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Transitions on the home front: A story of sustainable living beyond eco-efficiency

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ABSTRACT

The environmental impact associated with modern ways of living is widely recognized and has been increasingly problematized. A prevailing discourse in sustainable housing tends to focus on building performance, along with compelling stories of "green" lifestyles and attractive urban housing concepts, while avoiding storylines that suggest more profound changes in society and everyday life. This paper argues that in order to address the resource-intensity of contemporary ways of living, we need to engage with perspectives of transition that go beyond technical eco-efficient solutions. Other narratives are therefore explored, based in empirical insights from home visits and in-depth interviews with people seeking less impactful and more self-sufficient ways of living in the context of an affluent society as Sweden. The paper looks at how alternative narratives are manifested in (and through) the home as a starting point for transitions to a low-impact society. Highlighting aspects of agency, situated in the everyday and in the existing built fabric, these "home front transitioners" provide another story – one that questions mainstream assumptions of a pre-defined green lifestyle, and contributes to a more diversified perspective on sustainable living.

1. Introduction

With a growing sense of urgency, the environmental implications associated with modern society pose significant challenges to political visions for sustainable development. This includes often-highlighted aspects of unsustainable forms and levels of production and consumption, yet in essence revolves around the resource and energy-intensity of contemporary ways of life as such. Interconnected issues of resource depletion, climate change and ensuring an equitable development within planetary boundaries are complex and "wicked", in that they pose a challenge for planning and policy that goes beyond any single scientific discipline, and to which there are no optimal or definite solutions [1]. However, a prevailing ecological modernization discourse in sustainable building and planning has tended to take a more narrow approach to sustainability, relying on technical solutions rather than social dimensions [2], in creating compelling stories of "green" lifestyles, attractive urban housing concepts, and informed consumer choices promoting an efficient use of resources [3,4].

How we organize societal functions, facilitate everyday practices and social interactions – that is, how we build societies – is inherently linked to both social and environment benefits as well as detriments. The energy, material and land use implied in developing and maintaining the built environment is significant, and greenhouse gas emissions from buildings are expected to rise, related to increasing wealth, changes in lifestyle and urbanization [5]. This paper argues that transitions to less resource-intensive ways of living, particularly in high-consuming affluent societies, will need to engage in ways of telling different stories of low-impact futures. Stories that challenge dominant techno-optimistic notions of "sustainable housing" or "sustainable living", and instead place a focus on changing practices and interpretations of home, as a node of everyday life, at the crucible of low-impact transitions.

There is an increasing emphasis on social science perspectives in research on energy use, and the need to explore integrated strategies is more and more commonly recognized [6,7]. Yet such perspectives have previously been rather underexplored in predominantly techno-focused research on energy and buildings [8]. Calls for a narrative turn in energy research however acknowledges the role and responsibility of researchers in telling stories that embrace complexity in a range of human relations and endeavors [9]. This, it is here agued, must include critically examining the adequacy of eco-efficient technical solutions alone in addressing the resource use implied in everyday life, seeking a diversity in narratives and imaginaries.

The research presented here takes its point of departure in exploring

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narratives surrounding low-impact ways of living that shape and are shaped by notions of what the sustainable *home* is and could be. This offers a contrast to the dominant market-led story of eco-efficiency, and provides a basis for discussing potentially more radical reductions in resource use, while at the same time problematizing different understandings of for example the demand of energy, materials and land related to residential development. The paper presents empirical insights from home visits and in-depth interviews with seven households seeking less impactful and more resilient ways of living, in the context of a small municipality in western Sweden. The study places a focus on how interviewees perceive notions of sustainability and transitions towards a low-impact society, and how the various practices engaged in are manifested in (and through) conceptualizations and operationalizations of home.

The next section outlines contemporary interpretations of sustainability in housing and retells the dominant storyline of sustainable living as manifested in new eco-efficient urban developments. A framework of low-impact narratives and movements that are in different ways challenging this mainstream story is then presented, providing another framing for the perspectives explored. A methodological section describes the performative, narrative research approach and study design. The section thereafter presents the results from the empirical study, revolving around understandings of sustainability, and narratives regarding the practices engaged in – primarily related to self-sufficiency and voluntary simplicity. Emerging storylines are then discussed, examining how they contrast mainstream representations but also the potential conflicts that arise. The paper concludes that these "home front transitioners" can be understood as engaging in and/or envisioning profound changes in the everyday and to a large extent within the existing housing stock, in a semi-rural context. This contributes to shaping another narrative, questioning the notion of an urban green lifestyle package that one can buy into, and offering a more diversified perspective on sustainable living.

2. A mainstream narrative of efficiency and consumption

The conceptualization of environment and nature, and the discourse surrounding environmental issues has changed dramatically during the last century [10]. While early environmentalist concerns were based in an ecocentric and "deep green" perspective [11], later discourses under the umbrella of sustainable development have taken a more anthropocentric turn. Representations of environmental issues are entangled with debates on societal development, where different discourses are closely connected to political power as well as material realities [10].

The mainstreaming of sustainable development in various sectors and policy areas during the last decades, particularly in the context of affluent nations such as Sweden, has been dominated by an ecological modernization discourse [12,13], outlining a belief in the compatibility of economic growth and ecological preservation in the transformation of industrial society [14,15]. In a perspective of internalizing environmental care within an eco-modern framework, climate change action is for example represented as endogenous to market strategies through the monetarization of mitigation activities [16]. In the context of Sweden, an eco-modern policy focus, particularly with regards to urban development – as exemplified in the formulation and government funding of the Swedish Trade Council platform "SymbioCity" and the now concluded Delegation for Sustainable Cities – has emphasized public-private cooperation in the development of Swedish clean-tech solutions, best planning practices, and entire urban districts as an export commodity [17,18]. This can further be seen in the alignment of political and industry ambitions in showcasing new eco-profiled urban districts throughout Scandinavia, merging urban attractiveness and technological innovation to make it easier to "live sustainably" as part of a "green" urban lifestyle [3].

Narratives of sustainability in relation to housing and the role of residents have also shifted over the last decades [12,19]. The deep ecological movement in the 1970s and 1980s built upon self-organized grassroots projects, often manifested in for example participatory building processes, while the current framing of "green" housing has come to emphasize the resident primarily as a consumer [20]. This has further coincided with changing conditions in a de-regulated marketization of housing in Sweden since the 1990s [21]. In this context households are assumed to make informed purchasing and residential choices that promote more efficient resource use, driven by market mechanisms of associating consumption with an estimated price of the environmental harms caused [22]. In line with this perspective, a measure used in assessing residents' preferences and interest in less environmentally harmful solutions is thus their willingness to pay for "green" products and services.

In terms of the built environment, this techno-economic discourse is generally translated into eco-efficient buildings or eco-districts [4,23]. Eco-efficiency can be seen as encompassing two aspects Xue [24]: First, it relates to measures to improve the material and energy efficiency of buildings, primarily with regards to "sustainable building technologies" (including renewable energy solutions, "smart" technology and improvements in building performance). Secondly, it is linked to strategies of "urban densification", meaning that new construction is primarily located to former brown field sites or already appropriated urban land in connection to existing infrastructure (with the idea that a compact mixed urban environment will among other things reduce car use). The two aspects are commonly formed around an integrated infrastructure, providing efficiency in scale (for example district heating or waste management) and offering "finished" systems that can be plugged into [25].

These types of strategies and technologies shape the physical premises for everyday life, but also the narrative of sustainable living as part of what Hobson calls our "changing relationships with domestic materialities" [26; p. 318]. It reproduces certain understandings of sustainability, including the notion that technological advances, enabling incremental adjustments, can achieve both a reduced environmental impact and enable a maintained (or even increased) standard of living. The framing of housing as a commodity or as a speculative investment is moreover contingent on upholding mortgage structures and financial systems. Beyond the real estate value, however, this speculative development also links to narratives and imageries of home and consumer lifestyles as expressing identity [27–29], where consumption of residential space, along with material standards and practices of for example home decorating shape assumptions of an attractive home. In a story of consumption and efficiency, the home thus remains a place for self-actualization, where the narrative of a more *sustainable* way of living is centered on shifting the type of consumption to more efficient products and promoting an *urban* lifestyle.

3. Narratives of transitions to low-impact ways of living

While the above outlined mainstream narrative is prevalent in policy and sustainable building and planning discourse, a growing body of both research and activism questions the underlying reliance on measures of efficiency and technological innovation, and whether this will be adequate for meeting challenges of keeping within planetary boundaries [30,31]. A main critique of the ecological modernization approach is that a decoupling of continued economic growth from further environmental pressure is unattainable [32]. Such critical perspectives indicate that more radical approaches are needed, calling for a rethinking of progress that implies larger changes in how we organize society, the economy and everyday life [31,33].

Several studies have shown how sustainable living tends to be translated to symbolic actions, such as changing light bulbs, buying organic food and choosing green products [34–36]. Problematizing discourses of sustainable consumption as representations of individual lifestyle choices, Hobson [37] points towards the need for a larger

social justice framework that can resonate with people in their sense-making of everyday life. In terms of the built environment, measures of transit-oriented development, and the construction of eco-efficient urban districts may be praiseworthy, but are not deep-reaching enough to address the challenges posed by climate change and environmental injustices [38]. There is also a risk that dominant discourses – in excluding more radical concepts of behavioral and social changes – normalize low-impact housing as "imposing no restrictions or challenges to current lifestyles, institutions and practices", which might lead to a resistance to more fundamental transitions [39; p. 308]. Hence, there are repeated calls for the need to articulate and make visible *other* imaginaries of sustainable living [38,40].

Such imaginaries are indeed being built up, for instance around post-carbon societies and notions of deep ecological sustainable housing [19,41,42]. Writers such as Astyk [43] and Hayes [44] specifically focus on the home and home making as a starting point for transition. Or, as Astyk [43; p. 33] puts it, "coming together on the home front" for political and structural change. Gibson-Graham [45] also argues the need for building "diverse economies" beyond capitalist economic exchange, that is, economic relations that take place in the everyday and from the horizon of the home and the local community. This includes addressing issues of affordability in formulating anti-consumer or anti-capitalist approaches, and seeking alternative economic strategies and livelihoods [41,47]. For example, collaborative initiatives such as co-housing projects are recognized as a way to self-organize to build more ecologically, socially, and economically resilient communities [47,48], suggesting a form of living together that promotes ways of sharing spaces and resources, beyond private ownership [49,50].

There are several parallel and overlapping movements and research perspectives around transition, re-localization, degrowth, downshifting, and do-it-yourself culture that in one way or another deal with the reorganization of society and everyday life towards resilient, environmentally just, post-carbon futures [31,51]. One emerging movement in this context is Transitions Towns, which bases its core principle on actively shifting "from oil dependency to local resilience" [52], underlining the necessity to move from fossil fuels to renewables, but also using *less* material resources. The focus is foremost on community-led transitions of existing cities, suburbs, and settlements, rather than new housing or eco-districts. Resilience in this sense entails creating communities that can deal with changes and shocks, either financial or ecological crises, and creating local support structures that make the community less dependent on large, centralized systems (for energy provision, finance, food supply, etcetera). Building resilience also includes the reappropriation of practical skills such as cultivation, construction, and crafts – further relating to the concept of conviviality, with an emphasis on reskilling and developing tools and competencies that can be used by everyone, without having to rely on a body of specialists or centralized control [53].

Similar critical narratives further address what is seen as an over-reliance on large-scale systems, and a resource-intensive and consumption-based urban norm. The voluntary simplicity movement, at times manifested or coalescing with the tiny house movement, for example encompasses a diverse set of social critiques and proposes ways of achieving what is perceived to be a higher quality of life through a significantly reduced level of consumption [54,55]. By lowering living costs, people can downshift from a high-pressure (urban) lifestyle to either working less within the formal economy, changing career, or moving geographical location altogether. Seeking independence from large-scale systems and economic dogmas, and the call for "sufficiency", is further shared with other low-impact ways of life that promote notions of self-management, and finding ways of organizing life "off-grid" [56]. A "back-to-the-land" rhetoric [57; p. 44], for instance, stresses the importance of access to land for groups of "urban residents who are considering moving or have already moved out of the city in order to establish 'simpler' lifestyles in rural areas". This rather loose neo-ruralization movement, but also more formalized developments such as rural or semi-rural eco-villages, have nonetheless been problematized in terms of the relatively decentralized residential location, the inefficiency in provision of services and high emissions related to transport [58]. A key perspective, particularly for eco-villages, is however the emphasis on local community, where ideas of social connection and common interest in managing local resource loops, are conceived as a starting point for also engaging with sustainable transformations on a societal and global scale [59].

As illustrated above, there are several overlapping movements and discourses on more radical forms of low-impact living. A key question is, however, under what circumstances (and what aspects of) these discourses can have an appeal to broader groups in society. For instance, how and when practices of self-sufficiency and downshifting can be perceived as socially appealing and attainable for mainstream households – rather than instantly disregarded as associated with "tree huggers" [60]. Hence, it becomes relevant to study the narratives and motivations, not only of residents in urban eco-districts, eco-villages or co-housing projects, but also people residing in fairly ordinary small-town or semi-rural settings.

4. Research approach and study design

4.1. Research approach

The empirical study presented in this paper can be seen as part of a performative approach [45] to exploring narratives among people engaged in what might be considered more or less fringe low-impact practices, in order to diversify discourses on sustainable living. The researcher is here engaged in what Hobson [61,p. 284] calls "making things otherwise", seeking the perspective of those who to different extents are already engaged in transitions to what they understand to be less impactful ways of living, to propose an alternative to dominant, often "expert"-told hero stories of eco-efficiency and techno-salvation [9].

The study seeks thick description rather than strong theory [62], with an interest in narratives, here understood as social life – that is, including both the stories and the practices of the everyday, highlighting an intentionality of social life [63,64]. Interviews (as a way of gathering and analyzing narratives) are interpretative, or as McCormack [65; p. 220] suggests, a process of "storying stories", which "… explores individuals' understandings of their experience in the context of their everyday lives while simultaneously looking to the wider social/cultural resources on which people draw to help them make sense of their lives." With this narrative research approach, the focus is here on how interviewees make sense of what they think that they are doing. From the narratives of the interviewees, a research narrative of *home-front transitioners* is in turn constructed, which can be understood in the light of other, competing or parallel, discourses on sustainable living. Based in an assumption that there is no absolute sustainable way of living, the interest is instead to explore different ways of storytelling as "…a means of coping with uncertainty, with multiple perspectives and the absence of any single solution or 'silver bullet'…" [66].

The research approach employed also entails understanding the co-evolution of low-impact ways of living, material structures, and the shaping of sustainable (home) environments as cutting across sectorial and temporal boundaries [67]. Social practices are in turn understood as the mediation and intersection between individual agency and social structures in daily life [68,69]. Understanding constructs of home as a crucible between society and the individual [70], and positioning the household unit as a meso level, offers a way to bridge the dichotomy between macro and micro scales of change [71]. This includes both the consideration of societal factors in the representation of home, and a focus on situated home-related practices and the role of residents as co-creators or agents of change. Framing home as a platform for a multitude of home-related practices implies that meanings of home and everyday life shape, and are shaped by, these practices. In

Table 1
Outline of interviewees.

	Household	Dwelling context	Employment
1	**Woman, 45**, 1 child	Cottage in the forest	**Industrial worker** (full-time)
2	**Woman, 51** + **man, 52**, 2 children	Rural farmstead	**Teacher** + **civil servant** (both part-time, 50%)
3	**Man, 35** + **woman, 30**	Semi-rural self-built straw bale house	**Self-employed/unemployed** + **academic** (full-time)
4	**Woman, 31** + partner (not interviewed), 1 small child + 1 newborn	House in small village	**Consultant** + health professional (both part-time, 60%)
5	**Man, 53** + partner (not interviewed), 2 children	Apartment in center of town	**Health professional** (part-time, 80%) + in-home caregiver (part-time, 70%)
6	**Man, 69** + partner (not interviewed) (1 child and 1 grandchild living close by)	Apartment in center of town & rural farm where they will initiate self-building projects	**Self-employed** + Deacon
7	**Man, 36** + partner (not interviewed), 3 children	Semi-rural house	**Teacher** (full-time) + journalist (part-time, 75%)

exploring alternative conceptualizations of home, beyond contemporary norms, different material and social elements of practices (as outlined by Shove, Pantzar and Watson [72]) is thus here seen as continuously negotiated in the construction of meaning as part of narratives of home.

4.2. Study outline

4.2.1. Criteria for choice of households

Criteria for selecting study participants were formulated to find households engaged in some kind of low-impact practices that challenge dominant residential norms and representations of lifestyles in Sweden (outlined for example by Willén [73]), with regard to one or several of the following aspects: voluntarily reduction in consumption or living standard; implementation of resource management or eco-building strategies; or self-sufficient food and/or energy production. The study was limited to people intentionally living in these ways, rather than groups of households which, due to for example socio-economic constraints live on little means. This means that the narratives explored are limited to a certain group with certain predispositions, but also enables the possibility to shed light on perspectives and voices that – although perhaps not disadvantaged in a socio-economic sense (as noted in Section 4.2.3) – are often left out in mainstream representations, and particularly underexplored in Swedish sustainable building research, as they are neither the target group for the marketing of sustainable urban districts, nor have chosen to live in a particular alternative housing typology.

4.2.2. Geographical context

As a means of finding study participants that fit the above criteria, a context was sought that provides a relatively high concentration of bottom-up initiatives for sustainable local action. The choice of the municipality of Alingsås as a geographically limited area provided a relevant starting point in this regard, while also offering a policy and planning context that would be more or less the same for all households. Alingsås is part of the larger Gothenburg region in western Sweden, yet offers a somewhat peripheral and more affordable setting. The municipality has about 39,000 inhabitants, with a population density of 83 inhabitants/km^2, around 24,000 of whom live in the town of Alingsås itself. The municipal authority has high ambitions for sustainability and has set a national example in implementation of demonstration projects for energy efficiency strategies in renovation and new construction. Alingsås is also home to a regional center for passive house building. In other terms, Alingsås can be said to be at the forefront of sustainable building discourse in Sweden. The municipality is however also a hub for more grassroots-initiated activities related to a local chapter of the transition towns movement, "Transition Alingsås", exploring the beneficial characteristics of a semi-rural location with good infrastructure and access to land, combined with a small-scale urban core.

4.2.3. Selection process

Snowball sampling was considered appropriate in order to approach households that might not otherwise be that easy to identify. Initial contact was made with key individuals engaged in "Transition Alingsås" and with professional and personal acquaintances that have a connection to Alingsås and a known knowledge or interest in questions of sustainable living. A measure of saturation was noted when multiple referrals were made to the same person. Some variation in household composition among the interviewees was sought, although it should be noted that snowballing is often biased towards a particular social network, and does not claim to offer a representative sample [74]. This means that homogenous values might characterize the selected households, as they identify with, or are referred to by others as living in certain ways.

In total, nine people from seven households were interviewed during late spring of 2015. In two cases, the initial contact was made with one householder, who then was joined by a partner during the interview occasion. Acknowledging the dynamic of households as assemblages "of people and material things whose social and ecological relations are diverse, shifting and complex" [75; p. 352], the study is interested in narratives both as they are shaped individually and between the members of a household – which is revealed in the interviews with the two couples, as the story built up over the course of the interview poses personal narratives as both enforcing and conflicting in the construct of a shared understanding and motivation for living the way they do. In cases where there was only one interviewee, the interviews were not considered as an individual speaking for a larger household entity, but focused on the person's own experiences and reasoning – yet was often narrated by the interviewee as including parallel stories introducing other household members such as partners, children or even animals. Table 1 gives a summary of the interviewees (highlighted in bold) and their age, the household configuration, dwelling type, and employment at the time of the interview. It should be noted that the interviewees are quite similar in terms of socio-economic status and could be considered lower to average Swedish middle class, with the exception of the first interviewee – a single mother working in industrial production.

4.2.4. Interviews and home visits

In-depth interviews were conducted during home visits, enabling interviewees to make direct references to the organization of everyday life in terms of for example spatial relations, furnishing, amenities or standards. The visits started with a walk-through, where the interviewee could explain the use of the different spaces or functions, and offer narratives along the way, supported by occasional notes. Interviews then took between 1 and 1.5 h and were recorded and transcribed in full. Following a semi-structured interview guide, the interviews focused on: 1) how the residents view transitions and notions of sustainability, and how they see their role in relation to this; 2) the types of home-related practices and ways of living they engage in; and 3) their motivations and reasoning regarding these

practices.

The interview situation is here seen as a conversation [65], that is inevitably colored by different expectations, both from the interviewer and the interviewee. Acknowledging the presumptions made when agreeing to be part of the study, there appeared to be a general sense that the interviewer was familiar with key concepts such as peak oil or resilience, and several interviewees expressed their relief of not having to "explain everything from the beginning". Participants' perceptions of the study and the interviewer, along with being situated in interviewees' home environments, will likely have contributed to a feeling of the interviews as conversations, where narratives must thus also be recognized as co-constructed in that particular context and setting.

5. Narratives of sustainability and low-impact practices

Several narrative themes emerged in the interviews, dealing with how notions of sustainability and transition are constructed and reproduced in everyday life, and the meaning this has for the positioning of home in relation to the low-impact practices engaged in. The presented analysis tells the story of why (the motivations) and in what ways interviewees seek more low-impact ways of living. It also looks at how these different aspects are manifested in (and through) conceptualizations and operationalizations of home as a starting point for low-impact futures.

5.1. Criticisms of a mainstream storyline

> "We have sort of given up hope on the growth world and our way of living like this." (Man, 52).

Perspectives on how and why to transition, and to what, differ somewhat, yet interviewees share a common criticism of the (in)ability of societal institutions to act on pressing global and local challenges, and the perceived vulnerability of current systems – including, but not limited to: an inflated housing market; the economic system; continued urbanization; outsourced food production; and what is described as an overall problematic and unhealthy consumption-oriented lifestyle. A main motivation is found in an awareness of peak oil debates, and the seemingly well-established perception among interviewees of the need to break the current dependency on fossil-based energy systems at all levels of society.

While the importance of changing these systems – or even abandoning them altogether – is widely noted, interviewees also emphasize a narrative of dominant structures that lock people in, creating a reliance on established systems of provision and a compliance to norms: "In our Swedish middle class society we are already living on overtime/…/but we can't step out of it. We don't want to, because it's super convenient and pleasant in every way." (Man, 52). "Things are too cheap for us and we have it too good, and that makes us just buy solutions all the time." (Woman, 45). Or as another interviewee describes in her perception of mainstream "eco" norms and the inadequacy of common rational-economic portrayals of sustainable living to address the overarching changes:

> "Well, you're allowed to be sustainable and ecological, but within the economic framework that exists. So, the economic framework I would say is very limiting in regards to being able to live like this for real, or to live an environmentally friendly and sustainable life if you want to take it a step further than just buying organic food." (Woman, 30)

Although the interviewees, primarily in shaping their "origin stories" (as a background to why they now try to live in the ways they do), spend quite some time on depicting these types of perceived problems with contemporary society, they nonetheless also position themselves as wanting to challenge or seek ways to break free from what they see as a much too deterministic view on humanity as reduced to consumers. In describing others, such as colleagues, relatives or friends, and the ways in which they live, interviewees are provided with a reference for their own way of living. Yet interviewees stress that they are not the ones to judge whether what others are doing is right or wrong per se, but instead emphasize the complexity of various dimensions. This regards both finding inspiration in how others have set up their life and home, as well as using others as examples of how they could not consider living, as part of building up their critical reasoning on sustainability.

While interviewees continue to explore the ways in which their way of living contributes to a lower environmental impact, this is at the same time perceived as relative, where what one is comparing to becomes important to note. Is it in relation to how they could have lived, given all other variables (such as income or family situation) were equal and they followed more common urban or suburban norms, or is it compared to how they have lived before? One interviewee for example tells a part of her story against the backdrop of a colleague in a similar work and family position, who lives in a small apartment in central Gothenburg and bikes to work, and who the interviewee speaks about as fitting "better" to a mainstream understanding of urban sustainable living. In recounting the ways in which her own household does or does not adhere to "common knowledge" on for instance efficiency, the interviewee however frames her own narrative of seeking a less impactful way of living as encompassing more complex perspectives, including well-being – "it's not only those things you can calculate on paper that count" (woman, 31). A part of this is the more long-term impact, which is raised by several interviewees, who speculate on how finding your own way of living, outside of a dominant discourse or easily defined category, might reduce the overall need to consume experiences and products to fill a certain stereotype.

These types of comparisons and discussions of what living sustainably is, and who actually does it already, are also reflected in the ways that interviewees problematize the concept of sustainable development itself. Some perceive it to be nothing more than an empty signifier holding little meaning or direct connection to what they are attempting to do, and instead use the concept of resilience to define what they are working towards – incorporating aspects of adaptability, acknowledging the interlinkage with various socio-ecological systems, and enabling forms of independence from large-scale systems. Anticipation and preparation for what could be more significant changes in ways to work and live are prevalent in the interviewees' narratives, framing the practices they are engaging in and the way their homes can support this. While critically reflecting upon the ways in which they do or do not differ from more conventional understandings of home or mainstream representations of "being green", a parallel story of low-impact transition is created, where interviewees take a more active role as agents in shaping a different future.

5.2. Towards self-sufficiency

> "I guess I've lived kind of half on the side of society all my life, you could say, by reusing and self-managing pretty much." (Man, 69).

> "When I was a teenager/…/I came into contact with this idea of self-sufficiency. And I thought that's what fits me in a way. That practical life and having… like to take care of your own sustenance and life." (Woman, 45).

A significant narrative raised in the interviews is the perceived need to manage resources responsibly and in ways that demand direct commitment from individuals, situated in their everyday life and home environment. Interviewees share a basic storyline that seeks the re-establishment of an understanding of how different technical and ecological systems work, and a reconnection with production processes and practices that have been centralized and/or industrialized, and thus removed from the household and from the direct power of individuals. Ideas of self-sufficiency are in this perspective particularly based in calls

for a re-localization of various forms of provision, including energy generation, closing resource loops, self-construction or self-maintenance of housing, and food production – all seen as part of necessary transitions towards a less environmentally harmful way of life and less vulnerable society at large.

The (re)integration of different forms of local resource management that have been separated from the home in contemporary urban housing development, such as food production, is sometimes quite physically manifested in how the interviewees create their home environments. Spatial requirements (and limitations) in and outside the dwelling and the relation between various functions are considered in order to be able to accommodate practices of self-sufficiency. All interviewees to some extent engage in either growing vegetables or keeping animals (or both) to provide food in the vicinity of their home. There is a range in what this actually means for levels of self-sufficiency, with some satisfying only a small and more occasional supply of home-grown vegetables, while others produce a larger part of the food they eat.

Two of the interviewees are also engaged in self-build projects, using local materials (wood, straw bales and clay) or repurposed components to minimize the use of virgin materials with a high embodied carbon-footprint, and put an emphasis on incorporating closed loop solutions (such as a composting toilet) or passive heating principles. Those of the interviewees living in owner-occupied detached houses have taken over older buildings that they maintain, repurpose or add structures to (often using locally available or upcycled materials) in order to for example house chickens, workshop spaces or green houses. While often not necessarily visible from the outside, the use of gardens and the houses themselves in ways that differ from the neighbors is instead revealed once inside or when narrated as part of what everyday life looks like.

Whether understood as directly related to the heating and maintenance of buildings, the embodied energy of materials and household products, or the fuel used for farming, energy is a main recurring theme in the interviews. This also encompasses critical reflections on current mobility practices and the dependency on a carbon-based infrastructure that interviewees have only to some extent started to challenge. Different aspects of self-sufficiency, particularly related to discourses on energy systems, are weighed against each other. Questions surrounding being self-sufficient on firewood, self-building a well-insulated house, installing solar panels, farming with a horse to reduce the need for a tractor, or planning a permaculture garden, are all negotiated in regards to the organization of and values sought in everyday life.

While pragmatic aspects of self-sufficiency are raised throughout the interviews, a prevalent motivation also seems to be part of a more emotional narrative. In building up an understanding of where food and other resources used in daily life comes from, many interviewees say they particularly want their children to learn about what they eat and the work that goes into it. Notions of self-sufficiency in this sense also relate to concepts dealing with relations to nature, feelings of autonomy and responsibility.

> "I see it a bit like a cycle or a system where we provide for as many of our own needs as we can, and in no way isolate ourselves from the rest of the world, but make ourselves as independent of it as possible." (Man, 35).

This perspective on self-management is also perhaps the most significant difference compared to interviewees' understandings of mainstream "green" lifestyles as still complying with existing large-scale systems. Yet taking the step needed to live more independently and self-sufficiently is easier said than done, as emphasized by several of the interviewees. Nonetheless, as part of creating the story of a future low-impact society, they are in different ways already "stepping out" of dominant social and economic structures despite (or perhaps driven by) the uncertainty this poses.

5.3. Voluntary simplicity and downshifting in and through the home

> "A 40-hour working week has become a sort of norm. Or natural law almost./…/It's an important part for both health and the environment to go down in working time. Consume less instead." (Man, 53).

The interviewees are all engaging in various forms of voluntary scaling back in consumption levels, based largely in their aforementioned criticism of a resource-intensive consumer society. The home here becomes a framework for engaging in practices that both enable and necessitate downshifting from full-time work within the money-based economy, as well as offers a reassessment of living standards and the need to consume to create a fulfilling home life. As can be seen in Table 1, several of the interviewees work part-time (ranging between 50 and 80% of a full-time position) or have a partner who works part-time. In three of the households both adults work part-time only, which entails a quite large reduction of the total income.

> "… maybe it's enough with one in the family working and the other one doing the farming maybe, or that you split it… two work half-time and farm together. That's maybe the most optimal. And to keep living costs down, I think that's very appealing." (Man, 69).

Relating to the perceived unsustainability of the current housing market, a desire expressed by interviewees is to become less dependent on formal employment to get a mortgage in order to afford a certain home that in turn relies on the longevity of an inflated housing market bubble.

> "If you put yourself in an economic debt to the bank then we would, just to pay the interest, have to work full-time both of us and then we…/…/you become too dependent on your employer." (Woman, 31).

Although it should be noted that six of the seven households interviewed live in owner-occupied housing and that some are still bound by loans taken to acquire the house or land in the first place, the location in Alingsås municipality nonetheless provides ways of being less dependent on the current economic system. By having lower living costs (making it possible to get by on the equivalence of just more than one full-time salary), but also by the possibility to actually engage in practices (such as farming) that would not be accommodated in the same way in denser central areas or in expensive single-family house suburbs, the interviewees seem to find freedom in being able to step away from, or opting out of, the urban housing market.

> "…why should one work hard all one's life just to afford basic things such as rent or housing or food? When one actually can build a house that provides for many of one's needs without it costing a lot of money or work." (Man, 35)

Moreover, narratives regarding their current home and previous housing experiences speak of finding sufficiency and having less of an interest in conspicuous consumption to express identity. In comparison with contemporary norms, living with lower spatial, thermal, or material standards is discussed from different perspectives, including the potential to live more compactly (although most interviewees could not be said to live in significantly smaller houses or more collectively than the national average), with less stuff, or learning how to "put on socks and maybe not go around in a t-shirt indoors" (Man, 36). The same interviewee also adds that they chose to "inherit all clothes, and the furniture was here when we moved in." This appears to be a general premise, making due with what you have, refraining from buying new stuff and questioning the need to renovate as fashions change. A common characteristic is that while not minimalistic in the sense of ascetic interiors, the home is seen as less of a representative showcase for home-related consumption and more a kind of experimental space – that might lack the conventional comforts associated with contemporary Swedish housing design. One couple for example describe installing

Table 2
Types of narratives.

Seeking independence from large-scale systems	Autonomy & self-managing
Re-establishing a connection with nature	Re-localizing forms of food production & re-integrating local resource loops
Downshifting from the formal economy	Conviviality & reskilling
Opting out from consumer society	Voluntary simplicity & "frugality" (making due with what you have)
Building local resilience	Village-like clustering & collaboration

a composting toilet and the skepticism they encountered from others, but see it as an opportunity to introduce curious friends and family to less resource-intensive solutions. Another couple prepared by first moving into a trailer and then taking their children railroading around Asia before coming back to settle on an old farm to try to establish a less fossil fuel-dependent life.

5.4. The return of the village – building resilience together

> "…my neighbors are really nice and friendly, but it would have been fun if there were more that thought a bit alternative./…/I think you could share everything, you could share driving the kids to school, you could share so that he hunts and we slaughter sheep. There's nothing you can't share if you want to." (Man, 36).

Another key theme emerging from the interviews is the potential to collaborate to build local resilience. Sharing or collaborating is mentioned as being needed out of pragmatism (to ensure mutual survival and a rationality in food production) as well as from a social perspective, where sharing ideas, skills, and each other's company also provides intellectual stimulation for engaging in the ways of living the interviewees do.

> "We're into the idea that maybe it can become a simple learning center in time, where we can work, inspire others, and have some courses in farming, self-sufficiency, and building." (Man, 69).

Several already welcome acquaintances, interested strangers or volunteers to visit and help with building or farming activities. The home is thereby positioned as both a private and semi-public arena, where inner reflection is coupled with a functional and pragmatic workshop of sorts, allowing for hands-on learning and knowledge transfer.

Sharing spaces, stuff and work in order to save resources and create a better basis for local self-sufficiency is seen as essential, but interviewees also underline that this is dependent on how it is done and what forms it would take. Overall, there is a positive attitude towards more collaborative forms of living, although few are currently engaged in this. One interviewee admits that while ideologically he thinks it would be good to house several families in his current farmhouse, and although he has lived in urban forms of co-housing in the past, he has become a bit more "comfortable nowadays, with kids and stuff" and explains it as that one becomes "a bit socially lazy" after growing accustomed to having one's own space (Man, 36). He and several other interviewees instead keep coming back to a narrative that imagines a sort of village typology, where living quite close together (although not necessarily in the same house) in clusters enables neighbors to exchange goods, share tools, or farm together:

> "Well if we had all the economic possibilities we would have built like three small houses and a couple… one shared building, some form of three to four family housing with a shared part." (Woman, 31).

> "Well, we need to live with others, because some sort of village needs to be restored. Single-family areas where you exchange greetings over the hedge and then nothing more, that's completely unsustainable in the long run. Because that assumes that each one goes to their work and pumps money into the system that way. But when it won't be like that anymore, then you have to help each other in a completely different way." (Man, 52).

While the concept of a planned co-governed eco-village is not something the interviewees are particularly interested in – primarily because of hesitations regarding co-owning in light of future uncertain events and the potential difficulty in getting along in the long run – they nevertheless recognize the utility of working together to manage resources in a sustainable and resilient way. This of course has direct and indirect implications for how to better organize spatial relations and how the extended home environment is perceived as mediating between household independence and ideas of local cooperation and resilience.

6. Transitions on the home front

The narratives that emerge offer points for discussing alternatives to the mainstream sustainability discourse, in that they provide in some aspects more radical criticisms of contemporary society, and the ways in which we must re-organize our way of living. Table 2 offers a summary of the types of narratives expressed, relating both to the motivations for and aspects of what this transition will entail.

Based in these narratives, interviewees convey a perspective on sustainable living as transitioning in and from the basis of everyday life and the home. Not as a neatly packaged solution or housing concept, but placing home as an arena or starting point that enables independence from economic lock-ins and integrates alternative functional understandings that facilitate practices contributing to a reduced environmental impact – through downshifting, re-integrating local self-sufficient forms of provision, lowering consumption levels, or as expressed by several of the interviewees, in time, sharing both resources and spaces more efficiently.

While most of the houses interviewees live in could not be considered very efficient neither in terms of building performance nor in terms of space per person, the efforts pursued propose different ways of approaching sustainable living. Instead of residents being cast in the role of consumers, the story conveyed is that of self-managing agents and local citizens. Interviewees are engaged in practices of self-building and self-maintenance (with reused or ecological materials), setting up small-scale closed-loop systems (for example for water or nutrient flows), and seeking other ways to minimize the environmental impact of the maintenance and operation of the dwelling (including heating, by lowering indoor temperatures in combination with burning their own wood).

The dwellings that interviewees inhabit do not necessarily stand out from conventional houses; what is different is rather what is *being done* within and from the home. The interviewees are trying to create change within (or perhaps despite of) prevailing structures. Their living environments do not necessarily display the typical markers of mainstream sustainability associated with certain technical features or architectural expressions, but resemble more the residential settings of other semi-rural households. As such, there is no unilaterally discernible housing typology or architectural concept to be drawn from the narratives given. The storyline proposed here is instead that these households participate in *transitions on the home front*, where the home, as a major node in everyday life, provides an important starting point. Or as expressed by one interviewee, the home is where people do "most of the things that you do repeatedly and all the time." (Woman, 30). As proposed by Astyk [43] and Gibson-Graham [76], what one does in the home can in this sense be part of building another world order with more diverse and resilient economies, while positioned in the mundane and local. The narratives presented here do not rely on "buying into" a certain new lifestyle or housing concept in order to engage in low-

impact living, but emphasizes the relevance of transitions that will need to take place also within the existing. This offers a platform for approaching the often less narrated (or even "non-narratable") ways of "living with less" that have and continue to be practiced among those with restricted means – yet also needs to be problematized in terms of terminology or representations of for example *voluntary* and *relative* reductions in income and living standards, as part of discussing how we can create more inclusive narratives of low-impact living that go beyond the symbolism of "being green" as linked to an urban middle class lifestyle.

Not seeing home as a primarily financial investment, but rather as an investment in building resilience, proposes a shift from a contemporary market discussion of housing standards to what one can do in and through the home. The narrative insights problematize contemporary standards and notions of comfort and convenience, as households are trying to in different ways "make due" with what is available. Going beyond a consumption-focused understanding of home as an identity marker further emphasizes a more pragmatic approach that offers different functions and opportunities, yet also includes emotional notions surrounding simplicity and closeness to nature as having particular aesthetic and restorative qualities.

While relating their own narrative to the mainstream storyline, the interviewees nonetheless also emphasize that at least during a transition period, it is likely that they find themselves with "one foot in either world" (Woman, 51), as on one hand being part of a counter-movement seeking systemic change, and on the other hand part of the system itself. This is particularly evident in that some interviewees also hold positions within educational or political institutions at the local level, working as teachers, civil servants, or in one case, even holding political office in the municipality. Several of the interviewees thus find themselves in multiple roles. The particular context of Alingsås municipality is relevant to this, where it is noted that there is a more open attitude towards the alternative narratives and practices these households engage in than what is perceived to be the case in other municipalities. This includes for example what interviewees talk about as an openness to self-build processes and alternative materials within the municipal planning department, and an interest in for example the provision of locally produced food in municipal schools. The presence of a rather active transition movement, which organizes regular events and seminars that are attended by a wide array of local residents, is also notable. There is a general openness among interviewees to welcome people, also outside of the narrower interest group, to engage in discussions regarding transition and local resilience, and some of the interviewees run blogs and are part of different online forums, sharing their narratives both through pushing the discourse forward and by "showing by doing".

The reskilling and practical making demanded in the practices outlined here also requires certain space, and for most of the interviewees the home seems to function as an experimental workshop and platform for learning and developing skills and knowledge on one's own as well as through mutual inspiration and interaction with others. While sharing spaces or things or living more closely together with others is not something that overwhelmingly characterizes the interviewees' dwellings today, cooperative ambitions nevertheless recur as part of the narrative of how a low-impact future would operate, and the types of spaces that could facilitate this. With a focus on aspects of local resilience and integrated production, partly outside of a money-based economic system, the importance of re-instating a village-like typology is raised. To engage in more profound shifts in production and consumptions patterns to build resilience, several interviewees point to the need to address the limitations of current urban developments with regards to for example land use for agriculture versus industrial or commercial activity. Conversely, dispersed settlement patterns as in recent rural and suburban developments pose significant problems in bridging individualistic car-dependent structures. The narratives told by interviewees however point towards a will to challenge these prevalent mobility norms. Although so far limited to visions for how to revitalize local communities within walking and biking distance, create alternative fuel car pools or self-organize bus routes for school children, interviewees are nonetheless already putting some aspects into practice – for instance working from home or establishing self-sufficiency as a way to reduce the need for everyday travel.

The study illustrates the difficulty of clearly delimiting low-impact living with regards to one parameter (such as energy efficiency) and underlines the need to understand different factors in a more holistic way, including aspects of embodied energy (including carbon emissions related to building materials and construction processes), everyday use of energy, water and other resources, household consumption levels and use of land as well as fuels (fossil or renewable) relative to personal transport and residential location. The story presented here widens the repertoire of sustainable living, beyond eco-efficiency, yet does not provide a new patent solution. Instead, it explores different types of narratives that will need to be further acknowledged in envisioning low-impact futures, as has been emphasized also in previous research on sustainable living and housing [37,42,60].

7. Conclusions

This paper addresses more sustainable ways of living and conceptualizations of home in relation to transitions to a low-impact society. Presenting narratives from people engaged in forms of self-sufficiency and downshifting to low-consumption lifestyles, residents are set as self-managing agents, rather than as rational consumers buying into a pre-defined sustainable housing concept. These households are attempting to transition in more ways than through their choice of dwelling, yet the study also illustrates how the home can be said to enable these larger transitions in for example forms of production and consumption, rather than placing a focus on the residential building as such.

In contrast to prevalent discourses on sustainable housing, manifested in efficient urban eco-districts, and as a complement to other eco-oriented housing movements, this paper provides another narrative, one of "transitions on the home front". This entails a focus on transitions situated in the everyday and incorporation of low-impact practices in the *existing fabric*, in this case in a semi-rural context. While a mainstream eco-efficient discourse often links to individualistic urban consumer lifestyles supported by large-scale technical systems, the practices explored here are closer to an anti-consumerism found in the voluntary simplicity movement, while emphasizing a distinct self-sufficiency perspective of managing resources locally.

The paper contributes to a growing body of research that aims to broaden the discourse on domestic resource use, and tells the story of how transitions are situated in and through the home – beyond the dwelling unit or efficient building as an isolated technical solution, but also beyond a distinct eco-village or co-housing typology. This means that when seeking strategies for low-impact living and housing, such transitions might very well be ongoing in various forms of housing that might not "look" or be marketed as "green". In certain aspects, these existing built structures can in fact be a relevant base from which to transition to low-impact living, allowing for an experimentation and flexibility in the integrated eco-retrofitting of semi-rural or small town housing structures. Taken together, the story told in this paper can be seen as one part in diversifying how to create future environments, infrastructure, and systems of provision that are not reliant on carbon-fueled economic growth, but rather shaped by locally based transitions, starting in the everyday and in the home.

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