

LESS IS MORE? - INVESTIGATING TINY HOMES AS A SUSTAINABLE HOUSING ALTERNATIVE

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ABSTRACT

This paper looks to investigate the emerging world of tiny homes in the context of increasingly problematic environmental change. As environmental issues continue to unravel across the globe, it is becoming ever more necessary to devise innovative and comprehensive solutions to such challenges. At present there has been little academic research into the recent rise of tiny houses and the related tiny house movement. Popularly tiny homes are portrayed as eco-friendly forms of dwelling, encompassing the minimalist credo that less is more and aspirations for a simple life close to nature. This research investigates tiny homes and their viability as a sustainable alternative to conventional housing, focusing particularly on the benefits that accompany a decreased home size, and the impact that spatial alterations can have on the lifestyles of those dwelling within said spaces. The present hurdles and drawbacks of tiny house living are also explored. This research includes data collected through interviews and questionnaires with tiny house owners, as well as visits that I undertook to relevant sites. Ultimately, this research assesses the role that this specific form of alternative housing can have in developing the sustainable societies necessary to combat current environmental change, arguing that innovative transformations to human housing practices can foster eco-friendly behaviours.

INTRODUCTION

Humanity is currently living in an age of drastic environmental change (Grimmond, 2007). At present, global habits of consumption drive a myriad of detrimental environment impacts, including; greenhouse gas emissions (GHG); deforestation; desertification; and biodiversity loss (Grimmond, 2007). In July 2018, UN Environment and Yale University unveiled the Ecological Living Module (Fig. 1), a small-scale housing unit utilising modern technology to achieve a drastically reduced environmental footprint when compared to conventional housing (Wells, 2018). These types of innovation are demonstrative of a growing focus on home space as potential sites of socio-ecological improvement. Current decisions about how people dwell have important implications for the future of the planet (Grimmond, 2007). Our individual and collective life-styles, choices and actions all contribute to problematic environmental changes. Housing ourselves in an environmentally friendly manner is one promising form of counteraction.



Figure 1: The Ecological Living Module fuses innovative sustainable technology with the structure and ethos of a tiny home (Wells, 2018)

The overall aim of this research is to investigate the potential of tiny houses in creating sustainable housing practices, asking if a shift in the design of our home spaces can help humanity tackle issues related to environmental change. Additionally, it seeks to investigate whether, and if so how, downsized home spaces can be used to promote eco-friendly and anti-consumer lifestyles. Thus, this article shall explore the potential of tiny houses to fulfil needs for sustainable housing and highlight the issues faced by those who inhabit these unique spaces.

An Overview of Tiny Homes

Throughout human history, cultures across the globe have called small spaces home; grass huts, log cabins, yurts, and even the unconventional igloo and Gypsy wagon, all represent housing styles espoused by societies across the world (Evans, 2018). Evolving alongside these small houses are philosophies supporting simple living, like those developed in Henry Thoreau's influential 19th century work *Walden*, where he documents two years of living in the woods of rural Massachusetts. Thoreau was a transcendentalist, arguing for a simple, self-reliant life, surrounded by nature. He wrote:

Most of the luxuries and many of the so-called comforts of life, are not only not indispensable, but positive hindrances to the elevation of mankind. With respect to luxuries and comforts, the wisest have ever lived a more simple and meagre life than the poor. (Thoreau, 1854: 15).

At present, Thoreau's ideas of the prioritisation of emotion and intellect over possessions resonate against contemporary issues surrounding late capitalism and the growing interest in the tiny house movement (Ford and Gomez-Lanier, 2017).

Nowadays, alternative housing concepts have captivated interests in a growing tiny house movement, especially over the past two decades (Kilman, 2016). Simple living philosophies,

particularly minimalism, continue to permeate mainstream culture: the popularity of Netflix's *Tidying Up with Marie Kondo*, for example, attests to the growing interest in anti-consumption lifestyles. In their current form tiny houses encapsulate this minimalistic world view, whereby even excess space is erased. In a tiny house emphasis is placed on self-reliance, the minimising of living space, and the reduction of one's environmental impact (Fontenot, 2015). Owners frequently adopt the minimalist saying that 'less is more,' implying that a more fulfilling life is attainable by decreasing material belongings (Ford and Gomez-Lanier, 2017). In practice, a reduction in available space forces inhabitants to remove unnecessary commodities from their home (Carlin, 2014). The movements relative infancy means there have been few academic discussions regarding tiny homes and a lack of existing literature (Ford and Gomez-Lanier, 2017). This recent emergence also makes it difficult to define tiny homes, however, size, architecture and the promotion of simple living are all key considerations of tiny house design (Fig. 2).



Figure 2: A typical tiny house

The recent rise of tiny housing can largely be attributed to the global financial crisis of the mid-to-late 2000s, where many people lost their homes and were forced to tiny houses in search of more affordable living (Carlin, 2014). Additionally, the sharing of online imagery has aided a growing global interest in off-grid dwelling (Jørgensen, 2015). Whilst the exact size of tiny houses varies, they are generally no larger than 300 sq. ft (27.9 sq. m). The average floorspace of homes in the United States is 2596 square feet (241 sq. m), a figure that has doubled since the mid-20th century, significantly higher than typical tiny house parameters (Boeckermann et al., 2019). Structurally, tiny homes typically consist of a single large room that functions as a living-and-kitchen space (Fig. 3), a small bathroom, and a loft area containing the bed space.



Figure 3: The interior of a tiny house. Although smaller than a conventional living room, most of the usual features are accounted for. In this house the bed space is located in a separate room instead of a loft.

Whilst this is the conventional layout, these features can vary; for example, in homes with larger family sizes where additional bed space is required (Kilman, 2016). Whilst not applicable to all tiny homes, other common characteristics include self-built homes and the high proportion of tiny homes on wheels (Fontenot, 2015). Furthermore, the lower energy demand, compared to conventionally sized houses, typically makes it easier to integrate renewable energy sources into the home (Evans, 2018). In rural areas tiny homes have been popularised by those looking to pursue an off-grid existence (Ford and Gomez-Lanier, 2017). However, it is not uncommon for owners to dwell in secrecy, due to building regulations that frequently render their homes illegal (Evans, 2018). In sum, a tiny home seeks to provide all of life's essentials whilst eliminating excess space, leading to their association with anti-consumer lifestyles, particularly minimalism.

Geographies of Architecture and the Home

Recently there has been an increase in studies of the physical features of human habitation, or geographies of architecture. At present many geographers are investigating the practical influences of architecture, moving beyond simply symbolic interpretations of space (Jacobs and Merriman, 2011). For the purpose of this article, space should be understood as a three-dimensional area, separate in some way from other surrounding areas, either through physical form or purpose. For example, a tiny house constitutes its own space, separated from the external environment by walls and its function as shelter for the inhabitant: a 'self-contained world,' distinct from its surroundings (Tuan, 1977). Jacobs and Merriman (2011) consider a 'be-ing with' architecture, suggesting that just as we inhabit buildings, buildings inhabit our lives, influencing us in ways that we are aware of and often oblivious to. Ultimately, architecture plays a significant, if subtle, role in our lives. Modern built environments have only minimal spiritual significance, yet architecture still impacts directly on our senses and feelings. The human body responds to features such as height, width, spaciousness and light (Tuan, 1977). Different people can have opposing experiences of the same space: 'the claustrophobe,' for example, 'sees small tight places as oppressive containment, not as contained spaces where warm fellowship or meditation in solitude is possible' (Tuan, 1977). Moreover, small spaces themselves can be considered counter-cultural because owning space is generally perceived as a physical manifestation of one's wealth. This spatial aspect of capitalism creates a desire for space: to exhibit one's success and store possessions that function as material indicators of wealth. The Western world, in particular reveres spaciousness, associating it with freedom (Tuan, 1977). The small spaces of tiny houses thus juxtapose themselves with orthodox perceptions of a prestigious life, instead insinuating that smaller spaces are the means to a free and fulfilled life.

Blunt (2005) believes that the home is a lens through which we can understand societal and spatial aspects of the world. Geographers have studied the ways in which 'domestic architecture and design can be inscribed with meanings, values and beliefs' (Blunt, 2005: 507). The inhabitation of space involves dynamic interactions between people and the surrounding physical structure (Jacobs and Merriman, 2011). Our dwellings are familiar spaces and intimately understood; much of life takes place there (Tuan, 1977). As a result, homes become imbued with meanings, emotions, experiences and relationships; our home experiences are entwined in our memories, everyday habits and future dreams (Blunt, 2004). If we can accept that space has a 'capacity for symbolization' - that life's values can be manifest in space - then arguably, it can

be derived that home space can proactively proliferate sustainable lifestyles in an age entangled in environmental issues (Tuan, 1977: 5).

METHODOLOGY

This study utilised several methods, including an online questionnaire, site-visits and interviews. The variety of methods was employed in order to collect enough satisfactory data: tiny houses are something of a niche topic, particularly in Scotland. For the purposes of this research, an online questionnaire was developed and posted in the Facebook group 'Tiny House People,' an online community for tiny house enthusiasts. Boeckermann et al. (2019) used this group in their successful research, demonstrating that Facebook can be an effective way of connecting with the tiny house community. The group was chosen due to its global audience of people involved in the tiny home movement, many of whom have first-hand experience of living in a tiny house. The questionnaire consisted of both closed and open questions, designed to obtain concise data for comparison, and to give participants a chance to expand on their personal experiences. It firstly focused on eliciting general details regarding their home, before moving on to questions about lifestyle. All participants were required to be currently living in a tiny home and to be at least eighteen years of age. The questionnaire received 33 responses, all of which were anonymous: thus, participants are referred to as 'respondent' when quoted.

To obtain a more personalized understanding, two sites in Scotland were visited to observe alternative communities. The first site was Findhorn Eco Village, an alternative community focusing on an environmentally friendly existence, located near the similarly named Findhorn village. Here a guided tour was taken to learn about the site. The tour was given by a resident of the village and included discussions with other people from the community, providing valuable insight into the lives and practices of those living there. The second site visited was The Social Bite Village in Edinburgh, a recently completed tiny home community, built to temporarily house homeless individuals. Contrastingly, this site represents a Scottish community in an urban setting where tiny homes are being utilised en-masse, but not for environmental purposes.

Additionally, interviews were used to collect information only understood by those involved in the tiny house movement and to allow for participants to share their personal experiences (Cloke et al, 2004). Analysis of social media posts and interview transcripts helped substantiate data collection. For both of these methods, coding was used to draw out specific themes relevant to the research. The interview and social media results are not directly mentioned in this article.

As with any research, this study encountered several limitations. A lack of academic work conducted on tiny homes in Scotland, has made it difficult to contextualise the results in a Scottish setting, as was initially intended, and therefore the results should be understood within a broad Western setting. While both questionnaires and interviews were useful, certain themes were likely missed due to the relatively small sample sizes. Additionally, questionnaires were confined to the online Facebook community, which is not entirely representational of the community overall. A clear majority of questionnaire responses came from the United States, again making it difficult to relate to Scottish experiences. In the future, more preparation would have helped to successfully establish the connections with Scottish tiny home owners needed to undertake such a project properly. Furthermore, more specific questions, larger

sample sizes and a more focused area of study would allow for some of the highlighted themes to be developed further.

RESULTS

Sustainable Benefits

This section shall explore the findings concerned with the eco-friendly features of tiny homes. Of those who took part in the survey 70 % live on-grid, meaning that their houses are connected to the national electrical grid. This leaves 30% who live off-grid. One of the main limits to those going off-grid is the initial cost as much of the equipment required – such as solar panels - is expensive, especially on top of building expenses. Despite not all the homes being off-grid, there was still a high proportion employing eco-friendly technologies, with all but one of the respondents incorporating these features into their home. The most popular feature was the inclusion of a composting toilet by 42% of respondents. A composting toilet reduces water usage and allows for human waste products to be repurposed, through natural composting processes. After each use a biological material, such as saw dust, is added on top of the human waste to aid biodegradation and seal in odours (Mitchell, 2014). The toilet is regularly emptied into an outdoor container where composting can continue and eventually be applied to fertilise garden spaces; the drawback is that residents need land-ownership or permission from the land owner to properly utilise this feature (Mitchell, 2014).

The next most popular eco-friendly technology shown in the survey results is the usage of solar panels, recorded by 33% of respondents. This renewable form of energy can easily be employed in tiny homes because of the small size of their electricity dependent appliances and can be aided by the orientation of the home. It also allows for the homes to be powered off-grid because less energy is needed; thus, needs can be met through solar power alone, especially when using energy efficient appliances. 18% of respondents highlight their usage of these appliances, further reducing their energy consumption. Importantly, some appliances can have drawbacks, such as small refrigerators that reduces capabilities to store food over longer durations (Anson, 2014). In terms of supplying water to their homes, 18% use collected rain water to supply clean water for use in their house. Once collected the water can be stored and then used for cleaning, cooking and drinking. Wood burning stoves were noted by 18% as an eco-friendly feature, replacing the need to heat the home through electricity. Of course, for this to be sustainable wood must be harvested in the correct manner. Additionally, 18% noted insulation as a way of improving the heat retention of the home, thus requiring less energy. 9% of the homes used recycled materials in their construction, reducing usage of new materials. Finally, 12% utilise LED lights that require less energy than conventional lighting sources and provide enough light to sufficiently fill the smaller spaces (Mitchell, 2014).

Despite the positive features mentioned above, arguably the most significant benefit of tiny homes, at least from an environmental perspective, are the ways that it can help the environment through architecture. Common forms of housing put strain on the natural environment surrounding residential areas and increasing house sizes aggravate this issue. In general, people residing in Western societies have more living space than ever (Boeckermann et al., 2019). The sustainable features already mentioned can be realised across a variety of housing types, however the architecture of tiny homes represents an exclusive benefit to forms of small alternative dwelling, especially tiny houses. The questionnaire results revealed an

average floorspace of 282 sq. ft, vastly smaller than conventional houses in the US at 2596 sq. ft. As the majority of those surveyed reside in the US, this demonstrates the contrast in size between average homes and tiny ones. House size was even noted as a sustainable feature in the questionnaire: ‘A small space is by nature eco-friendly’ (Respondent 20). By reducing the physical structure of the house, a smaller artificial imprint is made in the environment. This decreases the amount of surrounding land altered from its natural state, in a sense conserving the space; this conserved space can then either be left in its natural state or converted into a garden area, which is a popular choice. Both options can still be used by wildlife. When used by residents, gardens can produce resources for use in the home, increasing self-sustainability and simultaneously reducing reliance on distant eco-systems. Therefore, the spatial aspect of tiny homes offers a sustainable alternative to current housing practices, especially in suburban and rural areas, where space salvaged through a smaller structure can be used as green space instead.

Lifestyle Benefits

Along with the spatial nature of these homes it is also important to recognise the impact that downsized space can have on resident’s behaviour (Tuan, 1977; Jacobs and Merriman, 2011). The vast majority of people found that living in a tiny house encouraged them to be eco-friendlier, at 85%, compared to 15% who did not, altering their behaviours (Fig. 4). However, inhabitants rarely chose to live in a tiny home solely due to these eco-friendly benefits, and only 9% of respondents noted environmental reasons as their primary motivation, with the majority being drawn in by financial and other lifestyle benefits, such lower living costs. Eco-friendly aspects are for most, an added extra: ‘being eco-friendly was a bonus’ (Respondent 21).

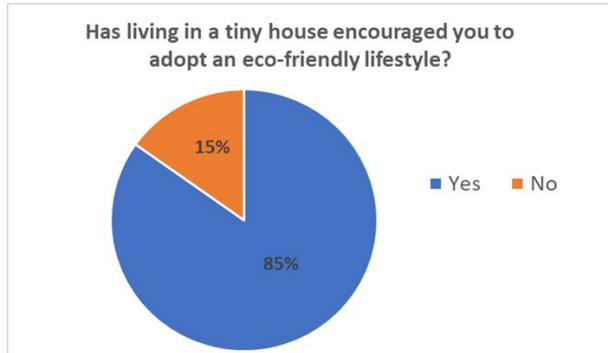


Figure 4: Pie chart showing encouragement to adopt eco-friendly lifestyles. The vast majority of participants, at 85%, felt they had become more eco-friendly.

Various reasons stand out as contributing to this notion of an eco-friendly life, which were entangled in romantic notions of living in nature. Some inhabitants noted that their tiny house allowed them to foster a closer, more intimate relationship with their natural surroundings: ‘I have a closer relationship with my personal environment and that extends to the earth’ (Respondent 13). This is partially due to many of the homes being located in a rural area; however, it is important to acknowledge the role architecture plays in the promotion of said relationship. Structurally, tiny homes promote the ‘liquidity of architecture’ (Jacobs and Merriman, 2011: 214). The home connects inhabitants to the outside world through usage of apertures, bringing light into the home, whilst allowing those inside to visually experience the external environment (Fig. 5). The smaller indoor spaces in and of themselves promote a

lifestyle that takes place out of the home, to find open space one has to venture outside. In a sense, the architecture of tiny home blurs the line between interior and exterior, through the downsizing of indoor space residents are inexorably pushed into the exterior realm, in turn familiarizing themselves with it and forging a deeper connection with the non-artificial, natural environment (Jacobs and Merriman, 2011).



Figure 5: This tiny house's windows let light into the home, as well as allowing for the surrounding environment to be taken in

Moreover, inhabitant’s consumer habits are also influenced by downsizing. Living in small spaces encourages inhabitants to think carefully about every purchase, as there is less storage space than in a typical dwelling. Reducing consumption is also an integral part of the tiny home movement’s ethos (Anson, 2014; Boeckermann, et al., 2019). ‘Less space encourages unnecessary purchases’ (Respondent 16) and living in a tiny house impacts upon ‘purchasing behaviour [as there is a] limited room for stuff’ (Respondent 19). Certainly, there is a relationship between tiny home living and concepts about distancing one’s self from common habits of consumption and adopting an anti-consumer approach to life. Often this type of lifestyle is associated with minimalism, the pursuit of a fulfilment through immaterial experiences (Dopierala, 2017). This minimalist approach exposes contemporary beliefs that consumption can generate a feeling of freedom, instead endorsing liberty that is obtainable out with of consumption (Anson, 2014). 52% of those surveyed consider themselves to be minimalist, compared to 33% who did not and 15% who were unsure, highlighting a majority that consider their separation from consumer processes part of their identity, integrating the minimalist credo of ‘less is more’ into their everyday routines (Dopierala, 2017). Even those who do not consider themselves minimalists are still constrained by the space of their home, inescapably forced to limit the purchasing of excess things because ‘... a tiny house by nature does not allow for excessive material goods’ (Respondent 7). Therefore, a lack of living space can ‘choreograph’ anti-consumer behaviours into home life (Jacobs and Merriman, 2011). In addition to the benefits that going tiny can bring to surrounding environments, tiny homes can also benefit geographically distant ecosystems through their promotion of sustainable lifestyles that limits excess consumption, in turn reducing detrimental environmental impacts. In essence, home space can produce change through ‘conscious effort and intention... but it may also be a result of an embodied being in the world with architecture’ (Jacobs and Merriman, 2011). In the words of one inhabitant: ‘your relationship to others and the environment is heightened because of the close space’ (Respondent 32). Hence, tiny homes are able to benefit natural environments, both near and distant, through their spatiality.

Tiny houses can benefit inhabitants in other ways, too, through outcomes that build upon the liberating aspects of small housing. Anson explains that lower monthly costs, due to cheaper bills, can free up disposable income to fund pursuits of fulfilling activity (2014). A tiny house, 'let's people save money for other things like schooling, vacations, or retirement' (Respondent 8). Another participant noted, 'I find myself out of my house more doing more activities and adventures' (Respondent 11). The importance of fulfilment stands out in the general rhetoric of tiny house living. 94% believed their quality of life had improved since going tiny, while the remaining 6% felt that it was unchanged; none felt their quality of life had decreased. This result is not entirely surprising, due to the palpable positivity that radiates from much of the movement, yet it does contradict popular discourses related to a fulfilling life, in which material goods can bring about happiness. For some a tiny house was the 'best decision we ever made' (Respondent 8). Housing satisfaction does have the potential to contribute to overall life satisfaction, whereby good housing can provide a strong base upon which one can build a happier life (Boeckermann et al., 2019). Society often overlooks the possibility of cultivating well-being through architecture (Jacobs and Merriman, 2011). More specifically, the arrangement of space itself represents a unique catalyst for positive personal development, that can overflow into the exterior world; affording inhabitants the opportunity to forge an improved life for themselves and producing a sense of fulfilment that spreads into aspects of the inhabitant's existence that transpire beyond the home.

Limitations of Tiny Houses

Whilst there are seemingly many benefits to tiny houses, there are certainly limitations faced by potential owners and current inhabitants, many of which would not be encountered in a conventional dwelling. Most respondents noted issues, in contrast to the 18% that did not encounter any issues. If one is fortunate enough to already own a property, then their construction of a tiny home is legally allowed, as an accessory dwelling unit: 'it was done as an ADU [accessory dwelling unit] to on a property I already owned and had a house on' (Respondent 15). Yet, while many issues represent an inevitable and normalised hurdle for potential owners - 'nothing beyond normal' (Respondent 13) - there are significant problems interwoven into the fabric of tiny houses which are a result of the movements infancy, problematizing how they are defined, along with a lack of awareness of these dwellings in general populations. This results in a lack of consideration and thought regarding tiny homes, both from a policy and provisional standpoint, making it hard to fully follow through on the realisation of a tiny home without issues arising. For example, there is distinct lack of financial support mechanisms available to tiny house buyers, such as mortgages, meaning that many prospective owners already must have acquired the capital required to buy the home (Anson, 2014).

In many places, tiny houses are yet to be defined by policy makers, stuck in a twilight zone between mobile homes and accessory dwelling units. In Scotland, especially, issues are created for budding inhabitants largely due to the financing, planning and insuring of their would-be homes. Particularly significant are the host of problems that arise due to minimum requirements for houses, that require homes be a certain size. To avoid this issue a tiny home owner can pursue the regulations highlighted under the British Standard 3632, a specification relating to residential park homes and residential lodges, technically categorising the tiny house in a similar way

to a caravan. Until policy regarding small alternative houses is adjusted to account for the desires of tiny house owners, the uptake of this style of housing will be greatly hindered. In some cases, in America, enthusiasts are pushed underground: 'we have been hiding in back yards, working in Colorado to legalize tiny home communities' (Respondent 8), forced to hide their tiny home away from the eyes of regulators for fear of prosecution. Of course, for those whose homes are on fixed bases their existence is even more perilous. Clearly, if tiny homes are to play any role in fostering more sustainable housing practices on a large-scale, policies must first be altered, from linear practices that only accommodate typical forms of housing to more open and permissive regulations.

CONCLUSION

The results of this study have highlighted various themes related to the tiny home movement, developing these themes in a geographical context. This research has demonstrated that tiny houses represent a unique opportunity to implement sustainable technologies effectively, whilst establishing spaces where eco-friendly behaviours are encouraged. Tiny house owners commonly encounter issues, particularly those of legality and legislation. However, despite these issues, most inhabitants significantly improve their lives in these small spaces, reconnecting themselves to nature and adopting a lower environmental footprint. At a large-scale, tiny homes theoretically represent a method to reduce anthropogenic environmental impacts, however, current policy attitudes greatly hinder this in practice. If everyone in society was willing to accept a life in small space, then tiny homes are a promising path towards a sustainable society (Fig. 6).



Figure 6: The Social Bite village in Edinburgh. Could this be the future of sustainable human neighbourhoods? A potential blueprint for a better world?

Sociologist Henri Lefebvre once declared 'Change life! Change society! These mean nothing without the production of an appropriate space... new social relationships call for a new space' (1991: 59). If this study demonstrates one thing for certain, it is the importance that spatial design has on our world, not only in terms of dwelling but of built environments overall. Space, in its arrangement and alteration, is intrinsic to life of Earth. A better understanding of the material implications of architecture, and its impact on human behaviour, allows us to improve the habits that shape our world. Our current period necessitates the production of socio-ecological space, where nature and society are afforded an opportunity to flourish. Frequently, the human imagination is drawn to conjure up future circumstances that envisage an Earth dominated by Blade Runner-esque cityscapes, plagued by pollution and devoid of the natural environment (Yuen, 2000). More than ever, we must question these dystopic depictions and develop new narratives

that envisage sustainable futures. It may be time to ask ourselves if less can indeed be more.

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