there, starting with a coffee and then walking or cycling around in the area. Some visits included taking care of a small-scale cultivation I had at an allotment in Rosendal for a couple of years (2019-2021). There were also a few longer visits, for example a one-day event called the Open House held in May 2022, when representatives from Uppsala Municipality and some of the property developers active in the area introduced Rosendal, the parks in the district, the storm water management system and selected housing projects. The longest visit consisted of a week in August 2019, when I borrowed an

apartment and test-lived in the area. I have hinted at these visits earlier in this thesis summary, and while they have not resulted in data analysed nor been included in the articles, the visits have been important for gaining understanding of Rosendal and the various initiatives with reference to sustainability taking place in the district. The visits have reminded me that the district is continuously taking shape and have in particular helped me elaborate my thinking around the urban as sociomaterial assemblage(s).

Table 5. Overview of the data referred to in chapter 4.

Interview data generated with a group of residents of Rosendal	Found material produced by Uppsala municipality and a group of developers	Field notes done during and after visits to Rosendal 2019–2023
Transcripts from 13 interviews + 8 follow-up interviews lasting 40–60 minutes. 56 participant-generated photos.	Written and visual material describing Rosendal and the various building projects taking place within the district. See Appendix 2 for a complete list of the collected and analysed material produced by Uppsala Municipality and a group of property developers.	Approximately 60 visits. Field notes including photos. Notes: approx. 40 A4 pages. Photos: approx. 900.

4.1 The urban as sociomaterial assemblage(s)

I approach the urban as sociomaterial assemblage(s), as explained earlier (see chapter 2.2). While I understand Rosendal as an urban assemblage, following McFarlane (2011), this assemblage is in turn understood to be made up of several assemblages. Additionally, Rosendal can be seen as an assemblage forming part of Uppsala. The borders of the assemblage are fluid and whether something – a residential district for instance – is considered as one or many depends on one's focus. I return once more to Andersson and McFarlane's (2011:124) definition of assemblages as "composed of heterogeneous elements that may be human and non-human, organic and inorganic, technical and natural" to account for my understanding of assemblages. To elaborate further on the characteristics of assemblages, I turn to Bennett (2010) who views vibrant matter as forming part of assemblages that produce certain effects. According to Bennett (2010:23–24), assemblages are "living, throbbing confederations that are able to function despite the persistent presence of energies that confound them from within" (Bennett 2010:23–24). Assemblages are unlike, for example, machines that function as an effect of

well composed parts. Rather, they are assembled from uneven parts, resulting in friction and conflict (Bennett 2010:23–24). Bennett (2010:20–38) uses the example of a large power blackout to explain how agency is distributed across humans and non-humans in the electrical power grid. She approaches the power grid as an assemblage, where each part has its own vibrancy. It is however not the separate parts, but the coming together of the different elements that produces certain effects, which Bennett (2010) refers to as *the agency of assemblages*. That assemblage theory decentres humans does not mean humans bear no responsibility for their actions, rather that certain events – or effects of an assemblage, are not the responsibility of one sole actant (Maller 2018:56–57; Bennett 2010:36–38). Events such as blackouts or pandemics expose more-than-human agency, while they reveal how humans cannot always control phenomena taking place in urban environments (Maller 2018:57). In this sense, both agency and responsibility are distributed across various actants within an assemblage. Like Bennett, I borrow Latour's term *actant* when referring to entities as part of the urban assemblage (Latour 2004 in Bennett 2010). Actants are both humans and more-than-humans with the capacity to do things as part of assemblages (Bennett 2010). The term is suitable when discussing a distributed understanding of agency, as opposed to *actor*, which is traditionally used when agency is attributed exclusively to humans.

Events such as blackouts, pandemics or natural disasters disrupting everyday routines can indeed help depict the interconnectedness of human and more-than-human agency. As Bennett (2010:37) notes, such events manifest how humans are often not the most powerful actants in an assemblage. Nevertheless, in my account below I focus on mundane materialities and aim to foreground the background by paying attention to material elements, or more-than-humans, which are often left unnoticed or ignored (Hall and Holmes 2020; Woodward 2020). The materialities brought forth have their own vibrancy and play various roles within their assemblages (Bennett 2010). In addition to accounting for more-than-human agency and seeing agency as distributed across various actants, there is a set of other interconnected reasons as to why I have found it helpful to understand the urban as one or several assemblage(s). First, assemblage thinking emphasises emergence (Anderson & McFarlane 2011) and when applied to urban environments, these are seen to be constantly in the process of becoming (McFralane 2011). Second, assemblages are more than the sum of their parts,

in that the parts require a certain amount of labour, that of assembling to form certain constellations (Ibid. 2011). And third, this constant assembling and re-assembling points towards a potential for urban environments to be different (McFarlane 2011). In other words, they hold the potential to transform. From the perspective of assemblage thinking, urban environments are constantly changing, and different types of constellations between the actants can give rise to other forms and effects. Assemblages are made up of uneven power relations, which like the rest of the assemblage are emergent and could potentially be otherwise (McFarlane 2011). In presenting a set of more-than-human actants below, I am showing the effects of them as part of urban assemblages in Rosendal. I focus especially on their role in reproducing what comes to count as sustainability and which actants are given space and how care is present or absent in the urban assemblages.

4.2 The car and the mobility house: This is not a car-free district

In May 2023 I cycle to Rosendal from Uppsala city centre, along the road Dag Hammarskjölds väg, like I usually do when visiting the area. At the entrance of the district, there is a small blue cargo container with posters on its walls introducing the district. There is a map with illustrations of the five phases by which the area is being constructed and a set of presentations of the public art in the area. This presentation includes a statement of how the environment and sustainability are important questions in Rosendal, and that this is reflected in the artworks. There are also posters introducing different topics linked to the district. These include the history behind the names of a certain street and a building, the storm water beds resulting in greener streets and a presentation of Dansmästaren (Eng. The Master of Dancing), referred to as the first so-called *mobility house* in Uppsala. On the only empty wall of the container, someone has attached a poster advertising a flea market taking place in the collective house Gården (Eng. The Yard). Behind the blue cargo container there is a large building with a sign saying “you can park here”; this building is Dansmästaren, also referred to as a ‘mobility house’ (Uppsala kommun 2022f).

Figure 11. The blue cargo container introducing Rosendal in front of the mobility house Dansmästaren. Photo: Bäckman, M. 2023.

Dansmästaren is Uppsala's largest parking facility, and is said to be smarter than ordinary parking houses as the facility serves as a test bed for energy technology (Uppsala kommun 2023f). The parking facility has the capacity to host 450 cars; 60 of the parking spaces are equipped with an electrical charging station (Uppsala kommun 2022f). The mobility house also hosts a carpool open for anyone to join (Uppsala kommun 2022f). The building has a concrete façade and is seven stories high, which means it is a rather dominating sight when entering the district coming from the city-centre. When I first started to familiarise myself with Rosendal in 2019, the only building in this part of the district was Grindstugan (Eng. the Gatehouse). This is a building with many of the typical features of apartment buildings in Rosendal, such as solar panels and roof terraces - something I have discussed in Article II, and will return to later in this chapter. Ever since Dansmästaren started to gradually appear next to Grindstugan, it has seemed odd to me why visitors coming to Rosendal from the city centre of Uppsala are greeted with a large parking facility. All the while, sustainable transport has been promoted as a key feature in Rosendal from early phases in the districts'

development (Uppsala kommun 2016), and is still heavily featured across the municipality's and developers' descriptions of the district (see, for example, Uppsala kommun 2022f; Byggvesta 2019). According to Uppsala Municipality, Dansmästaren is located at the entrance of Rosendal in order to decrease traffic within the district (Uppsala kommun 2022f). However, the municipality highlights how it is indeed also possible to drive to the buildings within Rosendal when needed (Uppsala kommun 2022f). This assurance of how cars are by no means forbidden in Rosendal, comes across similarly in the municipality's statement "Rosendal is not a car-free district…" (Uppsala kommun 2016:29). It thus seems important to emphasise that people moving to Rosendal by no means need to give up their habit of driving if they are used to do so, nor refrain from owning a car or having access to a car when needed.

Much of what comes to count as sustainable in Rosendal, according to the material analysed in Article II, links to visible features, and contributes to a certain type of aesthetic. The location and size of the parking facility Dansmästaren counteracts this aesthetic. Calling the parking facility a mobility house, and making it into a test-bed for smart energy solutions with solar panels on the roof does not succeed in erasing the fact that a building with space for up to 450 cars (Uppsala kommun 2022f) is placed at the entrance of the district. While the car was made invisible in the material analysed and discussed in Article II, the presence of cars is very apparent when entering Rosendal. In addition to Dansmästaren, there is an open air parking lot to the right of the blue cargo container. Meanwhile, the entrance is, as many times before, crowded by vans and other large vehicles linked to the constructions still taking place in this northern part of the district.

The large building Dansmästaren comes across as a statement reinforcing the idea discussed in Article II, that by moving to Rosendal one does not need to change. Instead, the district is built to accommodate those who do not want to live in an area with heavy traffic, while still being able to conveniently drive to and from Rosendal. The name of the district, which translates as Valley of Roses, brings to mind a fairytale-like world. The area is planned with a focus on pedestrians and cyclists, while cars are placed at the outskirts of the district. The burden of cars, such as noise, congestion, pollution and risk of accidents are outsourced to other parts of the city.

The location of Rosendal is something repeatedly put forward in the material produced by Uppsala Municipality and property developers as

enabling residents to cycle or walk to the city centre and their jobs (see, for example: Uppsala kommun 2016; 2022f; JM 2022). Additionally, as Rosendal hosts many services such as a day-care, supermarkets, restaurants and medical practices, one does not necessarily need to travel elsewhere to access such services. This perspective was echoed by the residents interviewed about what comes to count as sustainable in everyday life. Several of the participants talked about how they can easily lead an everyday life in Rosendal without a car. However, enabling the use of cars is a way to accommodate each individual's free will and sustainability becomes something one can consume, by moving to a district where sustainability has been a keyword throughout the development. When studying what comes to count as sustainability in everyday life according to a group of people living in Rosendal (Article I), I described how the bicycle was repeatedly put forward as a symbol for sustainability in everyday life and constantly compared to the car. The car and driving represented everything the bicycle was not, as it represented sitting still, being stuck in traffic and polluting. Whereas the bicycle allowed participants to do something seen to benefit both their own health and the environment. Yet, a considerable amount of space and attention is given to the car in the area. This sustainable district thus accommodates and enables a mode of transport heavily associated with unsustainability.

In discussing how cars take up space and demand parking infrastructure in cities, Kurnicki (2022) takes a practice theoretical perspective and proposes that cars be seen as performing the practice of parking. While cars have gained significant attention in urban and mobility studies, the practice of parking and parking infrastructure has so far received little attention (Kurnicki 2022). According to Kurnicki (2022), this can be explained by the immobile character of parking, a somewhat counterintuitive aspect to study, despite the considerable amount of space parked cars take up in urban environments. I find Kurnicki's way of approaching the car as a performer of parking helpful as it sheds light on how the car acts and has effects as part of the urban environment, despite not being in motion. However, in following Anderson and McFarlane (2011) as well as Bennett (2010), approaching the urban as sociomaterial assemblage(s) where agency is distributed across elements, the need to understand parking as a social practice becomes less relevant. Following assemblage thinking and the notion of vibrant matter, the car is understood as a more-than-human actant

with agency as part of the urban assemblage. Viewing the car as an actant with considerable effects as a *material in the background* after also being a *material element in use* (Shove 2017) within the practice of driving, renders visible how the car occupies space and through that forces policies and regulations to take its presence into account in urban development. This brings to mind accounts of research participants who had lived in Rosendal since the first part of the district, Södra Rosendal (Eng. Southern Rosendal) was ready for inhabitants to move in, around 2016. During this time the infrastructure, including roads and parking, was not yet ready. There is also anecdotal evidence of plans for the district to have less parking than what is usually planned for in urban living environments in Uppsala. This however resulted in what has been referred to as "messy parking situations", where people left their cars in spaces not intended for parking. One participant reflected on how leaving out parking is not a solution. He said, especially around rush hour it seems there are a lot of cars in circulation and when thinking about how not only Rosendal, but the whole southern part of Uppsala is about to expand with more people moving in, he thought there would naturally also be more cars. He reasoned around how "it's not that easy…you can't just make less parking garages in the new houses and think people will stop owning cars, because it becomes difficult or expensive. People will keep having cars". Another participant told how the messiness due to cars parked in locations not intended for parking had been 'solved' when more parking spaces had been provided. This goes to show how despite the car being associated with unsustainability in the participants' accounts (Article I) and in the found material analysed (Article II), its presence in Rosendal demonstrates how the car is a powerful actant that cannot be ignored. However, power relations are temporal and emergent (McFarlane 2011) – which means they have the potential to change. While humans cannot control everything in the urban assemblages of which they form part, it is peculiar how much care is given to this human-made, more-than-human actant in an area with a sustainability profile. Especially when this actant is widely associated with 'unsustainability'.

In this example, the notion of vibrant matter (Bennett 2010) helps demonstrate how matter cannot be ignored and continues to have an active role in the urban assemblage(s) after being used by a human actant (as in driving a car). Although the car and driving might be considered outworn examples in relation to (un)sustainability in urban environments, the car is

introduced here due to its presence in the urban assemblage as well as in my data. The car was brought up by participants interviewed about (un)sustainability in everyday life (Article I) and its absence and presence became apparent when analysing the found material produced by a group of property developers and Uppsala Municipality (Article II). Additionally, the presence of cars is difficult to ignore when visiting Rosendal, not least due to the mobility house Dansmästaren being located at the entrance of the district. The large areas reserved for parking in Rosendal raises the question: could these areas have been used for something else?

Figure 12. One of the open air car parks in Rosendal. Foto: Bäckman, M. 2020.

Figure 13. The temporary urban garden in September 2019. Foto: Bäckman, M. 2019.

Figure 14. The allotments in November 2019. Foto: Bäckman, M. 2019.

4.3 The allotments: A temporary way to care for 'the environment'

In June 2023, I go and look for the remains of what was once an urban garden. Last time I visited this exact spot in Rosendal was in August 2022; at that time, the allotments were still in existence but it was impossible to access them due to fences stopping anyone from entering and taking care of their small-scale vegetable cultivation. The allotments were part of a cultivation initiative initiated by inhabitants of Rosendal, and realized in collaboration with Uppsala Municipality. In late spring 2019, the municipality announced through their Rosendal-newsletter, that inhabitants could apply to get their own allotment on a piece of unused land in the district. The municipality provided pallet collars filled with soil, and granted access to water by installing a water hose next to the allotments. Additionally, the municipality provided a box with tools and seeds for communal use. Gradually, participants of the initiative added to the box and shared, especially, left over seeds with other gardeners. As I had signed up to receive the Rosendal project's newsletters as part of my research, I noticed the announcement and decided to apply. I became one of the participants of this initiative, and taking care of my allotment became a way to have a reason to visit the area regularly. In June 2023, there are however no traces of the allotments to be found. Due to fences and building materials stored at the site, I cannot reach the exact spot where the pallet collars used to be. From what I can see, there now appears to be an unused asphalt road at the location that was once an allotment garden.

When I conducted the photo-elicitation interviews in 2020, focusing on what comes to count as sustainability in everyday life according to residents, several of the participants considered cultivating vegetables a sustainable practice (see Article I). Some of the research participants had small scale gardens on their balconies, while a few had taken part in the cultivation initiative supported by the municipality described above. They thus had a set of pallet collars provided by the municipality in the allotment garden, just like myself. For most participants, cultivating was something they enjoyed doing and saw foremost as a rewarding hobby. Some considered it as a way to produce local food, and that they were able to decrease the amount of food with long transport distances bought in the supermarket. Others reflected upon how cultivating might not have much effect "in the larger scheme of things" but that it is foremost something positive for the individual who cultivates. Such positive meanings forming part of the cultivating practice,

were related to learning about where plants come from. One participant in particular talked about how cultivation had developed a greater sense of connection with the environment, where change of weather and seasons became more apparent in his everyday life. One aspect brought forth by several of those who were growing vegetables, was how plants and gardens have the ability to increase biodiversity, something they regarded as important in light of sustainability. Despite the interest in cultivation among the research participants, several thought that the lack of space and sunlight were hindering factors for performing this practice. This concerned especially those who were cultivating on their balconies. As a consequence, they proposed more space and opportunities for growing vegetables, and some suggested community gardens would be a way to enable more space for cultivation. Those who made this suggestion had seen the allotments described above, but were not aware of whose initiative this was, nor how one could sign up to take part. Despite an interest in better and more possibilities for cultivation in the area, the allotments were closed off by fences, which restricted access to them, during winter 2020-2021. There was an e-mail from the municipality in May 2021, sent out to those who had an allotment in Rosendal, informing that the initiative had come to an end. The e-mail also stated how despite an interest in cultivation among residents, the municipality had at that time no possibility to provide further opportunities for growing vegetables in the district. Instead, those interested in cultivation were directed towards allotments located in another residential area called Ulleråker, a couple of kilometres south east of Rosendal.

Urban gardening is indeed a common example of how 'sustainability' is enacted in urban areas. It also links to certain aesthetics (see Article II) and globally circulating ideas about urban sustainability, where green nature (Wachsmuth & Angelo 2018) is inserted in cities, as if the urban would not be part of nature to begin with. Nevertheless, the example of how the allotments were provided through a prompt from certain active residents and later shut down, is interesting in many respects. It shows the lack of flexibility, where despite it being stated in the Quality Programme that there should be space for both planned and unplanned areas in the district (Uppsala kommun 2016:26), the plans seem to have been so rigid that it was not possible to accommodate the residents' aspirations to have better possibilities for urban gardening in the area. This might be due to the economic growth oriented mind-set, which as discussed in Article II is driving urban

development in Rosendal and elsewhere. It is likely a profit-oriented housing market ensures densely built houses are prioritised over spaces for urban gardening, as these are seen to have little economic benefit. However, this is not the only explanation, considering there are several parks, playgrounds and recreational areas built and planned in the area, many of which have been expensive to realise. This further strengthens my claim (discussed in Article II) that it is largely the municipality and developers who shape what comes to count as sustainable in Rosendal, through how policies materialises in specific ways based largely on their decisions.

The priority given to planned, versus unplanned, areas also brings to mind one participant's critical stance towards the parks that were being built in the district at the time of the second interview (autumn 2020). She reflected upon how what is being built is always at the expense of something else, and how an untouched field in the area had given space to a large park with flower beds. She was certain it would become a beautiful spot, but wondered what all these planned green areas did for biodiversity. And that perhaps, all green spaces do not need to be so tidy and well-managed. In addition to the priority given to the planned spaces, this reflection also taps into both the aesthetic characteristics of what comes to count as sustainable in Rosendal, as well as how 'nature' is approached. This example shows how the human/nature divide is upheld in seeing nature as there for humans to make use of, protect (Plumwood 2009) or tame. In prioritising well-planned parks over already existing fields, 'nature' is approached as something that needs to be tamed when allowed into the urban assemblage, and that needs to have a certain type of aesthetic. Another example of well-planned green nature in the urban assemblage(s) is the storm water management system. This is something highlighted within the municipality's sustainability work in Rosendal (Uppsala kommun 2016; 2019b; 2022h). The well-planned storm water management system was implemented both to avoid flooding and to protect a large natural water reservoir located underneath Rosendal (Uppsala kommun 2022h). However, in the Quality Programme (Uppsala kommun 2016) and during the Open House event in Rosendal in 2022 (personal observation), the water reservoir receives little attention, while the aesthetic characteristics of the storm water management system are eagerly brought forth. These examples of 'tamed' green nature in the urban assemblage, come across as ways to promote the district's attractiveness rather than as efforts

to care for more-than-human actants interdependent with humans (Puig de la Bellacasa 2017).

Figure 15. The apartment building called Grindstugan. Photos: Bäckman, M. 2019; 2020.

4.4 Grindstugan: Contributing with recurring sustainability traits

Rosendal hosts several buildings and parks that have attracted my attention throughout the past years. As mentioned in the Quality Programme, the goal of creating a safe and liveable district is to be met foremost by physical features in public spaces that aim to "attract curiosity" (Uppsala kommun 2016:16). Another goal, that of making Rosendal into a varied and diverse district (Ibid. 2016:24) comes across mainly in the varied architecture and the different types of planned and tidy parks in relation to the nature reserves next to the district. Grindstugan (Eng. The Gate House), located next to the mobility house Dansmästaren, is one of the many buildings that forms part of reproducing what comes to count as sustainable in Rosendal. This apartment building, consisting of privately-owned apartments, has many of the features highlighted with reference to sustainability across the material produced by property developers active in Rosendal. Grindstugan was

indeed a gate to the district before Dansmästaren appeared, though now it is slightly hidden behind the mobility house. Attention is also drawn away from Grindstugan towards other buildings still under construction located next by. Nevertheless, the building still interests me.

Figure 16. The cargo bike available for Grindstugan's residents. Photo: Bäckman, M. 2019.

4.4.1 The cargo bike: Taking the symbol of sustainability one step further

The café where I often have coffee when visiting Rosendal, is located on the ground floor of Grindstugan. As I usually visit the area by bicycle, I often park next to a cargo bike with a text saying it is the property of Grindstugan's housing cooperative (Swe. Bostadsrättsförening). This actant contributes to Grindstugan's sociomaterial assemblage, and thus plays into what comes to count as sustainable in Rosendal. The cargo bike also contributes to enabling an everyday practice that residents interviewed associate with sustainability. Most interviewees touched upon cycling in some way during the interviews. The bicycle was seen as a symbol for sustainability, whereas driving or owning one's own fuel-driven car was often seen as something worth

avoiding. When discussing cycling in everyday life, often with reference to driving, several participants reflected upon situations where it was cumbersome to rely only on one's bicycle. Such situations included especially grocery shopping, or buying larger items from the second-hand shops located at an industrial area in Uppsala. Grindstugan's cargo bike thus enables residents in this building to also avoid relying on the car when they have items (or children) they need to transport. The cargo bike also reminds me of one of the images described in Article II, where a woman cycles with a cargo bike with two children on board. All of them look happy and wear helmets (see Uppsala kommun 2016:27). The photo, referred to as an inspirational image, has a caption saying cargo bikes are given space in Rosendal. Crago bikes do indeed take up space, both when parked and in the traffic, making it difficult to avoid noticing them. I have referred to ordinary bicycles as coming across as symbols for sustainability, both with reference to the interviews and the found material analysed. The cargo bike takes this one step further, as it comes across as signalling that perceived obstacles in relation to cycling can be overcome. The image also signals how 'doing the right thing' can be enjoyable. The happy people wearing helmets while riding a cargo bike have the appearance of exemplary 'sustainability' citizen. That it should be "easy to do the right thing" (Swe. "lätt att göra rätt") is mentioned in the Quality Programme (Uppsala kommun 2016:10), while mentions of ease and easily accessible abound. Making a cargo bike available to residents can be seen as one way to make it easier to cycle even when one has bulky items or children to transport. Simultaneously, the presence of the cargo bike also reinforces the idea of the bicycle as an imperative for sustainability in everyday life, while possibly distracting attention away from features that do not resonate with what is commonly held to be sustainable.

When seeing the cargo bike I start reflecting on participants reasoning about cycling in relation to wellbeing. Attention was in many accounts directed towards the personal benefits of cycling instead of driving. These benefits included wellbeing connected to both exercising and spending time outdoors. The act of not driving could be considered an act of care, as negative environmental consequences affecting both humans and more-than-humans are avoided. The focus on personal benefits, however, reflects a lack of consideration of the interdependency stressed within care ethics (see, for example: Tronto 2013; Puig de la Bellacasa 2017). Williams (2016) suggests

how an ethics of care can be fostered by making visible the care and justice already taking place in cities. In Rosendal it rather seems that personal benefits, self-care and making the 'right thing' as easy as possible are encouraged. This results in moving meanings of sustainability further away, rather than closer towards, the relational understanding inherent in feminist care ethics.

4.4.2 The rooftop terrace: Acting as a meeting place?

Many of the buildings in Rosendal have made use of their roofs in different ways, by installing solar panels, covering the roofs with sedum carpets and by building rooftop terraces. Grindstugan is no exception, it has solar panels and a rooftop terrace, referred to as the rooftop garden (BRF Grindstugan 2022). On Grindstugan's housing cooperative's webpages the architecture of the building is described as 'social' in that it enables residents to get to know one another by using the shared spaces, which include the roof terrace, an inner yard, a sauna and a wine cellar (BRF Grindstugan 2022). When looking at the image-galleries available on the webpages of the housing cooperative (Ibid. 2022) and the property developer behind this project (Rosendal Fastigheter 2022), the dwelling appears rather exclusive, aimed at individuals and families who can afford to choose where to live. Uppsala Municipality also highlights meeting places and different types of parks and recreational areas as a way to ensure there is something for "everyone". This links back to the varied and diverse nature of Rosendal, which is to ensure "an attractive urban environment where everyone feels welcome" (Uppsala kommun 2016:24). However, (as discussed in Article II) the use of 'everyone' ignores injustices related to the socio-economic groups who have the opportunity to move to an affluent area like Rosendal.

The 'social architecture' also brings to mind how the residents I interviewed said they had little contact with their neighbours, and how the voluntary nature of socialising was highlighted in the material produced by Uppsala Municipality and property developers involved in Rosendal. Yet, if thinking with care about Rosendal, there is an inescapable interdependency between humans - as well as humans and more-than-humans (Tronto 2013; Puig de la Bellacasa 2017). Examples of where residents I interviewed took care of the environment, either together or next to each other, include a 'waste picking day' (Swe. Skräpplockardag) initiated by a group of residents and the allotments described earlier (see chapter 4.3). The inescapable

interdependency also came across in interviews where residents talked about how they thought some of their neighbours were inconsiderate. This related to littering, not recycling properly and being noisy late at night. Apart from caring about one's own apartment, one's own wellbeing through the many opportunities for outdoors recreation and sports in the area, one's own family, one's own allotment or picking trash alone or together with others – there do not seem to be many opportunities for residents to practice care within or towards their living environment.

Figure 17. One of the district's buildings with natural wood panels.
Photo: Bäckman, M. 2023.

4.4.3 Wooden panels: Initiating a feeling of sustainability

There are several buildings in Rosendal with visible wooden elements. Grindstugan is one of these, with natural wood panels on the façade. When analysing the material produced by a group of property developers and Uppsala Municipality used in Article II, I found that much of what comes to count as sustainable contributes to a certain aesthetic. This aesthetic included, but was not limited to, wooden details and wood as building

material. When I asked research participants to take photos of things and places in their living environments that they associated with sustainability, one participant took a picture of the wooden panels of her building saying she thought it "feels sustainable". Although this photo was not associated with any particular everyday practice, it its noteworthy due to how the participant talked about how she was in fact not sure if these wooden panels were sustainable according to any measurable standards, but for her wood sparked connotations of sustainability. This participant did not live in Grindstugan, nevertheless the wooden panels were present in her building too. Wood is indeed often promoted as a sustainable building material (see, for example, Swedish Wood 2021). It is, however, worth noting that although there are houses in Rosendal where wood has been used as the main building material (see, for example, Genova n.d.b), there are also several buildings where wooden panels are attached to concrete buildings. This might indeed make it difficult to know whether the building is, or simply looks as if it could be, made of wood. I argue the wooden panels contribute to reproducing the idea of wooden features as something contributing to sustainability due to the presence of wood in a district with a sustainability profile, and due to the fact that wood as a building material is generally seen as 'sustainable'. What comes to count as sustainable is thus a result of sociomateriality, where the social and material are not in a relationship of cause and effect but in what Barad (2003) refers to as *intra-active*. Simultaneously, the wooden panels have effects on what type of aesthetics are associated with sustainability. Interestingly, many houses in Rosendal, including Grindstugan, have energy systems that are described as 'green' or 'sustainable' in that they either recycle part of the heat, have thermal heating, solar panels or a combination of these. With the exception of the solar panels, the features of these energy systems receive considerably less attention in the analysed material than the aesthetic character of the buildings, the storm water management system and the well-planned parks.

In this chapter I have shown how approaching Rosendal as sociomaterial assemblage(s) and paying attention to a set of more-than-human actants can shed light on how their agencies contribute to shaping and altering the urban environment. I have focused in particular on actants that have effects on what comes to count as sustainable in Rosendal. These effects are entwined with how sustainability is understood, as well as how sustainability is materialised. In that the assemblage is, in this thesis, understood as sociomaterial

(Durose et al. 2022) and sustainability discourses are understood as material-discursive (Barad 2003), there is an ongoing co-constitutive relationship between the social and the material.

5. Summary of Articles I–III

5.1 (Un)sustainable Everyday Practices Sociomateriality shaping sustainability in an urban district

Author: Malin Bäckman
Published in *Journal of Consumer Culture*

In this article, I study what comes to count as sustainable in everyday life according to a group of residents of an urban district with a sustainability profile. The aim is to understand what everyday practices residents associate with sustainability, as well as how material elements shape what practices can or cannot easily be performed. The urban district in question is called Rosendal and located in Uppsala, Sweden. When exploring what everyday practices research participants associate with 'sustainability', I take a practice theoretical approach and view consumption as embedded in everyday practices, performed in a particular urban environment. Building on Shove et al.s' (2012) practice theoretical framework, I view practices as consisting of materials, competences and meanings. Further, I hold that practices are sociomaterial in that the social and material are co-constitutive. This approach enables me to pay specific attention to the roles of material elements within everyday practices, when analysing semi-structured photo-elicitation interviews. Prior to the interviews, I asked participants to photograph things and places in their homes and living environments that either enable and/or hinder them in performing 'sustainable' everyday practices. I refer to the practices brought forth during the interviews as usual suspects, in that they mirror advice given by organisations such as Uppsala Municipality and The Swedish Environmental Protection Agency regarding

what individuals can do in order to 'live more sustainably'. In analysing a selected set of practices brought forth during the interviews, namely growing vegetables, showering and cycling, I show how material elements in practices not only contribute to shaping the practice, but contribute to what comes to count as sustainability. Due to imagination being situated in sociomaterial practices, I argue it is difficult to think beyond the 'usual suspects' due to the living environment being shaped in particular ways. Therefore, I argue urban districts need to be planned in ways so that new ideas of, and ways to enact, sustainability may emerge.

5.2 Tracing sustainability meanings in Rosendal: interrogating an unjust urban sustainability discourse and introducing alternative perspectives

Authors: Malin Bäckman, Katarina Pettersson, Lotten Westberg
Submitted to *Local Environment. The international journal of justice and sustainability.*

While acknowledging that sustainability discourses are often appropriated by forces keeping up the status quo, we depart from the transformative potential of sustainability when studying an urban sustainability discourse reproduced in a district called Rosendal. This district, located in Uppsala, Sweden, is chosen due it being a typical example of contemporary urban sustainability. The aim of this article is to question taken-for-granted meanings of sustainability and open up for alternative perspectives. By applying Bacchi's (2009) *What's the problem represented to be* approach to policy analysis, we set out to interrogate the meanings reproducing the *Sustainability in Rosendal* discourse. We analyse found material describing Rosendal, its sustainability profile and its various building projects. The material consisting of text and images, is produced by Uppsala Municipality and a group of property developers involved in the district. Through the analysis, we identify four intertwined sustainability meanings: *Everyone is included*, *It's all about aesthetics*, *Closeness to nature* and *Sustainability is easy*. We find that each meaning entails a set of silences. First, the use of the expression 'everyone' erases challenges related to inequality and residential segregation. Second, visible features linked to the district's aesthetics and attractiveness are given attention at the expense of less visible 'sustainability solutions' in the analysed material. Third, 'nature' is portrayed as a passive

resource failing to take into account human interdependency with more-than-humans. Fourth, throughout these meanings sustainability is portrayed as something that can be reached effortlessly, ignoring conflicting views, contradictions and difficulties involved when planning for uncertain futures. Most importantly, the *Sustainability in Rosendal* discourse fails to question the economic system within which it operates. As we approach discourses as material-discursive, we argue the growth dependency of urban sustainability in Rosendal reproduces injustices. In order for urban sustainability to become more transformative and emancipatory, we propose a feminist ethics of care lens, coupled with a pluralistic view on justice as a way to foster alternative sustainability discourses uncoupled from economic growth.

5.3 Foregrounding the background: Reflecting on what participant-generated photos made me see, grapple with and reconsider

Author: Malin Bäckman
Submitted to *Qualitative Research*

In this methodological reflection, I consider a set of different roles of participant-generated photos that were part of a photo-elicitation study. Additionally, I account for how these photos made me reconsider the role of material elements within everyday practices. The aim of this article is to share insights gained when grappling with participant-generated photos, as well as material elements portrayed within them. The photos were produced by a group of people living in an urban district with a sustainability profile, as part of a study focusing on sustainability in everyday life. Prior to conducting semi-structured photo-elicitation interviews, I had asked the research participants to photograph material elements in their homes or living environments that are part of everyday practices they associate with (un)sustainability. When analysing the interview material, the photos made me grapple with their multifaceted roles. I considered the photos as windows into meanings of sustainability where I approached them as situated in a specific research context, whereas the meanings portrayed reflect their social embeddedness. Another dimension I took into account was how the photos are windows into sustainable materialities, in that they portray material elements that are part of 'sustainable' everyday practices. I argue the participant-generated photos helped bring to the fore things and

places often left unnoticed. Finally, I saw the photos as artefacts that provoke and have effects within the research practice. This led me towards understanding not only the photos, but also the material elements portrayed within them as vibrant, in that they have agency through their effects within everyday practices.

6. Discussion: How approaching the urban as sociomaterial assemblage(s) can bring attention to alternative trajectories

The actants described in chapter 4, such as the car, the mobility house Dansmästaren, the allotments and the apartment building Grindstugan, holding a set of features typical for buildings in the district, all in different ways contribute to what comes to count as sustainable in Rosendal. These actants are entangled with ideas of urban sustainability circulating both locally, for instance in Uppsala Municipality's sustainability policies, and globally, for example through the idea that urban environments will save the world, as discussed in chapter 2.1.4, and by ideologies of green and grey nature (Wachsmuth & Angelo 2018). Change is here understood as taking place constantly as assemblages are emergent (Anderson & McFarlane 2011), and the everyday practices contributing to their reproduction (Durose et al. 2022) are constantly changing (Strengers & Maller 2015). However, the actants within Rosendal do not seem to have the capacity to bring forth the type of sustainable transformations often called for. Rather, these actants reproduce ideas of sustainability that, to borrow Westman and Castán Broto's (2022) expression "keep all the same". Many of these actants, especially the car and the allotments can indeed be thought of as outworn examples of urban sustainability. Yet, they are present in the urban assemblage and in my research data to the extent that it becomes difficult to ignore them. That these actants, along with others discussed above, are present is in itself noteworthy in that they contribute to reproducing what comes to count as sustainable in the urban assemblages making up Rosendal. I have argued that many of the everyday practices, to which these vibrant materials (or sociomaterial actants) contribute, are 'usual suspects' as they are widely associated with sustainability, while they tend to

reproduce, rather than alter or transform the urban assemblage (Article I). By analysing found material produced by Uppsala Municipality and a group of property developers active in Rosendal, I showed how the *Sustainability in Rosendal* discourse reproduces urban injustices and fails to question the economic growth-oriented mind-set by which Rosendal is being developed (Article II). I have also discussed how using a photo-elicitation method helped me re-consider the role of materials in practices, from viewing them as static to now understanding them as dynamic vibrant materialities with agency (Article III).

By building upon my account of actants within Rosendal's urban assemblages (see Chapter 4, as well as Articles I–III), I now aim to show how the emergence inherent in assemblage thinking can open up for alternative trajectories. I do this as a way to discuss how different trajectories in the urban assemblage could potentially lead towards less human-focused urban sustainabilities uncoupled from economic growth dependency underpinned by neoliberal ideals. As noted earlier, Maller (2018) has suggested more-than-human thinking can shed light on the interdependency between humans and non-humans, while interdependency is central within feminist care ethics (see, for example, Tronto 2013). I argue viewing the urban as assemblages further brings forth this interdependency, while moving away from a human-centric perspective on urban sustainability. What follows is a way to discuss how to move towards urban sustainabilities that focus on creating caring habitats – where justice is integrated in the notion of care – as opposed to urban sustainability as an added value when developing attractive districts for the chosen few. I do this by discussing how things are right now, with consideration of other types of trajectories in the emerging urban assemblages, which potentially could lead Rosendal to become more caring, and through that a more just and transformative urban environment.

6.1 What is given space and what is cared for?

In the previous chapter I discussed how two different types of actants – the car and the urban garden made up of allotments, are given different amount of space in the urban assemblage. I argue the space given reflects what is being cared for in Rosendal. The municipality has ensured space for the car, while despite a demand among residents, urban gardening could not be included in

the plans already made. Although I have argued more radical ideas of what comes to count as sustainable is needed (Article 1), the actants linked to the 'usual suspects' show what is given care in the here and now. Despite the car being repeatedly associated with unsustainability, its use is enabled in the urban assemblage(s) constantly making up Rosendal. Considering that urban gardening and green nature are associated with sustainability in Rosendal and beyond, leads to a consideration of why allotments are not given the same amount of space and care as the car. Parking is ensured through modern mobility houses, while the rather simple infrastructure required for cultivation is not catered for. I suggest one way to ensure the indispensable interdependency between humans and more-than-humans (Tronto 2013; Puig de la Bellacasa 2017) be brought to the fore in urban environments, is by creating possibilities for residents to care for what is often referred to as 'nature' or 'the environment'. For the time being, humans in Rosendal are cared for by more-than-humans part of 'nature' in various ways. Both by providing resources such as clean water and air and by providing the resources by which Rosendal is being built. The development of Rosendal is underpinned by an extractivist, rather than a caring logic due to the unjust nature of this caring relationship.

Puig de la Bellacasa (2010) gives the example of composting as a practice where people living in urban environments can care for earth. Among the residents I interviewed, many brought up waste sorting and recycling as an everyday practice associated with sustainability, and many said they did recycle food waste. In most apartment buildings in Rosendal and elsewhere in Sweden, food waste is put in brown paper bags, provided either by the municipality or the landlord. The paper bags filled with food waste from households are then placed in dedicated garbage containers located in the apartment buildings' waste sorting room. While this is a way of caring for the environment, it however does not foster the same kind of understanding of human interconnectedness with the more-than-human, as composting (see Puig de la Bellacasa 2010), where one might need to get one's hands covered with dirt and care for worms. Such embodied understanding of human and more-than-human interdependency did seem to develop through the allotments, according to certain research participants, as described in chapter 4.3. Apart from the allotments and the waste picking day, there appear to be few opportunities for residents to care for the environment of which they are themselves an integral part. Instead, 'the environment' and 'nature' are, in the found material produced by property developers and Uppsala

Municipality, repeatedly described as something separate, there to serve human needs, as something that needs to be protected (but only carefully selected parts and species) and as something that needs to be tamed when allowed into the urban assemblage(s). Considering the emergent nature of assemblages, what is given space and cared for right now could be different in the future. There could be fewer pre-planned parks with flower beds, and more areas could be left untouched, as one research participant implied. Leaving untouched 'nature' in urban areas could potentially foster an attitude where more-than-humans need to be taken into account and not only allowed on human terms. Further, as Williams (2020) argues, care needs to be enabled, especially in such urban environments where it is currently being ignored. Practices of care are, just like other practices, sociomaterial. It follows that the possibilities and nature of caring are entwined with urban materialities (Power & Williams 2019). I therefore suggest that allowing more space and creating opportunities for caring practices in the built environment is vital, if urban sustainability is to go beyond creating convenient and attractive districts. Materialities allowing an embodied understanding of human interdependency with the more-than-human is a way of both enabling care and fostering more caring attitudes in urban assemblages.

6.2 Who decides what to care for?

Allotment gardens are only one example where relational caring involving humans and more-than-humans may take place in urban environments. If urban assemblage(s) are to become caring, there needs to be more opportunities for caring practices emphasising relationality and interdependency. As stated above, such opportunities can be created through materialities of care (Power & Williams 2019). Enabling relational care is not only about fostering a caring mind-set, but also ensuring actants with whom we share the more-than-human habitats and are interdependent with (Maller 2018), can survive. Tronto (2013) has argued we care for the wrong things; in Rosendal it seems human-made actants (for example cars) receive more care than do the more-than-humans often referred to as 'nature' (untouched green spaces and allotment gardens). Considering that both Uppsala Municipality and several property developers make efforts to ensure residents can meet and socialise (if they want to), creating opportunities to

care for 'the environment' could be a way to foster such social connections where they are sought. Potentially, enabling opportunities to care for more-than-humans in the urban assemblage might strengthen relational caring among residents. Currently, efforts to create social encounters among residents remain limited to architecture referred to as 'social' and public spaces where residents have had little say in what to prioritise. This leads to urban assemblage(s) where what is given space and cared for is largely driven by those who are involved in the formal development of the district, including property developers and Uppsala Municipality. Likewise, they are largely shaping what comes to count as sustainability through the material-discursive nature of sustainability policies.

Certain exceptions do exist. That the allotments were given space, although only temporally, was a way for inhabitants to contribute to shaping the sociomaterial urban assemblage(s), and through that what comes to count as sustainable in Rosendal. Another example is the collective house Gården (Eng. The Yard), which has been built without a property developer, where a group of people who wanted to live in a house with more shared spaces than usual and have ownership over the building process, were given permission by Uppsala Municipality to build a house in Rosendal (Bogemenskap Gården n.d.). Similar examples exist, for instance, in Germany, but are so-far a minority in the otherwise largely profit-driven housing market. The small poster attached to the blue cargo container advertising a flea market organised by Gården that I saw when I visited Rosendal in May 2023 (see 4.2) was indeed a reminder that some residents do take initiatives of their own that have an impact on the trajectories of the urban assemblages. However, the impact of one collective house and a flea market are likely to have less effect in the urban assemblage, than the concrete mobility house and the many buildings having features similar to those of Grindstugan. Despite the varied architecture, what makes the different buildings *sustainable* re-occurs across the buildings and includes features such as solar panels, bicycle-storage and wooden panels. To account for more and different types of sustainabilities in Rosendal, I argue more space for resident-driven initiatives is needed. To avoid property developers and Uppsala Municipality largely deciding what comes to count as sustainable in Rosendal, decisions on what is given space, and what is being cared for needs to include a more diverse set of voices. However, as the declaration "everyone is welcome" seems to erase inequalities (as discussed

in Article II), opening up for more resident involvement also needs a consideration of who gets to be involved and how.

6.3 How welcome are 'everyone'?

I discussed some of Grindstugan's sustainability traits due to their effects on what comes to count as sustainable, in chapter 4.4. As mentioned, Grindstugan comes across as a building for people who have the means to choose where to live. The building is made up of privately owned apartments, which of course excludes those who do not have the possibility, or are not willing, to invest in their privately owned apartment. Additionally, as Rosendal consists of newly built apartments, these are more expensive than apartments in other areas with older buildings. One can quite easily assume that 'everyone' cannot afford to live in Rosendal. When analysing found material produced by developers and Uppsala Municipality, I identified a set of the meanings part of reproducing the *Sustainability in Rosendal* discourse. One of these was articulated as *Everyone is included* (Article II). The vision included in the Quality Programme (Uppsala kommun 2016:4) states that "*Everyone is welcome to Rosendal*." Apart from references to ensuring activities for people from different age groups, there is little explanation of who are included in this imagined *everyone*. Code (1996) writes about how we-saying can result in exclusiveness, especially when little consideration is given to "who we think we are" (Code 2015). I argue the way *everyone* is used in the Quality Programme comes across in a similar way, as the exclusive we-saying. Instead of critically reflecting upon who Rosendal is for and who is excluded, everyone is used as a false alibi when making references to diversity and equality. All the while, there are no mentions regarding difficulties and tensions related to ethnic diversity, nor are socio-economic aspects that restrict some, while enabling others, to have access to housing in Rosendal mentioned. Diversity relates mostly to architecture and design of public spaces, where different types of recreational activities are ensured.

Another meaning part of the *Sustainability in Rosendal* discourse identified when analysing the found material is articulated as *Closeness to nature* (Article II). The closeness to nature, which is heavily promoted in the municipality's as well as the developers' material can be understood as an environmental 'good' (Walker 2009). From a distributive perspective of

justice (Schlosberg 2007) often focusing on how disadvantaged populations tend to suffer from environmental burdens, the environmental advantages or 'goods' such as clean water, air and parks or natural reserves have been shown to be more accessible by advantaged populations in urban areas (see, for example, Anguelovski et al. 2022). This seems to be the case for the type of closeness to nature available to those who can afford to live in Rosendal. Not only is nature approached as passive (Plumwood 2009), it is also presented as an attractive character when promoting the area. Additionally, it plays into the aesthetic character of Rosendal, often linked to lush greenery. A few aspects should be considered in the context of closeness to nature for 'everyone'. First, as 'everyone' is used in an exclusive manner, while rendering invisible the fact that housing in Rosendal is mainly targeted at affluent groups, it is worth questioning who the closeness to nature is for. Second, as discussed above, instead of seeing 'nature' as there for humans to make use of, more opportunities for residents of Rosendal to develop caring relationships with actants often referred to as 'nature', can be a way to foster an understanding of human and more-than-human interdependency. There are some material elements in Rosendal intended to care for more-than-humans. These include so-called bee-hotels as well as bat- and birdhouses. Further, certain species and trees referred to as 'valuable' are preserved. Among these are old pine-trees, said to add to the district's character. Tschakert (2022) discusses how justice needs to extend to the more-than-human. The selectiveness and exclusiveness of who gets to be involved in Rosendal's sociomaterial assemblage(s) is apparent both when it comes to humans as well as more-than-humans.

I argue making visible the exclusiveness ingrained in the urban assemblage is more likely to steer the trajectories in more inclusive directions, rather than pretending Rosendal is for everyone and that caring for a very selected part of 'nature' would make up for the otherwise extractive attitude towards the more-than-human. Involving more diverse perspectives on what is to be included in 'urban sustainability', what is to be given space and how caring relationships are to be fostered, can open up for other less exclusive and extractivist trajectories in the urban assemblages making up Rosendal. A more caring and just urban assemblage that can lead to transformative sustainabilities is far from the here-and-now in Rosendal. As shown above, there are potentials for things to be different. However, I argue a more profound transformation would require the logic by which

urban environments are developed to centre around care rather than economic growth.

7. Conclusions

Throughout this thesis my aim has been to understand what comes to count as sustainable in Rosendal and how sustainability is being reproduced in the urban assemblage, as well as to question taken-for-granted meanings of urban sustainability in order to open up for alternative perspectives. I have approached Rosendal as an example of contemporary urban sustainability, and I have shown that what comes to count as sustainable in Rosendal does not have the capacity to initiate the type of transformation often called for. Materiality has had a central role in this thesis and I have referred to this 'dear child' in different ways: sociomaterial, material-discursive, vibrant matter and more-than-human actants. Despite this plethora of nicknames, they all signify how the world is both social and material (Woodward 2020), and how the social and material are in a co-constitutive relationship (Orlikowski & Scott 2008). I argue that bringing forth matter often left in the background, can help clarify consequences of material and social entanglement. Their intra-active relationship (Barad 2003) becomes especially apparent in urban assemblages, where various interlinked sustainability challenges that humans and more-than-humans face, including environmental degradation, excessive resource consumption and inequality, to name a few – are bound up with sociomaterial processes and consequences. I have argued that urban sustainability needs to be uncoupled from the extractivist mind-set inherent in economic growth-dependent urban development underpinned by neoliberal ideals, where resources are consumed as if 'nature' is separate and there for humans to make use of. The advantages of this economic growth dependency are available to the very few: a selected group of humans and more-than-humans get to enjoy attractive urban environments. Increasingly, such environments are referred to as 'sustainable'. In line with Maller (2018), I argue there is a need to

reconsider who and what urban environments are for. Not only should there be more citizen-involvement in how urban environments are shaped, but what comes to count as sustainable needs to be open to a broader influence than currently. Participatory processes are indeed challenging, and it is beyond the scope of this thesis to discuss this topic in more detail. However, like Castán Broto and Westman (2019), I argue challenges related to participatory processes invite further exploration rather than dismissal. Importantly, instead of approaching sustainability as something that can easily be achieved, building on the idea of sustainability as an open-ended process open to tension and conflict is likely to better accommodate perspectives where a larger group of actants, not only a chosen group of humans and more-than-humans, can live as well as possible.

Due to the central role of sustainability discourses within urban development, what comes to count as urban sustainability is a question of what kind of urban habitats and societies are shaped. Emphasising a feminist ethics of care where justice is integrated, is a way to make visible the interdependency between humans as well as more-than-humans, and gradually start fostering a more caring mind-set so that 'sustainable' urban environments can become more than attractive districts for the chosen few. Ideally, sustainable urban districts would be planned with an aim to create caring habitats for humans and more-than-humans. I argue assemblage thinking can enable visibility of more-than-human actants and their agencies. The emergent nature of assemblages also brings forth that current circumstances could be different. Imagining other kind of trajectories for urban assemblages is, however, difficult due to the situated nature of imagination. Questioning current circumstances is a first step towards alternative trajectories. I argue that questioning and moving away from human exceptionalism is central within the making of 'sustainable' urban environments. Assemblage thinking helps shed light on how humans are not the only, and often not the most important, actants in assemblages. The inevitable interdependencies among humans as well as humans and more-than-humans emphasized within feminist care ethics, resonates with the relations among actants within urban assemblages. Approaching the urban as assemblages can bring attention to already existing relational caring relationships, as well as the lack thereof. Thinking with care about future urban environments is crucial if urban sustainability is to become more than an added value to profit-driven urban development.

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Popular science summary

Currently, urban districts around the world are developed to be sustainable. One such district is Rosendal, located in Uppsala, Sweden. This new district, taking shape a few kilometres south of Uppsala city centre, is described by Uppsala Municipality as an area where innovation and sustainability are important in the urban development process. Yet, what is it that actually makes Rosendal sustainable? In this thesis I explore what comes to count as sustainable in Rosendal. I do so by first studying what everyday practices a group of residents of Rosendal associate with sustainability. Next, I look at written and visual material produced by Uppsala Municipality and a group of property developers active in the area, in order to understand their perspectives. My results lead me to call what is associated with sustainability - such as bicycles, cultivating vegetables, recycling, resource efficiency and closeness to nature – the 'usual suspects'.

The built environment and material elements have an important role throughout this thesis, as I approach the material and the social as being mutually dependent. What comes to count as sustainable in Rosendal is thus a 'sociomaterial' phenomenon, where ideas of sustainability together with the built environment reproduce an example of contemporary urban sustainability. I find that Rosendal's urban sustainability is the product of economic growth-dependent urban development. Only a small group of people can afford to live in this exclusive urban district with a sustainability profile. This group gain access to green areas, closeness to services and the city centre, resource efficient housing and climate adapted infrastructure. Others cannot afford to live in Rosendal, do not have access to these things, and thus injustices are perpetuated. Additionally, what comes to count as sustainable in Rosendal does not have the capacity to initiate the type of societal transformation often called for in sustainability discussions.

By focusing on the 'more-than-human', a concept used to decentre humans and include animals and 'things', I describe how particular non-humans affect the urban environment. The more-than-human perspective sheds light on human and more-than-human interdependency, while it helps account for how organic, non-organic, human and more-than-human elements – including allotments, cars and wooden panels – together shape the urban environment. This 'urban assemblage', consisting of various elements, is constantly being made, which makes it possible to imagine new forms of urban development. If the sustainability transition is to become more just and transformative, there needs to be thorough reconsideration of who and what urban districts are developed for. I suggest urban sustainability should be concerned with developing caring living environments for humans and more-than-humans. Such caring urban development does not prioritise only a chosen few, such as socio-economically privileged groups and aesthetically appealing species, but strives towards enabling as many as possible to live as well as possible.

Populärvetenskaplig sammanfattning

Många nya urbana områden utvecklas i syfte att skapa mer hållbara städer och stadsdelar. Denna utveckling sker på olika håll i världen och ett sådant område är Rosendal, beläget i Uppsala, Sverige. Denna nya stadsdel som tar form några kilometer söder om Uppsalas stadskärna, beskrivs av Uppsala kommun som ett område där innovation och hållbarhet är viktiga ledord i stadsutvecklingsprocessen. Men vad är det egentligen som gör Rosendal hållbart? I den här avhandlingen undersöker jag vad som uppfattas som hållbart i Rosendal. Jag gör detta genom att först utforska vilka vardagspraktiker en grupp boende i Rosendal associerar med hållbarhet. Sedan belyser jag Uppsala kommuns samt en grupp byggherrars perspektiv på hållbarhet, genom att granska texter och bilder skapade av dessa aktörer. I ljuset av mina resultat kallar jag det som ses som hållbarhet för ”vanligtvis utpekade”. Dessa innefattar bland annat cyklar, odling av grönsaker, återvinning, resurseffektivitet och närhet till naturen.

Den fysiska miljön och materiella objekt har en central roll i avhandlingen, eftersom jag förhåller mig till det sociala och materiella som samskapande av varandra. Det som uppfattas hållbart i Rosendal är ”sociomateriellt”, där både föreställningar om hållbarhet och den byggda miljön tillsammans återskapar vad som ses som urban hållbarhet. Jag hävdar att den hållbarhet som utvecklas genom modern stadsutveckling och är beroende av ekonomisk tillväxt blir tillgänglig för en liten grupp människor. De som har råd att bo i en exklusiv stadsdel med hållbarhetsprofil får tillgång till fördelar så som närhet till grönområden, närhet till service och stadens centrum, resurseffektiva byggnader och klimatanpassad infrastruktur. Detta återskapar orättvisor i staden och visar att det som uppfattas som hållbart i Rosendal inte bidrar till den samhällsförändring som ofta efterfrågas.

Genom att fokusera på det så kallade ”mer-än-mänskliga” visar jag hur saker som pallkragar, bilar och träpaneler i Rosendal bidrar till att återskapa vad som betraktas som hållbart. Att fokusera på det mer-än-mänskliga innebär att röra sig bortom den människo-centrerade syn som genomsyrar nutida stadsutveckling. Begreppet gör det möjligt att belysa det ömsesidiga beroendet mellan människor och det mer-än-mänskliga. Det hjälper mig även att synliggöra hur levande, icke-levande, mänskliga och mer-än-mänskliga tillsammans skapar staden. Denna samskapelse av det urbana är hela tiden framväxande och öppnar upp för nya föreställningar om vad hållbar stadsutveckling skulle kunna vara. Ifall hållbarhetsomställningen skall bli mer genomgripande och rättvis krävs dock en förändring av hur stadsdelar utvecklas och för vem. Mitt förslag är att urban hållbarhet bör handla om att skapa omsorgsfulla boendemiljöer för människor och det mer-än-mänskliga. En sådan omsorgsfull hållbar stadsutveckling prioriterar inte enbart vissa utvalda, som till exempel socioekonomiskt privilegierade grupper och estetiska tilltalande växter, utan strävar efter att så många som möjligt skall kunna leva så bra som möjligt.

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över att jag äntligen skall bli klar. Pirkko ja Esko, kiitos varsinkin avusta mökin kanssa, kun väitöskirja oli loppusuoralla. A special thank you goes to Freja W. for sharing your peaceful home with me during some crucial and intensive last weeks of writing.

Finally: Pyry, bundis, partner in crime. Olet tärkein.

Appendix 1

Interview guide: (Un)sustainable everyday practices in Rosendal

Translated from Swedish by the author.

Intro

Thank you for participating.

Let me know if you need to take a break.

Let me know if you have any questions.

Start recording

Ask for consent, for the interview and the photos.

(information sent prior to the interview to each participant)

Overview of interview

Introduction of my research

Clarify that it is the participants' perspective on sustainability in everyday life that is of interest. I do not depart from any specific definition.

Background questions

Age

Gender

Occupation/Education

When did you move to Rosendal?

Why did you move to Rosendal?

How many persons are included in your household?

Photos

I let the participant know we will look at their photos together. I share screen.

The participant decides what photo to start with.

Can you tell me about this photo?

-What does it portray?

-Why did you take this picture?

-Does the portrayed item/element enable or hinder you?

Something else before we look at the next photo?
(Next photo, similar questions)

Questions to discuss after having looked at the participant-generated photos.
If these have not been touched upon so far during the interview.

Difficulties
Are there 'sustainable' everyday practices you think you should do/would like to do that you find difficult for some reason? Why?

Advice
If someone would ask you for advice about how to live more sustainably in their everyday life
-What would you suggest?
-Where should they start?
-What is the most important?

Your everyday life
What do you think is the most important (in relation to sustainability) in your everyday life?

Covid-19 / Pandemic everyday life
In what ways has the pandemic affected your everyday life?

Rounding up
-Questions?
-Interested in a follow-up interview?

Thank you.

Interview guide for Follow-up interviews

Introduction
Record
Ask for consent
Give overview of interview
Remind the participant that it is their perspective on sustainability in everyday life that is of interest.

Possible follow-up questions related to interview 1
Varies depending on interview, some interviews prompted questions.
What has happened in Rosendal since we talked last time?
Has something that affects your everyday life happened?

The Photos
(Look at the photos from interview 1)
Remind the participant how they described the photos.
These pictures give insight into what you associate with everyday life.
What comes to mind when you see the photos?
-Do they give an overview of what sustainability in everyday life means to you?
-What is the most important for you among these photos?
-Is something missing? Is there something you would like to add?

Discussion topics:

What is a sustainable lifestyle?

Sustainability in Rosendal – Does the living environment enable sustainability in everyday life?

Your everyday life – Would you describe it as sustainable / unsustainable?

Information / Knowledge
Do you find it easy/difficult to know what the most 'sustainable' alternatives in everyday life are?

Conflicts
Do you think your everyday choices matter?

Responsibility
Whose responsibility is it to make sure residents living in Rosendal live ‘sustainably’?

Conclusion
Anything you would like to add concerning sustainability, lifestyles and everyday life?

Thank you.

Appendix 2

Analysed Material produced by Uppsala Municipality and a group of property developers active in Rosendal.

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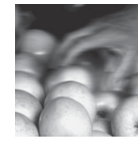
Papers I-III

I



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(Un)sustainable everyday practices *Sociomateriality shaping sustainability in an Urban district*

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Abstract

Urban areas are often seen as central sites for sustainability transformations, and in many parts of the world, cities are striving to be recognised for their sustainability initiatives. An example of a new urban district with a sustainability profile is Rosendal, in Uppsala, Sweden. Based on semi-structured interviews supported by participant-generated photographs, I let the everyday practices residents of this district associate with sustainability be the starting point for studying the different ways in which they understand and enact (un)sustainability. My analysis builds upon a practice theoretical framework, viewing practice as mundane, routinised behaviour shaped by 'materials', 'competences' and 'meanings'. By focussing on a set of practices brought forth by the interview participants, namely, growing vegetables, showering and cycling, I pay specific attention to the different roles of materials and how these are co-constitutive of the sociomaterial practices of which they form part. Based on the analysis, I contend that the sociomaterial urban assemblage enables and restricts what comes to count as sustainable, as well as which (un)sustainable practices are performed in everyday life. Further, the ability to think of alternative ways of enacting sustainability in everyday life is both enabled and restricted by present practices due to the situated nature of imagination. If urban districts are to play a central role in sustainability transformations, I argue that living environments should be planned in ways so that new ideas and practices for enacting sustainability may emerge.

Keywords

Everyday practices, practice theory, sustainable consumption, Urban district, Sweden, photo-elicitation, sociomateriality

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Introduction

Growing concerns about excessive resource consumption (Wynveen, 2015; Middlemiss, 2018), social inequalities (Agyeman, 2008; Walker, 2012) as well as pollution, environmental degradation and climate change (Denegri-Knott et al., 2018) have resulted in a plethora of initiatives attempting to steer development of societies in what is often referred to as *sustainable* directions. Since urban areas are portrayed as central for sustainability transformations (Rose and Cachelin, 2018; Castán Broto et al., 2019), cities around the world are attracting attention due to their sustainability initiatives (Miller and Mössner, 2020). One such initiative is Rosendal, an affluent, new and developing urban district located in Uppsala, Sweden. This district is part of the municipality's agenda to be recognised as a sustainable city, nationally and internationally (Uppsala kommun, 2016; 2017). According to the municipality, significant sustainability work has been done in Rosendal, including: developing an innovative storm water management system and cherishing existing green areas while creating new parks, which are part of the district's 'eco-systems services' (Uppsala kommun, 2019; 2022a). Additionally, the plans for Rosendal included shaping a living environment where leading a sustainable lifestyle should not solely depend on the residents' active choices, but where options for sustainability in everyday life are enabled through the district's structure and content. Features in the built environment, intended to enable certain 'sustainable' practices, are highlighted in the district's plans (Uppsala kommun, 2016). These include sustainable mobility infrastructure, where cycling is prioritised, waste sorting facilities, opportunities to grow vegetables, as well as 'smart' solutions such as energy-efficient buildings and solar panels. Further, the district's location, being close to the city-centre and nature reserves, is highlighted as a sustainability feature (Uppsala kommun, 2016).

In this study, I acknowledge Uppsala municipality's sustainability agenda in Rosendal, while setting out to explore the type of everyday practices residents experience as (un) sustainable. I study practices residents themselves associate with sustainability, and what enables them to, or hinders them from, performing such practices. As these include practices considered sustainable, as well as unsustainable, I use the word (un)sustainable to reflect this duality. Like many other researchers interested in everyday practices and sustainability, I locate this study in the field of sustainable consumption. Within this field, researchers have increasingly departed from practice theoretical approaches to understand and intervene in patterns of consumption (Halkier et al., 2011; Warde, 2014; Welch and Warde, 2015). From this perspective, consumption is not seen as a separate practice, but as embedded in practices (Warde, 2005). Resources are thus consumed as part of such mundane practices as cooking, washing dishes and heating up one's home, to name a few examples. As this is a study of a new and affluent urban district, it is important to note how the ways such living environments are organised tend to steer practices in resource-intensive directions. It is exactly this resource-intensive nature of many everyday practices (Pink, 2012; Jack, 2020) that has guided me to focus on how they are shaped. Many of them are carried out unconsciously (Gram-Hanssen, 2014) and largely due to convention (Jack, 2020). There is a tendency to regard them as either normative or resistant, as they are understood to either reproduce or challenge the status quo (Pink,

2012). However, Pink (2012) suggests that everyday practices always hold potential for both stability and change. When seeking to understand how practices in Rosendal are shaped, and why these are experienced as (un)sustainable, I depart from this notion of practices as holding potential to change, while acknowledging how the way practices are performed may recreate current circumstances. While people reproduce certain structures by performing practices in specific ways, I argue in line with Behagel et al. (2019) that they can always choose to do otherwise. In this sense, people are not dupes (Jack, 2020), pre-programed to perform practices in specific ways. Moreover, performers of practices are not the only ones embodying agency, as agency is distributed across elements within practices (Sahakian and Wilhite, 2014).

Within practice theoretical approaches to sustainable consumption, researchers often focus on specific practices, for instance, those related to water, energy or food consumption. In contrast, I am interested in the variety of everyday practices residents themselves associate with (un)sustainability. I let these everyday practices be the starting point for the different ways in which (un)sustainability is understood and enacted in Rosendal. There are previous studies across different academic fields focussing on how people understand sustainability (e.g.: Wynveen, 2015; Shirani et al., 2014). However, with the exception of Denegri-Knott et al. (2018), studies have typically not departed from practices. Much like Denegri-Knott et al. (2018), my aim is to study what comes to count as 'sustainable' from the perspective of residents. Taking a practice theoretical perspective allows me to consider (un)sustainability in everyday life as something that is being made when certain practices are performed, as opposed to something people merely have perceptions about. I argue that the ways residents perform everyday practices in Rosendal contribute to the district's sustainability profile. Therefore, residents' understandings and experiences of everyday (un)sustainability are central when developing districts under the umbrella of sustainability.

I explore (un)sustainability in everyday life among residents of Rosendal through semi-structured interviews supported by participant-generated photographs. This method proved suitable for studying practices in a specific location, while having limited access to observing people in their everyday lives. Asking participants to take photos prior to the interviews, enabled them to choose which practices to discuss, while I was granted insight into the sociomateriality (Orlikowski and Scott, 2008; Gherardi, 2017) of these practices. I apply Shove et al.'s (2012) practice theoretical framework when analysing participants' accounts and pay explicit attention to the material elements in the practices brought up. I argue that the analysed sociomaterial practices both restrict and enable ideas of what could be, due to the situated nature of imagination (Stoeltzer and Yuval-Davis, 2002). Therefore, urban districts need to be shaped in ways that allow space for new ideas of sustainability, as well as for new practices to emerge.

Theory: Sociomaterial everyday practices

By departing from a practice-based understanding of consumption in everyday life, the practices residents of Rosendal associate with (un)sustainability, become the unit of analysis. When analysing these practices, I build upon the framework developed by Shove

et al. (2012), who follow Reckwitz (2002: 249) in viewing practice as *'a routinized type of behaviour which consists of several elements'*. These elements are interconnected and include: *'forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge*' (Reckwitz, 2002: 249). I understand the interconnectedness not only as practices being held together by the different elements, but also as indicating how these elements depend on, influence and shape one another. Within Shove et al.'s. (2012) framework, the elements consist of *materials*, *competences* and *meanings.* Using this approach allows me to analyse the elements which certain practices consist of and the various ways these elements are interconnected and shape the practices.

Although the importance of materials within practices has been acknowledged by many practice theorists, Shove et al. (2012) bring the material elements to the fore in an explicit way. This is my main motivation for having chosen to build on their understanding of practices. According to Shove (2017), materials and practices are heavily co-constitutive and intertwined, while materials play different roles within practices; *as things in action*, *as things that are used up* or as *things in the backgroun*d,[1] although often being given the same status. Further, the roles of materials in practices are never entirely fixed (Rinkinen et al., 2015). Focussing on material elements is common within the field of practice theoretical approaches to consumption (see, for example: Strengers and Maller, 2012; Spurling, 2021). Jacobsen and Hansen (2021) argue that a focus on materials, especially among researchers building upon Shove's work, has taken place at the expense of embodied practical understandings. My intention is not to grant priviledge to materials, but rather to show how different materials in the participants' living environment contribute to shaping (un)sustainable practices.

In my analysis, I pay specific attention to the different roles of materials, while approaching meanings and competences in broader terms. I focus on how different materials, in conjunction with competences and meanings, shape what comes to count as (un) sustainable practices. To better grasp how practices are co-constituted by materials, I turn to the concept of *sociomateriality* which implies the social and material are co-constituted (Gherardi, 2017; Orlikowski and Scott, 2008). This perspective aligns with understanding agency as distributed across elements (Sahakian and Wilhite, 2014) and acknowledges non-human agency (Bennett, 2010). Although the nature of human and non-human actants differs, there is no reason to privilege human agency (Bennett, 2010) as humans do not control the social world on their own. Sociomateriality overcomes the opposing dualisms between humans and more-than-humans, while elements within practices attain agency due to their interconnectedness (Gherardi 2017). Finding ways to bring forth the often invisible nature of sociomateriality can unpack the consequences thereof (Orlikowski and Scott, 2008). Further, I argue practices both restrict and enable certain meanings of what could be. This resonates with Stoetzler and Yuval-Davis' (2002) notion of situated imagination, which builds on a critical understanding of standpoint theory and situatedness. They explain how imagination can be understood as situated in the same way as knowledge, in that '…our imaginary horizons are affected by the positioning of our gaze' (Stoetzler and Yuval-Davis, 2002: 327). Partial meanings, shaped within practices, thus influence what is possible to imagine.

There are certain limitations to how practice theory is applied in this study. The most central relates to the focus on *everyday* practices. Previous studies building on practice theoretical approaches tend to focus on mundane, 'micro-level phenomena' (Everts, 2016; Schatzki, 2016). This has led to criticism claiming practice theory fails to account for more structural perspectives (Keller et al., 2022). Yet, certain authors discuss how practice theory can indeed take 'large' phenomenon into consideration (Everts, 2016; Nicolini, 2016; Schatzki, 2016), while others have combined practice theory with a multi-level perspective (see Keller et al., 2022 for an overview). The way I have applied practice theory in this study takes a local approach, which makes it difficult to analyse 'the bigger picture'. Although a more thorough account of how everyday practices are part of recreating and changing structures is beyond the scope of this study, I suggest my focus on everyday practices could benefit from being combined with assemblage theory. This would allow to account for how practices both recreate and alter the sociomaterial urban assemblage (Durose et al., 2022).

Method: Semi-structured photo-elicitation interviews

In order to explore the everyday practices that residents of Rosendal associate with (un) sustainability, I conducted semi-structured interviews supported by participant-generated photographs. I refer to the residents as participants, as I regard the generation of data a collaborative process. I recruited participants by posting interview invitations in two local Facebook groups. Recruiting participants through Facebook naturally poses limitations regarding who the invitation reaches. However, at the time of recruiting participants, these groups seemed to be the most commonly used communication channels in the area.

Prior to the interviews, I asked participants to take 3–5 photographs in their home, or living environment, of something that either enables or hinders them to carry out sustainable practices in their everyday lives. I explained how it was up to each participant to decide how to interpret what an (un)sustainable practice is. In total, I interviewed 13 people and eight of them took part in a follow-up interview. The participants were a mix of genders and ages (20–70 years). Some were students or recent graduates, and others were further on in their career-path. The majority of them were Swedish and of professions suggesting academic degrees. Several of the participants had moved to Rosendal due to being able to obtain a first-hand rental contract, something that is usually difficult in Swedish cities. Others had decided to purchase an apartment, both due to the location and characteristics of the district. Few respondents stated the sustainability profile had influenced their decision to move; nevertheless, all of them expressed interest in sustainability issues. As Rosendal is a new district, both privately owned and rental apartments are more expensive than in other parts of Uppsala. The participants can thus be described as privileged in terms of socio-economic status and evoke Carfagna et al.'s (2014) 'eco-habitus'. They suggest eco-habitus is displayed among ethical consumers who are 'more female, whiter, richer, and much more educated than the general population' (Carfagna et al., 2014: 163). Apart from 'more female', the other characteristics could presumably be attributed to the participants. This does not mean participants are frugal, rather that they have the means to make choices guided by ethical and

environmental awareness. This study is thus portraying the perspectives of a rather limited group of residents with a prior interest in sustainability.

Due to the COVID-19 pandemic, I conducted the interviews during online video calls using the software Zoom. During each interview, I shared my screen and showed the pictures the participant in question had sent me. We discussed the pictures individually, and I asked the participant to explain how the picture relates to (un)sustainability. This way of including photographs as prompts in interviews is a method commonly referred to as photo-elicitation (Harper, 2002; Soiata and McKee, 2021). By using participant-generated photos, I departed from the *emic* point of view of the participants (Pretto, 2015). Some argue that people generally find it difficult to talk about routinised and taken-for-granted practices; however, interviews can allow people to reflect upon their practices (Hitchings, 2012). The photos allowed the participants to present specific material aspects in their living environments visually and to describe what practices these were part of and how they were associated with sustainability.

The interviews lasted from half an hour to an hour and were audio recorded and then transcribed verbatim. A first, thematic round of coding resulted in the identification of everyday practices, which could be allocated to eight different groups related to *transport, food, shopping, growing vegetables, water use in the home, energy use in the home, waste* and *wellbeing*. The practices were then grouped together based on how participants talked about them (see Figure 1), and I consider them to make up a dynamic 'web of practices' (Schatzki, 2010: 130). Each practice was analysed through a process of going back and forth between theory, analysis and writing, where I started out from an emic perspective,

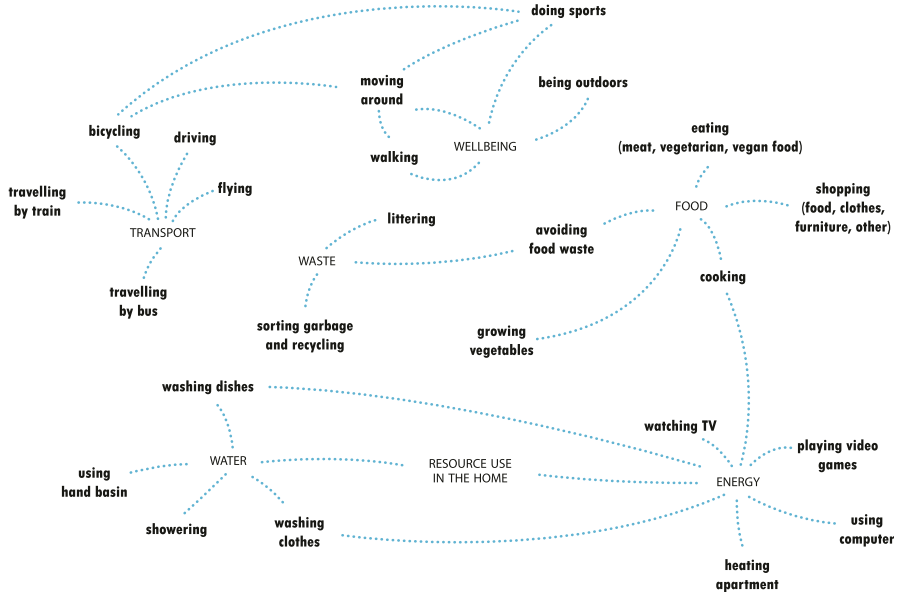

Figure 1. An overview of the everyday practices brought forth by participants.

gradually moving closer to an etic perspective guided by Shove et al.'s (2012) practice theoretical framework. Further, I paid specific attention to materials by considering the different roles these play within practices and by approaching the practices as socio-material (Gherardi, 2017; Orlikowski and Scott, 2008). Stoetzler and Yuval-Davis' (2002) notion of situated imagination, in turn, allowed consideration of how the sociomaterial practices shape ideas of what could be.

Findings: (Un)sustainable everyday practices in Rosendal

In this section, I focus on presenting how participants have discussed the practices of *growing vegetables, showering* and *cycling*. These practices are chosen not only due to them being mentioned in several of the interviews, but also because they give a broad representation of the different types of practices discussed during the interviews. Other (un)sustainable everyday practices mentioned but not discussed in depth here, are presented in Figure 1. I have given the participants pseudonyms to preserve their anonymity.

Growing vegetables – rewarding hobby, restricted by space and sunlight

Participants who associated growing vegetables with sustainability generally cultivated edible vegetables, on their balcony, or at an allotment in Rosendal. Although cultivating is often associated with food practices (see e.g.: Torkkeli, 2022; Tucker, 2019), in this study, it was described foremost as something positive and fun. Based on participants' accounts, the practice holds meanings of joyfulness and of being a rewarding hobby, and the participants were noticeably proud of their gardens. These findings resonate with Sovová and Veen's (2020) study among allotment gardeners in Czechia and the Netherlands, further supporting their claim that small-scale cultivation hold similar meanings across different European contexts.

Some of the participants had responded to an initiative organised by the municipality of Uppsala, to obtain a set of pallet collars placed on unused ground in Rosendal. The pallet collars, as *materials in the background*, along with gardening tools and a water hose as *materials in action,* were provided by the municipality and seen as enabling elements. One participant in particular, Erik (see Figure 2), greatly appreciated this urban gardening initiative and described how it had led him and his partner to find a new hobby which they enjoyed and found rewarding.

> Erik: …this is something we think is really fun, we are so very happy. (…) I hope they continue with this in some form. Because it has become a real hobby.

Although the practice of growing vegetables was primarily regarded as a pleasant leisure activity, some participants did regard it as a way of producing their own food. They explained how they were able to avoid buying everything from the store and decrease the purchase of products with long transportation distances. On the other hand, there were participants who reflected upon how cultivating in small urban gardens has limited impact 'in the larger scheme of things' when striving towards sustainability; they saw the practice

Figure 2. A photo of a small urban garden proudly presented by Erik.

as something that has positive impact foremost for the individuals engaged in it. Corresponding to findings by Maćkiewicz et al. (2021), increased biodiversity resulting from growing vegetables, was also mentioned and described as a sustainability trait. Meanings are thus related to both personal benefits and to contributing to the greater good. Additionally, competences connect to meanings in that competences include the ability to consider cultivation a sustainable practice.

Growing vegetables was thus mostly described in positive terms and as a sustainable practice. However, one participant, Lisa, who was enthusiastic about growing edible vegetables on her balcony, was troubled by the large amounts of water her plants needed, something she considered unsustainable. To tackle this issue, she placed a plastic tub in the shower while washing herself, to collect water for her plants. In this way, she could use water that would otherwise just have run down the drain (see Figure 3).

> Lisa: No, but I like growing things. Especially edible vegetables. But it does require quite some water [laughter]…so I try economizing as much as possible, so I try to save water.

Figure 3. Lisa's photo of a plastic tub used in the shower to collect water for her edible plants.

This example illustrates the sociomaterial character of growing vegetables, where the plastic tub is used as a way to overcome what is understood to be unsustainable – in this case, excessive water consumption. I consider this ability, to go beyond default options and find ways of altering practices, as part of competences. The water tub, *a material in use*, also demonstrates how specific elements can be part of several practices. Showering and growing vegetables are linked into a web of practices through the use of water, a *material being used up*.

Balconies, as *materials in the background*, enabled the practice of growing vegetables. However, the size of the balconies and their position with respect to the amount of sunlight received, were highlighted as restricting the possibilities for urban gardening. I consider this ability, to reason around the ways in which the practice is enabled or restricted by materials, a competence contributing to shaping the practice. Participants who felt limited due to space and sunlight, suggested that a community garden in the area could offer residents improved opportunities for growing vegetables, while providing a social activity. They had seen the allotments in the area but were not aware whose initiative this was, nor how one was able to take part. I interpret the suggestion of a community garden as a competence to imagine possibilities to increase urban gardening in the area. The suggestions of making more space for urban gardening and allowing residents to do

something together, is tied to the sociomaterial practice of growing vegetables. As imagination is situated in practice, participants are able to imagine other ways of cultivating based on current restricting material elements. Further, community gardens are often seen as spaces that enhance local sustainability through collaboration (see e.g.: Datta, 2019). Rabadjieva and Butzin (2020) show how meanings of certain practice-fields can transfer across locations without direct social interaction, for instance, through images and text in media. Participants are thus likely to have been influenced by travelling meanings associated with community gardens that feed into their imagination of what could be, while both enabled and restricted by the sociomaterial practice of cultivating.

Showering – 'invisible' resource consumption

One of the everyday practices linked to resource consumption within the home that featured in many interviews was showering. Showering has been studied due to its resource-intensive nature and used as an example of inconspicuous consumption, in order to demonstrate the usefulness of practice theoretical approaches to consumption (see. for example: Shove, 2003a; Hand et al., 2005). Like other forms of resource consumption taking place as part of practices in the home, participants brought forth how the water and energy consumption embedded in showering was hard to grasp and difficult for individuals to influence due to its 'invisible' nature. Although short showers were seen as something to strive towards, participants thought there were too few incentives for them to avoid taking long showers – described as unsustainable and unnecessary luxury.

> Louise: It is not as if I don't know I should use less water, nevertheless I stand there and take my long showers, mostly out of convenience.

Louise further explained how she thought it made very little difference if she alone took shorter showers, but if everyone were to do so, it would be strange for her to continue with her long showers. This example demonstrates how practices are reproduced and altered based on what people performing them consider to be normal and convenient (Shove, 2003b). Louise reasoned how she kept taking long showers partly due to water being cheap, and referring to water as a resource *'that's just there'*. She also thought *'the system'* needs to change in order for her to be able to change. Additionally, she had studied and worked with questions related to reducing water consumption in households, and was of the opinion that water consumption needs to decrease. Knowing that one should take shorter showers while still doing the opposite, and being able to reason around why, links water – *a material being used up* – with the competence of reflecting upon the practice of showering. So too is the ability to reason around which way of showering might be considered sustainable or unsustainable.

Louise had at the time of the interview recently moved to Rosendal, and compared her new bathroom to the ones in her previous apartments. She was used to small and unpleasant bathrooms where she rushed to get ready, whereas now she had a new spacious one where she enjoyed taking long showers. For her, this represented everyday luxury and she described her current spacious bathroom as a sanctuary. These notions of luxury and

sanctuary align with Madsen and Gram-Hanssen's (2017) findings where Danish participants associated meanings of comfort and relaxation with their bathrooms. Although Louise was convinced there is a need to reduce water consumption, her current bathroom facilities – *materials in the background* – were encouraging her to take long showers (see Figure 4).

Some of the participants lived in buildings in which taps and showerheads designed for limited water consumption had been installed. These are so-called low-flowing taps and showerheads, where the default option is reduced water flow, with colder water compared to ordinary ones. Opinions towards these *materials in use* were mixed. The low-flowing devices had made some participants wonder whether there was something wrong with these items. Having realised the shower heads were designed this way in order to save water and energy, certain participants considered them to enable showering in a sustainable way. Others were less convinced. For instance, Lena thought the low-flowing showerheads resulted in longer showers.

> Lena: Yes, well, the water pressure is low. I have quite a lot of hair. It takes…it is not very convenient, it takes time.

Figure 4. Louise's bathroom which she described as providing her with everyday luxury.

She described how she understood that someone had made calculations proving such showerheads would lead to decreased water use. Nevertheless, she thought she had to use more water when rinsing shampoo out of her hair, as the water pressure was poor. She also described how she would take hot showers in order to get warm during the winter, but how the water pressure and amount of warm water did not suffice. This shows how people involved in practices have expectations towards the technologies they use (Shove, 2003b). For Lena, meanings include expectations about the showerhead, in addition to the comfort of getting warm. In contrast to other studies of showering (see e.g.: Eon et al., 2018; Gram-Hanssen et al., 2020), participants in this study did not bring up meanings of cleanliness. This might be due to the taken-for-grantedness of cleanliness, or that the shower practices performed by participants in this study are held together primarily by other meanings, such as comfort and convenience.

Cycling – a symbol for sustainability, in contrast to driving

Cycling was frequently brought up among the participants as associated with sustainability and without exception described with positive adjectives, and by some even as '*the right thing to do'*. Cycling was put forward as the most sustainable mode of transport, and repeatedly compared to driving a car. Many of the interviewees discussed how they try to avoid driving, something they considered an unsustainable practice. Instead, the bicycle – *a material in action* – represented an undisputed sustainability symbol, and thus feeds into the meanings of cycling. In contrast to findings by Buck and Nurse (2023), participants in this study did not talk about walking in relation to cycling, nor as a mode of transport. Instead, walking was mentioned mostly as moving about in nature. Despite being associated with sustainable transport, cycling is not only about getting from A to B without needing to rely on fuel or electricity, cycling is also a practice many of the interviewees enjoy doing and they see it as a way to exercise.

> Sven: You think, yes, I could have taken the car, but it's a bit better if I take the bike. It's good for my health, it's good for the environment and nature, and then there's less cars crowding the streets.

Sven had taken a photo of his favourite sports bike hung up indoors next to a wallpaper portraying a highway with multiple lanes, full of cars, in what appeared to be a traffic jam (Figure 5). For him, the bike represented everything the car was not: no crowding, no pollution, no sitting still, being unhealthy and waiting. These two *materials in use* thus shape contrasting meanings where the bicycle holds positive connotations relating to well-being and doing something for the greater good. A study among cyclists in Copenhagen reported similar findings in relation to meanings, with the exception of environment and sustainability (Larsen, 2017). Although being aware of cycling having such connotations, their participants did not consider these as reasons or motivations for their own cycling. Participants in Rosendal might be influenced Uppsala municipality's promotion of cycling in relation to their sustainability efforts.

Figure 5. Sven's photograph of his favourite bicycle, which stands in stark contrast to the wallpaper portraying multiple lanes crammed with cars.

While the joyfulness and convenience of cycling were echoed by many other participants, there were also many for whom cycling was the default option. These participants did not have the option to choose between a car or a bike as they had either decided to no longer own a car, or had never owned one. Most of them thought they did not need a car, and that it was fairly easy to live without one in Rosendal. They illustrated how the location of the district in relation to the city-centre and other parts of Uppsala made it easy to get around the city by bike. Additionally, they talked about how materials *in the background*, such as good bicycle lanes in the city enabled cycling as an everyday mode of transport. This resonates with other studies (see, for example: Buck and Nurse, 2023; Scheurenbrand et al., 2018; Larsen, 2017) where the perception of the physical infrastructure had a direct link to how easy or difficult cyclists considered the practice to be in different locations. Materials thus shape meanings of cycling in relation to whether these are seen as enablers or hindrances.

That practices are situated (Gherardi, 2017), becomes especially apparent in the practice of cycling. Aldred and Jungnickel (2014) show how meanings associated with cycling align with whether the practice is *emerging* as opposed to *established*. In line with their study in four different UK cities, my findings reflect how meanings of cycling are connected to location. Participants talked about the proximity of both services and nature, and how this meant they did not need to travel long distances and could thus easily lead an everyday life without a car. Furthermore, the positive meanings related to enjoyment and convenience also relate to how Uppsala is a city where cycling is established. Uppsala is

often described as a 'cycling city' and the municipality is continuously looking to improve its status as a cycle friendly city (see e.g.: Uppsala kommun 2022b). The idea of Uppsala being a cycling city was mirrored in participants' accounts, and in contrast to findings from emerging cycling cities (Buck and Nurse, 2023; Spotswood et al., 2015; Scheurenbrand et al., 2018) participants in this study did not consider the need for special skills an obstable, nor were meanings of danger or difficulty associated with cycling.

A recurring topic was how not owning a car was less expensive (Spotswood et al., 2015) and made life easier. There was one less thing to take care of, with no need to worry about service or other costs. Avoiding the unsustainable character of driving was often portrayed as an added value, rather than the main reason for not owning a car. This was clearly illustrated by Helene, who said she did not want to own a car because she was uncertain she would use it enough to motivate expenses. Meanings of inconvenience and unmotivated expenses thus contribute to avoiding the purchase of a material element associated with unsustainability. She described how it is easy to think of oneself as doing something out of virtue, when in fact the reason might lie elsewhere.

> Helene: I suppose I think it's really good I don't have a car, that I cycle. Although it's mostly because I can't afford to buy a car right now. Nevertheless, it's easy to think: Well done for not having a car…[laughter]

However, Helene was not fully convinced she would never own a car, although she did highlight how cycling was an important contribution towards a sustainable everyday life.

Cycling lanes, cycle parking and service points for bikes were *materials in the background,* mentioned as both enabling and hindering factors. Another example seen as enabling to some, and restricting to others, were the possibilities to service one's bicycle. A small bike service point in the inner yard of one participant's building was described as an enabling factor, while others wished for better service facilities. This ability to imagine how *materials in the background* could be further improved is here interpreted as a competence. As imagination is situated, it is enabled by and restricted to the current elements of cycling and practices associated with cycling. If the materials enabling cycling in Uppsala were less appreciated, or the meanings participants associate with cycling were less positive, the ability to imagine improvement would most likely take a different direction. Other competences of cycling discussed by participants include the ability to consider the bicycle as a symbol for sustainability, reflecting the different positive connotations of cycling and the ability to reason around the materials enabling or restricting the practice. Furthermore, enabling cycling through material elements such as cycle lanes is expected by the participants. Cycling thus represents a sustainable practice where people experience doing the right thing (Aldred and Jungnickel, 2014), while being enabled to do so by different materials forming part of the built environment.

Summing up and reflecting on the findings

What has been of interest when choosing to focus on the three practices of growing vegetables, cycling and showering, is how participants talk about specific sociomaterial

practices they themselves associate with (un)sustainability in everyday life, as well as how these practices are enabled or restricted within their living environment. Often, the same materials are discussed as both enabling and restricting. Yet, materials not only shape the practices of which they form part, they contribute to what comes to count as sustainable in Rosendal. As practices are sociomaterial, and because the area has a sustainability profile, I argue that what comes to count as sustainable is influenced by material elements in the area.

Certain materials are ingrained in meanings of sustainability to the extent that they become symbols for sustainability in everyday life. This was the case especially with the bicycle, *a material in use,* and the garbage sorting facilities, *materials in the background*. Although not discussed in depth here, garbage sorting was a practice that participants described as something one is expected to do, and they expected there to be good facilities in place, especially due to the district's sustainability profile. The presence of materials such as pallet collars for cultivation or bicycle service stations, contributes to reproducing certain ideas of what (un)sustainable practices are. Further, as imagination is situated, current sociomaterial practices associated with sustainability shapes imagination. While participants spontaneously imagined improvements for growing vegetables and cycling, this seemed more difficult when it came to showering. I interpret this as being due to the meanings of comfort and convenience and the *materials in the background* enabling showering – meanings being too important for participants to give up, and materials being difficult to question as bathrooms in new apartments follow certain standards. Due to the sociomaterialities of the practice, it becomes difficult to think of other ways of showering, or alternatives to showering for that matter.

While participants had the ability to reflect upon enablers and hindrances, as well as imagine possible alterations to practices, practical skills were almost entirely absent. I interpret this as being due to the taken-for-granted nature of the practical skills part of growing vegetables, cycling and showering. However, if the participants had not held ecohabitus (Carfagna et al., 2014) characteristics, the skills required to grow vegetables or cycling might not have been considered self-evident.

Concluding discussion

In this study, I departed from an understanding of consumption as embedded in ordinary everyday practices (Warde, 2005), which hold potential to contribute to both stability and change (Pink, 2012). Applying a practice theoretical lens when analysing the practices of *growing vegetables*, *showering* and *cycling* has allowed me to show how the ways sustainability is made in everyday life depend on different interconnected elements (Reckwitz, 2002). Employing Shove et al.'s (2012) framework, with specific attention to the different roles materials play within practices (Shove, 2017), and coupling this framework with the notion of sociomateriality (Gherardi, 2017; Orlikowski and Scott, 2008) highlighted the different ways materials are co-constitutive of practices. Further, the notion of situated imagination (Stoeltzer and Yuval-Davis, 2002) helped demonstrate how the ability to think beyond current meanings and ways of performing practices is both enabled and constrained due to imagination being situated in practices.

The aim of this paper has been to understand what type of everyday practices residents in an urban district with a sustainability profile associate with sustainability, and what enables residents to, or hinders them from, performing these practices. When considering the type of practices associated with sustainability in everyday life brought forth in the interviews, these can be seen as the 'usual suspects'. In discussions about what individuals can do in order to 'lead a more sustainable everyday life', cycling as opposed to driving a car, choosing locally produced food, and avoiding excessive consumption of resources such as electricity and water are among practices often suggested (see e.g.: Uppsala , n.d.; Naturvardsverket, 2020). Similar practices were discussed in the interviews.

The practices brought forth by participants imply what comes to count as sustainable in their everyday lives. Although there was a slight variation in the practices participants mentioned, they reoccurred to the extent that it appears they have a common understanding of what (un)sustainable everyday practices are. This understanding resonates with Uppsala municipality's sustainability plans in Rosendal, where those initiatives aiming to support sustainable choices in everyday life include bicycle infrastructure, waste sorting facilities, opportunities to grow vegetables and 'smart' energy solutions (Uppsala kommun, 2016). There were also initiatives linked to sustainability from the municipality that did not match the everyday practices discussed. For instance, the storm water management system (Uppsala kommun, 2022a) was not touched upon in the interviews. However, biodiversity and greenery were, according to the municipality, supported by the storm water system, and these features were in turn mentioned by participants in relation to growing vegetables. However, despite some 'mismatches', the participants' and the municipality's perspectives of what comes to count as sustainable in everyday life align in broad terms. This supports my claim that materials in the living environment not only enable and restrict certain practices, they also clearly play into reproducing ideas of what comes to count as sustainability. The different types of materials in the living environment form part of the urban sociomaterial assemblage that is both altered and reproduced by the everyday practices performed (Durose et al., 2022). Simultaneously, the municipality's sustainability plans and policies contribute to shaping the urban assemblage, in that they materialise in specific ways.

Although the materials are the main 'channel' through which those involved in planning new living environments can contribute to influencing resource consumption as part of everyday practices, the materials shape practices performed by residents in conjunction with meanings and competences. Despite practices always holding potential for both stability and change (Pink, 2012), I argue that common understandings of sustainability restrict change at a larger scale. Regardless of Rosendal's sustainability profile, the district is an example of how contemporary affluent living environments are commonly shaped. Based on this study, I argue such districts allow little space for performing practices in ways that could challenge current ideas of sustainability in everyday life, since the sociomaterialities only enable practices and imagination of a specific kind. Sustainability initiatives tend to take place in towns and cities because urban areas are commonly seen as sites for sustainability transformations (Rose and Cachelin, 2018; Castán Broto et al., 2019). Nonetheless, *if* new and developing urban areas are to have a central role in societal transformations by influencing consumption patterns taking

place within them, more radical meanings and new ideas for enacting sustainability are needed. Such meanings and ideas would require the sociomaterial urban assemblage of such areas to be significantly different than currently.

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Note

1. In the findings section, I bring forth the different roles of materials with help of Shove's (2017) articulation, yet I have chosen to refer to *materials* instead of *things*.

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Author Biography

Malin Bäckman is a doctoral candidate at the Department of Urban and Rural Development at the Swedish University of Agricultural Sciences. Her research focuses on exploring and questioning taken-for-granted ideas of urban sustainability, with attention to the co-constitutive relationship between the social and material.

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In this thesis Malin Bäckman explores what comes to count as sustainable in Rosendal, a developing urban district in Uppsala, Sweden. In light of how urban sustainability initiatives tend to reproduce the status quo, her aim is to question taken-for-granted meanings of sustainability and open up for alternative perspectives. She suggests that integrating feminist care ethics into urban development can foster more just and transformative sustainabilities.

Malin Bäckman received her BA in Industrial Design from the University of Lapland and her MA in Creative Sustainability from Aalto University in Finland. She undertook her doctoral education at the Department of Urban and Rural Development at SLU.

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