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Homelife in a Norwegian forest: a rural approach to the sustainable transition

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ABSTRACT
The introduction of technical solutions and the phasing out of unsustainable technologies in Elverum, a small town in the middle of the Norwegian forest, is the starting point for this discussion about homelife and why it can be resistant to change. Sustainable ambitions, goals, and solutions are inspired by the challenges faced by urban neighborhoods, but rural communities are also dealing with the sustainable transition and require opportunities for change that are relevant within their particular context. This article takes an emic insider view of how innovative, and potentially more sustainable technology, affects homelife by considering four main themes: choosing where to live; relationships with cars; leisure activities; and how Ydalir—a zero-emission neighborhood being planned in Elverum—is understood within this context. Rather than smoothing over variations in needs and preferences inside and outside urban and rural contexts, engaging with differences helps to avoid misunderstandings and disappointments. The goal is to encourage a co-production of meaning when approaching the challenge of achieving goals for sustainable futures. Furthermore, associations between homelife and social sustainability offer a site where the sustainable practice is strong. Many rural communities already possess qualities, such as equity, social engagement, inclusion, social interaction, safety, and security. We propose that starting with social sustainability, rather than technical innovation, has the potential to encourage sustainable practices in rural communities, thereby increasing the appropriation and domestication of sustainable ambitions outside of urban contexts.

Introduction

Homelife is at the center of the sustainable transition. A common approach to reducing household consumption is the introduction of innovative technical solutions that should enable reductions in energy use and carbon-dioxide (CO_2) emissions. This technology-driven approach has implications for homelife across the world, but homelife means different things to different people and in different places. Norwegian homelife is not the same as homelife in the UK or Bavaria. Norway is one of the wealthiest countries in the world and its high standard of living comes with steadily increasing household consumption.[1] With its small population (5.4 million people) and seemingly egalitarian and homogeneous society, Norway appears at first glance to be in a good position to roll out technical solutions for reducing household consumption.

But the introduction of technologies is not going as smoothly as one might perhaps expect. We propose that these complications are related to Norway's rural character. More than 20% of the population in Norway lives in rural areas where the population is <500 people per square kilometer (<1,250 per square mile) (SSB 2021b). Apart from very few population centers around the four largest cities (Oslo, Bergen, Trondheim, Stavanger), the 5.4 million Norwegians are spread thinly across an area that roughly corresponds to the size of Germany. The low population density creates many challenges that are different from those found in the metropolises that inspired the United Nation's Sustainable Development Goals (SDGs), and it is important to present the processes from the lived perspective of rural places (Roberts and Henwood 2018). This article discusses responses from people living in Elverum, a small town located in the middle of a pine forest, to plans for technological changes and we ask what were the reasons for passively and actively opposing the development of a zero-emission neighborhood (ZEN)?

The approach takes an emic insider view of how innovative and potentially more sustainable technology impacts homelife, one that stems from a

culturally interpretive tradition. The plans by the municipal government of Elverum for the Ydalir neighborhood to become one of the first ZENs in Norway provide the background to discuss the introduction of sustainable technologies and the phasing out of unsustainable technologies. The intention is to get closer to the people on the receiving end of innovative technical solutions, but not to probe their individual commitment (Shove 2003b). Rather, a detailed and close approach avoids assumptions about what unsustainable and sustainable practices are by offering knowledge about what makes people adopt and sustain practices within their families and social networks. In this way, we avoid analyses, "framed in terms of restraint, excess and individual choice" (Shove 2003a, 4) or behavior changes (Evans 2011, 109). Instead, we consider the relationships and experiences that household consumption makes possible, as well as why they are important to families in Elverum. The approach does not, however, avoid the need to address resistance to change and the politicized nature of human interaction with the environment and sustainability goals (Baer and Reuter 2015, 2). It instead offers wider practice-based insights into household consumption and how it is embedded in the social and cultural context (Shove 2010; Pekkanen 2021).

Between 800 and 1,000 dwellings will be built around a new school and a kindergarten in the Ydalir neighborhood. The plans for the neighborhood are part of Norwegian and international energy and emissions politics because buildings are responsible for ∼40% of energy consumption and 36% of greenhouse-gas emissions (GHG) on a yearly basis.[2] Long-term research targeted at reducing energy use and GHG releases from buildings is part of this political context, the "low hanging fruit" of climate-change mitigation (Müller and Berker 2013, 586). We conducted research in Elverum during a seven-month period of fieldwork, where we asked people to tell us stories about what they considered to be a good life today in the town. The approach is inspired by anthropologist Marianne Gullestad's study of ordinary everyday life among working-class women in Bergen where she asked questions about "how things are" rather than "what they ought to be" (Gullestad 1984, 23).

This approach, along with more systematic scrutiny of the mundane (Shove 2003a, 2), avoids unsophisticated understandings of households (Ellsworth-Krebs, Reid, and Hunter 2015). Tensions between the technical vision of a ZEN and everyday life are given context in Elverum. The case offers the opportunity to study relations between local and universal expectations for sustainable lifestyles and the feasibility of changes proposed in Ydalir. The article contributes to the limited literature on sustainable rural development in the global North. In line with Varley, McDonagh, and Shortall (2012) on the background of the questions "whose sustainability?" and "sustainability for whom?" we investigate how current technocratic visions that apply urban visions of sustainability to rural areas can—or cannot—contribute to a "living countryside." We pursue this objective by considering Elverum and Ydalir in terms of lived space (Rodman 1992), relational space (Roberts and Henwood 2018), and care in a sustainable context (Arora et al. 2020).

Our argument and the description of the Elverum case is presented in five sections. We first consider how household sustainability is often conceptualized before moving on to present some historical and demographic information about Elverum and the plans for the ZEN. The next section provides an overview of the methodology as well as the challenges that we faced during the recent pandemic. Four central themes uncovered during fieldwork that are important to the homelife of respondents in Elverum are presented in the fourth section. A discussion about why current expectations about sustainability can be challenging for rural communities and some concluding comments complete the article.

Conceptualizing sustainable homelife

When planning technical solutions for a sustainable future, households are typically required to become "better" at saving energy or "more" sustainable. These objectives require that we consider what "better" means and for whom (Healey 2012, 199). It also suggests a need to ask questions about the relevance of technical solutions within specific social and physical contexts, moving the discussion away from environmental sustainability, where the need for technical solutions guides the process, to consideration of social sustainability, a neglected pillar within sustainable development (Boström 2012, 3). In this way, the focus is redirected toward the needs and preferences of households and the community. Key principles associated with social sustainability are equity, democracy and social engagement, social inclusion, social mix, social interaction, sense of place, safety and security, and the quality of the built environment (Shirazi et al. 2022, 3). These principles are integral to a sense of community, and they are affected by the physical aspects of a place, such as access to services, technologies, infrastructures, and housing. Homelife, in this context, is not measured in terms of kilowatts saved or the number of journeys made by private car or by public

transport, but in terms of how everyday practices within the community or neighborhood are performed.

In other words, homelife refers to life at home or in domestic surroundings.[3] The term is applied here to indicate a community of practice that originates in and around the home. Homes in Elverum are solid material structures, often single-family houses with sizable gardens, and it is tempting to consider homes and homelife in terms of recalcitrant structures and inert continuity. But this perspective loses sight of homes as sites for mobility and change and the interaction between a household's members and the physical context provided by houses (Miller 2001, 4, 7). Houses mediate, and they offer a link between public and private domains, something which can be essential in a country like Norway where privacy is of great importance (Miller 2001; Garvey 2001). This does not mean that homelife is determined by material qualities, rather practices and materiality of the home can reconfigure alongside changes that are taking place in the context around them (Miller 2001, 9).

The physical context of houses or apartments in a narrow sense is not at the center of this analysis of homelife in Elverum. The idea of a home refers to the community established through emotional, relational, social, and cultural dimensions in and around a dwelling (Woods and Korsnes 2019, 139). Homes are from this vantage point associated with specific practices and with a community that supports the collective good (Douglas 1991, 297), but the practices can have a wider context than a house or apartment.

The extent and composition of the community of the home is an empirical question and has two closely related parts. The first begins with the assumption that homelife is a set of distinct practices that are connected to specific communities of practice and their members (Wenger 1999). Like all communities of practice, they share a common language, its members interact regularly, and they have a common project. The project is the creation of exchanges that are outside the logic of capitalist markets (Thompson 1971) and that is, moreover, invested in the creation of intimacy and trust. In this sense, they are communities of care (Arora et al. 2020, 251). Even though, care, trust, and intimacy are essential to the project of creating and maintaining homelife, we are aware that a home is not necessarily a place of protection or care. Normatively, this community is one of balance and sharing, described by Douglas (1991, 297) as having solidarity between members, and it is understood as supporting the "collective good." This can include the conventions, rights, and duties, described in

Mauss's (1954) gift economy, but the conventions and duties may also be experienced in terms of conflict, oppression, and negotiation (Brickell 2012). In Elverum, stories that residents told about homelife had positive associations. This was in part because we asked people to tell us stories about what they considered to be a good life, but it is also because of "closeness" (naerhet) which is a key concept for understanding what takes place in a Norwegian home (Gullestad 1991, 491). Closeness is about relationships and is characterized by care and by the feeling that members of the household become whole when they are with each other. Norway is a largely secularized society and formal rituals, ceremonies, and etiquette no longer guide routines and everyday life. As such, the informal and intimate activities associated with homes are significant and meaningful (Gullestad 1991, 490). This closeness and meaningfulness characterized the stories we heard about homelife in Elverum.

The use of technologies can be understood in terms of rituals that have patterns and dependencies and which provide households with what they need. The second part of a community is associated with these technologies and the rituals of technology use that help keep a community together. A community with lots of rituals enables information and support to flow freely between members (Douglas and Isherwood [1979] 1996, xxii). This idea of ritual dependencies underplays the constitutive role of things in socio-technical systems, but the idea that practices have meaning alongside each other and as part of a whole supports the idea of a community of care that Elverum's residents consider necessary to keep homelife going. In this way, technology, conventions, and social relations can be seen as working together, but the community can appear conservative. It may be difficult to see how changes can be made and how new technologies can be introduced into the system.

The idea of the co-production of meaning through use is central within science and technology studies (STS). This approach considers the ways technologies become part of everyday lives through processes of appropriation and domestication (Lie and Sørensen 1996; Berker et al. 2005). Domestication processes start before specific technologies enter the home, for example when a household discusses whether it should acquire a new device and what this acquisition would mean for daily routines (Livingstone 1992, 115–116). This is not just about the introduction of individual technologies, but also concerns the interaction between existing and new technologies and the practices associated with them. Considering novel devices in relationship with the systems and technologies upon

which they depend, encourages us to note the reconfiguration of ideas, actions, and habits associated with their use and appropriation (Shove 2003a, 12). A similar analysis is necessary when proposing to remove technologies that have become closely associated with the same system. Patterns, paths, and dependencies have consequences for change and stability. Perspectives from STS can help us to understand why some routes are taken and not others.

The community of the home is associated with everyday life and is a socio-technical context that is changing and evolving. It is not long since everyday life was solely associated with drudgery, a characteristic that now co-exists with ideas of closeness. According to Gullestad (1991), the breadth of meaning serves to make "everyday life a rich and potent political symbol" (Gullestad 1991, 480). New technologies and ambitions about reducing GHG emissions are introduced into this potent production and application of meaning. Within the home technologies and services may be valued because of convenience and their ability to help people to stay on schedule, but new technologies may not always be associated with improvements or energy-use reductions. They can also exacerbate the situation, coming at a cost to sustainability (Shove 2003b, 412–414). Tumble dryers that allow laundry to be dried even when it rains, but increase energy consumption, are an example, as is a convenience food that requires considerable amounts of transport. Household practices that support the community of the home are under continual revision, but we propose that the need to provide closeness and care remains constant.

The technologies associated with the home can be meaningful, but they can also be associated with ideas and consequences that are fragmentary and contradictory. An example of this is the paradoxical effects of the introduction of household technologies that were supposed to reduce drudgery but in reality, created "more work for mother" because of increased standards of hygiene and cleanliness (Schwartz Cowan 1985).

The case: rural Elverum and the ZEN concept "Ydalir"

Existing understandings and attachments to a place, as well as socio-economic history, are significant influences on local interpretation and evaluation of proposals for the introduction of new technologies (Pidgeon et al. 2021, 302). There are ∼21,000 inhabitants who live in and around Elverum's "urban" town center and in villages spread over 1,229 km² (474 mi²). The rural location and the distribution of

the population are reminders of the less profitable pre-World War II and pre-oil economy, where households were dependent on the land, and land inheritance went from father to son over several generations (Barnes 1957, 40–41). Households are no longer land-dependent and living in rural Norwegian communities is based on considerations other than primogeniture. But choices about where to live, and why, say something about expectations about homelife.

Importantly, for Elverum and this narrative, the town is surrounded by pine forest. Forestry was important to the development and growth of the town and it is still critical to its economy. No other town in Norway has so much commercial activity linked to forestry.[4] The neighboring municipality of Trysil has the largest area of forest, but Elverum tops the logging statistics (340,000 cubic meters of timber in 2019). The topography of the town is relatively flat but from any vantage point, there are trees and forests as far as the eye can see. Within a climate context, forests provide effective CO_2 capture, and timber is a renewable material resource. The forest also influences the social context, where people choose to live, their working and leisure activities, and how they interact with their families.

Elverum is not an urban context typical of national and international sustainability ambitions but is rather a rural town serving the smaller communities around it. The Norwegian countryside is characterized by long distances, middle-sized or small towns, numerous villages (tettsteder), and hamlets (farms and associated buildings) (SSB 2021a). There are few large cities. Despite its rural reality and governmental focus on regional and district development (KMD 2020) research intended to support sustainable development goals and ambitions for GHG reductions often has an urban focus. This is not just a Norwegian characteristic, according to Berisha, Caprioli, and Cotella (2022), the United Nations SDGs favor cities and they struggle to grasp regional challenges and the heterogeneity of problems. Technical solutions are often inspired by and developed for urban environments (Zulauf and Wagner 2021, 1) and presuppose, for example, a certain population density to reach an efficient operational scale. Small- and medium-sized municipalities have climate plans and goals, but the rural population appears peripheral to the sustainable transition. The population in Norwegian rural areas is declining, while the population in the largest cities is growing (SSB 2019). Rural areas are not as attractive for establishing new businesses and Elverum and towns like it are losing workplaces (Vareide and Nygaard 2015). Planning for changes in rural locations should consider the differences

between urban and rural areas and not assume that one size will fit all.

The division between urban and rural areas is not normally part of the ideal presented nationally and internationally. In the ideal version, Norway is an egalitarian and homogeneous society, without class divisions (Østerud 2005; Onozaka and Hafzi 2019). The ideal is a stereotype, useful when reinforcing images of Norway as a nation in comparison with others. This conception, while sending out positive images of Norway and its successful welfare state financed by the export of oil and gas, influences policy development and can have consequences on the everyday lives of individuals (Abram 2008, 2). Not everyone agrees with the ideal and in the words of a prominent anthropologist: "We Norwegians are actually not very alike or unchangeable" (Eriksen 1993, 3).[5] But the ideal remains, encouraging a negation of differences between cultures, ethnicities, and incomes and smoothing over variations in needs and preferences inside and outside urban and rural contexts.

Elverum municipality has been experiencing a slight but incremental decline in its population and business development since 2013 (SSB 2021a; Elverum Municipality 2021). Forestry is still important to the local economy but does not provide many jobs, and the majority of the population works for the municipality or service industries. The plans for the Ydalir neighborhood are part of an ambition to change this negative trend and to place Elverum on the map as a forward-thinking municipality. Designs for the future neighborhood show a dense, car-free, urban environment with young people and families enjoying green spaces and wooden houses (Figure 1). Elverum municipality, in collaboration with the Research Center for Zero Emission Neighborhoods in Smart Cities (known by its Norwegian acronym, FME ZEN, and an initiative of the Norwegian University of Science and Technology (NTNU) and local and national actors from the construction industry), is planning and developing the Ydalir neighborhood.[6] The ZEN concept operates with seven criteria where zero emissions can be achieved: zero lifecycle GHG emissions, increasing energy efficiency, renewable power supply, sustainable mobility, economic sustainability, spatial qualities to stimulate sustainable behavior, and innovative solutions (Wiik et al. 2018).[7] Together, the criteria are meant to cover the most relevant dimensions of CO_2-emitting activities in the design, construction, and daily life of a neighborhood. Nine neighborhoods are currently working with the ZEN concept, but they are not required to achieve zero emissions in relation to all seven criteria; rather they each have chosen three criteria that seem most relevant for the context and where there is the greatest potential to realize the objective. Elverum municipality has chosen GHG emissions, energy, and mobility. These criteria give an indication of which technologies will be introduced or phased out and have implications for the response of the people living in Elverum.

Life cycle analyses conducted by the ZEN center's researchers have revealed the importance of reducing fossil fuel-based individual mobility if the goal is to reach zero-emission targets in the neighborhood (Lund, Lausselet, and Brattebø 2019). The specific technologies that the people of Elverum are expected to adopt are therefore mostly related to the reduction of this type of transport and mobility. The innovations involve new forms of collective transport including driverless shuttle buses that are accompanied by restrictions on access to personal cars as a way to reduce individualized transport within the neighborhood. In the context of the case studied here, it is important to note that the appropriation of these technologies is in its early stages *before* they enter the everyday lives of the households (Livingstone 1992, 115–116). They are, thus,

Figure 1. An illustration from the feasibility study for the Ydalir neighborhood (Copyright Tegn3 architects).

still on the level of technologies that have a considerable degree of interpretative flexibility (Pinch and Bijker 1984). Nevertheless, the proposed solutions for Ydalir are clearly unusual within the rural context around Elverum and have not achieved widespread approval from people living in the town.

Methods: fieldwork and the impact of the pandemic

Critical voices among the local population attacking the plans for the Ydalir neighborhood were the starting point for the fieldwork, but instead of asking why people disliked the plans for the new community, we asked questions about what they liked about the life that they live today, what they considered to be a good life, and what they expected of a more sustainable future. Our starting assumption was that homelife in Elverum today, everyday practices, and residents' preferences and ambitions influence their expectations about the future and their interpretation of the municipality's sustainable ambitions for Ydalir. The intention was to gain access to experiences and aspirations that are personalized and culturally specific, as well as ideas about plausible futures and sustainable lifestyles that are based on experiences, practices, and local knowledge (Pink and Postill 2019, 39).

The fieldwork period started in June 2020 and continued until March 2021. In all, we conducted 35 conversations with people from Elverum. Fourteen of the conversations took place via videoconference (Microsoft Teams) and we followed up eight of the digital conversations with face-to-face meetings. In addition, we spoke with children from a kindergarten, two classes from a primary school, and groups of students from the local secondary and high schools. Conversations were conducted on a one-to-one basis, or with friends, partners, families, or classmates. Accordingly, we have counted here the number of conversations rather than the number of respondents.[8] Most conversations took about 40 minutes, but some lasted more than 2 hours. The participants in this study are anonymized and for the purposes of this article we have assigned each individual a pseudonym.

The Ydalir neighborhood has not yet been built and the fieldwork took place within the wider context of Elverum municipality. Starting with stakeholders associated with the ZEN center, we established contacts in schools, the library, a shopping center, and local offices. A few conversations took place in homes, and these were digital, but homelife was central to the conversations. A broad group within the local population participated in this study and included people from different age groups, cultural backgrounds, working lives, genders, and social situations. The youngest person to whom we spoke was 3 years old and the oldest was 83 years of age.

The COVID-19 situation in Norway in 2020 and early 2021 affected the fieldwork and procedures did not turn out as initially planned. After a promising start in June and several visits through October 2020 (when infection rates were low in Norway), we were able to conduct workshops in classrooms and to organize conversations in an office, the library, and a local shopping center. However, in due course meeting people anywhere, especially unfamiliar researchers from out of town, became difficult. From November 2020 until March 2021 fieldwork moved out of the local context and onto the Microsoft Teams platform. In March 2021, when infection rates had again declined, we resumed our fieldwork in Elverum on a face-to-face basis. We followed up with respondents to whom we had previously spoken via Teams and commenced new conversations. The continuing restrictions due to the pandemic meant that visiting people in their homes continued to be difficult, but digital conversations inspired curiosity about what the homes were like and where they were located in the town. Our solution was to ask for follow-up meetings close to homes so our conversations took place on doorsteps and when walking or driving around neighborhoods.

In the following section, excerpts from conversations provide insight into what people thought of the planned changes to technologies in the community. They also indicate where homelife shows signs of sustainable or unsustainable practices that encourage or challenge the municipality's plans for Ydalir. The conversations point to an understanding of sustainability that is broader and more inclusive than the technical and environmental focus of the ZEN concept and we suggest that qualities associated with social sustainability are shown to play an important role in the rural context of Elverum.

Homelife and the forest

Transport, housing, food, and recreation are the dominant consumption-based sources of emissions in Norway (Steen-Olsen, Wood, and Hertwich 2016). The choice of themes for our discussions is connected to these four factors and to the seven criteria associated with the ZEN concept presented in the description of Elverum, particularly sustainable mobility (Wiik et al. 2018). Homelife and the community of care are part of the description of each theme. The former considers why Elverumsings (a person who is either from Elverum

or a long-term resident) have chosen to live in the municipality. We then move on to consider the relationship families have with their cars, before taking a look at the forest and the value it has as a place for leisure activities. Finally, local descriptions of Ydalir as a location for sustainable lifestyles are discussed.

Our fieldwork started with discussions about sustainability with children in Elverum who were in the sixth (11–12 years old) and seventh grades (12–13 years old) in a local primary school. The children prepared for the discussions by choosing two things that they liked about their hometown and their choices set the scene for the whole period of fieldwork. They said that they liked the forest and that there was nature all around them, that Elverum is a small town and a safe community, that they are always close to their friends, that everyone is a friend, and that everything that they need is close by. The children also noted that there were plenty of leisure activities and that there was a lot of snow in the winter. During conversations with adults in Elverum, the same words and phrases were repeated. It is possible to offer a critical appraisal of the town for many of the same characteristics: for being small, for being too close, for being too far away from more vibrant and cultured cities, and for being surrounded by forest, and some people did, but in sum the conversations established a picture of the town as a haven within a forest.

Choosing elverum

Ragnhild, a mother of two children who grew up in and around Elverum, explained why she lives in the town.

> We have family around us. We can help them, and they can help us. My husband is also from Elverum. My mother lives in Elverum. My in-laws live here … When you have family and friends in a place, you connect to it. I had a job first in Fredrikstad but I like it best in Elverum … It is very centrally located in the country. It has good outdoor activities, and it is almost urban. It's a short distance to the forest and a short distance to the town center. Its lovely to be able to walk or cycle to work. Everything is close by … It's child friendly … The countryside is wonderful.

When asked to describe the good life, Ragnhild said, "The good life is being with those you love." Living in Elverum enables adults to be close to their families and to be able to create the same caring community that they had experienced as children. Karl said that Elverum sometimes felt a bit too small, "because everyone thinks that they know everyone" but at the same time he emphasized the importance of this small-town community.

> When my wife died, my closest friends were there for me and that circle became much bigger. People wanted to help me and my children. They came by with food, flowers, and warmth. They offered to cut my lawn. There seemed to be no limit to it. People were there when things got tough.

Questions about the good life caused Elverumsings to reflect on what they already had and what they required for a sustainable future. The community associated with the town of Elverum is for some residents an extension of homelife, but the quality of the built environment is not what they think of in the first instance. This community is a place where Douglas's (1991, 297) "collective good" is at the forefront of everyday practices. It affects why residents have chosen to live in the town. In the descriptions by both the school children and the adults of what it means for them to reside here, we found accounts of many of the qualities associated with social sustainability: equity, social engagement, social inclusion, social mix, social interaction, safety, and security (Shirazi et al. 2022, 3). We do not mean to propose that the plans for a ZEN at Ydalir are in opposition to the existing collective good. After all, the houses pictured in Figure 1, are not very different from the homes already found within the community and they will be built in the same safe, caring environment that Elverum Municipality offers to all its residents. Opposition arose particularly around the plans for sustainable mobility in the neighborhood and we turn in the next subsection to a discussion of the role of cars in the town.

Cars

The physical environment influences homelife in Elverum. Descriptions by both the children and Ragnhild mention distance, the importance of being close to everything in town, and situated not too far away from the rest of Norway. Elverum is a place where there are short distances between people and the services that they need. At the same time, when discussing plans for Ydalir these features of the community did not seem so close. In the original zoning plan for the neighborhood, parking was not allowed outside of homes because of an intention to reduce the number of private cars. A focus on reducing CO_2 emissions through mobility was the main criterion chosen by proponents of the ZEN concept in Elverum. The infrastructure for the neighborhood is already in place, such as roads and district heating, and a school and a kindergarten have been built in the middle of the area where new housing is also planned. The proximity of the school and kindergarten is intended to enable children to walk or travel by bicycle, reducing the need for parents to drive them and to make the

neighborhood safe for cyclists and pedestrians (see Figure 3). In addition, Elverum is flat and the town center, with its shops, medical offices, and sports facilities is a 15-minute walk away. Elverumsings greeted the plans to limit the number of cars in the new neighborhood with disbelief and the zoning plan was revised to eliminate the provision disallowing cars to be parked outside of homes. Despite this change, our conversations often returned to the difficulties that families would face without a private vehicle in Ydalir.

Stine and Tor, a father and daughter who have moved to Elverum, provided some insight into how important cars are to people living in the municipality.

> Stine: Everyone wants to park their car right outside the shops. Elverumsings need educating. They don't even turn the engine off.
>
> Tor: For a person like me who is fond of the USA, it's like coming home. A car right outside the door and driving big American cars. These are my people."

Tor's American dream in rural Elverum is not exceptional. Others have noted that Norwegian villages can be more American than America (Bryn 1992; Eriksen 1993) and that American cars (*Amcars*) are essential to this image (Lamvik 1994). The American dream is under pressure in Elverum from expectations about sustainable mobility where transport is public and electric. Elverumsingers can understand that living without a car in Oslo or other larger towns is possible, but their own town lacks the population density for a more active bus service, and trains to Oslo and neighboring towns run infrequently. Henrik, a teacher living in Elverum, described the transport challenges.

> We should have more public transport. The train is a fantastic way to travel … A lot of people who live in Elverum work in Hamar. It only takes twenty minutes by train, but the system is just decaying … My wife's elderly mother lives in Hamar, but it's easiest just to get into the car.

The local transport system challenges the ability of families to manage everyday responsibilities. Our conversations made it clear that the ability to take care of the family largely depends on personal cars which reduce distances and keep family life going. The distances that they are dealing with are not just spatial, they are between people. In this way, the relationship with the car becomes "profound" because the vehicle encourages relationships between people and it becomes essential to the relational context (Miller 2008, 1). Stine and Tor's discussion about the importance of private vehicles in Elverum emphasizes the role of the car as part of homelife.

> Tor: It [the car] secures everyday life for a family. It has to be easy to get to and from the kindergarten or school. It is time which tests most families with small children. What if they don't get a place in Ydalir kindergarten and have to travel to another part of town? What if they also work somewhere else? It really is time that is difficult.
>
> Stine: As a parent you have to be better at not simply driving them everywhere.
>
> Tor: I love driving my grandchildren around!

The private fossil-fueled cars are more than a means of transport or sources of CO_2 emissions. They help to keep families close and are means to show that they care. In addition, distance is not the same everywhere and for everyone. It depends on who you are, young or old, healthy or sick, and distance is different in a small town like Elverum than in a city like Oslo where public transport is more accessible. Electric cars are also part of this caring-car dependency. At least two of the people with whom we spoke in Elverum have electric vehicles (EVs) (incidentally Stine was one of them). In some cases, there was talk of EVs being second cars. Norway is known for the successful transformation into an EV society (Anfinsen 2021) and the local charging network is vital in this context because of Elverum's distance to the rest of Norway. Although generally positive to EVs, Elverumsings remain unconvinced about their practicality because the charging network is not well established outside the largest cities. Residents of the town are still largely dependent on fossil fuel-driven private cars and these vehicles dominate Elverum's town center (Figure 2).

Leisure

Homelife interacts with practices associated with work, school, and leisure. When talking about the good life respondents in our conversations regularly emphasized how families spent their leisure time and much of this time was in the forest. In particular, the closeness of the forest was described as valuable and Elverumsings were able to access the forest any time of the year, but they emphasized the winter and skiing as especially important. There was joy in being able to step out of doors, strap on skis, and head straight into the forest.

> Sara: I can put on my skis on Christmas Eve or on a Friday afternoon after work. My partner often drives me up to Haernes [a village close to the town of Elverum]. It only takes half an hour from there on skis to the town center. The kids are really fascinated by being able to do this. We live next door to a fantastic ski track [*skiløype*]. We don't need to use the car … It gives the feeling of luxury and freedom. You won't find that anywhere else.

Figure 2. Main street in Elverum town center with cars parked along the street and in front of local businesses. Photograph by Linda Vespestad.

Figure 3. The Ydalir neighborhood in 2021. The school and kindergarten are in the center, surrounded by plots for the planned housing. Photograph Kokkvoll.

Sara manages a large business, but her idea of luxury was not associated with consumer goods or travel. For her, the good life involved skiing and being with her family. The forest offers somewhere to be active and to keep the family close, but there is more to it. When Tone, who is 83, looked back on the good life in Elverum, she was reminded of when she was grieving after the loss of her first husband. Being in the forest on skis provided comfort.

> The good life is skiing up to Svenkerudkollen. When I had finished work, I could go home and strap on my skis and go up there, and just be in the forest. When I became single again, I became a good skier.

Elverumsings understand that not everyone likes the forest. In the summer it can be hot and full of insects, but it is among the reasons why many residents have chosen to make their homes in the town. In several cases, they had moved back after living elsewhere because they missed the forest. We could have asked people how often they actually went skiing, but the point is the value that people place upon the potential to go out into the forest. This love of the forest can be linked to a moral narrative about what is typical for Norwegian culture (Berker and Gansmo 2010, 175). It connects the town to national values and indicates care for the natural resources around them.

Skiing and the concept of outdoor life are significant in the history of the development of the Norwegian nation-state, epitomized by polar heroes Fridtjof Nansen and Roald Amundsen. Life out of doors exists in parallel to the material and geographic structures of work. Leisure activities support identity construction which is reproduced by family socialization (Arnesen and Skjeggedal 2003; Abram 2012). But a rural lifestyle or an interest in nature and the outdoors does not automatically equate with a sustainable lifestyle. Low population density, when combined with high standards of living and a desire to be closer to nature, can be a threat to nature (Berker and Gansmo 2010, 173). The interest in nature in Elverum appears to be in contrast to the love that residents have for their cars, but the fact that they are close to the forest and to ski tracks makes the leisure footprint a little smaller. Elverumsings use their cars for work and for transporting their children, but leisure activities are not bound to vehicles. In the larger cities, the opposite is often true, ski tracks and cabins are a 2–4 hour trip by car, while workplaces and kindergartens are accessible by public transport.

Ydalir

When asked directly about what they thought about the planned ZEN in Ydalir people considered the question in terms of what the neighborhood says about environmental sustainability and they were in general critical of the plans. Their disapproval was influenced by the local media—after all controversies sell newspapers—but the negative appraisal is also located within the physical context and the everyday practices connected to homelife described in the three previous themes. Gunnar described Ydalir as "a no-man's land" and Tor was disappointed. The primary school and kindergarten are in place, but only two houses have been completed as of mid-2022. The other houses in the area are not within the boundaries of the ZEN (see Figure 3).

> One of the first things we heard about (when they moved to Elverum) was Ydalir. A green neighborhood with a school, a kindergarten, and environmentally friendly houses. It is not getting built … You have to look right up to the edge of the forest to see any houses. It doesn't look like a green neighborhood.

In other descriptions, the site of the neighborhood is described as brown rather than green, and as a desert rather than a forest. The second indication that Ydalir currently represents something other than sustainable comes from descriptions of a warehouse for electrical goods and two other stores

that have been built next to the neighborhood (Figure 3, top left corner). People are driving to Ydalir to shop, but the neighborhood's residents are not expected to have personal cars. Gunnar who has lived in Elverum all his life summed this up,

> It seems a bit odd when there are big carparks next to Ydalir, ones that the rest of Elverum is driving to. It has become another satellite that you drive to. The electrical goods shop used to be in the town center.

Both Gunnar and Tor's comments show environmental sustainability being sensitive to visual interpretations and to connections with homelife and to the community of care. The way the neighborhood looks today is in contrast to the "green" ambitions promoted by the municipality and ZEN. The location of the stores which was intended to provide Ydalir with services within walking distance has ended up supporting the negative interpretations of the neighborhood. The visual qualities will be improved when more houses have been built, but the process has been slower than expected and many of Elverum's residents remain unconvinced by the sustainable ambitions for the neighborhood.

Discussion: challenging homelife

Elverum's location in a pine forest is the starting point for this article's discussion about how people respond to the introduction of sustainable technologies or the removal of established less sustainable ones. From the vantage point of this particular town, which is described by people across age groups as a haven for families, we considered what homelife requires to support a community of care that is essential to keep families close. This was addressed through four main themes: choosing where to live, relationships with cars, leisure activities, and how Ydalir is understood within this context.

There is increasing attention to the neighborhood level and to the social dimensions of sustainable communities and societies in urban planning (Pagano 2015; Brownill and Bradley 2017; Shiraz et al. 2020). Neighborhoods provide a manageable size to consider the "social dimension." Household consumption in Norway is ranked as one of the highest in the world and this makes everyday life in Norwegian towns and neighborhoods incompatible with a sustainable future.[9] The pressure on individuals and households to take steps to reduce GHG emissions is increasing (Masson-Delmotte 2018; IPCC 2021) and with this situation there are growing expectations that we change how we organize our societies and our lifestyles (Westskog et al. 2021, 336). Our study of homelife in Elverum points

to communities of care being smaller and household-based, where the context is defined by activities that move and change throughout the day according to the needs of residents. The idea of neighborhood scale, although relevant in urban contexts, appears less suitable in rural locations.

The description of homelife in Elverum uncovered a resistance to change and solutions associated with environmental sustainability that emphasize the importance of the mundane and insight from the social and cultural context (Shove 2010; Pekkanen 2021). It is not obvious from characterizations of homelife by Elverumsings where changes in household consumption should take place. The community of care that allows families to keep its members close is conservative and seems undisposed to change, particularly to the technical changes deemed crucial by developers and designers associated with concepts for ZENs. However, the community of care should not necessarily be seen in terms of resistance to future-orientated concepts. Rather, it should be regarded in terms of interdependent assemblages that include people, values, and technologies; moreover, it is a place where questions about who does the work of caring, for whom, and for what purpose are essential (Arora et al. 2020, 251). In Elverum, interdependence and care are highlighted by resistance to reducing the use of private cars. The location of villages in relation to the urban center and its services and the lack of efficient public transport services limits participation in the transition to more sustainable mobility solutions.

Choosing to live in Elverum in practice means that people have selected car dependency. Skepticism toward reducing the use of private cars can appear conservative, but it is also based on everyday practices associated with homelife and keeping households running according to the requirements of their members. Local resistance to centralized sustainable solutions does not mean that communities do not care about the future, nor should it mean that local visions of care are less valuable than the controlling centralized visions or solutions (Arora et al. 2020, 259). Questions pertaining to change depend not on the distance to the town center or access to cycling paths, but on why people are making the car journeys. Until Elverum is connected to an efficient charging system for EVs or has a train service that runs regularly, resistance to ambitions to reduce trips by private carbon-dependent cars will remain. Rural areas of Norway lag behind the larger cities with regard to systemic changes to transport systems and the proposed restrictions on the use of private vehicles in Ydalir

occurred before wider infrastructural changes were in place.

On one hand, the interaction between homelife, everyday practices, and infrastructures during the co-production of meaning in Elverum can limit the municipal government's ability to establish acceptance for changes to technology among local residents. On the other hand, the associations between homelife and social sustainability offer a site where the sustainable practice is strong and has, we propose, the potential to encourage sustainable practices. Feedback from school children and families suggests that qualities, such as equity, social engagement, inclusion, social mix, social interaction, safety, and security (Shirazi et al. 2022, 3) are established in Elverum. The quality of the built environment supports the community, but our conversations about sustainability focused on who people are, what they do together, and how to manage the connections. The physical context tended to be a peripheral consideration with one important exception, namely the forest. The rituals of daily life (Douglas and Isherwood [1979] 1996, xxii), are connected to this landscape. Skiing on wooded trails is a practice that has meaning because it helps to explain why people live there and is valuable because it keeps families together.

Access to the forest in Elverum is associated with the good life and is not associated with GHG production. The forest trails need upkeep but other than that skiing in the forest requires little infrastructure. The paths are close to people's homes and can be accessed without private cars. The good life in Norway is often associated with enjoying good food, traveling, and generally having the economic resources to live as we choose and to buy whatever we want (Syse and Müeller 2015). This largely financial ability to consume the good life and to enjoy leisure time challenges efforts to reduce energy use and GHG production as required by climate politics, but the good life is not always measured in terms of financial resources. Subjective experience, where happiness and satisfaction are important factors, also influences ideas of the good life (Hellevik 2015). In Elverum happiness and well-being is about families and the forest. In addition, the forest connects local residents to a moral narrative about caring for nature which is typical in Norwegian culture (Berker and Gansmo 2010, 175).

Care for nature found in the value placed on the forest resonates with the definition of sustainable development developed for the Brundtland Report, notably "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland 1987). This formulation emphasizes the

environmental rather than social dimension of sustainability (Pekkanen 2021, 242), but the definition is rooted in Norwegian society. Gro Harlem Brundtland lead the World Commission on Environment and Development (WCED) and was the Norwegian Prime minister at the time of the report's publication in 1987, which means the connection between the work of the WCED and Norwegian society is strong (Langhelle 2001). Conversations with people in Elverum showed them to be uncomfortable with the definitions and goals of sustainability, but when offered several potential definitions this was the one with which they were most comfortable. Other ideas about sustainability planning or social sustainability were relatively unknown (see, for example, UNDESA 2015).

There are countries that are far more polarized with regard to opinions about climate change than Norway, and although it is from the outside often regarded as being among the countries with a population who care most about the environment, Norway is not as homogenous and egalitarian as the country often presents to the outside world.[10] Taking time to consider the reasons for and implications of differences can be worthwhile. In Norway's case difference does not have to be a challenge and not having control can have positive consequences. Allowing for differences in cultures and places encourages the co-production of meaning when approaching the challenge of achieving goals for sustainable futures. Rather than smoothing over variations in needs and preferences inside and outside urban and rural contexts, appreciating the agency of communities and allowing different ways to know each other (Arora et al. 2020, 259) will help to avoid misunderstandings and disappointments. Making connections allows for the co-production of meaning, encouraging the appropriation and domestication of sustainable ambitions (Lie and Sørensen 1996; Berker et al. 2005).

Conclusion

Elverum's location within the forest has implications for the community of the home, the ability to care for this community, and for both sustainable and unsustainable everyday practices. Ideas about community and care are relevant within a context of social sustainability which is applicable beyond this small Norwegian town. Although caring practices appear resistant to change, they do contain the seeds of change, because practices are always open to adaption, improvization, and experimentation (Warde 2005; Evans 2011). These beginnings can provide inspiration for other communities struggling with the goals and expectations associated with the sustainable transition.

When planning sustainable solutions, establishing a lived space where local meaning and values are given the chance to meet expert opinions and respond to technical solutions before they are imposed upon the community would provide residents with the tools to navigate the design and development phases. In Elverum, local residents are, when living the good life, building upon ideals about sustainable lifestyles. Ideals that are local and defined by the forest, but at the same time connected to national identity. Central among these aspirations are caring for the community of the home and living with and taking care of the natural resources of the local area.

This potential for change was initially hindered in Elverum by the focus on mobility in Ydalir and caused negative impressions about the new neighborhood. Local ideas about the need for private cars challenge conceptions about sustainable mobility that focus on physical distances rather than the purpose of particular journeys. Technological changes that challenge homelife, because they offer opposition to concepts of care struggle to be accepted in Elverum. This opposition could be interpreted as a struggle by households to incorporate ecological sustainability into their everyday lives, but in the Elverum example it is rather a case of residents not finding the technologies to be acceptable because of social and physical limitations. The communities of practice around the project of creating and maintaining intimacy, trust, and care that we encountered in Elverum rely deeply on car-based mobility to realize their ideals. The proponents of an urban vision of zero-emission Ydalir dismissed these practices as not sustainable. However, if forced to choose between pursuing their project and living sustainably—in the sense implied by the Ydalir project—these communities will continue to favor the status quo. The lack of differentiation between the needs of rural and urban populations when establishing goals for a sustainable transition can exacerbate the divisions between urban and rural areas, encouraging rejection of sustainability goals and slowing down sustainability transitions.

Closing the gap will be no mean feat. It requires a national policy that gives as much attention to rural needs as to urban challenges and solutions, and offers rural communities the incentives to make the infrastructural changes and to provide sustainable solutions that are relevant to the community. It will also require greater sensitivity to what it means to be a sustainable and caring society. A sustainable future does not mean change for the sake of change and is more than technologically innovative, it is

safe, inclusive, democratic, and equitable and enables families to continue to provide what they consider a necessary and sustainable community of care.

Notes

1. Based on gross domestic product (GDP) per capita, Norway is one of the wealthiest countries. See https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?most_recent_value_desc=true. In terms of household consumption, based on expenditures per capita in 2020, Norway ranks among the top ten nations in the world. See https://www.indexmundi.com/facts/indicators/NE.CON.PRVT.PC.KD/rankings.
2. See https://ec.europa.eu/info/news/focus-energy-efficiency-buildings-2020-lut-17_en.
3. See https://www.oed.com/view/Entry/87898?redirectedFrom=homelife#eid.
4. See https://www.elverum.kommune.no/landbruk-og-miljo/skogbruk. Authors' translation.
5. Authors' translation.
6. See https://ydalirbydel.no. The ZEN concept includes solutions for advanced energy systems and renewable energy sources and it considers the impact of mobility and spatial qualities on the neighborhood as a whole. Activities are supported by life cycle analyses which calculate the ability of a neighborhood to reach zero emissions.
7. ZEN's methods and criteria are described in Wiik et al. (2018) and at https://fmezen.no.
8. Conversations were transcribed professionally and then translated by the authors, who are both long-term residents in Norway and fluent in Norwegian.
9. Household consumption is calculated per capita based on the final expenditure and market value of goods and services, including products such as cars, washing machines, and home computers. It does not include the cost of purchasing a home. See https://www.indexmundi.com/facts/indicators/NE.CON.PRVT.PC.KD/rankings.
10. See https://www.usnews.com/news/best-countries/slideshows/the-countries-that-care-most-about-the-environment?slide=12.

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