Between fascination and fear – The impacts of urban wilderness on human health and wellbeing

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The contributions of urban green spaces to the quality of life have gained increasing attention. This article focuses on the role of wilderness areas within wider urban green structures, as wilderness has been found to have specific impacts on our health and wellbeing. Research shows, for example, that although wilderness can have negative impacts and connotations, it primarily should be appreciated in terms of encouraging transcendent experiences, keeping us in touch with nature and natural processes, encouraging personal development and play, acting as a refuge, and encouraging stress restoration. More interdisciplinary research is needed to understand the mechanisms behind wilderness-health relations. Planners need to include urban wilderness areas in the development of urban green structures.

Introduction

By far most of us living in industrialising countries call cities and towns our home. With continuing urbanisation, there has been increasing attention for the quality of life in our urban environments (e.g. European Commission, 2009). In their efforts to develop better, more liveable cities, decision makers and planners have to deal with a wide range of pertinent challenges, such as climate change and shifts in demographics through for example ageing and migration.

Green spaces such as parks and urban woodland are an important part of the discourse on the quality of urban life and environment. Through a wide range of ecosystem services, these spaces provide important benefits to urban society (Tzoulas, 2009). They provide recreational settings while they also help cities adapt to climate change through, for example, cooling (Bowler et al., 2010b) and stormwater management (Bolund and Hunhammar, 1999), while also harbouring biodiversity (Kowarik, 2005) and keeping urban dwellers in contact with nature (Tuan, 2007).

Especially during recent years, the impacts of green spaces on human health and wellbeing have also come to the fore. Forests, gardens and trees are known to provide opportunities for

activities that enhance public health and well-being. Gradually more empirical knowledge is being accumulated on these impacts on people's mental and physical health, as well as general wellbeing (Bowler et al., 2010a; Annerstedt, 2011). Recent studies have looked, for example, into the impact of accessibility and use of nature on (self-reported) health and well-being. Studies that related health indicators with access to green spaces found that both health and well-being were better among people who regularly visited nearby nature and green spaces (Maas et al., 2006; Mitchell and Popham, 2007).

However the (physiological) mechanisms behind nature and health interactions are still largely unknown, in spite for a number of theoretical developments and empirical studies. Very little is known, for example, about the particular effects of different types of green spaces. City parks may have different health impacts than urban woodland, for example, due to the different experiences and affordances offered.

This article looks at the impacts of nature on human health and wellbeing from the particular perspective of urban wilderness areas, as research indicates that these areas play their own particular role. After discussing research findings, suggestions for future planning and research are provided.

Defining wilderness

Most of the green spaces in a city, if not all, can be regarded cultural landscapes, embodying some form of integration between the human and cultural with the natural (Konijnendijk, 2008). This seemingly contrasts with the notion of 'urban wilderness', as wilderness is mostly seen as embodying a dualistic vision in which the human is entirely outside the natural, with wilderness then being defined as those natural areas untouched (or unmanaged) by humans (Cronon, 1996). The present reality is, however, that wilderness is used as a much broader concept, referring even to areas that are situated in urban areas, but have lower levels of human interference as compared with the heavily controlled and artificial environments that dominate our cities (Kowarik, 2005). Thus areas such as urban woodlands can be defined as wilderness, for example when they have emerged naturally on abandoned industrial sites.

During most of our Western history, wilderness was a place of fear, of desolation. This view changed, however, among the cultural elite during the Romanticism, when wilderness was increasingly seen as sacred and associated with the deepest core values of the culture that created and idealised it (Cronon 1996). The new wilderness appreciation inspired the evolving concept of the sublime, coined by Edmund Burke in 1757 as a sense of awe and reverence, sometimes mixed with elements of fear (Van den Berg and Konijnendijk, 2012). This ambivalence between awe and fascination on the one hand, and fear on the other, still determines our relationship with wilderness today. Dutch research shows that so-called 'impressive nature

experiences' that typically evoke both fear and fascination include close encounters with wild animals, confrontations with the forces of nature (e.g. hurricanes and floods), overwhelming situations (such as being intimidated by the greatness of a mountain scene), and disorienting situations (e.g. getting lost in a wood) (Van den Berg and Ter Heijne, 2005).

One way of conceptualising our relations to urban nature is to apply the place-space continuum as introduced by Tuan (2007) and others. 'Space' is a common symbol of freedom in the Western world. Space lies open, suggests the future and invites action. On the negative side of this, space also can hold a threat, as open and free can also mean exposed and vulnerable. In contrast to space, place can be characterised as enclosed and humanised space, as the calm centre of established values. In brief, place is security and home, and space is freedom and the unknown. Humans require both, as we are attached to the one (place) and long for the other (space), moving between shelter and venture, between attachment and freedom. Moreover, "when space feels thoroughly familiar to us, it has become place" (Tuan, 2007, p. 73). Elsewhere, I have adopted this space-place perspective to urban nature, and urban woodland in particular. Many woodland areas, especially when they are wilder and less managed, can act as 'space' for urban dwellers, encouraging exploration and adventure, and offering an escape from urban society, but also evoking feelings of fear (Konijnendijk, 2008).

Urban wilderness, health and wellbeing

What do we know about the role of 'space' in our cities, e.g. represented by urban wilderness areas, as a complement to the places that many parks and gardens represent? Is there a case to be made for including wilder areas in a city's overall green structure, for example because of their specific impacts on our health and wellbeing?

Literature on wilderness – health relations is not abundant, but some interesting, mostly explorative and qualitative work has been done. Studies have often focused on the relations between our mental health and urban wilderness, demonstrating that wilderness and other types of nature and green space are really different in terms of, for example, psychological and restoration effects (Kaplan & Kaplan, 1989; Gallagher, 1993). Wilderness experience has been associated with a range of spiritual and transcendent experiences that provide benefits such as greater self-confidence, sense of belonging to something greater than oneself and renewed clarity on 'what really matters' (Kaplan and Talbot, 1983; Gallagher, 1993; Knecht, 2004). Here wilderness is not limited to the larger, more remote nature areas of expeditions and longer holidays. Nearby nature, for example in the shape of urban woodland, can also offer wilderness experiences (e.g. Konijnendijk, 2008). A study by Williams and Harvey (2001) of 131 Australians who visit, work or live in forests illustrates that so-called transcendent experiences are associa-

ted with forests. Characteristics of these are strong positive affect; feelings of overcoming the limits of everyday life; a sense of union with the universe or some other power or entity; absorption in and significance of the moment; and sense of timelessness.

Research done in the United Kingdom has also stressed the important role of woodland and wilder areas, particularly also for young people. These state that wilder adventure space offers them a breathing space away from family or peers, a place that offers risk and challenge, to have a good time with friends and to really relax and feel free. Wilder areas can act as areas for unsupervised play, vehicles of adventure, but also places of learning about dangers (Ward-Thompson, 2012). In a study of young British adults between 16 and 21 by Milligan and Bingley (2007), woodland was found to often act as a therapeutic place for young people, offering a place where to go when feeling upset and to sit and recollect one's thought.

But are we encouraged to use wilder green spaces i.e. how do we perceive and appreciate them? Research suggests that some kind of 'care', for example in terms of management clues, is often preferred by people. Nassauer (1995) mentions that more natural landscapes mostly have a rougher, wilder appearance and look 'messy', and therefore they need 'cues for care' to enhance their acceptability. However, as Gobster (2012) argues, our perceptions and preferences differ for example according to different aesthetic preferences: what looks messy and even dangerous to one group could be a much appreciated wildscape to another. A literature review by Jorgensen et al. (2006) shows that people tend to prefer more managed landscapes close to their house, but also appreciate 'wilder' green areas, including woodlands, close to their neighbourhood. The latter are then more directed towards the individual and its relation with nature. Research in Sweden by Grahn and Stigsdotter (2010) has indicated that wilder, more natural areas that are rich in species and offer refuge opportunities have the highest restoration potential for stressed individuals.

The earlier-mentioned ambivalence in meanings of wild nature needs to be kept in mind. A Dutch study, for example, showed that respondents being in a wilderness environment were more inclined to think of death than respondents in a managed, natural city environment. On the other hand, the 'wilderness respondents' were also far more inclined to think of freedom than their counterparts (Koole and van den Berg, 2005). Negative emotions towards wilderness can be expected to often be driven by biophobia, i.e. an inherent fear of or antipathy towards the natural, non-man made (Van den Berg and Konijnendijk, 2012). Negative impacts of wilderness on e.g. human health and wellbeing also relate to the ecosystem disservices that are related to urban nature areas, such as poisoning, tick-borne diseases, allergies, and the like (Lyytimäki and Sipilä, 2009). A recent study from Italy shows that toxicological hazards associated with forest and nature visits, including snake

bites, are to be taken seriously (Moro et al., 2009).

Consequences for urban planning

In spite of the negative impacts that wilderness areas may have on our health and wellbeing, evidence suggests that the positive effects very well could outweigh these. We need wilderness areas as 'space', for transcendent and restorative experiences, for personal development and play, as a refuge and antidote to the hustle and bustle of city life. Much more research is needed to explore the wilderness – health relations, where especially the different mechanisms that cause the impacts are studied. Here a close collaboration between medical and 'green' researchers is required.

But there already is sufficient evidence pointing at the need for wilder green spaces for this aspect to be incorporated into urban planning. When developing urban green structures, part of the green spaces in the city should be wilder and less managed. Some larger areas such as larger woodland and nature reserves will offer good opportunities for wilderness experiences in or close to our cities. Much can be learnt from cases such as the Sihlwald of Zurich, an urban woodland that gradually has been transformed into an 'nature experience park' that offers residents of Zurich the opportunity to experience a wilderness areas at the city's doorstep (Konijnendijk, 2008).

But in order to offer wilderness experiences to all, and not in the least to our children, wilder green spaces need to be brought even closer to where people live. Accessibility is crucial and those green spaces within a few hundred metres of people's homes are used most intensively. So-called 'urban wildscapes' do not have to be large or spectacular, but represent a wide spectrum of spaces that emerge as a result of abandoning and lack of control, areas that have evolved rather than having been designed and planned (Jorgensen and Keenan, 2011). These wildscapes are needed as contrasts to controlled urban life, as settings for (both child's and adult) play, as places for coming of age. But it is not sufficient to count on abandonment and evolution, as there is a need for planners to become better in integrating these spaces and their particular qualities in how urban landscapes are planned and designed. Moreover, it would be wrong to think of a strict dichotomy of regulated and wild urban places; rather there is a continuum ranging from 'wilderness' to apparently ordered spaces, with different levels of wildness existing at multiple different scales at each locality. Interesting examples of 'mixing' wilderness and management include the Nature Park Südgelande in Berlin, where 50 years of natural succession have transformed a derelict shunting station in the heart of Berlin into a highly diversified piece of natural urban landscape. Also in this case, a combination of both natural dynamics and controlled processes has proven successful, while combining nature conservation with providing public access has been another key priority (Langer, 2011).

Moreover, when developing urban wilderness areas, it is important to realise that people are different, also in how to perceive and appreciate wildness. Central questions are: whose nature, whose wilderness are we talking about? What are people's preferences, fascinations and fears? How do we balance the many different views of wilderness and nature? If we can find answers to these questions, we can take the positive values associated with wilderness and bring them closer to home (Cronon, 1996).

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