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Personality and Individual Differences

Green teens: Investigating the role of emotional intelligence in adolescent environmentalism

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ABSTRACT

Identifying the factors that drive environmentalism is critical to reduce human impact on the environment. Emotional intelligence (EI) has been shown to influence pro-environmental behaviour and environmental attitudes in adults, while such influences in adolescents are yet to be examined. The current study investigated the relationship between self-reported EI, pro-environmental attitude (PEA) and pro-environmental behaviour (PEB) in 382 Australian adolescents (12–17 years). Higher PEB was associated with higher PEA, and EI dimensions of Emotional Management and Control (EMC), and Understanding Others Emotions (UEO). Hierarchical multiple regression confirmed that PEA predicted PEB, while EMC also predicted PEB. EMC and UEO interactively moderated the relationship between PEA and PEB. This study suggests that adolescents' ability to manage, control and understand emotions affects the extent to which their PEAs predict PEBs, which has significant implications for the development of future environmental education initiatives to encourage pro-environmentalism.

Climate change, air pollution, resource depletion, and loss of biodiversity are already devastating and far-reaching environmental issues (Harris, 2005). This state of affairs is particularly relevant for the younger generations who are emerging as active, decision-making citizens, and are thus a crucial group for driving environmental behaviour change (de Leeuw, Valois, Ajzen, & Schmidt, 2015). In adults, Emotional Intelligence (EI) has been associated with pro-social decision-making (Lomas, Stough, Hansen, & Downey, 2012; Mavroveli, Petrides, Rieffe, & Bakker, 2007), as well as environmentalism; however, such research in adolescents is scant (Boeve-De Pauw, Donche, & Van Petegem, 2011). Investigating the relationship between EI and environmentalism in adolescence may, therefore, be an important step toward understanding how the development of EI in adolescents might foster better environmental outcomes.

Environmentalism is best understood as a tendency to act with pro-environmental intentions (Stern, 2000, p. 411), and has been operationalised through the study of pro-environmental behaviour (PEB; Klöckner, 2013). PEB is broadly conceptualised as any behaviour that benefits the natural environment, enhances environmental quality, or causes minimal harm to the environment (Steg & Vlek, 2009). From a behavioural perspective, PEB includes discrete pro-environmental actions, such as recycling or reducing car use (Aguilar-Luzón, Calvo-Salguero, & Salinas, 2014; Bamberg & Schmidt, 1999), as a product of pro-social behaviours and self-interest (Bamberg & Moser, 2007). As PEBs can be constrained by external factors (e.g., economic, social and opportunity), engagement in specific PEBs does not necessarily explain an individuals' propensity toward environmentalism (Kollmuss & Agyeman, 2002).

Identifying antecedents of a pro-environmental disposition, rather than specific behaviours, may encourage behavioural change in individuals, leading to greater environmental benefit (Steg & Vlek, 2009). Pro-environmental attitudes (PEAs) influence environmentalism and PEBs in adults (Bamberg & Moser, 2007; Markowitz, Goldberg, Ashton, & Lee, 2012) and adolescents (Fielding & Head, 2012; Meinhold & Malkus, 2005). In adults, emotional attention and regulation has been associated with "eco-centrism" (Aguilar-Luzón et al., 2014), while EI has been associated with pro-social actions and ethical buying behaviour (Chowdhury, 2017); thus, PEAs contain emotional components that motivate PEBs (Aguilar-Luzón et al., 2014; Schultz, 2005) and should be studied in combination (Bamberg & Moser, 2007; Boeve-De Pauw et al., 2011; Hawcroft & Milfont, 2010; Stern, 2000).

PEAs do not necessarily translate to PEBs, however (Connell, Fien, Sykes, & Yencken, 2014; Kollmuss & Agyeman, 2002). Perceived behavioural control, attitudes and moral norms have explained only 50%

of the intention to perform PEBs, which only account for 27% of actually performing PEBs (Bamberg & Moser, 2007), indicating additional external influencing factors. Older adolescents (mean age = 20.1) have been shown to participate in less PEBs than those in middle (mean age = 16.0) and early adolescence (mean age = 12.1), with the relationship between age and PEBs being moderated by their affinity with nature and acting in accordance with moral judgements (Krettenauer, 2017). Children and adolescents are also directly and heavily influenced by their parents and peers' attitudes, respectively (Collado, Staats, & Sancho, 2017; Grønhøj & Thøgersen, 2012). Together, these findings suggest that as adolescents gain understanding in moral concepts and the complexities of situational factors, moral decision making becomes more ambiguous, and in combination with reduced exposure to nature, adolescents may tend to disengage from PEAs and PEBs (Krettenauer, 2017). Finding ways to encourage the translation of PEAs into PEBs is therefore critical (Kollmuss & Agyeman, 2002).

EI predicts many pro-social behaviours in adults and adolescents (Chowdhury, 2017; Petrides, Sangareau, Furnham, & Frederickson, 2006; Salami, 2009; Schokman et al., 2014), thus may be implicated in the development of pro-environmental attitudes and behaviours. EI was originally defined as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189), and was later refined to focus on perceiving, using, understanding and managing emotions (Mayer & Salovey, 1997). EI has been conceptualised as both trait and ability EI. Trait EI relates to self-reported situational, emotional and behavioural dispositions (Petrides & Furnham, 2000b, 2001). Ability EI is more directly concerned with maximal emotional performance, which is quantified using questions with correct responses (Mayer & Salovey, 1997; Petrides & Furnham, 2000a). Trait EI instruments have demonstrated greater predictive validity for a wide range of criterion variables relating to social, emotional and behavioural well-being (Frederickson, Petrides, & Simmonds, 2012). Investigating individual differences in EI could help to better understand why PEAs predict PEBs in some but not others (Markowitz et al., 2012).

Few studies have investigated the role of EI in pro-environmentalism. Aguilar-Luzón et al. (2014) reported higher rates of PEAs associated with higher emotional attention and clarity (conceptually similar to perceiving emotions and understanding emotions) amongst young adults, while recycling attitudes, intentions and behaviours were not related to emotional repair, attention or clarity. Higher emotional clarity and attention in combination with more PEAs, however, predicted PEBs, suggesting that EI dimensions moderate the extent to which PEAs predict PEBs; thus, those who better regulate their emotions may better predict the positive outcomes of their PEBs. Strengthening the connection between PEAs and PEBs during adolescence may be an essential step toward fostering future pro-environmental outcomes, which is of significance given the role that adolescents will play in managing environmental issues as they emerge as active, decision-making citizens. It was hypothesised that adolescents with stronger PEAs would participate in more PEBs, that PEAs and PEBs would be associated with EI, and that EI would moderate the relationship between PEAs and PEBs.

1. Materials and method

This study was approved by the University Human Research Ethics Committee. All participants and their parents/guardians provided informed consent prior to participating in the study.

1.1. Participants

Participants were a convenience sample of 406 grade 7–11 students attending an Australian independent boy's school or an independent co-educational school (age range = 12–17 years, $M = 14.48$, $SD = 1.11$).

Two parents returned forms of non-consent, excluding their children from participation.

1.2. Procedure

Principals of independent schools in the researchers' networks were approached; two schools agreed to participate. An information statement and form of non-consent were then sent to the parents/guardians of all eligible students, parental non-consent deemed the student ineligible. All eligible participants were provided an information statement and provided consent before completing an online survey during class.

1.3. Measures

1.3.1. Pro-environmental behaviour

The 13 item Pro-Environmental Behaviours Scale (PEBS; de Leeuw et al., 2015) measures adolescents' PEBs across home and school over the past six months on a five-point Likert scale from 0 (*never*) to 5 (*always*). Five of the items are reverse-coded and items are summed for a total score out of 65 (Cronbach's α = 0.72; de Leeuw et al., 2015). For the current study, changes were made to the US language of the scale to improve comprehension in Australian adolescents (e.g., "trash" was replaced with "rubbish").

1.3.2. Environmental attitude

The 10-item New Ecological Paradigm Scale for Children (NEP; Manoli, Johnson, & Dunlap, 2007) measures adolescents' PEAs through six pro-environmental items and four anti-environmental items measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), and demonstrated good fit for children aged 10–12 years (GFI = 0.94, RMSEA = 0.085). Anti-environmental items were reverse-coded and items are summed for a total score out of 50. Although the scale was originally developed for children aged 10–12, the scale has demonstrated a reasonable fit for adolescents aged 14–16 (GFI = 0.91, RMSEA = 0.108; Boeve-De Pauw et al., 2011).

1.3.3. Emotional intelligence

The 57-item Adolescent Swinburne University Emotional Intelligence Test (SUEIT; Luebbers, Downey, & Stough, 2007) measures four dimensions of trait EI: Emotional Recognition and Expression (ERE: the ability to identify one's own feelings and express them to others, 10 items), Understanding Emotions of Others (UEO: the ability to identify and understand others' emotions, 19 items), Emotions Direct Cognition (EDC: the use of emotional knowledge to problem solve and make decisions, 10 items), and Emotional Management and Control (EMC: the ability to manage one's own and others' emotions and to control strong emotional states, 18 items). These dimensions are directly related to the core trait EI dimensions of perceiving (ERE, UEO), using (EDC, EMC), managing (EMC) and understanding (ERE, UEO) emotions (Mayer & Salovey, 1997). Responses are recorded on a five-point Likert scale ranging from 1 (*very seldom*) to 5 (*very often*), with higher scores reflecting higher EI (Cronbach's α for dimensions = 0.75 to 0.85; Luebbers et al., 2007).

1.3.4. Statistical analysis

Participant data were screened for missing responses and outliers. There were no missing data or outliers for the NEP or PEBS. No EI data was recorded from 14 participants, and an additional 10 cases had missing values; these participants were excluded leaving 382 cases for subsequent analyses.

A one-way ANOVA was conducted to investigate gender differences in age, PEBS, NEP and SUEIT dimension scores, as males have been shown to self-report higher EI than females (Petrides & Furnham, 2000a); post hoc analyses were conducted for all significant main effects' using Tukey's HSD due to unequal group sizes. To test the