The one health approach: Main psychological components

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Abstract

Environmental issues currently represent one of the most significant social and scientific challenges. With the exacerbation of the climate crisis, researchers are reconsidering the human-nature connection to gain a better understanding of this relationship and explore solutions to environmental issues. To address these challenges, the One Health approach, through its holistic view, proposes a dynamic model of health and well-being that promotes the integration of human, animal and environmental health. In recent years, this approach has also gained relevance in psychology as it is becoming increasingly urgent to identify strategies and promote behaviour that can protect the natural environment. The present theoretical reflection aims to investigate the psychological mechanisms and processes that support the emergence of pro-environmental attitudes and behaviour. These are the result of a process involving not only the rational side (e.g. beliefs and values), but also the emotional and empathic side towards nature. Several psychological dimensions implicated in the adoption of pro-environmental behaviour have been identified, including empathy, gratitude towards nature and personality traits. Finally, training and educational programmes based on nudging principles that encourage individuals to reflect on their decisions towards the natural environment and the adoption of pro-environmental behaviour and attitudes were considered.

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The aim of this paper is to highlight the importance of psychological components towards One Health approach to health. To address today's major global challenges, the One Health approach proposes a systemic model of health and well-being based on the integration of different disciplines: biology, human and veterinary medicine, public health, environmental chemistry, and health economy, just to mention a few of the most relevant. This approach is grounded on the recognition of an inextricable interconnection between human, animal and ecosystem health. Given this complex intertwining, it is of great importance to understand which psychological dimensions are particularly involved in embracing a One Health mindset.

The term One Health was first introduced in 2004 after the conference "One World, One Health: Building Interdisciplinary Bridges to Health in a Globalized World" organized by the Wildlife Conservation Society (WCS) in New York. Then, in 2008 FAO (Food Agriculture Organization), WHO (World Health Organization), OIE (World Organization for Animal Health) and UNICEF (United Nations Children's Fund) signed an agreement aimed at a close cooperation to address the complex issue of the interconnection between humans, animals, and health of the natural environment (Gebreyes, 2014). Nowadays, the One Health approach is officially recognized by the European Commission and the Italian Ministry of Health. This approach is outlined as a collaborative, multisectoral, and transdisciplinary framework that requires the integration of various disciplines and the collaboration between different professionals which share the need for surveillance of an "integral" nature, including livestock, wildlife and habitats at particular risk (Evans, 2014).

The approach emphasizes a broad conception of health and well-being that underlies a positive and dynamic narrative of the interrelationship between human and ecosystem health. This vision stems from a shared mission, namely, to address environmental disasters and threats that we are currently beginning to experience and will most probably become more prevalent in the future.

The One Health approach encourages a paradigm shift from an anthropocentric view of the environment to a holistic one. In recent years, the scientific community began to consider this approach from a

psychological perspective, assuming that psychological well-being depends in a large part on healthy natural environment (Costa, 2016). Several research studies have shown that the physical characteristics of a natural environment directly influence the psychophysiological well-being or discomfort of individuals (Baroni, 2010; Zinsstag et al., 2011; Evans, 2014; Koger & Winter, 2010).

Among the various psychosocial dimensions connected with the relationship between humans and nature, Wilson (2002) proposed the concept of "Biophilia", which is defined as "an innate love for the natural world, which humanity should feel universally" (2002, p. 134). In other words, it is a propensity of humans to enter into a collaborative relationship with ecosystems and the life forms that inhabit them, thus enabling the development of emotional relationships towards nature and consequently a desire for mutual health.

There is a large and persistent association between culture and health of the natural environment. Several studies indicated that there is a close correlation between individual natural environmental decisions and culturally shaped belief systems that are different for each culture (Eom et al., 2016; Galpin et al., 2015; Onel N. & Mukherjee A., 2014; Onwezen et al., 2014). Specifically, cultural dimensions such as individualism, as well as the life expectancy at birth, education, and income significantly influence the health of the natural environment in different countries (Cutler & Lleras-Evans G. et al., 2008; Muney, 2006; Onel & Mukherjee, 2014). Although there has been a growing interest in protecting the natural environment, many people are not interested in changing their behaviours. This is due to several factors including selfishness, lack of knowledge compared to other more environmentally oriented behaviours, and not having the opportunity due to economic issues (O'Brien, 2015). Also, a recent contribution by Gilli (2019) highlighted the reasons why it is so difficult to deal with the environment (and climate), including that it represents a 'social dilemma' (i.e., pervasive conflict between immediate individual interests and long-term collective benefits) and that corrective actions are constrained by economic, political, and technical interests, but also by a sense of inertia and distrust towards individual actions and the delegitimisation that everyone is equally involved in nature protection.

From the perspective of psychological research, it is very important to understand what factors motivate people to be aware of the natural environment and would therefore change their behaviour to protect the environment. Pro-environmental behaviours can be described as concrete actions that positively affect the natural environment (e.g., recycling, purchasing organic products, reducing water and energy consumption)

(Lange & Dewitte, 2019). Thus, behaviours concretely impact the health of the natural environment (Stern, 2000). Not least, a relation between pro-environmental behaviour and one' tendency toward altruistic behaviour has been shown (Berenuer, 2010). Of course, not only behaviours, but also attitudes have their own effect on the natural environment. Pro-environmental attitudes such as connecting with nature, define oneself as an environmentalist, environmental awareness, and the intention to recycle may be able to foster a healthier natural environment (Gilli, 2019).

Schwarzt (1977) was the first to propose a model that places a close correlation between individual conscious behaviour and social norms, values and self-awareness. Based on Schwartz's theory, it has been observed that values can have a positive influence on pro-environmental behaviour (Karp, 1996). More recently, Stern (2000) proposed the value-belief-norm theory according to which pro-environmental behaviour is more likely to occur if individuals are inclined to believe that the features of the natural environment they consider important could be damaged. Several studies showed that three different value orientations may be particularly relevant to understanding natural environmental beliefs and intentions: egoistic, altruistic, and biosphere (De Groot & Steg, 2008; Nilsson et al., 2004). The first refers to calculating the consequences of one's environmental actions only with respect to oneself, the second considers the effects on others, and finally, the third considers the repercussions of environmental changes on all living things (De Groot & Steg, 2008).

Research highlights that the development of pro-environmental behaviours could be the result not only of the more rational aspects of the individual but also of their emotional inclination. Empathy towards nature can be defined as the affective bonding of people towards the natural community (Schultz, 2001). Several studies showed that empathic engagement towards the natural environment can foster the emergence of an effective strategy to stimulate a pro-environment attitude (De Berenguer, 2010; Fido & Richardson, 2019). A relationship was found between empathetic involvement with nature and sustainable actions, highlighting how empathy for nature could have a twofold effect: on the one hand, engaging people in campaigns that aim to enhance better pro-environmental practices, and on the other hand, empowering people to optimize policies and economic resources relevant to planning these actions (Czap, 2018). Furthermore, empathy is an important psychological dimension to theconservation of natural environment and care efforts. People may spontaneously empathize with nature more strongly than others (Tam, 2013). Studies showed that a

higher level of empathy toward nature is positivelycorrelated with the protection of natural environment, pro-enviromental attitudes and behaviours and a greater interest in the environmental crisis (Tam, 2013).

A further psychological dimension of positive dispositions toward the natural environment is personality. This has been studied for a long time to understand human behaviours toward health (Strickhouser et al., 2017). Personality traits have been examined, on the one hand, to predict pro-environmental behaviours and, on the other hand, to understand how to better promote pro-environmental behaviours. Several studies demonstrated that a propensity for openness to experiences is significantly correlated with pro-environmental behaviour and greater openness to change perspectives, thoughts, thinking styles, and strategies (Lange & Dewitte, 2019; Kesenheimer & Greitemeyer, 2021; Pavalache-Ilie & Cazan, 2017; Poskus, 2018;).

Recently, Tam (2021) identified an interesting psychological construct that seems to be related to pro-environmental behaviours: the concept of gratitude. This represents a virtue that can guide theconservation of natural environment, which stems from the recognition that one has benefited from his or her experience. This study showed that gratitude toward nature can be conceptualized as a form of gratitude triggered by the benefits that people experience in being surrounded by nature. Furthermore, experiencing gratitude toward nature not only motivates people's intentions to care for nature, but also concretely promotes pro-environmental behaviours (Tam, 2021).

The present contribution highlighted the importance of considering the psychological components that characterize personal inclination toward a One Health approach. From a psychological perspective, the construct of One Health is multifaceted and complex as it involves intra- and interpersonal levels. We identified different psychological dimensions, including pro-environmental attitudes and behaviours, empathy and gratitude toward nature, and personality traits.

Although we are aware that the psychological components identified are not exhaustive of the complexity of the One Health approach, we believe that these can be the basis for developing training and educational programs that may encourage individuals to reflect on their choices towards the natural environment. Although people value their health, they sometimes persist in behaving in ways that undermine it. This can reflect both an individual propensity and social influence (Byerly et al., 2018). Of the various strategies that can induce changes in pro-environmental behaviours in a specific context, nudging represents a widespread and effective strategy (Nielsen et al., 2017). The term

'nudge' refers to interventions that are designed to modify humans' behaviours without restricting their freedom or substantially altering their motivations (Thaler & Sunstein, 2008).

Nudging strategies should be viewed as a complement to traditional policy actions rather than a substitute for them (Lehne, & Heiskanen, 2016). As well, the social norms of reference cultures influence both individual actions and social policy. Within this framework, culture plays a key role, becoming a reference point for social re-education (Bicchieri, & Funcke, 2018). The topic of education on decision-making has been addressed with children using financial education trainings (Bianco et al., 2021; Lombardi et al., 2021; Marchetti et al., 2021; Lombardi et al., 2022), showing how these educational programs can influence, for example, altruism and intertemporal choice. Since it is possible to create "ethical" educational programs on different topics such as finance, it is also plausible to hypothesize ethical programs on the psychological dimensions involved in the One Health approach.

With respect to environmental sustainability and pro-environmental attitudes and behaviours, educational research highlighted the positive effects in the lifespan of integrated educational projects that provide interdisciplinary skills, from technical-scientific ones to the ability to discuss ethically about environmental issues (Foster, 2001; Monroe et al., 2007; Evashwick & Ory, 2003). From an early age, children can be potential 'agents of change' as they may influence their peers by educating them in behaviours and attitudes geared towards sustainability and respect and care for the natural environment (Charry & Parguel, 2019). Educational programmes should also aim to encourage students to identify and implement strategies to ensure environmental sustainability (Foster, 2001; Monroe et al., 2007). The nudging approach to behavioural change offers a theoretical and practical framework for promoting pro-environmental behaviours in educational contexts by influencing indirectly humans' decisions. In recent years, nudging-based interventions have increased significantly in educational policies, proving their effectiveness in various areas of school life such as learning motivation and active participation during teaching activities (Weijers et al., 2021; Daamgard & Nilesen, 2018; Castleman & Page, 2015). The positive results of these nudging-based programmes have stimulated interest in using similar principles and strategies in the education of pro-environmental behaviours and the care of natural environment. For example, Charry and Parguel (2019) implemented an educational programme to encourage children to learn and adopt 'eco-friendly' behaviour, using nudging and, specifically, the technique of social labelling. The labelling strategy consists of providing a person

with a statement about his/her personality or values (i.e., a social label) in an attempt to provoke behaviour consistent with the label. Specifically, the results of the study showed that belonging to a social group labelled as 'ecological', instead of belonging to a group without specific social labelling, is sufficient to elicit greater awareness of natural environment, and triggers ecological behaviours. Furthermore, nudging-based research has demonstrated positive effects on pro-environmental behaviour in adolescents and young adults as well. For example, Cosic and colleagues (2018) reported that nudging-based interventions can also be used with university students to promote pro-environmental behaviour. The intervention aimed to improve the recycling behaviour of plastic from food and beverage vending machines. Specifically, the programme used two types of nudging: (i) informative (i.e., increasing knowledge about recycling and its positive environmental outcomes) and (ii) 'easy-to-do' nudging that was used in combination with the social norm of throwing rubbish in the bin (i.e., the bin where plastic could be thrown was enlarged). The combination of the above-described nudging strategies had a significant impact on behaviour change, increasing the students' plastic recycling efforts. In conclusion, interventions based on nudging strategies – although not without criticism, e.g. as mere marginal interventions of broader and deeper issues – have a strong impact on sustainability and environmentally friendly behaviour.

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