

Practicing sustainability: Lessons from a sustainable cohousing community

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Abstract: Recent scholarship has conceptualised initiatives at the grassroots level as niche sites of innovation for sustainable development, comprising a diversity of innovations and sustainable practices that may (or may not) be usefully transferred to mainstream systems (Seyfang & Smith 2007). Sustainable housing communities such as cohousing and eco-villages, based around goals of improved sustainability and community vibrancy, provide examples of such niche, grassroots sites. There is evidence to suggest that residents of these communities are significantly reducing their environmental impact, whilst maintaining strong wellbeing and social capital outcomes. With household consumption contributing significantly to global greenhouse gas emissions (Hertwich & Peters 2009), innovations within these communities that have the potential to influence everyday practice, and the associated resource use, are promising areas for research.

Using an Australian cohousing example, this paper explores how an intention to live in a more environmentally sustainable manner is realised. It applies social practice theory to explore the practices, and elements of practice, that residents perceived as significant for their everyday sustainability, and focuses on the role of the cohousing community in the evolution of these practices.

The findings from focus groups, one-on-one interviews and ethnographic observations at a cohousing community are discussed. The focus is on the practices and routines that are introduced, encouraged and/or developed to reduce environmental impact. What are the key elements of these practices, and what is the impact of the cohousing community? And what lessons can planners and designers take to create the frameworks for sustainable and liveable communities and precincts?

Introduction

It is well established that human interactions with and within the planetary system are currently on an unsustainable trajectory (Stafford Smith & Brito 2012; Steffen et al. 2007; Rockström et al. 2009; WWF 2014). Australia is a highly urbanised nation, with major cities being home to over two thirds of the population and growing faster than regional or remote areas (ABS 2008), so interventions and adaptations within cities to this unsustainable trajectory cities are likely to be crucial. Over the coming decades, Australian cities will face challenges such as decarbonisation of society (Connolly 2015), continued population growth and urbanisation (ABS 2008), increasing rates of social isolation (Monbiot 2014), the continued rise of the single person household (ABS 2013), as well as the effects of climate change (Webb & Hennessy 2015). Household consumption contributes significantly to global greenhouse gas emissions (Hertwich & Peters, 2009), and the practices that generate this consumption are made up of a dynamic range of technological, social and individual elements. Reducing household consumption levels will be a significant challenge to be faced by the cities of Australia in achieving a decarbonised society.

Cohousing is an innovative housing concept that combines the autonomy of private dwellings with the advantages of community living. Cohousing has the potential to deliver a number of positive contributions to Australian cities, such as encouraging environmentally sustainable living (reduced energy, reduced waste production), strengthening social networks and reducing isolation, and providing more affordable accommodation (Marckmann & Gram-Hanssen 2012; Williams 2005). The greater use of shared and communal space also has potential to combat urban sprawl, through reduced land consumption. These possible impacts all relate to some of the key challenges facing Australian cities. This paper focuses particularly on the impact of cohousing on environmentally sustainable living, discussing findings from research with an Australian cohousing project – Murundaka Cohousing Community.

Social practice theory has been described by a number of researchers as a highly appropriate framework for in-depth analysis of sustainable socio-technical innovations, such as cohousing (Middlemiss 2011;

Seyfang & Smith 2007). It focuses on the ways of 'doing' everyday social practices, and the inconspicuous consumption linked to these practices, rather than the decision making of individuals (Hargreaves 2011). This research uses social practice theory to explore everyday practices, such as growing food, car sharing and waste disposal, that residents believe impact positively on the sustainability of their lifestyle within Murundaka. By understanding everyday practices within an innovative community that intentionally aims to live more sustainably, it is hoped insights can be gained that can be applied on a wider basis.

The following section presents a brief review of the literature on cohousing and sustainability, summarising arguments about how cohousing can impact household consumption levels and environmental sustainability, and quantitative studies looking at environmental sustainability of cohousing. Next, social practice theory is introduced and the methodology of the article is presented. The findings of the preliminary research are presented and discussed by looking at the practices that residents associated with personal sustainability within the cohousing community, and the key elements of these practices.

Literature on cohousing and sustainability

The modern form of cohousing has evolved out of Northern Europe in the 1960-70's, and been adopted to varying extents globally. Rather than being a set form of housing, cohousing is an adaptable concept that is described as "a type of intentional, collaborative housing in which residents actively participate in the design and operation of their neighbourhoods" (CAUS 2014). It focuses on creating more communal living spaces driven by a wish to increase social interaction and more recently, address issues of unsustainability (Williams 2005).

Cohousing is a well-established model internationally, particularly in northern Europe, with an estimated 5% of the population of Denmark living in cohousing in 1994, and to a lesser extent in the USA, where roughly 5000 people lived in cohousing in 2001 (Williams 2005). Cohousing is still a niche idea in Australia, and there are currently only a small number of established cohousing communities, with the Cohousing Australia website listing 14 existing cohousing communities. It is an active niche, however, with 10 currently forming and 8 proposed cohousing communities' listed (Cohousing Australia 2015). There have also been a number of recent articles in the mainstream media discussing cohousing, or projects that adopt a number of the cohousing principles (Mcgee & Benn 2015; Norwood 2015; Perinotto 2015; SUV 2015)

Six principles have been identified as underpinning the traditional conception of cohousing (McCamant & Durrett 2011):

- the planning and design of the community is a participatory process with residents being responsible for all final decisions;
- the physical design encourages a strong sense of community by encouraging opportunities for informal socialising and casual encounters;
- extensive common facilities designed for daily use, as a valued supplement to private living areas;
- resident management of the community;
- non-hierarchical structure with decision-making shared by the community's adults ; and finally
- no shared community economy, with residents having independent income sources.

Whilst not all cohousing communities consider environmental sustainability to be a community focus, for many it is an explicit priority of the community, expressed in vision statements and everyday community management (Fromm 2000; Williams 2005). There is considerable overlap between environmentally motivated cohousing communities and ecovillages. Ecovillages are defined as: "an intentional or traditional community using local participatory processes to holistically integrate ecological, economic, social, and cultural dimensions of sustainability in order to regenerate social and natural environments" (GEN 2015), a definition which encompasses many cohousing communities. On the other hand, Marckmann and Gram-Hanssen (2012) suggest ecovillages could be considered a subset of cohousing communities, with a greater focus on sustainable living. In an Australian context, the term ecovillage is more closely associated with rural intentional communities. Cohousing is generally considered an urban form of intentional community (Metcalf 2012), and one that generally considers environmental sustainability to be an important driver for the community creation. Given the highly urbanised nature of

the Australian population, the urban form of cohousing has significant potential to play a role in addressing key challenges facing Australian cities.

The arguments for cohousing having a crucial role to play in any future sustainable housing stock are summarised by Marckmann and Gram-Hanssen (2012, p.416) as:

- cohousing encourages active involvement in selecting and using sustainable technologies within the community
- the sharing of more communal space allows for smaller and more compact individual houses resulting in higher density and higher space efficiency
- the social structure of co-housing facilitates sustainable everyday practices of the residents, helping them to realise the ideal of sustainability and 'green living'
- sharing of goods and resources has environmental advantages for one- and two-person households

Meltzer (2005) and Lietaert (2010) both emphasise the impact that cohousing can have on the pro-environmental behaviour of residents, particularly by establishing systems for sharing goods, resources, space and labour. Scheuer (2002) found an increase in environmentally responsible behaviour for people living in a cohousing setting. Even though residents in existing 'green' cohousing developments often already held pro-environmental values before living in a cohousing community, the social support, stimulus and coordinating systems often create an environment for even greater sustainability (Meltzer 2005). The sharing systems and collaborative nature results in reduced levels of consumption, and less wastage (Lietaert 2010).

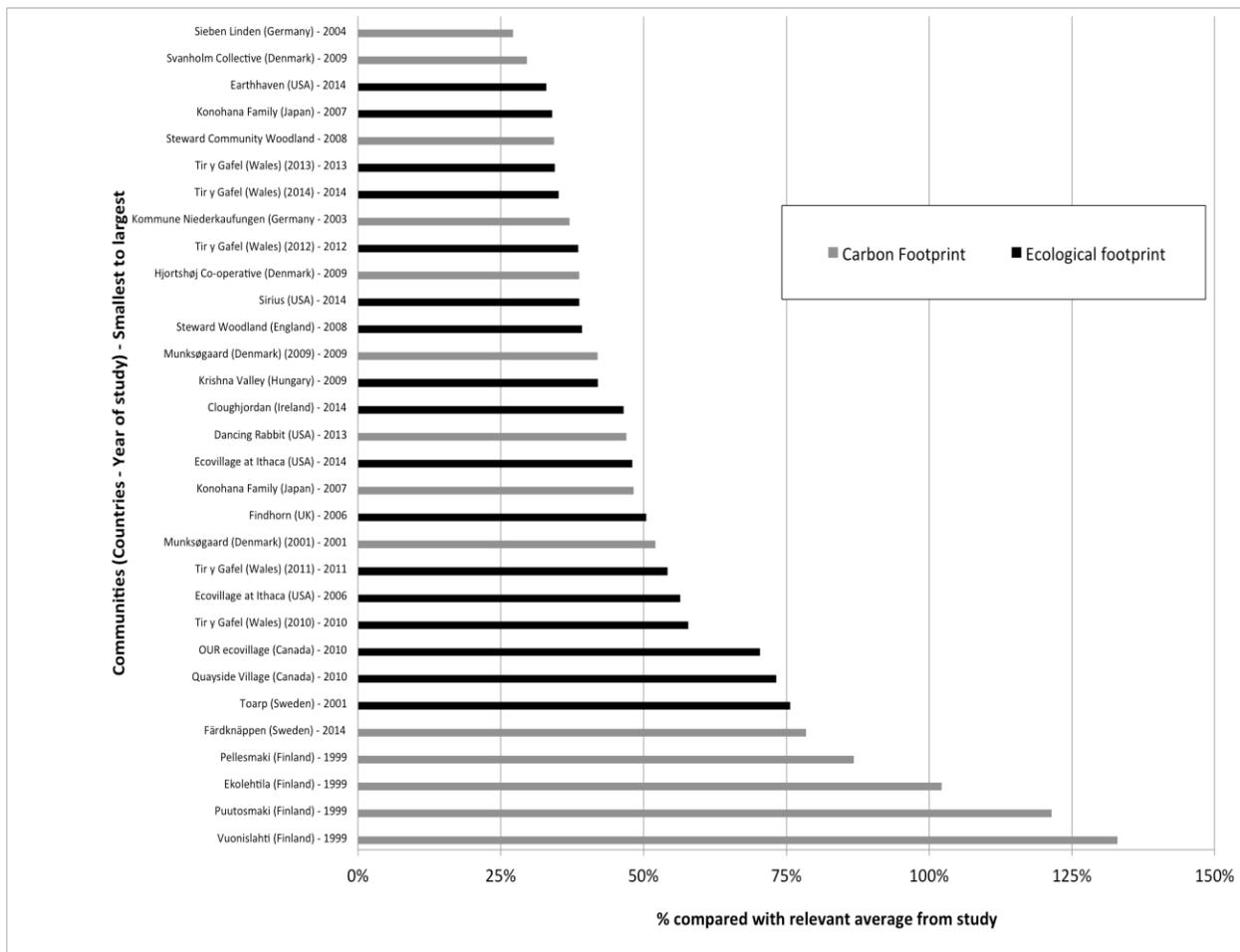


Figure 1: Ecological and carbon footprints of various cohousing communities and ecovillages expressed as a percentage compared with the footprint of a relevant 'mainstream' community (Created by Author).

A systematic review of quantitative studies of the environmental impacts of ecovillages and cohousing communities has been previously conducted as part of this authors doctoral research project (Daly 2013) (full details of review are in a journal paper currently under review, and not discussed here due to space restrictions). From 23 different studies covering 30 different communities, there is evidence globally to suggest these communities are achieving significant reductions in environmental impact. **Figure 1** shows the relative ecological and/or carbon footprint of ecovillage and cohousing communities compared to the relevant comparison community from the original study. All but one study found reductions in the footprints of cohousing and ecovillage communities, with some communities achieving a ~75% reduction in footprint.

In addition to the environmental benefits that a greater uptake of cohousing has the potential to confer on Australian cities, cohousing can have a positive impact on quality of life and social capital. One study that explored the impact of living in intentional communities (such as cohousing) on quality of life, found a strengthening of social capital that provided a higher quality of life for residents, even with lower incomes or less capital (Mulder, Constanza & Erickson 2006).

An area of growing interest to researchers exploring sustainable transitions for socio-technical systems has been the role of grassroots innovations (Seyfang & Smith 2007). Within the framework, cohousing can be described as a community-level innovative niche, or grassroots innovation, that allows experiments in alternative ways of living to be practiced, and that contains a diversity of innovations and sustainable practices that may (or may not) be usefully transferred to mainstream systems. This paper uses social practice theory to explore the innovations and practices that residents believe contribute to the environmental sustainability of living in Murundaka Cohousing Community, and draws out some of the key elements of these practices.

Social Practice Theory

Practice theory offers a perspective which places less importance on individual behaviour and choice, and focuses instead on the 'collective development of modes of appropriate conduct in everyday life' (Warde, 2005, p.146). The central unit of analysis is everyday practice, with individuals becoming 'carriers or hosts of a practice' (Shove, Pantzar, & Watson, 2012, p.7).

The often cited definition of practices by Reckwitz (2002) suggests that:

A 'practice' is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a 'block' whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements (Reckwitz 2002, pp.249–250)

Shove et al (2012, p.14) endeavour to simplify the language of social practices by proposing three types of elements: materials, competences and meanings (see **Figure 2**)

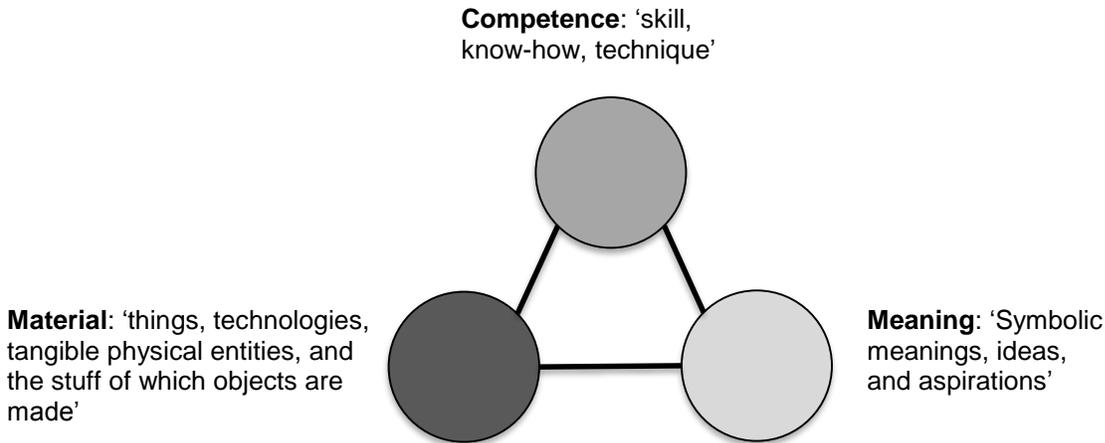


Figure 2: The elements of practice (modified from (Shove et al. 2012))

Schatzki (1996) described two central notions of practice, summarised as: practice-as-entity and practice-as-performance. This useful analytical distinction, described in more detail below, is used by Shove et al (2012) in their exploration of the dynamics of social practice, to show how the elements of practice can be enacted and reproduced in different and changing combinations.

Consider the example of the practice of showering. Whenever someone has a shower they combine the materials (water, electricity, soap, a dedicated shower space), meanings (cleanliness, freshness, relaxation) and competences (how to use soap and wash oneself, how to make oneself presentable for the day ahead) that make up the practice of showering. Through enacting this practice-as-performance, the links between the elements of showering as a practice-as-entity are reinforced or modified (Shove & Walker 2010).

Spurling et al (2013) describe social practices, such as showering, cooking and driving, as a better target for policy interventions designed to create a transition towards sustainability than the 'behaviour', 'choice' and technical innovation routes that have to date been most popular. A focus on practices holds particular promise when considering the inconspicuous or ordinary consumption that is associated with the ordinary practices of everyday life (Spurling et al. 2013). Both Spurling et al (2013) and Watson (2012) discuss three broad means of creating change in practices through intervention:

- Re-crafting practices - changing the elements that make up a practice
- Substituting practices - discouraging unsustainable practices in favour of existing or new alternatives
- Changing how practices interlock - changing the way practices bundle together or interlock, as the complex interactions between practices can ripple through interconnected practices

Middlemiss (2011) has argued that the strong emphasis practice theory places on the social context to help explain action makes it 'highly appropriate as a theory to explain change in practice in the context of community-based initiatives' (p.1158). This research has used social practice theory to explore a cohousing community in suburban Melbourne that has a stated vision to live sustainably and be an example of a sustainable cohousing neighbourhood. The aim is to understand the way meanings (e.g. intention to live more sustainably) combine with the other elements of competence (e.g. knowing how to turn intentions into reality) and material (e.g. the nature of the built form the community inhabits) in everyday practices. The focus has been on the domain of the (cohousing) home (Hargreaves 2011), and how changes in everyday practice may be occurring.

Research Methodology

The findings discussed in this paper are based upon the analysis of data collected for a doctoral research project. This paper specifically focuses on one case study, a cohousing community in suburban

Melbourne – Murundaka Cohousing Community. The doctoral research project created a database of 60+ existing Australian intentional communities using publicly available literature (e.g. websites, mainstream media, blogs etc). A shortlist of potential case study communities was created using a qualitative assessment based on consistency with the New Economics indicators for sustainable consumption (Seyfang 2009). These indicators focus attention on the extent to which an activity involves localisation, reducing ecological footprints, community building, collective action and building new infrastructures of provision. Murundaka was selected from the shortlist as one of the case study communities for the doctoral research as a recently established, urban cohousing community with an explicit focus within the community on environmentally sustainable living. Part of the Murundaka vision is “We live sustainably: Conscious of ourselves, our local community, the world and our legacy for the future through our individual and collective actions”, and the community states on their website that they aim to ‘introduce the idea of sustainable cohousing neighbourhoods to everyone’ (Murundaka Cohousing 2015). In addition, many of the members of Murundaka have strong links with the Sustainable Living Foundation, an active sustainability group based in Melbourne. In many ways Murundaka can be expected to be an exemplar sustainable cohousing community, where much can be learnt about the way intentions to live in sustainably are realised in practice.

The analysis in this paper is based on data collected during a week-long immersion in the community lifestyle during Autumn 2014. Data was gathered in the form of personal observation, 9 semi-structured, one-on-one interviews ranging in length from 15 – 90 minutes, a group interview over a communal dinner, as well as review of literature including the community website, blog postings and mainstream media articles. Interview questions explored how living in the cohousing community contributed to residents being able to live in an environmentally (and socially) sustainable manner, and sought to identify what residents thought were significant everyday sustainable practices, and the elements that formed those practices.

Description of Murundaka Cohousing Community

Murundaka Cohousing Community is located in Heidelberg Heights, Victoria, approximately 15 km from the centre of Melbourne. It is owned by Earth Housing Co-op, a Melbourne based housing cooperative that is a member of the Common Equity Housing group. It consists of 18 private, self-sufficient apartments split between two 3-level blocks situated around an extensive common house. The common house contains a commercial kitchen with walk-in fridge and large pantry, dining and living space, semi-separate library/TV room as well as guest rooms and/or office space. In addition, there is a large communal garden/yard space. The first residents moved onto the premises in December 2011 (although members had been meeting regularly for at least a year prior to moving in), and at the time of the case study visit there were 35-40 people living on-site.

Murundaka exhibits the six characteristics of cohousing development that were discussed previously, although the participatory design process was modified by involvement of federal government stimulus funding in the financing. As an example, all the apartments are designed approximately 10% smaller than they would otherwise have been, and this saved space is combined into the ‘extensive common space’ of the shared common house. Although all apartments are fully self-sufficient (other than not having internal laundries), the common areas at Murundaka are designed and located for daily use, to supplement the private living areas.

Findings

Through the case study interviews and observations of the organisation of everyday life within the Murundaka community, a number of practices emerged as being of key significance to the residents understanding of everyday sustainability within the cohousing community. Often, they are not practices that are unique to a cohousing community (e.g. growing food in a backyard garden). However, it seems that there are elements of practice within the cohousing community that may contribute to these common practices having a more significant impact on reducing household consumption than would otherwise be expected (e.g. very large communal backyard, and permaculture trained resident to share knowledge). A

reduction in household consumption of resources is a key aspect of reducing the environmental impact of a household or community. Therefore, some of the key practices that are most clearly linked to consumption of resources are discussed below, with more included in the summary

Table 1.

Designing a cohousing development:

One of the most significant impacts on the perceived sustainability of the community came from the way that Murundaka was conceived and designed. The founding members of Murundaka had a specific image of the design of a housing community, one that emphasised social interaction, increased communal space and helped residents live a lower environmental impact lifestyle. Although the founding members did not actually design the building, they were involved in the whole design process, and had significant interaction with the architects and builders. Different competences from a traditional housing design were involved, with the design incorporating the principles of cohousing, and designing a community with a large amount of shared space.

Yeah so we all gave up the spare room. Or you could call it the stuff room. In lieu of the common spaces. So the guestroom that is downstairs we book and we share it, and so we don't have to have our own spare rooms. We don't have our own laundries, we share a laundry. The workshop, the creative space, the office, all that is shared space. (Female resident 1)

Growing food:

Most residents discussed gardening as an important practice for personal sustainability. There was a community ambition to be able to supply 10% of their food from the garden, motivated by a variety of meanings such as self sufficiency, personal responsibility for food supply chain, and a desire for locally grown, organic food.

"So we have people who are really passionate about growing your own food, and really concerned about is food security." (Female resident 4)

The material element of gardening practices included a large area in the communal backyard that was dedicated to gardening, with vegetable plots, compost bins and a chicken run, as well as shared tools and a supply of willing gardeners. The organised garden group had about 10 members, and met roughly monthly for working bees. Different people held different levels of gardening competences, with at least one community member having permaculture training, whilst others just enjoyed gardening and were happy to contribute and learn from others. This personal engagement and learning-by-doing through participation in working bees, or organised workshops (e.g. composting) appears to be an important mechanism for the spread of know-how within the community.

"Anyway so here, you know, we can share the work. And things that I cannot do on my own I can do." (Female resident 4)

Car sharing:

Car sharing is a practice that is occurring in a number of forms is at Murundaka. At least one member has a car listed on an online peer-to-peer car sharing network (Car Next Door), and other residents are using the available share car. Other residents co-purchased and shared a car in a smaller, private sharing network. Sustainable transportation, particularly the minimisation of private vehicle usage and emphasis on greener forms of transportation was a concept that was designed into the community. Only 14 car spots were provided for 18 units, with this being approved by council based on the assumption that private vehicle ownership would be reduced. Greener transportation as an aspiration or meaning has linked with the material lack of car spaces to encourage car sharing as a practice to occur. A particularly significant element is the trust that has developed amongst community members, both through shared experience and community processes, that facilitates the sharing of a significant resource.

"The one thing, well one thing that I have seen is that there has been a few, and I have done this, which is something that I never would have done before, is to share a car....

What changed? [Interviewer]

Ummm, I think living in the community and trusting people.” (Female resident 3)

Disposing of waste:

Reducing the quantity of waste disposed was an aspiration for Murundaka from the design stages, as reducing the environmental impact of the residents was one of the symbolic meanings for Murundaka community. Since the residents moved in, other meanings that are shared, such as the desire to reuse goods and materials, and the idea of trash as someone else’s treasure, or waste as a resource, have been integrated into the community waste disposal practices. During the planning stage, the number of waste bins was restricted in an agreement with council, locking-in the waste minimisation aspiration. A small, unused pump room has been repurposed as the Resource Utilisation Group (RUG) room for the collection and sorting of waste, and chickens and compost bins are in the garden for the reuse of kitchen scraps. Know-how for appropriate waste disposal has developed as the community has matured, with more community members having an understanding of what materials can be recycled, reused, composted, fed to chickens or disposed of. This know-how has been shared throughout the community using signage, private knowledge sharing, as well as through some people taking leadership roles (see quote below). The public leadership of some members, and the publicly shared weekly audits of the number of bins used by the community also serve to reinforce the social and symbolic significance of appropriate waste disposal.

Like if I do see polystyrene going into a landfill bin I will pull it out, put it into the RUG room and yeah. Sometimes I do that. For a while there... the wrong things were going into recycling bins... And I was consciously pulling things out, like getting into the bins... to pull out things that didn't belong there. And people saw that (Female resident 1)

Summary of key practices and elements

Table 1 summarises six of the key 'sustainability practices' identified at Murundaka, as well as exploring the elements of these practices.

Table 1: Key practices and elements associated with sustainability at Murundaka

Practices	Elements		
	Materials (things, stuff)	Competences (know-how, bodily knowledge)	Meanings (symbolic meanings and images)
1. Designing a cohousing development	Sufficient land Architectural design tools	Cohousing design principles Community participation skills	Design for social interaction Maximise communal space Ecologically Sustainable Development principles Sympathetic development group
2. Growing food	Large communal backyard dedicated to garden Shared gardening equipment & tools Pool of willing labour Plentiful compost Rain water tanks	Permaculture, gardening and composting knowledge Cooking of seasonal vegetables Preserving of excess food	Self-sufficiency and personal responsibility (grow own food) Local, organic food is desirable
3. Car Sharing	Communal car(s) Car sharing platform (Car Next Door) Reduced parking spaces	Recognition that only need car sometimes How to share Knowledge of how to use car sharing website	Reducing environmental impact Save money Trust of neighbours Quality of life tied to access not ownership
4. Dining	Communal spaces (commercial kitchen, dining area, pantry, fridge, freezer) Building design so that common area is visible as people arrive home Shared bulk dry foods	Community participation policy Learning skills from people Can check if people in kitchen when arriving home from work	Social interaction Build community Save money Spend less time cooking by sharing
5. Shopping for clothes	Permanent open closet clothing exchange space Unwanted clothes	Browse clothes while doing laundry Know swapped clothes can satisfy desire for novelty	Reuse Save money Novelty as driver of consumption Trash as treasure
6. Disposal of waste	Restricted number of council bins Waste (Resource) collection and sorting room (RUG room) Chickens & Compost bins	Collect waste in RUG room Bin audits Composting knowledge	Trash as treasure and the power of a collection (of jars etc) to become a resource Reuse Reduced environmental impact

Some elements of these practices above were constitutive elements of a number of practices. The physical materials and infrastructure of the communal spaces and resources provided opportunities for a number of practices that would have been difficult to access within the confines of a single dwelling, and were seen as a key material element.

...you see the effect of just providing a space, just having a big enough space. It's the apartments yes, but it's the common shared facilities where it happens. And it is like... alchemy. It's transformational (Female resident 1)

The community members shared symbolic meanings around the significance of living in an environmentally sustainable manner. This was reflected in a number of ways, such as the idea that waste can be viewed as a resource, and that someone's waste can be valuable to someone else was an element of meaning in a number of practices, and particularly in practices that had a clear link to the consumption of resources. Another meaning that was integrated in a number of practices, and had an effect on the way practices related to resource consumption was the idea that access to things was more important than the ownership of those things, that a shared resource, or space, was able to satisfy the same need as an individually owned one. And by developing the competence of living in a strong and interactive community, sharing was made much more common. As one resident noted;

"if quality of is measured by your access to material things... our quality of life in that measure has gone up". (Female resident 2).

Finally, the access to knowledge and practical competence in the community was a key element in both enabling and empowering community actions. Many community members were experts, or held extensive knowledge in particular areas (e.g. permaculture gardening, home energy auditing, all-weather cycling), and the extensive social interaction of the cohousing community creates an environment which facilitates knowledge sharing. This exposure to new forms of know-how could occur in semi-formal situations (e.g. gardening working bees), or through more informal everyday interactions.

Discussion and Conclusion

This research has focused on exploring the ways that cohousing can impact environmentally sustainable living practices. Murundaka Community in many ways can be expected to be an exemplar cohousing community for sustainable living practices, as living sustainably is part of the community vision, it is a recently finished construction, and the community has strong links with the Sustainable Living Foundation, so many residents came to the community with a strong environmental ethic. So what can be learnt about the way that an intention to live more sustainably (meaning) combines with the built form of the cohousing community (material) and the knowledge to turn those intentions into reality (competences)?

The practices that were discussed above were identified as being of significance to community member's ideas of living sustainably by a number of interviewees, and can be considered practices that have been adopted by enough carriers and formed enough links between elements to have achieved some degree of stability. This is in itself of interest, as these are the practices that have survived and evolved with the community. For almost all residents, Murundaka was the first cohousing community they had lived in. Moving in was the beginning of a new way of living, not only in a new home, but also, for most residents, in a new location. This was undoubtedly a significant life moment, and one that exposed all residents to new 'ways of doing', and potentially allows a reconfiguration of the elements of many of the practices for which they were carriers. The 'unfreezing' of locked-in practices is a vital ingredient in changing habits, whether through significant changes, or other means of raising awareness of actions from practical to discursive consciousness (Jackson 2005). Major life events such as moving into a new, and different type of housing, can be regarded as transitional periods where people acquire new competences (Royston et al. 2014), and are exposed to new meanings and materials. The everyday practice-as-entities and as performances are then opened to the possibility of changing configuration. At Murundaka, restricted parking spaces combined with an available share car and a neighbour who can explain how it works may encourage a resident to adopt car-sharing as part of the bundle of mobility practices they carry. The existence of a supportive social environment, in this case the cohousing community, is key to the effectiveness of the reconfiguration of practices (Jackson 2005).

Spurling et al (2013) and Watson (2012) highlighted changing elements of practice as a key mechanism for intervening in practices. Many residents carried meanings of significance to environmentally sustainable living into the community, and these elements were adopted and made prominent within the community through a visioning process. This visioning process provides a means of raising many practices and elements, particularly meanings, from the practical to the discursive consciousness of all members of the community, as well as the extended group of people that interact with Murundaka through visiting friends and family, or attending community events hosted by Murundaka. Spaargaren and van Vliet (2000) have suggested that bringing practices or elements of practice into discursive consciousness is a crucial step in creating pro-environmental change, and one that should involve a social exploration of new alternatives at a group or community level (Jackson 2005). An obviously changed material element available to the Murundaka community is the generous and useful communal spaces, and this was highlighted as a key element that was fairly unique to a cohousing community, and it was integrated into most of the practices discussed. The communal spaces are also fertile and dynamic spaces where different elements and practices interact in a multitude of ways, and the spread of different elements can occur. Know-how is an obvious example. Know-how can be formed through collective experiences and shared participation in practice – it can be passed on through 'showing' and through 'doing together', and the opportunities to 'do together' are magnified by increasing the quantity of everyday life that is performed in communal spaces.

This raises the idea that encouraging communal spaces where everyday living occurs, as places where new elements (i.e. elements significant to environmentally sustainable living) can be exposed to new carriers, may be one area where policy makers can intervene. The restricted number of parking spaces, which was an element in the evolution of car sharing in the community, is also an example of influence by council policy makers, although in this case it was the community that took the lead in renegotiating existing planning guidelines.

The governance of practices, and the idea that policy makers or planners can promote sustainable practices, is an area of ongoing discussion and research (Shove & Walker 2010; Spurling et al. 2013). Practices are always changing, and therefore it makes sense to consider ways to guide them along more sustainable trajectories. Shove & Walker (2010) caution that practices often have emergent and unexpected trajectories (it is easy to image alternative trajectories from the reduction in car spaces), and emphasised the need to attend to all the elements of practice, as well as the ongoing processes of transformation, evolution and feedback within the circuits of practice reproduction (Shove & Walker 2010). Similarly, Spurling et al (2013) conclude that a practice approach demands more than one-off interventions, and recommend intervening in the way that sets of practices interlock, and the institutions and infrastructures that maintain such arrangements. The cohousing community is by design both intentional and reflective in nature, as evidenced by the codified vision statements, monthly meetings for all residents, and numerous sub-groups focusing on specific community issues. It can be argued that this is particularly appropriate for attending to the ongoing evolution of everyday practices within the community along a sustainable trajectory, and this concept will be further explored within this doctoral research project.

This paper has drawn on research investigating sustainable practices at a leading Australian cohousing community. The use of practice theory to look at everyday behaviours allows the complex interactions between the elements of practice to be foregrounded, and highlights some interesting changes in the elements of everyday practices. The increased sharing of spaces and resources within the cohousing community presents opportunities for the reduction in resource consumption associated with many practices. The emphasis on communality also creates a supportive social environment in which meanings and competences can be readily shared, and practices potentially reconfigured in more sustainable ways. Whether cohousing remains a niche idea from which to learn, or is more widely adopted, it can help to address a number of social and environmental problems that will face Australian cities in the future. There is a place for further research that explores how important elements of sustainable practice can be spread into more standard Australian neighbourhoods and housing developments, or that looks at the barriers and enablers for the adoption of cohousing in Australian cities on a larger scale.

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