

12

PSYCHOLOGICAL WELL-BEING AND PRO-ENVIRONMENTAL BEHAVIOUR

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Introduction

The adoption of environmentally friendly behaviour can have a major effect on reducing human impacts on the environment (Clayton *et al.*, 2015; Dietz *et al.*, 2009; Gardner and Stern, 2008). Hence, in an era in which multiple environmental crises are diminishing planetary well-being, it is crucial to promote pro-environmental behaviour without increasing immobilizing anxiety and avoidance. In this chapter we construct a view of nature as a part of human psychological functioning, one that combines mental well-being (including psychological needs) with pro-environmental behaviour. We also argue that supporting nature-connectedness and mental well-being among humans can facilitate pro-environmental behaviour; that is, we offer ways to promote both planetary and human well-being.

We consider mental well-being in line with the tripartite model of well-being that comprises psychological, emotional, and social well-being, and lack of mental health problems (Kokko *et al.*, 2013). Research has shown that humans who flourish along the lines of the tripartite model also tend to be healthy at the highest level (Keyes, 2005). Psychological well-being is a core feature of mental health; it is understood to include hedonic (enjoyment, pleasure) and eudaimonic (meaning, fulfilment) happiness, as well as resilience (coping, emotion regulation, healthy problem-solving) (*e.g.*, Tang, Tang and Gross, 2019). In this chapter we argue that the subjective experience of well-being is an essential part of improving planetary well-being, a concept that emphasizes the interconnectedness of human and non-human well-being.

Considering this interconnectedness, one first needs to comprehend certain features of the species-specific needs of humans, including manifold psychological needs that are integral to human well-being. For example, self-determination theory

notes the psychological needs required for optimal psychological well-being: Autonomy, competence, and relatedness (Deci and Ryan, 2000). *Autonomy* refers to the experience of choice and volition in one's behaviour, whereas *competence* involves the ability to bring about desired outcomes and feelings of effectiveness and mastery over one's environment. *Relatedness* reflects feelings of closeness and connection in one's everyday interactions (*ibid.*). We suggest that relatedness in particular can promote perceptions and behaviours that are in line with the requirements of planetary well-being.

How, then, could such relatedness of psychological well-being and non-human nature be supported? Extensive literature in environmental psychology shows that non-human nature (including non-human nature in urban areas) supports human health and well-being (Berto, 2014; Bowler *et al.*, 2010; Hartig *et al.*, 2014; Ohly *et al.*, 2016). A large body of research on the topic of restorative environments shows that observing and/or engaging with non-human nature can provide affective, cognitive and behavioural benefits, including reductions in psychophysiological stress and increases in well-being (Twohig-Bennett and Jones, 2018; Wilkie and Davinson, 2021).

In the human–nature relationship, elements of non-human nature pertain both to concrete characteristics of nature, for instance presence of plants, trees, water (Ulrich *et al.*, 1991), and to perceived sensory dimensions, for instance species richness (Grahn and Stigsdotter 2010). These are relevant for restorative nature experiences and well-being (Hartig *et al.*, 1997; Ulrich *et al.*, 1991). From this perspective, human well-being is in part determined by nature-connectedness and exposure to nonhuman nature (*e.g.*, Brymer, Cuddihy and Sharma-Brymer, 2010; Mayer and Frantz, 2004).

There is an urgent need for interventions that promote planetary well-being. The needed transformation is not restricted to socio-technological solutions but requires the reshaping of human–nature relationships and restoring the view of humans and human minds as part of nature, not separate from it. Crucially, positive nature experiences—and in particular nature-connectedness achieved through emotional and social support—can promote both well-being and pro-environmental behaviour in humans. Pro-environmental behaviour is understood here as a range of behaviours that benefit the natural environment, enhance environmental quality, or harm the environment as little as possible (Steg and Vlek, 2009). A nature-based intervention called Act with Nature (AWN), introduced later in this chapter, is one possible method for supporting such behaviour and also promoting individual human well-being.

The human mind as part of nature

Psychology is the study of the human mind and behaviour (American Psychological Association (APA), 2015). The discipline embraces all aspects of the human experience—from the functions of the brain to the actions of communities, from

child development to care for the aged. Psychology has typically focused on the effects of the social environment on the human mind and behaviour. Our view as eco- and environmental psychologists is that many mainstream psychological theories and approaches have helped to uphold the strict dichotomy between humans and nature (or the natural world)—or, at least, that these theories fail to sufficiently account for the interconnectedness of human and non-human well-being.

Yet the human-centred approach has been challenged within psychology too. Some theories and subdisciplines propose a more holistic view in which humans are part of the physical environment. We present three specialty areas in psychology that are relevant to our endeavours: *Environmental psychology* (e.g., Stokols *et al.*, 2009), *gestalt therapy* (Perls, 1973), and *ecopsychology* (e.g., Roszak, 1993; Winter and Koger, 2004). Although each provides valuable contributions, we argue that ecopsychology and its take on the concept of nature-connectedness is especially promising with respect to planetary well-being. The three specialty areas have a shared grounding in the idea, already discussed above, that human well-being (or lack thereof) is influenced by the physical environment, consciously or unconsciously. For example, environmental psychology proposes that humans have a species-typical propensity for psychological restoration in natural environments (e.g., Kaplan and Kaplan, 1989) even though a person may not recognize this explicitly.

Environmental psychological theories of restoration in nature can be thought of as focusing mainly on attention restoration (Kaplan and Kaplan, 1989) or stress reduction (Ulrich, 1983). The concept of environmental self-regulation refers to more explicit use of physical settings—often favourite places—and relates experiences in nature more broadly to self-regulation (Korpela *et al.*, 2018). This means that a person consciously or unconsciously regulates (e.g., facilitates, strengthens) their experiences (emotions, stress, coping, *etc.*) by means of the physical environment (e.g., favourite places in nature). A concrete example of environmental self-regulation is going to a park or forest after a stressful workday and noticing the reduction in stress there.

Gestalt therapy's concept of organismic self-regulation is similar to environmental self-regulation. The central idea in gestalt therapy (Perls, 1973) is that a human being cannot be understood separately from its environment (Yontef and Fuhr, 2005). Humans are seen as organisms that are a part of nature, living in natural cycles of contact and withdrawal in relation to both physical and social environments (Crocker and Philippon, 2005). Human beings—like all other organisms in nature—regulate themselves in changing circumstances, including both internal changes related to bodily experiences and external changes related to the physical and social environment, that is, organismic self-regulation (Perls, Hefferline and Goodman, 1951). The environment becomes a bodily experience through sensory perceptions and is processed in human minds through complex cognitive and emotional schemes, which also include cultural and societal aspects. Expanding to a planetary well-being viewpoint, *all* living entities have various processes whose functioning and regulation is focal to well-being.

Ecopsychological views go even further. Ecopsychology's view of nature-connectedness unambiguously means that humans are part of nature (Brymer, Cuddihy and Sharma-Brymer, 2010) and that this interconnection explains the well-being effects of nature. Brymer, Cuddihy and Sharma-Brymer (*ibid.*) emphasize the depth and emotionality of nature-connectedness. According to them, in addition to psychological restoration (Kaplan and Kaplan, 1989; Ulrich *et al.*, 1991), non-human nature initiates deep reflections, provides opportunities for caring, and helps individuals to understand and experience being part of nature. Deep reflection in nature means, for example, that nature promotes self-awareness and acceptance. Non-human nature acts as a mirror that can reflect one's own thoughts and feelings. Interestingly, from a planetary well-being perspective, the concept of ecological unconsciousness (Roszak, 1993) is used in ecopsychology to argue that the state of the planet awakens feelings consciously and unconsciously.

Continuing within the ecopsychology approach, the comprehensive nature experience model (Salonen, 2020; Salonen, Kirves and Korpela, 2016) underlines that the perceived characteristics of nature are dependent on subjective emotions. Put simply, the characteristics that we see in nature are related to our subjective experiences. Further, nature-connectedness means here that there is no boundary separating a person's experience of self from that of non-human nature; the experience of self continues into nature and nature continues into the experience of self. Nature-connectedness is particularly experienced through close contact with natural elements and in relation to sheltering natural elements (*e.g.*, forests, trees).

Nature-connectedness and pro-environmental behaviour

In the following we examine more closely the conditions of environmentally friendly behaviour and take an in-depth view of the significance of nature-connectedness, including its relevance for supporting behavioural change. Planetary well-being requires overcoming the dualist dichotomies wherein humans and human societies are perceived as separate from nature. Nature-connectedness, thus, can help to address the environmental crises by promoting change in both behaviour and well-being.

Pro-environmental behaviour refers to the actions that individuals take to minimize environmental harm or to restore the natural environment (Anderson and Krettenauer, 2021; Brick, Sherman and Kim, 2017). A variety of different interventions and strategies have been developed to change human behaviour and reach sustainability goals. These involve changing factors that precede behaviour, for instance antecedent strategies such as information, education, and behavioural commitment strategy (*e.g.*, Geller, Winnett and Everett, 1982). Previous research has shown that merely providing information or rewarding/punishing different behaviours is not sufficient to change individual behaviour (Schultz and Kaiser, 2012). In contrast, commitment strategies (*e.g.*, the participant commits to behavioural change) appear to be successful in encouraging pro-environmental behaviour (see Abrahamse *et al.*, 2005).

Variation in terms of individuals' nature-connectedness may affect their readiness and ability to engage in the desired behaviour change (Clayton, 2012). There is strong evidence that long-term nature-connectedness (*i.e.*, a deep relationship with nature and a sense of belonging to the wider natural community) (Mayer and Frantz, 2004) is an important predictor of pro-environmental behaviour (*e.g.*, Anderson and Krettenauer, 2021) and that it can explain nature's positive effects on well-being (Mayer and Frantz, 2004). The concept of nature-connectedness includes the idea of a subjective belongingness to nature (*ibid.*), which has been found to be a contributing factor for life satisfaction and subjective well-being (Cervinka, Röderer and Hefler, 2012; Mayer and Frantz, 2004) as well as for strengthening environmental responsibility (Mayer and Frantz, 2004).

In addition, social support can be helpful in strengthening pro-environmental behaviour. Modelling and providing information about the behaviour of others appears to be successful in supporting pro-environmental behaviour (Schultz *et al.*, 2007).

In sum, evidence-based interventions are urgently needed to support the well-being of humans during environmental crises and to facilitate desired pro-environmental behaviour change. To this end, we present an intervention that focuses on nature-connectedness but also applies commitment and social support to promote pro-environmental behaviour and well-being.

Act with nature: Intervention to promote nature-connectedness and pro-environmental behaviour

Act with Nature (AWN) is one of the several models and methodologies developed to promote nature-connectedness and pro-environmental behavioural change. In short, it is a working model for intervention that accounts for the role nature-connectedness and human well-being play in promoting pro-environmental behaviour. AWN is embedded within non-human nature. Participants are encouraged to recognize nature's significance for well-being and behaviour change, and to use the environment as support for psychological and environmental self-regulation (Korpela *et al.*, 2018). Through the intervention individuals learn to recognize, among other things, how their mood improves in nature, and that different nature elements enable different experiences. Through increased nature-connectedness, the participant can experience oneness with nature whereby nature becomes perceived as part of oneself (and oneself becomes a part of nature). Within the AWN approach, the well-being of humans and that of the surrounding non-human nature are both considered equally important.

AWN exercises take into account that changing a behaviour is a process that also includes mental changes. Different people have different levels of change readiness (see, *e.g.*, Norcross and Wampold (2018) on the transtheoretical model of behavioural change), meaning that that some participants may need more support for change than others. Nevertheless, the central idea is that behaviour changes do not require sacrifices with respect to human well-being.

AWN builds on a previous intervention, called Flow with Nature (FWN; Salonen *et al.*, 2018, 2020). Based on eco- and environmental psychology (*e.g.*, Mayer and Franz, 2004), FWN was developed to promote occupational well-being (Salonen *et al.* 2018) and to treat depression (Salonen *et al.*, 2022). The nature-based exercises of FWN have significant potential to promote pro-environmental behaviour, since participants reported stronger connectedness with nature and environmental responsibility during the intervention period (Salonen, 2020; Salonen *et al.*, 2018). FWN participants have shown positive well-being outcomes compared to control groups (Hyvönen *et al.*, 2023; Salonen *et al.*, 2022).

AWN techniques take into account research on pro-environmental behaviour (Brick, Sherman and Kim, 2017), as well as participant orientation to environmental attitudes (*e.g.*, Sparks, Ehret and Brick, 2022) and intentions (Rise, Thompson and Verplanken, 2003). For example, the participants decide themselves which concrete changes in behaviour they will commit to. It seems that behaviour change barriers/failures can result in strong feelings of disappointment, shame, and anxiety, which is why they are addressed in order to empower coping activities (*e.g.*, taking action to solve the problem causing one's mood), which in turn may help maintain the change in everyday life. These actions in everyday life help to maintain well-being and stabilize change. Consequently, the pro-environmental behaviour can be expected to continue even after the intervention.

AWN as a tool of intervention includes three separate stages in which the nature experiences, content of the exercises, and the intensity of social support varies. In the first stage, the aim is to strengthen nature-connectedness and environmental self-regulation, and to build experiences of safety and confidence through exercises focused on favourite places in nature. In the second stage, the aim is to address environment-related emotions and build psychological flexibility, which results in enhanced coping strategies (including environmental self-regulation). Participants become more aware of nature elements by reflecting on their own environment-related emotions and thereby acquire skills for psychological processing of change. In the third stage, the aim is to experiment with alternative ways of making changes and to affirm positive change in environmental behaviours.

AWN is an intervention method that seeks to facilitate behavioural change at individual and societal levels. At the core of the AWN intervention is a desire to support lifestyles that are respectful of nature's capacities and boundaries and that encourage respectful decisions about nature. Fundamental cultural and political changes in the structure of societies can be pushed forward through broad and collective behavioural changes in individuals. Put another way, while environmental crises and planetary well-being present great challenges for individuals and their behaviour patterns, intervention methods such as AWN can help address needed behavioural changes while simultaneously supporting the well-being of human individuals.

Conclusion

In this chapter we have argued for the promotion of psychological well-being from the perspective of eco- and environmental psychology. The chapter contributes a psychological perspective to the topic of planetary well-being, but does so in a way that reaches beyond the psychological perspective of the individual and beyond the problematic human/nature dichotomies that have long been mainstream in the field of psychology.

A truly integrated understanding of planetary well-being requires understanding of the conditions of human subjective well-being. The concepts and definitions used in this chapter to describe human nature and psychological well-being can be understood to be closely interconnected. They can be useful when analyzing human behaviour and promoting behavioural change for planetary well-being.

Deep behavioural change requires psychological well-being; well-being and behaviour are not separate aspects of human functioning. On the whole, when we humans perceive that there is no boundary between ourselves and the planet, and when we feel that we are one with our natural environment, it is much harder to destroy it.

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