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Engaging with nature through the dwelling practices of garden landscapes

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Abstract

Based on an empirical study in Copenhagen Denmark, this article investigates whether and how a more diverse nature can be integrated in the dwelling practices of garden owners and users. Is concern for biodiversity part of the engagements inherent in gardening practices? And are such engagements integrated in the embodied competences of garden owners? Drawing on and discussing the theoretical approaches applied in affordance theory, Tim Ingold’s dwelling perspective, relational geography and practice theory the article analyses the affordances and affects that are maintained in common gardening practices and how these practices sustain or hinder the integration of a broader variety of species in suburban gardens. The study finds that concern for biodiversity and a deeper care for wildlife do not appear to play a significant role in gardening practices. But concern for wildlife and biodiversity does have a latent presence among the affects, conceptions and ideals that are – or potentially could be – enacted in the constitution of gardens landscapes. Based on its empirical findings and theoretical discussions, the article furthermore suggests that we need to consider how secondary experiences and media representations are an integral part of the co-constitution of landscape and dwelling.

Key words: dwelling; affordance theory; practice theory; biodiversity; gardening; affect

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Introduction

Are garden owners and users concerned with biological diversity? Could the inclusion of a broader variety of species be integrated in their gardening and dwelling practices? And are there, in the practices and orientations of garden owners and users, potential for a deeper engagement with nature and biodiversity? As loss of biodiversity (BD) continues at an alarming rate (WWF, 2016), these are relevant questions for two reasons. Firstly, popular engagement with nature is a key factor in halting the erosion of biodiversity (Secretariat of the Convention on Biological Diversity, 2014), an engagement that comprises a deeper understanding of the many ecosystem services provided by nature, but also an increased sense of connection between humans and wildlife in all its diversity. The garden constitutes a boundary space between the home and the broader landscape of flora and fauna, and as such it could potentially provide a setting for augmented affective connections with and better understanding of nature. As Ginn (2014) puts it, gardens might provide a space where humans learn to care for other species.

Secondly, habitat loss is a main cause of biodiversity erosion (WWF, 2016), so protection as well as provision of habitats is crucial for halting biodiversity loss. However, urban and built-up areas, including sealed surfaces for infrastructure, cover more and more land (European Environment Agency, 2010, 2015), and the open land is cultivated intensively for agricultural production; especially in a country like Denmark where 66% of the land is used for agriculture and an additional 10% is built upon (according to the national statistics agency’s estimate from 2012 (Danmarks Statistik, 2012)). Under such circumstances preservation of biodiversity should arguably not only rely on protection in designated nature spots and reserves but also on provision and maintenance of good living conditions for a broad variety of species in cultivated and built-up areas, including domestic gardens.

Gardens do not cover a majority of the land at either national or global level. Loram, Tratalos, Warren, and Gaston (2007) estimate that domestic gardens constitute between 11 and 25% of the total area in five different British cities. Private gardens (including summerhouse and allotment gardens) constitute an estimated 8% of the total area in the greater Copenhagen region that was the object of study (Petersen et al., 2014). It is an a priori assumption of this article that any improvement of the living conditions for a broader variety of wildlife, even in the relatively small share of the land that is covered by private gardens, can potentially make a difference for biodiversity by providing green corridors between larger green spaces, providing habitats that are otherwise marginalized by agriculture and other human activities, and not least by contributing to a deeper sense of caring for wildlife.
However, such a potential can only be realized if certain living conditions are advanced in the domestic gardens, and this in turn depends on the gardening practices of those who own and use gardens. The aim of this article is therefore to explore the social dynamics of co-existence between nature and humans in urban gardens. Do garden owners and users relate to a general and in some ways abstract concern for biodiversity? To what extent is engagement with nature integrated in the dwelling practices of suburban garden owners and users? And what is the potential for specific modes of co-existence, which can support a broader variety of flora and fauna and stronger care for wildlife? Please note that included in the category of ‘garden owners’ are henceforth also people who use and have the right of disposal over a private garden and occupy whatever houses, cottages or allotment huts that are located on the property, even though they do not own the land or the house.

The article will proceed with an overview of core insights from gardening studies and a general discussion of theoretical approaches to the relationship between humans and their material surroundings in general and garden owners’ engagement with nature in particular, introducing also the concept of dwelling practices, which seeks to combine the different theoretical approaches of practice theory and the dwelling perspective. Having thus laid the ground, the article will present results from an empirical study in the greater Copenhagen area in Denmark about gardening practices and biodiversity enhancement.

**Gardening studies**

Private gardens and gardening practices have been the subject of some studies from disciplines like sociology, human geography, anthropology and psychology. Nature and environmental perspectives are addressed from different viewpoints in a number of these studies. The issue is thus an integral part of several studies, which investigate and categorize the different meanings, values and benefits that are associated with gardening. An overview of such studies can be found in Freeman et al. (2012) who compose a typology, based on Kiesling & Manning (2010) as well as Gross & Lane (2007), of the values and meanings that people attribute to gardening. Their list includes the following:

- Escapism; the garden is valued as an antidote to a stressful life, and the garden is perceived and enjoyed as a refuge
- Ownership and identity; in particular the pleasure of creating a place and an attachment to it
- Connectedness to flora and fauna
• Social relationships: reflecting memories, relaxing with family and friends, connecting with neighbours
• A duty of caring; for specific plants, for the space, for the environment
• Health, both physical and mental

According to this typology, protection of and co-existence with nature is not at the core of every function that gardens can serve or the pleasures they can provide, but engagement with nature does seem to be a significant element in the value of gardens, not just in terms of connectedness to plants and animals, but also because garden nature is a constitutive element in values like stress relief, place creation and bodily health. Studies from community and allotment gardens furthermore indicate that learning about nature is an important service provided by community gardening activities (Breuste and Artmann, 2015). According to Barthel, Folke, & Colding (2010), the learning that is maintained in such places pertain to a large extent to knowledge about cultivation of vegetables and food production in general, but also a broader social-ecological memory is maintained through the activities of urban gardens, including knowledge of interdependence with and preservation of nature.

It is, however, evident from other studies, that the pleasures and functions of garden nature are different from other kinds of nature appreciation. The pleasures of the garden rely on a specific ordering of flora, fauna and terrain. Thus, Head & Muir (2006) find that people’s garden aesthetics – their sense of order and their choice of plants – can be decidedly different from what they appreciate in more wild and pristine nature or even just in public green areas (Petersen, 2013). Freeman, Dickinson, Porter, and van Heezik (2012, p. 137) make a similar point: ‘There is something about the “informality” of nature that seems to be at odds with garden “culture”’. Gardens are all about human intervention to achieve human acceptability. In a similar vein Clayton (2007) as well as Beck, Heimlich and Quigley (2002) find that naturalness and sustainability are perceived by gardeners to be opposed to neatness, and sustainability is perceived to be in contrast to aesthetic appeal. It may be that a crucial element in the aesthetic pleasure of gardens and other landscaped spaces are their ‘cues to care’ (cf. Nassauer, 1995), i.e. the cues that indicate human presence, and human aesthetic ordering – an inherent quality of the cultivated landscape.

But even though gardening involves a significant element of ordering of the environment, several studies distance themselves from an overly simplistic understanding of this practice of ordering. Instead, they apply actor network theory to develop a more nuanced understanding. Gardening is not just a matter of human control of a docile environment; it is rather a matter
of humans and ‘non-humans’ (plants, animals, water, dirt) engaging with each other, competing and collaborating and thereby constructing a particular hybrid landscape (Hitchings, 2003; Power, 2005).

Hybridity is also discussed in other studies as a core feature of gardens and gardening. Bhatti & Church (2001, 2004) as well as Head & Muir (2006) understand the environment constituted by gardens as a liminal or hybrid space. The home, including the garden, is important in the construction of existential and ontological security: a place where one can withdraw into a sphere of (perceived) certainty. As part of the home, the garden is a refuge from the troubles of the outside world. A sense of order, familiarity and manageability is instilled in the garden and in the process of gardening; a refuge from the stress and uncertainties of the non-home world in general, but also a distance to ecological threat, i.e. to the risks, disorders and nuisances of a messy nature beyond the garden borders. This sense of ontological and ecological security is, however, contrasted by the unmanageability of weeds and unwanted organisms and by various threats such as trees that can fall down on the house or decease-carrying wildlife. Hence the liminality of the garden: it is between the secure and the insecure, the home and the outside.

Such liminality can also be detected in the kind of gardening practices that seek to sustain wildlife. In one study regarding such practices Doody, Sullivan, Meurk, Stewart, and Perkins (2010) found that people in Christchurch, New Zealand were willing to include locally appropriate woody species in their gardens, thereby supporting the regeneration of these species and affiliated organisms in the nearby urban forests. But the study also indicated that gardeners need to control where wildlife-supporting species are located in their garden. The plants cannot be allowed just to plant themselves at inappropriate places. In a study from Leeds, UK, Goddard, Dougill, and Benton (2013) find that garden owners may pursue wildlife-friendly gardening practices for reasons of personal well-being and moral responsibility to nature, but neighbourhood norms for garden aesthetics are a considerable barrier to such practices. So in gardening for wildlife, plant and animal species of the surrounding landscape outside the domestic sphere – species that may signify ‘cues to wilderness’ rather than ‘cues to care’ – are included in the domestic sphere through deliberate interventions which seek to maintain control of the garden design, adhere to neighbourhood aesthetics, or, as the present study shows, include visiting animals in the realm of homeliness.
**Socio-materiality**

At this point, I would like to suggest that a further understanding of how garden spaces are constituted could benefit from a broader theoretical discussion regarding the relationship between human beings and their material surroundings. To this end, I want to refer to three sets of approaches: *affordance theory* and *the dwelling perspective*, *practice theory* as it has been developed in environmental sociology and *relational geography* and its focus on affect in human interactions with the landscape.

*Affordance theory*, which originates in James Gibson’s work in ecological psychology, investigates the issue of humans’ perception of their environment (Gibson 1977, 1979). According to this theory, perception is closely linked to the perceiving subject’s active engagement with objects in the environment. What humans perceive is a direct function of how they act, and how they in their actions engage with various objects. Objects in the world are perceived and given meaning according to what they *afford*, i.e. the functions they serve when incorporated into a characteristic pattern of day-to-day activities. For instance, objects in a garden such as trees, lawns or pavement afford certain possibilities to human actors such as play, sports, sunbathing, sensory pleasures, food supply, shade, or dining, all depending on how people engage with these objects.

Affordances are both objective and subjective; they stem from the reciprocity between the environment and the human organism (Macnaghten & Urry, 2000, p. 169). On the one hand, affordances are determined by the actions and perceptions of the human actor who engages with an object and thereby ascribe certain functions and meanings to it. On the other hand, affordances also constrain behaviour along certain possibilities inherent in the objects. For instance, open flat lawns cannot afford shelter or hiding but can afford both relaxation and exercise (Petersen, 2013).

In outlining his *dwelling perspective*, Ingold is strongly inspired by affordance theory. He argues that human beings and human societies do not reside outside nature on the surface of the land. They are immersed *in* their surroundings; they *dwell* in them (Ingold, 2000). To dwell is to inhabit a landscape, to experience it in an embodied, sensual manner, and to be both formative of and formed by the landscape (Baron & Petersen, 2014; Franklin, 2002). The landscape, any landscape, in which we dwell, whether a suburban garden or a tundra with flocks of reindeer, is always changing under the influence of a combination of human dwelling activities mediated by various technologies and the activities of animals, plants, weather and movements in the terrain – which in turn both influence and are tempered by human actions.
Relational and non-representational geography share with Ingold an understanding of landscapes as practice, rather than merely as collections of objects. Moreover, landscapes cannot be perceived purely in terms of human fabrication or personal psychological impression. It is through interactions between humans, plants, animals and inanimate objects that landscapes are constituted (Anderson, 2009; Lorimer, 2005; Thrift, 2004). Spaces such as private gardens, and the humans, organisms and things within them, are constituted and continuously re-constituted through associations and transactions between bodies and things (Hale et al., 2011). Relational geography furthermore offers a valuable perspective on the affects that are an inevitable product and an integral part of any human-landscape interaction. Affect should not so much be understood at the personal and intimate scale. Rather, affect presents itself socially as something that is pushing, pulling or lifting human actors to feel, think or act. Affect should be understood as the property of interactions, rather than a property of the single human being (Kraftl and Adey, 2008; Thrift, 2004). Or as Anderson (2009) puts it, relational sensibility is the emotion registered within a human being, but produced through the co-constitution of that human within a transient space.

Hale et al. (2011) add an important point to this approach. People’s affective responses to the environment do not only include the immediate sensory experiences but also the social norms and aesthetics that are at work in the co-constitution of people and places. The affective – and practised – responses for instance to weed and slugs or flowers and birds are saturated with collective knowledge and values, e.g. the values of neighbourhood aesthetics that may come in the form of non-acceptance of messy, weed covered gardens. From a practice theoretical approach (see below) Chappells, Medd, and Shove (2011) make a similar point regarding changes in people’s responses to and actions in garden landscapes. They argue that any change in gardening practices will always be effected within a framework of pre-existing collective knowledge and social orientations.

Humans do not only respond to practical, hands-on, sensory and personal experiences when they interact with the environment in which they dwell. They also respond to abstract ideas and distant concerns as well as to secondary experiences. The affectual and practical engagement with objects in the environment is carried by collectives who draw on shared experiences of active engagement; experiences which transcend the individual in both time and space and which may be conveyed by complete strangers with whom the individual actor has no relation, for instance the kind of strangers that write advice in printed and on-line garden magazines.
This is an important point, because if deeper care for a broader variety of species is not yet an integrated part of people’s affectual engagement with garden nature or their gardening experience, then such care does not emerge solely in the individual garden owner’s meeting with organisms in the garden. A sense of land and nature is of course, as Barthel, Folke, & Colding (2010, p. 263) argue, an inherent part of the social-ecological memory that is maintained through hands-on garden activities. By conducting those activities, people learn a kind of ‘stewardship of ecosystem services’. But again, if no deeper knowledge of how to support wildlife is part of that individual and collective experience or of pre-existing social orientations, a deeper sensitivity towards wildlife will have to be informed and prompted by input – aesthetics, sensibilities and knowhow – from sources outside individual experience and/or from the collective and individual memories of former practices and former landscapes.

The practice theoretical approaches that have proliferated in environmental sociology in recent years (Gram-Hanssen, 2009; Hand, Shove, & Southerton, 2005; Petersen, 2013; Shove, Pantzar, & Watson, 2012) can contribute to this discussion. A cornerstone in these approaches is their focus on patterns of actions rather than the subjects who perform them. Practices are the routinized ways in which bodies are moved, objects are handled, and the world is understood in different fields of everyday life such as for instance transport, food provisioning, domestic comfort or gardening (Warde, 2005). Another cornerstone is the analytical distinctions between different key elements through which practices are constituted and enacted. Shove et al. (2012) distinguish between (a) the embodied competences involved in performing all practices, (b) the meanings, i.e. norms, engagements, feelings, and orientations that saturate and guide them, and (c) the materials, i.e. artefacts and technologies as well as landscapes and organisms that are used in – and constitute the environment for – all practices.

As Fyhn & Baron (2016) propose, practice theory and the dwelling perspective outlined above can be combined simply by construing dwelling as a practice. The practice of dwelling – including garden activities – is the practice of continually maintaining and gradually adjusting the parcel of space in which one dwells, whether it is through reparations and rearrangements indoors, mowing, weeding and trimming in the garden, or larger redesigns and renovations of house and land. Understanding such activities in terms of dwelling allows us to perceive the reciprocal and co-constituting relationship between humans and landscapes. The practice of maintaining house and land is a practice of both enabling and enjoying certain affordances provided by vegetation, animals, terrain, built structures and weather. Or as it
could be formulated from the perspective of relational geography: it is a practice through which the landscape as well as its dwellers and their affects and abilities are mutually shaped. Thus, through a range of activities such as weeding, planting, trimming, fencing, mowing etc. the garden owner enables and maintains qualities like ontological security, homeliness, sensory pleasures, relaxation, social interaction etc., and at the same time the rhythms and gradual changes of flora, fauna, sun/shade, weather and terrain prompt the garden owner to pursue these activities, thus shaping the uses garden dwellers make of their garden and the affects it inspires and produces.

Understanding dwelling activities as a practice allows us, equally, to include meanings, feelings and competences in the analysis of dwelling. Thereby we can also achieve a better understanding of how socio-material interaction involves factors beyond strictly personal, hands-on experiences. Competences and affective engagements are attained from actually performing specific acts, but also from accompanying other practitioners, observing them in physical/bodily form or experiencing practices in mediated form in images or through narrated accounts. Similarly, meanings and engagements are enacted in concrete practices but essentially collective and proliferated not only face-to-face but also through various forms of mediated communication.

With this, we should have established a conceptual framework for the empirical study below, which will apply the analytical distinctions of practice theory. Garden practices are regarded as a subset of dwelling practices. The study analyses whether concern for biodiversity is part of – or potentially could be part of – the meanings, affects and engagements that are inherent in gardening/dwelling practices, whether such engagements are integrated in the embodied competences of garden owners and users, and how gardeners interact with the materiality of garden nature.

**Study and methodology**

A study was conducted in the greater Copenhagen area in Denmark in 2013. The whole area covers 2500 km² of urban, suburban, peri-urban and rural land with almost 2 million inhabitants. The urban and suburban parts of the region – the parts where we find the most densely populated residential areas with private gardens and courtyards – covers app. 300 km² and has 1.2 million inhabitants. The study investigated how human intervention in garden landscapes may hinder or facilitate increased biodiversity, and how increased biodiversity may contribute to the pleasures people derive from gardens. It consisted of a questionnaire survey and qualitative interviews with garden owners.
The survey comprised questions regarding practices, values, sources of inspiration, pleasures, and nuisances in garden use, and respondents were asked about their reactions to a set of specific BD-enhancing measures (see figure 2). It was set up on-line and distributed as a link sent by e-mail to 11,000 persons in the designated research area. 1,135 persons responded resulting in a response percentage of 10. This is not unusual for on-line questionnaires, but it does provoke some reflections regarding representativity, so the socio- and geo-demographic characteristics of the respondents were compared with those of the general population in the area. In terms of garden size, gender, ownership, number of households with children, and distribution of detached vs. terraced houses the respondents mirrored more or less the demographics of the area. The average age of the respondents was much higher, 55 years, than that of the total population in the area, 39.6 years, but the survey addressed adult respondents with house and garden, and the age average in the total area includes children and young adults living in apartment buildings. While there are no accessible data regarding average age of adult owners of house and garden in the area, it is fair to assume that it is not that different from the average age of the respondents. However, the share of people with higher education was much larger among the respondents (54 %) than in the general population in the relevant municipalities (between 24 and 39 %). Therefore, the replies were categorized according to education, and no significant differences emerged.

A total of eight interviews were conducted with eight garden owners/users in the greater Copenhagen area. Interviewees were found by asking respondents in the survey whether they would be willing to participate in an interview. When selecting among those who accepted, the aim was not to find a representative sample of the region’s garden owners but to cover a broad spectrum of conditions and experiences as these can be expected to depend on age, gender, household size, and in this case also size, type and age of garden and duration of ownership. Please see table 1 for a list of interviewees.

The interviews took place in the respondents’ gardens and lasted approximately one hour, including a tour of the garden. They were semi-structured and were as such informed by an interview guide. The interview guide as well as the questionnaire was informed by the preceding literature study and ensuing theoretical reflections, which condensed into some core issues: (A) Interactions between humans and non-humans in a hybrid garden landscape. (B) Change and stability. (C) The engagements pervading gardening practices. (D) Sources of inspiration for garden design and maintenance.
Table 1: List of interviewees

| Name   | Gender | Age | Living Arrangement | Occupation | Education | Living Area | Garden Size                      |
|--------|--------|-----|---------------------|------------|-----------|-------------|----------------------------------|
| Elise  | F, 56  | lives with partner and joint-custody teenager | University trained. | Terraced house, 350 m² garden + access to 1000 m² shared private garden |
| Erik   | M, 68  | lives with partner | 9 years primary school. Retired, former truck driver and farm worker | Allotment garden with house occupied during summer, 350 m² garden. |
| Ingrid | F, 74  | widow, lives alone | Medium-cycle higher education. Retired | Detached house, 650 m² garden |
| Kirsten | F, 59 | widow, lives alone | 9 years primary school. | Allotment garden, house occupied during summer, 400 m² garden. Previously: 1700 m² garden |
| Lotte  | F, 40  | partner and two children | University trained. Public servant | Cohabitation w. 1000 m² shared garden |
| Louis  | M, 41  | wife and two small children | University trained. Engineer | Detached house, 1000 m² garden |
| Susanne | F, 33 | husband and one small child | Medium-cycle higher education. | Detached house, 500 m² garden |
| Therese | F, 39  | husband and two small children | Nurse. | Detached house, 700 m² garden |

The interviews started with the question ‘When did you move here?’ and from there developed as in-depth conversations following the narratives and reflections of the interviewee while still revolving around the issues of garden uses, pleasures, nuisances, daily maintenance and planned as well as implemented changes in the garden’s landscape design. Towards the end of the interview, after they had unfolded their own reflections and stories, interviewees were asked about their reactions to the same set of specific BD-enhancing measures that were presented in the questionnaire.

All interviews were transcribed in full length. In the analysis, the respondents’ statements and stories were categorized thematically using colour coding by hand. The coding was established as a result of a combined deductive and inductive process. To the themes of the interview guide were added thematic categories which emerged in the interview material resulting in the following set of categories, for each of which the respondents articulated a variety of perceptions and practices: # Development and modification of the garden; # orders and borders; # knowledge; # cosiness; # sensuous experiences; # everyday use; # time together; # garden work; # nuisances; # BD-enhancing garden designs.

Mixing quantitative and qualitative methods is in general pursued as research strategy in order to acquire a larger knowledge base (Brannen, 2005). In this case mixing a questionnaire with interviews allowed us to combine the more holistic accounts of people’s experiences provided in the qualitative interviews with the insights derived from recording quantitative...
occurrences of certain phenomena, i.e. certain practices and perceptions pertaining to the issue. Through the interviews, it was possible to gain an in-depth understanding of the lived interactions between garden owners/users and garden nature as well as the orientations, affordances and affects inherent in these interactions. Through the questionnaire, it was possible to achieve an indication of how widespread or unusual certain values and orientations are and, by correlating answers, an indication of how certain perceptions may relate to certain socio-demographic or physical characteristics such as garden size. This is in turn relevant data, when the aim is to uncover the potential for enhanced biodiversity. Presenting respondents with specific BD-enhancing measures was particularly useful for two reasons. Firstly, it is more enlightening to record people’s reactions to concrete and specific measures – known to support increased biodiversity and potentially relevant in private gardens – rather than just to ask about their overall support for biodiversity. Secondly, when collective and individual experience with BD-enhancing gardening practices is scarce, it provides a basis for further reflections when specific measures are introduced into the conversation after interviewees have developed their own stories.

Results from interviews and survey both corroborated and complemented each other in the subsequent analysis by providing corresponding results regarding the same phenomena and by illuminating different aspects of the issue at hand (Brannen, 2005).

**Results**
The results from the empirical study reveal a certain ambiguity in garden owners’ perception of and care for nature and biodiversity in the garden. Such a concern is acknowledged in principle, but it does not seem to be an important part of the meanings and engagements that are seem to be enacted in gardening practices. On one hand, 73% of respondents agree partially or completely that garden owners have a co-responsibility to increase biodiversity in Denmark (Petersen et al., 2014). On the other hand, biodiversity and experience of nature is not necessarily the most important feature of the garden.

Thus, when asked what is important in landscape design and maintenance of the garden, having ‘good places for relaxation and being together’ is clearly the most important concern for the respondents. With 88% finding it either very important or important it appears to be the principal orientation guiding gardening and dwelling practices (see figure 1). Conversely, it is for most of the respondents not particularly important to provide habitats for wildlife, although 32% do find it important or very important.
Furthermore, some of the more pervasive elements in typical gardening practices identified in this study do not provide the best living conditions for a more diverse nature. Firstly, it seems that modification of the garden landscape is a main activity for any gardener. When asked about their history with their current dwelling, garden owners often related a story about the unsatisfactory state in which they found the garden at the time of moving in, but they had made an effort to change it and had plans for further changes. Those who had resided in their garden for decades told about the considerable and continued development the garden had undergone. As Louis remarked: ‘I don’t think you ever reach the point where a garden is complete or perfect.’ Similarly, relocation of plants from one part of the garden to another is – like setting out new plants and removing old ones – an integrated part of the yearly gardening cycle.

Erik: Well, my wife, she goes around and moves those flowers all the time, because the big ones have to be round the back of the house, and the small ones have to be in the front, and she wants something blooming from early spring to late fall. And the herbaceous perennials have to be thinned; otherwise they wither in the core or become too big, but then they have to be regrouped. She spends a lot of time moving those plants, a lot of time.
Secondly, gardeners interviewed in this study seem to prefer their garden to be a tidy and ordered space, and they prefer distinct borders between the different garden elements. This appears to be another important element in the meanings inherent in gardening and dwelling practices. It is for instance a source of annoyance and perceived to be messy and also unpractical when there are several plant species in the same hedge; unpractical because the different species grow in different speed requiring more frequent trimming.

Susanne: I am really annoyed with the hedge. The depth, the height and the thing that… well, you can see how there are many different hedges in one. It’s running amok.

Therese: There is this rose-bed that I would like to eliminate because we never get around to weeding it. The weeds become so tough that you don’t even know where to start. I just think it’s ugly and it depresses me.

Similarly, plants are unwelcome in the spaces between paving stones; leaves, twigs and branches are removed from the lawn and in some cases also from the ground in flowerbeds and around bushes; the lawn must be distinct from the flowerbeds, which also need to be tidy; and the battle against weeds is pursued endlessly, albeit with uneven enthusiasm. Some of the interviewees relate how it is a source of pleasure that the garden is neat and tidy to look at.

These orientations or meanings enacted in gardening practices tend to leave less room for a more diverse nature. The constant reorganization of the landscape disrupts the long continuity that allows a broad variety of organisms to settle and interact in the habitat. The inclination for tidiness can in some instances provide better living conditions for vulnerable species, for instance when dominant species which thrive in nutrient rich environments (e.g. stinging nettle) are removed through weeding, but mostly the continuous tidying (including weeding to protect utility plants) tends to eliminate more species than it supports and destroy microhabitats that sustain a diverse flora and fauna.

Nevertheless, the study did find indications of some potential for a deeper engagement with and stronger affective connections to nature and biodiversity. This potential was found in current orientations and practices of garden owners, but also in the respondents’ reactions to a general concern for loss of biodiversity and to specific BD-enhancing measures in the garden, and it was found in the memories of childhood garden landscapes, memories that were invoked as part of the interviewees’ reflections on biodiversity and species loss. As Chappells, Medd, and Shove (2011) argue in their study of garden owners’ responses to
drought and watering restrictions, the manner in which ‘disruption’ generates change in
gardening practices is mediated by pre-existing social orientations.

As mentioned above, we found that relaxation and being-together rather than providing
habitats for and connecting affectively with wildlife are the most important orientations in
garden maintenance and landscape design, but relaxation and being-together are still
facilitated, afforded and produced by the properties of nature and landscape. The outdoor
space for relaxation and being together achieves its qualities from the greenness of the hedges
that constitute the space, the smell of grass and flowers, and the sound of birds. As Susanne
says:

I missed having a garden when we lived in an apartment; being able to get outdoors and
sit quiet and peacefully. You know, all the green, that’s what gives me peace and calm.
So to just sit there [in the garden] and be able to see all that green around me and see the
birds; that’s what is best for me.

Others, like Elise, mention how they enjoy watching things grow or enjoy the therapeutic and
stress relieving qualities of working with and caring for plants as a contrast to the in-door
office life, they endure during their workday. So it is not just terrace paving, fences and other
inanimate constructions, but the living nature of the garden landscape that facilitates the main
engagements inherent in gardening practices, i.e. relaxation, having your own outdoor space
and being together with family and friends.

Of equal importance are the stories told by several interviewees about wild animals in
their garden. These stories revealed a kind of inclusion of the animals in the domesticated
space, expressed in the recurrent use of the Danish phrase ‘hyggelig’ or cosy/homely.
Susanne referred to the birds as contributing to a cosy garden space. Kirsten told about a fox
and its cubs on the property. Her family fed them, and the cubs were playing in the morning
mist – which was perceived and narrated as cosy. Louis used the same term when he told how
fond he was of three Burgundy snails in his garden and also mentioned a hedgehog and two
squirrels. While Erik on a slightly more ambiguous note told how he had been annoyed when
he one winter morning found out that some hares had eaten his borecole, but upon reflection
and because the hares had not eaten all of it he appreciated that he had ‘given food’ to the
hares. In these cases, where wildlife visitors are included in the sphere of homeliness we see
how the garden is constituted as a liminal space between home and nature, and how affective
connections to wildlife become part of the engagement with and shaping of garden spaces.
The respondents’ reactions to a selection of specific BD supporting measures gave further indications of where the potentials might be for a deeper engagement with wildlife and of how this potential is mediated by existing orientations. Please consult table 2 for a list of the measures in question.

**Table 2: Biodiversity promoting measures***

| BD PROMOTING MEASURES                              | BENEFICIAL FOR                                                                 |
|---------------------------------------------------|--------------------------------------------------------------------------------|
| Blooming flowers from spring to fall              | Butterflies, bees, hoverflies etc.                                             |
| Heap of brushwood                                 | Hedgehog, bumblebees and other insects                                         |
| Dry meadow in part of the lawn                    | Diverse meadow flora with herbs and grasses. Butterflies, hoverflies, grasshoppers, beetles |
| Keep old and weakened trees and leave dead branches on the ground | Fungi, beetles, birds, bats                                                     |
| Keep old and dense thicket/hedges with native plants and undisturbed ground beneath the hedge | Fungi, invertebrates, insects, spiders, small birds                           |
| Garden pond, but without fish                     | Frogs, salamanders and other amphibians                                        |
| Area with gravel/sand and sparse un-weeded vegetation (for instance in driveway) | Plants that thrive in nutrient poor environments, bees, heat craving invertebrates |
| Green roof on garden shed, carport, garage or main building | Rainwater retention. Diverse meadow flora. Butterflies, grasshoppers, beetles |
| Rainbed (special flowerbed designed for rainwater retention) | Rainwater retention. Depending on plant selection: Butterflies, hoverflies, etc. |

* These measures were devised by biologist Rasmus Ejrnæs as part of the project. Their impact on biodiversity is not further discussed here, but they do resemble some of the biodiversity increasing methods tested in Gaston, Smith, Thompson, & Warren (2005), including small ponds, dead wood and patches of nettles.

Reactions to these different measures ranged from broad acceptance to considerable scepticism and dismissal (see figure 2). One measure corresponds very well with already established practices: 54 % of the respondents already have designed their garden to support season long blooming, and an additional 30 % would like to do so. The continuous blooming is in accordance with the sensuous pleasures garden owners want from their gardens, gives a strong sense of changing seasons, contributes to the creation of an enjoyable and cosy outdoor space, and does not conflict with the need for order and tidiness. At the other end of the spectrum, the majority of garden owners were sceptical towards gardens ponds and areas with gravel and sand.
**Figure 2: Which of the following biodiversity enhancing measures would you consider to implement?**

| Measure                                                                 | Not interested | Would like to | Have/do already | Don’t know |
|-------------------------------------------------------------------------|----------------|---------------|-----------------|------------|
| Blooming flowers from spring to fall                                     | 12             | 30            | 54              | 4          |
| Keep old and dense hedges...                                            | 40             | 21            | 33              | 6          |
| Heap of brushwood                                                       | 53             | 20            | 20              | 7          |
| Keep old and weakened trees...                                         | 59             | 14            | 21              | 6          |
| Area with gravel and sparse vegetation                                  | 64             | 17            | 10              | 9          |
| Avoid mowing the lawn in parts of the garden                            | 67             | 15            | 11              | 7          |
| Garden pond without fish                                                | 73             | 16            | 7               | 4          |

The category ‘would like to’ is noteworthy; it represents the group of respondents who are interested in doing something different than they already do. They are for each of the suggested BD enhancing measures a minority. Only with the most popular measure are as many as 30% of respondents interested, although for some of the least popular measures this group constitute a larger segment than those who have already implemented the measure. This could indicate that only a minority is open to change, but those who do want change towards higher biodiversity – those who in other words want to integrate in their actual doings an orientation towards a broader variety of species – lack the knowledge to pursue such change. In any case, the responses to the different measures, whether accepting or rejecting, depend on and invoke a number of key concerns: size, work and core functions.

Firstly, the size of the parcel matters. Thus, respondents expressed differing sentiments towards large and old trees. While some did enjoy the aesthetic qualities of older trees, respondents also expressed a number of reservations: for instance that the trees had grown too big, that they could fall on their house, and that leaves, sap, and fruit smeared the car or the pavement. But the bigger the garden, the more people want to preserve old trees (see figure 3). The same pattern is repeated in the reactions to having a permanent heap of brushwood, not mowing parts of the lawn and in the general attitude towards garden wildlife. What is unpractical, looks untidy, is in conflict with the principal affordances or can pose a risk in a small garden becomes nice and ordered or can be concealed in a larger garden. One of the
interviewees, Elise, expressed the issue of garden size quite clearly. In one statement, she praised the beauty and lovely smells of meadow flowers; in the next she articulated her dislike of all non-grass vegetation in her lawn: ‘I don’t want dandelions in my lawn, and there are these really obstinate purple ones, I don’t want them either.’ Upon further reflection, she concluded that her own garden is much too small for a patch of meadow flowers or even non-grass in the lawn, but the adjacent private communal garden, shared by all owners of the surrounding terraced houses, would be well suited for such a garden element.

Secondly, the work involved in tending a garden is a factor. There were obvious differences in respondents’ sentiments towards garden work. 50 % of survey respondents replied that they are very, somewhat or moderately annoyed with garden work. Most of the interviewees actually cherished garden work in itself, but some found it difficult to find enough time in a busy family schedule.

Therese: I actually like to mow the lawn. But in peak season, it becomes a bit of a nuisance: ‘we must remember to do it now, because the grass is growing so tall’, and then you think it is so annoying that we cannot choose ourselves when we want to cut the grass. But other than that, no, garden work is not a nuisance, but it is irritating not to have the time for it.
For the interviewees, reducing the more troublesome and tedious tasks was a good reason in itself to design the garden landscape in specific ways and it also tempered their approach to different BD enhancing measures. Thus, the garden owners usually told about various tricks to reduce weeding, for instance by keeping a nice looking ground cover in the flowerbeds. Such tricks were an integral part of their gardening competences. More than half of the respondents in the survey either already had dense hedges and undisturbed ground beneath them or were interested in having such garden elements. The interviewees explained how a good thick hedge with foliage all the way to the ground rendered weeding superfluous. Thus, the production of BD supporting garden spaces can potentially be the product of other orientations in common gardening practices, such as the inclination to reduce garden work.

Thirdly, any new landscape design or garden element should not be in conflict with the core meanings of gardening practices, the functions, affects and pleasures that garden owners want and expect their garden to produce. Thus, interviewees express fondness for meadow flowers, but the lawn serves some functions such as play and relaxation, which require vegetation to be short, even and easy to maintain. It is noteworthy that when respondents were asked whether they would be interested in keeping the grass long, the majority reacted negatively, but when they were asked whether they would be interested in having a patch of dry meadow on the ground, reactions were much more positive, as long as the patch is small or can be established as a green roof on a shed.

Regardless of the varying reactions towards the abovementioned BD supporting measures – or towards any other measures to develop wildlife supporting garden spaces – gardening for wildlife and stronger affective connections to a broader diversity of organisms in the garden will not emerge in practice unless garden owners actually know what to do. Nor will gardening for wildlife become a widespread practice unless BD supporting measures match existing orientations of garden owners – i.e. the ideals for dwelling and life quality that are an integral part of gardening practices – or unless these orientations somehow are altered.

We asked garden owners, both in the interviews and in the questionnaire, from where they get their inspiration, advice and ideas when tending and designing their garden (see figure 4). It was obvious that there is a good deal of hands-on, trial-and-error experience involved in developing competences for keeping the garden, but it was equally obvious that a variety of external sources – i.e. external to the specific hands-on situations in the specific garden – feed into, prompt and inspire these experiences. As Susanne explained: ‘None of us are good at it, and we hardly even know how the apple trees should be cropped. Or when. But then we’ve bought some books and we try to get accustomed to it all.’
In various ways and various degrees garden owners refer to and rely on input from other sources, including the internet and different garden magazines as well as nurseries and social network. It is noteworthy that the neighbours – the sources closest by and those who should have most experience with the particular landscape in which the garden owner dwells – are the least consulted sources among those suggested in the questionnaire. It is equally noteworthy that media is the most common source of inspiration, indicated by 48% of respondents. This result differs to some extent from Breuste and Artmann (2015), who in their study from Salzburg focus on the 47-48% that learn gardening from other gardeners and family members, but seem to ignore the still relatively high proportion of 38% who learn from media. In any case, sources outside personal experience do play a role, also for the gardeners studied in Salzburg.

Some interviewees refer to their childhood garden, not necessarily as a model to be followed in every detail, but as a frame of reference. As Elise states: ‘The way that I want to keep my garden, I think it is something I have seen my parents do. Definitely.’ It is also her recollection of the many butterflies in her childhood landscapes that prompts Elise to reflect on how increased biodiversity can be promoted and causes her to support BD-enhancing measures in the larger communal garden adjacent to her own small garden.

Some of the interviewees, like Louis and Susanne, told that initially when they bought their house they browsed through garden magazines to be inspired. Louis also explained how the manager at the local nursery had told him that he could not grow cherry trees in his area.
and that the smell of hollyhocks attracts Spanish slugs. Another interviewee told how he always checks a book or the internet when he is not sure how to address a specific challenge in his garden:

Erik: If something doesn’t work, then you try something new and find some books and see how… I have had some problems with a little green beetle which ate all our gooseberries, not the berries, but the leaves, but then I read in a book, that if you keep the soil soft, then they can’t get through to the plant so easily. And then you can spray with a mixture of alcohol and dishwashing liquid. And that has kept the beetles away.

So in developing their gardening competences, the engagements that are enacted in these competences, and the interaction with materiality this entails, garden owners connect both to hands-on experiences, individual and collective memories and to a variety of second hand and mediated experiences outside their own garden.

Conclusion
At this point, we need to return to the article’s research question and the categories of its theoretical discussions. Do garden owners relate to a general and in some ways abstract concern for biodiversity? To what extent is engagement with nature integrated in the dwelling practices of suburban garden owners? And what is the potential for specific dwelling practices, through which garden spaces are produced that allow a broader variety of flora and fauna and deeper affective connections to wildlife?

Even though garden owners are familiar with the general societal concern for protecting nature’s diversity and a significant majority seem to believe that garden owners have co-responsibility for protecting biodiversity, such a concern is not integrated in garden practices. Flora and fauna is an inevitable and constitutive part of any garden, but according to the present study current gardening practices – current modes of constituting garden spaces – do not promote nor require a particularly diverse habitat in the garden. When maintaining their dwelling, garden owners are mainly oriented towards relaxation, social interaction and spaces of aesthetic pleasure. Or in other words, the affordances and affects that are developed in human-nature relations in private gardens revolve around relaxation, social contact and sensory-aesthetic pleasures, and aesthetic pleasures are rather emphasized by neatness and cues to care than by naturalness and cues to wilderness.

This does however not imply that there is no potential for developing a stronger engagement with a broader variety of flora and fauna as part of the garden experience or no
potential for making garden landscapes a site for enhanced biodiversity. The fact that so many respondents acknowledge their co-responsibility for protecting biodiversity and that interviewees express a wide range of positive sentiments for wildlife – they miss the butterflies of their childhood gardens, they enjoy the company of visiting birds, they treasure the sight and smell of meadow flowers – suggests that care for a diverse nature constitutes a kind of latent engagement for garden owners. While concern for biodiversity is not integrated in the competences of garden owners, it is not completely alien to them either. It has a slumbering presence among the conceptions, ideals and worldviews that are involved in garden owners’ understanding of nature – including the nature that is present in their gardens – and affective connections to wildlife are potentially a significant part of how garden spaces are constituted. There appear to be potential synergies between the prevailing orientations of garden owners and a deeper care for wildlife.

Firstly, the aesthetic orientation of most garden owners does lean towards the neat and orderly, but orders can be established and maintained in ways that provide beneficial living conditions for more species. A stronger care for a broader diversity of organisms in the garden can be mediated by the orientation towards order and neatness. For instance, hedges can still be trimmed regularly; that will not in itself hinder biodiversity as long as there is room for several (native) plant species in the hedge and the ground beneath it is undisturbed. Similarly, the lawn can still be kept even and well mowed, but to the order of the tidy lawn can be added an extra element in the shape of a (strictly demarcated) patch of meadow flowers.

Secondly, as a liminal zone the garden provides a space where on the one hand the cosy and homely feel of the indoors is extended into the garden, and on the other hand visiting animals are included and cherished as part of the domesticated space where cosiness is reigning. The garden as an outdoor part of the home can be facilitated by the experience of a broader range of wildlife visiting and living in the garden.

Lastly, the common ideal of a neat and orderly garden is to some extent in conflict with the annoyance many garden owners feel towards garden work or at least the lack of time they have for it. The more laidback attitude can be coupled with an orientation towards higher diversity in garden nature. Thus, keeping a diverse ground cover can reduce the need for weeding and is also good for biodiversity. Similarly, garden owners can save the trouble of removing branches and leaves from every corner of their garden, thereby providing valuable living conditions for many species.

These findings may inspire a revision of some of the concepts and approaches presented in the literature review and theoretical discussions above. The overall framework of practice
theory, relational geography and the dwelling perspective has proved useful in identifying the
critical elements of competences, material affordances, social orientations and affective
connections through which gardening practices and garden landscapes are constituted. But our
understanding of orders and cues to care, instilled in gardens and dwellings, may be further
refined. The concept of cues to care should perhaps not only be associated with cultivation of
food crops, nurture of aesthetically pleasing species, maintenance of non-messy landscapes
and general upkeep of ontological security. The study presented here suggests that the concept
of care should be extended to encompass also certain cues to wilderness, which are integrated
in the otherwise highly ordered landscape. These cues evoke a kind of stewardship of and
hence care for endangered wildlife to the effect that provision of – demarcated – spaces for
more species becomes part of the constitution of a homely sphere, thereby falling within the
realm of care.

Furthermore, we need to acknowledge the sources through which garden owners’
orientations are adjusted and new competences and gardening practices are developed. Even
though new biodiversity enhancing measures are mediated by and integrated into pre-existing
orientations, practice adjustments are inspired by sources outside these pre-existing
orientations. As discussed, the maintenance of any dwelling and the performance of any
practice are not constituted solely by personal hands-on experiences. It was obvious that
gardeners rely on advice and inspiration from a variety of sources. Books, magazines, garden
advice pages at the internet, and not least the personal contact to various holders of garden
expertise all inform gardening practices, and these sources inspire the knowhow as well as the
affects and aesthetic orientations of gardening. To maintain their dwelling, gardeners do
indeed invoke memories of garden landscapes of their past and invoke knowledge, aesthetics
and experience from beyond their personal life. This is also the case, if and when a deeper
care for wildlife should be integrated in concrete gardening practices. That will also require
input from nursery workers, advice pages and magazines etc., i.e. all the fora of societal
communication in which garden owners are embedded.

These findings contribute to a wider academic understanding of human interaction with
landscapes. Media representations and other forms of secondary experience are an integral
part of the interactions between materials and human dwellers. They are an integral part of the
processes through which (garden) landscapes are constituted as well as the processes through
which practices are changed.

It may seem obvious that dwelling practices and practice changes are constituted from a
variety of sources, including media representations, but it is somewhat unacknowledged in the
academic literature on human-nature interaction. Thus, Ingold is adamant that ‘one learns to perceive in the manner appropriate to a culture, not by acquiring programmes or conceptual schemata for organizing sensory data into higher-order representations, but by “hands-on” training in everyday tasks whose successful fulfilment requires a practised ability to notice and to respond fluently to salient aspects of the environment.’ (Ingold 2000, pp. 166-167). This understanding does not necessarily preclude the role of secondary experiences, but hands-on experiences are strongly privileged, and the sources through which collective knowledge and conceptual schemata enter into the hands-on experiences receive limited attention.

Practice theoretical approaches acknowledge more explicitly that meanings and orientations (or cultural schemata) are an integral part of any practice. The study by Chappells, Medd, and Shove (2011) clearly emphasizes the role of pre-existing social orientations in any reconfiguration of hands-on doings. But they are much less interested in the other side of the equation: the mediated messages that enter into and potentially change practices, meanings and competences. Nor do they consider that pre-existing social orientations are maintained through the collective sharing of mediated representations of meanings, knowhow and materials, not just through hands-on doings.

The reflections above do not constitute a dismissal of Ingold or of practice theory, but the findings of this study do indicate that we must consider media representations (on all kinds of platforms) as an integral part of the constitution of landscapes and an equally integral part of dwelling practices.

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