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The role of wilderness therapy for adolescents in the face of global trends of urbanization and technification

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ABSTRACT

This paper discusses how the increased urbanization and technification trends of our time may partly explain the considerable rise in adolescent maladjustment, typically expressed through symptoms of depression and anxiety. The authors argue that if living life increasingly disconnected from the natural world is part of the cause, then reversing, or at least moderating these trends and resultant pathology, must be part of the solution. Evidence-based wilderness therapy approaches have a long history of enabling optimal growth and personal development with adolescents. This article proposes how specific core elements of these often-complex therapeutic outdoor programs can be put to use on a broad scale throughout our communities. We provide examples supporting a three-stage approach to address the deleterious effects of urbanization and technification in adolescents; (1) changing beliefs, (2) education, and (3) planning. Finally we present some practical examples of possible antidote measures.

Introduction

> In wildness is the preservation of the world.
>
> –Henry David Thoreau (*Walking*, 1862/cited in Nash, 1979)

An extensive study of almost 200,000 Norwegian adolescents showed that the majority are well-adjusted, active, and enjoy good relations with their friends and parents (Norwegian Social Research, 2015) although approximately one in three agreed to the statement: 'I do not like the way in which I live my life'. This general lack of contentment among a third of the adolescent population is occurring in the country that currently ranks number one in global happiness (Helliwell, Layard, & Sachs, 2017). Barnes and colleagues (2016) raise their concerns in Canada, the 7th happiest nation in the world, following their national study of physical activity among children and youth when they concluded that despite a 'perplexingly favorable physical activity landscape … and good availability of facilities, policies and programs' the average level of physical activity is worryingly low (p. 115). The links between physical activity, well-being and most aspects of health are of course well established.

As authors from Norway and Canada, respectively, it seemed natural to provide the above examples from our own neighborhoods. More important still is to stress that even in countries that empirically do well on a range of desired health and well-being indicators, there remains major, and increasingly

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so, concerns when it comes to the welfare of our young generations (Collishaw, 2015; Olfson, Druss, & Marcus, 2015). In the following sections we provide our understanding of possible causes of worrying mental health trends we see among adolescents in the developed world; primarily the effects of urbanization and technification. We propose the use of wilderness therapy as a comprehensive intervention comprised of core-elements that could be adapted for mainstream health promotion and adolescent clinical treatment; as antidote to the pathology.

Urbanization

The number of people living in urban areas surpassed those living in rural areas in the last decade and the urban global population is expected to increase by 84% by 2050 (United Nations, 2014). There are already 28 'mega-cities' with 10 million people or more; Tokyo being largest with a staggering 38 million inhabitants (www.un.org), slightly more than the entire population of Canada, the second largest country in the world by landmass. An urban area commonly refers to towns, cities and suburbs, usually with high density of human-built structures, whilst rural areas are open swaths of land with few buildings and people. Rural areas, often called the 'countryside', are generally open spaces where wildlife is more frequently found (www.nationalgeographic.org).

There is, however, little or no relation between a nation's population density and the percentage of its people living in urban areas. Canada has an extremely low density with four people per square kilometer of land area (http://data.worldbank.org), yet 82% of its inhabitants live in towns and cities (https://esa.un.org/unpd/wup/Country-Profile). Interestingly, Canada's urban residency figure is the same as both the US and UK (~80%) though their population densities are 20 and 218 people per square kilometer, respectively. The all-important difference is of course the size of low- or unpopulated areas of these countries. While the UK hardly has wilderness left, Canada still has vast tracts of land that are mostly free of permanent human inhabitation, although most adolescents in North America, Europe and Australia-New Zealand reside in urban areas with limited to no access to wilderness-like terrain in their immediate surroundings. To add to this, modern city planning, particularly in large and more recently developed countries, allows for urban sprawl to such an extent that individual cities that used to be far apart gradually grow together by ever-expanding suburban housing development (e.g. in the US, Arizona State capital Phoenix has engulfed smaller surrounding towns and is now merging with the city of Tucson – their city centers being 170 km apart!). And, as city planning often sacrifices open areas in favor of building projects, modern urbanization trends not only prevent access to wilderness but often result in reduced access to local green spaces as well (Soga et al., 2015).

Technification

In our contemporary western society, adolescent's use of interactive devices, social media, TV and music has been, and continues to be, on a sharp rise (O'Keefe & Clarke-Pearson, 2011). The trends are appears similar across different nations (Bucksch et al., 2016). Statistics are plentiful and generally point in the same direction; adolescents have tripled their time using the Internet over the last 10 years. Total screen-time increases with age, and after the age of 15, 60% spend more than three hours daily looking at screens. Girls tend to prefer social media while boys prefer online gaming (www.buf.dir.no). The Deloitte Global Mobile Consumer Survey (2016) found that in the US 76% of mobile users checked their phone within 30 min of waking up. On average, people checked their phone 47 times a day, and this figure rose to 82 times a day for 18–24 year-olds. Smartphones are powerful mini-computers that are increasingly customizable what many include as their life's essentials. According to the 2016 survey 77% owned a smartphone and 59% a tablet, while in 2014 were 58 and 38%, respectively, indicating a formidable increase. Additionally, 98% of young people report using their phones while watching TV and showed a marked increase in willingness to multi-task (e.g. 93% use their mobile while eating in restaurants). The increased use of digital activities appears to come at a cost and a strong correlation exists between screen-time and mental health problems (Norwegian Social Research, 2015), and

growing evidence of the deleterious effect of digital connectedness on developing brains and the behaviour of young people (Swingle, 2016).

Urbanization and technification: a detrimental confluence

This paper focuses on urbanization and technification as variables of change in adolescent lives. There are of course other impact factors as well; globalization, cultural norm shifting, changing parental attitudes, and the streamlining of many education systems to mention a few. These factors mutually influence one another so that developments in one societal factor will most likely affect others.

Furthermore, it is important to stress that we do not intend to paint a 'doom and gloom' picture of our generation of adolescents. Developmental trends can be positive and negative, and there are areas where adolescents are better off now than before. Their tolerance for 'otherness' often surpasses that of older generations, exemplified perhaps by only 29% of young Brits voting for Brexit, whilst 64% of those 65 years and older took the same stand (https://yougov.co.uk/news/2016/06/27/how-britain-voted/). More young achieve an education, youth crime is generally on the decline, and in many countries adolescents smoke and drink less than their parents did (Center for Disease Control & Prevention, 2017; Norwegian Social Research, 2015).

Still, there are concerns. The adolescent generations have been given many labels: *Millennials*, *Generation Me* and *iGeneration* to mention a few. The cover of the May 2013 TIME magazine portrays an adolescent taking a selfie, with the headline; *The me me me Generation*. The corresponding article shared research claiming today's youth are lazier, more entitled, selfish and shallow than before (Stein, 2013). Also, the prevalence of narcissism among this age group has been on a sharp rise since the 1970's (Twenge, 2014). Twenge argues that adolescents take it for granted that they themselves are unique and special individuals. Many strive ambitiously towards their externalized ideas of happiness, which are often materialistic ones, or fame, or both, so much so that this generation in Norway is named *The Serious Generation*. Paradoxically, it can be argued that this culture, with its elements of narcissism, fosters the idea of self-entitlement to the point where it also promotes laziness (i.e. Why should I work hard when I don't enjoy it?). Herein lays the possibility for an intra-conflict of substantial importance. The adolescent works hard (though she dislikes it) towards a goal (which lacks internal grounding), and which she (though she doesn't know this yet) will most likely not obtain. And she does this in an environment that is fast-paced and fragmented (i.e. urbanized and technified) to the point where a birds-eye view upon her own life is all but impossible to achieve. The result: An almost epidemic increase in depression and anxiety among this age cohort. In the US the 12-month prevalence of major depressive episodes (MDE) in adolescents rose from 8.7% in 2005 to 11.3% in 2014 (Mojtabai, Olfson, & Han, 2016). According to the US National Institute of Mental Health, the overall 12-month MDE prevalence for 2015 was even higher at 12.5% (19.5 and 5.8% for girls and boys, respectively). A US study by Merikangas and colleagues (2010) showed that 22.2% of 13–18 year olds met the clinical assessment criteria for severe impairment or distress (anxiety 31.9%, behavioural disorders 19.1%, mood disorders 14%). Adding further concern, Canadians Flett and Hewitt (2013) showed that mental health issues were generally underestimated, citing lack of disclosure, as well as a range of existing sub-threshold conditions not quite meeting criteria for diagnoses. Over the last century, increased urbanization populations have experienced a general trend of increased life expectancy, decreased infant mortality, and acute illness related to childhood disease shifting toward chronic lifestyle diseases such as obesity and diabetes (Dye, 2008). While longitudinal trends may show benefits of urban living, the negative mental health effects of urban upbringing and city living are well-documented including increased prevalence of anxiety and mood disorders, schizophrenia and reduced ability to process social stress (Lederbogen et al., 2011).

To sum up, there are some worrying developments in adolescent mental health, some attributed to increases in urbanization and technification; a societally induced pathology needing treatment. The psychological explanations are complex, and a thorough presentation of causes of this pathology is beyond the scope of this paper. Still, it seems reasonable to infer that many young people's life circumstances are not conducive to optimal health and development. For example, adolescents in urban

settings rarely experience environments that enable states of presence and serenity. These states, in turn, facilitate self-awareness, introspection and contact with one's emotional system, all key factors for making congruent and health-promoting adjustments to one's life (McGeeney, 2016).

An emerging question that needs answering

This truncated outline of the effects of urbanization and technification generates a question of sub-stantial importance regarding adolescents: Do we accept, and even welcome the developments as they are, and rely on humans' unique ability to adapt to new circumstances? Or, do we acknowledge that some societal developments will benefit from a more active and targeted involvement, so that its qualities are harvested whilst its hazards to some extent are reduced?

We argue that both approaches are warranted, as one does not exclude the other. Still, the law of entropy states that basically anything, if left to itself, through time will become an organization of ever-increasing complexity (Romeiro & Earp, 2013). Without becoming too technical, social entropy predicts natural decay within social systems, and movement towards breakdown of societies over time (Bailey, 2006). In the dismal light of entropy, the optimistic key words are 'if left to itself'. We do not have to leave things to themselves. It is in our power to create movement in the direction of those virtues, ethics and qualities we hold as important societal values. And when we discover that the vortex of modern life is indeed plaguing many of our adolescents, should we not seek to find countermeasures? We believe so, and in the following sections we discuss one approach, wilderness therapy, proposed as antidote to this growing dis-ease, and provide clear practical examples of how to apply this antidote through accessing core elements found in wilderness therapy traditions.

Finding an antidote for the increasing trend of adolescent alienation

If accepting the premises outlined above, some simple key antidote factors spring to mind; temporarily replacing everyday noise, fragmentation and high activity, with situations allowing for and promoting states of introspection, awareness and presence. In doing so an adolescent may undergo contrasting experiences that potentially alter their current perspectives enough to make way for change. Examples include playing an instrument, practicing yoga, or mindfulness meditation. These approaches address above-mentioned key factors to counteract depression and anxiety argued herein as increased by urbanization and technification.

One approach includes these factors, and in addition involves being in the natural world as its most vital ingredient. Wilderness therapy is becoming an evidence-based way of working with adolescents and is gaining recognition in the mental health field (Annerstedt & Wahrborg, 2011; Bowen & Neill, 2013). While substantial differences in practice internationally limit wilderness therapy from recognition as a distinct modality, the approach has gained credibility through outcomes research and a slowly building theoretical base (Becker & Russell, 2016). It resonates well with the zeitgeist of ecological awareness, it makes intuitive sense to funders, and the public generally embraces it as an approach to health. Contact with nature alone has been commonly cited as a mainstream health promotion strategy (Maller, Townsend, Pryor, Brown, & St. Leger, 2005; Thompson Coon et al., 2011). In the following section we build our case beyond just contact with nature; in that core elements of wilderness therapy provide a viable antidote to urbanization and technification's negative effects.

Wilderness therapy: a general introduction

> Keep close to nature's heart … and break clear away, once in a while, and climb a mountain or spend a week in the woods. Wash your spirit clean.
>
> –John Muir (cited in Young, 1916)

Wilderness therapy is mental health care which utilizes client and group experiences in wilderness therapeutically. The main prerequisite is that nature in and of itself facilitates and strengthens intra- and inter-psychological processes that may lead to increased psychological robustness, as well as a reduction of mental health and behavioural problems (Hoyer, 2012). Theorists and researchers of outdoor therapies have been challenged for rarely exploring the human-environmental relationship in the reporting of outcomes and change (Berger & McLeod, 2006; Beringer, 2004). Without recognition of the 'ecology' of the treatment milieu, success of these interventions has been contributed to conventional psycho-therapeutic practice and ignores the deeper integral approach to treatment built through decades of practice (Taylor, Segal, & Harper, 2010). Wilderness therapy borrows its theoretical and philosophical rationale from ecophilosophy (e.g. Drengson & Devall, 2008), ecopsychology (e.g. Roszak, Gomes, & Kanner, 1995) and ecotherapy (e.g. Buzzell & Chalquist, 2009). Also, seminal books like *Last Child in the Woods* by Louv (2008) and *The Biophilia Hypothesis* by Kellert and Wilson (1993) have had considerable impact on the general publics' understanding of the reciprocal relations between humans and nature (i.e. the more-than-human), as well as the possible negative consequences of our distancing from nature. Explanations for the well-being many experience in nature are predominantly biological (Selhub & Logan, 2012); an easy conceptualization when simply considering our composition is of elements similar to that of all nature (Suzuki & McConnell, 1997). Genetically speaking, we are still adapted for a pre-industrial way of living that largely consisted of hunting, gathering and significant physical exertion, and as such, today's urban existence, driven by rapid technological advances, forces upon us a lifestyle that is incongruent to our constitutional make-up (Cordain, Gotshall, & Eaton, 1998). Many of us have become disconnected and alienated from our natural selves to the point that this causes a range of threats to our health. Louv (2008) coined this 'nature-deficit disorder', and Harper (2008), playing along these sloganeering lines, labeled the effect of this disorder as resulting in an 'enviro-mental dis-ease'. The antidote we prescribe is obvious; more quality time spent in healthy natural environments with intentions to heal or address maladaptive behaviours (Jordan, 2014; Maller et al., 2005; McGeeney, 2016). Approaching the nature-deficit view empirically has led Selhub and Logan (2012) to conclude that 'less contact with nature, particularly in one's young years, appears to remove a layer of protection against psychological stress and opportunity for cognitive rejuvenation' (p. 3). What wilderness therapy offers beyond contact with nature is of critical importance to its recognition as a viable antidote.

Key practices and core theoretical elements of wilderness therapy relevant to trends of adolescent lifestyles: the antidote

Social media, technology and electronic entertainment accessible to adolescents today runs counter to the experiences available from a wilderness expedition. Tolerance for, and valuing the burdensome experiences of outdoor living and travel often only emerge during, or even after the expedition. So what is it about wilderness therapy that sets it apart from traditional therapy and an adolescent's day-to-day life? First, an expression of common wilderness therapy practices delineating the wilderness approach from conventional office-based talk therapies (Gass, Gillis, & Russell, 2012; Harper, Peeters, & Carpenter, 2015) are described briefly in Table 1. Three core elements of clinical wilderness therapy are then described in more detail to theoretically support how therapy undertaken in wilderness, and to a lesser degree in nearby-nature, can be 'antidote' to the above-mentioned malaise (Fernee, Gabrielsen, Andersen, & Mesel, 2017).

Theoretically, a wilderness therapy clinical model has been proposed based on three core elements (Fernee et al., 2017; Russell & Farnum, 2004): Wilderness, the physical self, and the psycho-social self. While practices vary across wilderness therapy programs internationally, these three elements are central features common to most. Each is described below in the context of evidence-based benefits for adolescent clients.

Wilderness, the first core element, is difficult to define as it carries with it contested romantic, colonial and biblical connotations (Harper, Gabrielsen, & Carpenter, 2017). For our purposes, wilderness primarily means places in nature that are uninhabited. This ecological construct is essential to the wilderness

Table 1. Elements of wilderness therapy practice and brief descriptions with examples.

1. Experiential learning methods	Group outdoor travel and living, along with planned initiatives, games, and group activities provide opportunities for 'learning by doing'. (e.g. tasks such as food preparation or safely crossing a river become social learning laboratories in which the therapist as participant-observer can assess and intervene as needed). Beyond the cognitive exercise of talk therapy, client and therapist are engaged in lived-body expressions of self, other, and the dynamics of the environments travelled in
2. Integration of therapeutic practice into group travel and outdoor living	Individual and group therapy, psycho-education and social group learning are all present in an undulating process where therapists can step into and out of therapeutic process. Daily travel and living demands flexibility in roles and responsibilities for all, and is not limited to 60 min planned sessions, although those are easily facilitated on multi-day wilderness trips. Therapist ability to 'assess' and work with client in the life space is accelerated as they live with clients for extended time
3. Connection to place	Considering a socio-ecological perspective, place-based knowledge and land-based practices are often central to trip design. Considerations for where clients are from, cultural and social backgrounds, client psychological states, diagnoses etc. are all factors leading to choice of trip location, intensity and natural and cultural heritage features. Clients can bring their histories and ecological selves (i.e. heritage, knowledge, skills and experience in outdoors etc.) into this new environment where they learn about place(s) (e.g. the stories of Indigenous and colonial peoples, flora and fauna, spiritual or sacred spaces, terrain features and geography...). One's sense of self is intricately entangled with nature. Biologically, we are nature; not a hard proposition to accept, yet one underutilized therapeutically
4. Reflection and the generation of metaphors	Being in uninhabited natural spaces provides ample opportunities for clients to think reflectively and generate meaning for their lives and current journey. Often, nature affords clients access to analogies and narratives of their experiences which become central to their personal narrative of self. (e.g. changing weather patterns considered parallel to one's moodiness and recognizing these states shift and change but do not need to be judged or fixed, rather accepted and honoured). Periods of inactivity and guided alone-time allows for introspection and alternative entrances to awareness
5. Challenge	The adventure factor includes assessment of client competences and the choice of activities, terrain and levels of challenge and risk deemed appropriate to achieve individual and group therapeutic and social goals. A balance of perceived risk and task burden is gained with ample support and mentorship from staff to ensure task completion. It is in the unknown outcomes in which adventure lies, and, which has the potential for disruptive learning, (e.g. self-discovery of strengths and abilities never even considered such as showing courage in the face of adversity or compassion to another client in need)
6. Natural consequences	Client actions and choices have clear and unambiguous feedback. Weather changes, varying terrain, individual and group decisions etc. all carry the potential for unknown outcomes and many provide optimal learning moments. (e.g. client is shown how to load their backpack including keeping raingear accessible. When raining, the client is refusing to where raingear due to its inconvenient location in the bottom of their pack. Client gets wet and cold, becoming weak and frustrated. Process between therapist and client in unpacking, changing to dry clothes, and, in putting on rain gear is ripe for opportunities to discuss goal-setting, self-care, organizational skills, and the impact one's decisions have on others etc.)

therapy model. It is the more-than-human environment in which the therapist and client relationship is established, and the milieu where therapy occurs. Fernee and colleagues (2017) suggest wilderness provides a place to establish competencies for living outdoors, an ideal place for reflection and insight, a reprieve from regular life busyness and stress, and as providing a diverse pallet for metaphors. A systematic review of 'nature-assisted' therapy found a small but reliable evidence-base supporting the effectiveness of this approach for public health interventions for diagnoses such as schizophrenia, obesity and mental health issues (Annerstedt & Wahrborg, 2011). The review identified three main health-promoting effects of interacting with natural environments: Stress reduction, improved illness recovery, and improved well-being. Addressing issues of urbanization directly, time in nature has been found to be a critical resource in reducing the negative effects of rumination linked with depression and other mental illnesses (Bratman, Hamilton, Hahn, Daily, & Gross, 2015). As antidote to issues of urbanization which put adolescents 'at-risk', outdoor programs using adventure activities have been suggested to build resilience and well-being (Ungar, Dumond, & McDonald, 2005).

The physical self, the second of the three core elements, is the easiest to describe and support empirically; the physicality of outdoor travel and living is inherent and obvious, and the research on the benefits of physical exercise, especially in the context of 'green' or outdoor exercise, is growing rapidly (Barton & Pretty, 2010; Duncan et al., 2014). Green exercise has been found to improve mood states and positive engagement, reduce tension, confusion, anger and depression, and increase energy (Thompson Coon et al., 2011). With the rigors of outdoor travel, over varied terrain, sleeping on mats under tarps or in tents, and cooking meals over fires or on portable cook stoves, daily living presents significant opportunities for clients and therapists to be active and eat healthfully while adapting to the conditions. Systematic reviews of physical activity programs on adolescent social and emotional well-being have consistently reported positive effects, yet strong bias remains present in the body of research leaving questions as to efficacy (Lubans, Plotnikoff, & Lubans, 2012). These finding rings true of much wilderness therapy research as well which report primarily on positive outcomes, yet coming from a small group of researchers (Becker, 2010; Fernee et al., 2017). It's easy to grasp however, that the adjustment to the routine of outdoor travel and living implicitly requires physical challenges to be undertaken. It is for this reason that the physical self remains central to wilderness therapy practice and its health benefits are recognized widely.

The psychosocial self is the third core element in the clinical wilderness therapy model. Wilderness therapy for adolescents generally occurs in small intact groups that become interdependent and challenge individuals to be relational, and to work toward attachment with others outside of their families (Fernee et al., 2017). From assessment through treatment, to post-trip evaluation, therapists can work with clients individually and within the group context, thereby gaining access to a broad range of emotional and behavioural states and growth opportunities. The young person's psychological and social self are transparent in the wilderness therapy context, stigma is reduced related to mental health issues, adherence to treatment increases and there are ample opportunities to explore alternative ways of being (Fernee et al., 2017). Individual growth has been found to occur within the group context of outdoor adventure programs including mindfulness, self-efficacy, life satisfaction and happiness, reduced anti-social behaviour and increased accomplishment motivation (Mutz & Müller, 2016; Paquette & Vitaro, 2014). These findings suggest parallel social and personal processes illustrating the entanglement and benefits of individual and group therapy approaches.

A final note is required to ensure that wilderness therapy, as described in this paper, is understood as having three basic core elements, yet programs and practices manifest in numerous forms internationally. The field of 'wilderness therapy' has, for example, undergone significant scrutiny for questionable care practices and unethical treatment of young people (Becker, 2010). While described by Becker as an 'industry', many wilderness therapy programs are run in an ethical and professional manner. We are presenting wilderness therapy as a healthy and viable option for youth and write from our perspectives and familiarity with wilderness therapy options in Norway and Canada. We do not represent, support or endorse all practices claiming to be wilderness therapy.

Discussion: How to make use of key wilderness therapy elements on a large scale

The most precious things in the modern world are probably silence, solitude, and darkness.

–Paul Bogard (2013)

If one accepts our simple descriptions of the urbanization and technification trends of our time, and allow us the assertion that one possible antidote to the resulting dis-ease are found in the core elements and practices of wilderness therapy, an all-important question arises: How can this antidote possibly become relevant on a larger scale? We propose a three-stage approach as a possible way forward: (1) The internalization of green(er) values in society, (2) Increased knowledge of viable antidote measures, and (3) Planning to put antidote measures into practice. Finally we suggest some examples of practice.

Stage 1: the internalization of green(er) values in society (Changing Beliefs)

This headline may sound moralistic, but in the context of this paper it is not. We argue that many people habituate to the gradual change of life circumstances without reflecting very much upon how this actually affects their lives on a deeper, less conscious level. This is to be expected as most changes occur slower than we will notice in our day-to-day lives; some change is so slow it can only be identified across generations. This phenomenon is referred to as the 'shifting baseline syndrome' and occurs when 'the people of every generation perceive the state of the ecosystems they encountered in their childhood as normal' (Monibot, 2013, p. 69). Examples of change due to urbanization include increased air pollution, light pollution (disappearing night sky, increased lighting in urban areas) and noise pollution (transport, industry, ever-present entertainment etc.). Many adolescents now live in a bubble of light, noise and constant distraction. Another consequence is that physical solitude is a state many seldom or never experience, as silence, solitude, and darkness are easier to come by in non-urban settings and wilderness.

When we realize that many are gradually losing touch with aspects of the natural world so beneficial to our well-being, chances are that we will take measures to preserve, recreate and seek out these elements in other ways. In other words, on an individual level, we may choose to rearrange our value systems so that our need for connection with the natural world is better accommodated. If, or when, this gradual shift takes place in a community, these values will subsequently be converted into goals and actions. Politicians may be elected that govern according to new sets of values and goals. This would, in addition to the obvious environmentally friendly choices, affect city and school planning, architecture, public health initiatives etc.

One might argue that the above call for 'green values' constitutes some form of utopia, but what is seen globally is a polarization of political landscapes, often because of the complex relationship between environmentalism and economics (e.g. Wildavsky, 2017). This said, environmentally focused political parties are slowly gaining support, at least in many European countries (Haute, 2016). In order to apply antidote measures found in wilderness therapy on a larger scale, we need to reach a point where public opinion and key players in society believe these to be a viable way forward.

Stage 2: Increased knowledge of antidote measures (Education)

Spending time in nature leads to improved health and well-being. This assertion is broadly documented in many different fields of study (Hartig, Mitchell, De Vries, & Frumkin, 2014). Also, physical activity in natural settings is arguably regarded as the single most potent health behavior we know (Thompson Coon et al., 2011). As presented above, research from wilderness therapy has identified elements in practice that hold the potential to further strengthen positive benefits of being in nature, many of which can be simplified for everyday use across settings. A challenge is to mainstream some of these elements so that more people actually know of them. A successful example is mindfulness; in the western world this originally marginal concept gradually has become accepted, invested in, and is now well-known for its contribution to health and well-being. Can this happen with some of the key 'antidote' elements from wilderness therapy too? How can concepts like 'connection to place', 'silence and solitude', 'physical

awareness', and 'creative challenge' described in Table 1 become well-understood societal counter forces to anxiety and depression? How do we get to the point where we understand that 10 min of sitting still in a pleasant natural setting, without other disturbances, can prove vital to our health in the same way as physical exercise, healthy food and mindfulness meditation?

Shanahan, Fuller, Bush, Lin, and Gaston (2015) conclude that 'a very rapid improvement in psychological well-being is possible in response to very low durations of nature dose' (p. 480). In other words, a little goes a long way. This, we believe, is a key marketing point to policy makers like government officials, but also to adults more directly involved in adolescents lives like teachers and health workers. Furthermore, nature in this respect is an extremely broad term, and includes urban nature such as city squares with trees and birds, green backyards shielded from traffic noise, river and lake sides, and of course larger city parks. With some creativity, green experiences are available almost anywhere, any time. If on a societal and an individual level, we build a culture that more frequently seek out small experiences of nature, important prerequisites for improved health will already be at work. To further accelerate these health-promoting processes, wilderness therapy antidote measures could be introduced, adapted and adopted.

Stage 3: putting the antidote measures into practice (Planning)

Most young people will never experience a professionally implemented wilderness therapy expedition. They will not get to spend weeks, or even days, in pristine wilderness whilst being continuously therapeutically challenged, enabled and motivated to discover new sides to their own psyche. More importantly, many urban-raised parents lack the skills, security, habitual culture, motivation or means to provide for their kids on their own family adventure, or provide any other outdoor experiences for that matter. Finally, children's play, at least in the western world, has to a worrying extent, and for a wide range of reasons, moved from more risky play, often in the outdoors, towards safer activities away from natural hazards (Brussoni, Olsen, Pike, & Sleet, 2012; Sandseter & Kennair, 2011). All the above adds up to an adolescent generation that essentially lacks a basic ability to self-organize, make reasonable decisions about safety and prosper in outdoor environments (Tremblay et al., 2015). The responsibility lies of course with the preceding generations. We have been the suppliers of those premises informing and forming the lives and cultures of our young. It is our responsibility, if we believe changes are warranted, to take action.

We now suggest how society can implement countermeasures to the aforementioned rise of adolescent environ-mental dis-ease. While we provide some specific ideas for direction, we recognize the list is inadequate without desired motivation for change. We call on policy-makers and leaders to consider where they can contribute.

Increased creativity on both system-oriented and individual levels in turning indoor activities into outdoor activities

A range of classroom subjects may be taught in outdoor settings. Besides the described effects of being outdoors, it poses a welcome break for school-tired students, and makes pedagogical sense (Bentsen, Andkjaer, & Ejbye-Ernst, 2009). The same applies to psychotherapy, which, despite all its various forms, usually involves dialogue of some sort. Jordan (2014) and Berger and McLeod (2006) make powerful cases for the inherent benefits of bringing therapeutic work into nature, providing well-being for the patient and therapist alike, and arguably making the therapy more effective as well. This call for creativity obviously applies to a range of other situations and activities as well (e.g. sports, meetings, social gatherings etc.)

Increased societal culture for allowing and taking short time-outs

Examples of this are provided in the following chapter. It is worth noting that in a recent study Cox and colleagues (2017) show that the *frequency* of exposure to nature is a stronger predictor for a range of health outcomes than the *duration* of these exposures.

Increased understanding that antidote measures can be facilitated across a wide range of professional disciplines

No one has a monopoly on providing adolescents with healthy experiences to combat the urbanization and technification trends. Outdoor educators, adventure therapists and wilderness therapy providers all have valuable and in-depth knowledge in this field, but if we wish for a wide implementation of antidote measures, a broad and interdisciplinary focus is needed.

Increased understanding that anti-dote measures may be facilitated at various levels of complexity

We believe a spectrum of interventions is warranted from brief and ad hoc activities in natural settings to full-scale wilderness therapy programs. This also falls in line with the continuum that runs from public health to specialized treatment approaches, and from general to clinical health and well-being needs. In short; increasing the dosage and the quality of our connection with the natural world runs as a red thread throughout all proposed antidote measures.

Increased political focus

As we have briefly touched on before, governmental 'ownership' of possible antidote measures is of fundamental importance, as this will enable new and strengthened initiatives in schools, work places and within the social and healthcare services. Environmental issues will be given higher priority in the shaping of societies, and hopefully in the not too-distant future all citizens' access to experiences in nature is regarded as nothing less than a civil right.

Practical examples (Action)

Based on elements presented in Table 1, we cautiously share a shortlist of viable and easily adaptable antidote measures for adolescents suffering negative effects of urbanization and technification. Of course, these micro-intervention scan be done in urban settings although deeper impact will occur if conducted closer to nature.

Quiet time

Based on elements no. 3 and 4. The adolescent simply sits in a natural place for a predefined time period (e.g. 5–20 min). She is to refrain from performing any other tasks including talking to others. Dis-ease antidote factors: emotional awareness, mental restoration, peace and serenity.

Walk and talk

Based on elements no. 1, 3, and 4. Groups of two or three go for a walk together in a natural setting. The topic of conversation, if any, can be directed or open. Dis-ease antidote factors: physical activity, natural conversation, and non-directed attention.

Use of metaphors

Based on elements no. 2 and 4. Finding an object, or seeing something in nature, that metaphorically symbolizes something else. This task can be set up to be fun (metaphor represents a good memory, hobby, friend, future dream etc.), difficult (metaphor represents a movie, a historical event, a political topic etc.), or emotionally challenging (metaphor represents a personal life story, loss, challenge etc.). Dis-ease antidote factors: reflective thinking, creativity, awareness of natural detail, and increased self-insight. These activities can also be done in groups to enhance social interaction skills.

Risk and challenge through experiential activity

Based on elements no. 1, 2, 3, 5, and 6. Physical activities facilitated through group experiences that include elements of play and perceived risk/challenge, which may be seen as burdensome such as hiking up to a summit overlooking a town, climbing a tree or even abseiling a building. Dis-ease antidote

factors: self-efficacy, bodily awareness, breath control, and a holistic understanding of self (e.g. control of thought, or lack there off, when being scared or challenged).

Conclusion

> A major consequence of continued urbanization is that more people will be exposed to the health risks associated with city living.
>
> –Shanahan and colleagues (2015)

In the opening quotation, Henry David Thoreau suggests that it is our wildness that will preserve our future. Not necessarily wilderness, but our inner wild soul and spirit that lives in harmony with the more-than-human world. The urbanization and technification of adolescent lives poses an unequivocal threat to the preservation of our future because adolescents *are* our future. Whilst we are convinced of the urgent need for antidote measures to combat this rise of this adolescent dis-ease, we welcome debate on the nature of these antidote measures themselves. Knowledge gathered from wilderness therapy surely cannot hold all answers, but can certainly point us in a direction of action that is empirically and heuristically supported, cost-effective, easy to implement, has a host of secondary gains and no known negative side-effects. We will continue to live in our culturally diverse and wonderful cities, and the technological marvels at our disposal will advance further with amazing possibilities we have not even dreamed yet. But we must, in our opinion, regularly touch the soil, climb the trees, play with the wind, dive into the waters … if nothing else, to check in on ourselves for a while and rest our souls.

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