Exploring the prosocial effects of moral elevation in middle childhood and early adolescence

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Abstract

A growing body of research has explored the impact of moral elevation – the emotional response to witnessing acts of moral virtue, or moral beauty, such as giving and kindness – on prosocial behaviour in adulthood, however much less is known about the experience and effects of moral elevation in a younger age group. This thesis examines the effect of moral elevation on prosociality in childhood and adolescence.

Chapter 1 is a theoretical chapter that reviews the relevant literature on prosocial behaviour, the appraisal tendency framework (e.g., Lerner & Keltner, 2000) and moral emotions, specifically moral elevation. *Chapter 1* also includes an overview of the empirical research that follows in *Chapters 2, 3, 4* and *5.* In *Chapter 2* and *3,* we test the effects of moral elevation on general and intergroup prosociality. We find that moral elevation increases general prosocial motivation *(Study 1*, 5-11-year-olds, *N*=91; *Study 3*, 13-14-year-olds, *N*=150) and outgroup prosocial motivation and behaviour *(Study 2*, 5-11-year-olds, *N*=125). In *Chapter 4,* we explore the (dis)similarities of the experience of moral elevation and admiration *(Study 4*, 5-11-year-olds, *N*=213*; Study 5*, 9-11-year-olds, *N*=203). These studies show that cognitive appraisals, and subsequent motivations associated with moral elevation and admiration differ, and that differences may become more pronounced between mid to late childhood. In *Chapter 5*, we test the effects of a longitudinal intervention designed to increase engagement with moral beauty, in school-settings (*Study 6*, 9-11-year-olds, *N*=36; *Study 7*, 11-12-year-olds, *N*=150), and in a lab-based setting with undergraduate students (*Study 8*, 18-31-year-olds, *N*=38). We found that repeatedly reflecting on displays of moral beauty over an extended period of time, increased feelings of moral elevation in 11-12-year-olds and undergraduate students, but not children aged 9-11 years old. *Chapter 6* provides an integrative discussion of the findings, theoretical and practical implications and avenues for future research.

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Chapter 1

General Introduction

"*We human beings are social beings. We come into the world as the result of others' actions. We survive here in dependence on others. Whether we like it or not, there is hardly a moment of our lives when we do not benefit from others' activities. For this reason, it is hardly surprising that most of our happiness arises in the context of our relationships with others*." Tenzin Gyatso, Dalai Lama XIV

"*That was a tear of celebration, a tear of receptiveness to what is good in the world, a tear that says it's okay, relax, let down your guard, there are good people in the world, there is good in people, love is real, it's in our nature*" (David Whitford, describing 'tears of celebration', in Haidt, 2003a).

Humans are inherently social. For our ancestors, social groups – that typically consisted of next of kin – offered safety, support, access to valuable resources, and in turn, an increased chance of survival. Accordingly, humans may have developed a capacity for, and an attraction to, living in groups (Van Vugt & Schaller, 2008). Prosocial behaviour (i.e., behaviour that is intended to benefit others; Eisenberg & Mussen, 1989) may have played a fundamental role in the evolution and development of stable societies and consequently, the success of humans (Keesing & Strathern, 1998).

Many Western societies are becoming increasingly diverse (see Eurostat, 2018). From 1960-2000, the number of people that migrated from the Global South to the Global North increased from 14 million to 60 million (Bove & Elia, 2017). On one hand, diversity brings new perspectives and skills, however, with diversity often comes the potential for division. Salient differences in group membership can lead to intergroup bias in both adults (Dovidio, Gaertner, & Pearson, 2016) and children (Rutland, Cameron, Milne, & McGeorge, 2005),

which can have detrimental effects on societal cohesiveness. To prevent breakdown in societal cohesion in the context of greater diversity, it is becoming increasingly important to identify means of promoting prosocial orientation toward groups of all types. It is therefore critical to encourage positive intergroup relations early in development (Abrams, Van de Vyver, Pelletier, & Cameron, 2015).

Although prosocial behaviours are displayed early in development, and people seem to possess an inherent desire to help others (Crockett, Kurth-Nelson, Siegel, Dayan, & Dolan, 2014; Rand, Greene, & Nowak, 2012), there are often a number of factors that influence the likelihood of prosocial action. Thus, there is an apparent need to test and develop interventions that inspire people to have genuine care for the wellbeing of others, especially those who belong to different groups. Recent studies have highlighted the potential of emotions, such as moral elevation, in promoting prosocial outcomes among adults in a range of settings (e.g., Schnall, Roper, & Fessler, 2010; Van de Vyver & Abrams, 2015). The aim of this thesis is to explore the effect of moral elevation on prosociality in childhood and adolescence.

Prosocial Behaviour

Prosocial behaviour refers to behaviour that is intended to benefit another, independent of the actor's motives, however, there are different types of prosocial behaviours, and they can be driven by different motives (Svetlova, Nichols, & Brownell, 2010).

Prosocial Motivation

Prosocial motivation is the desire to expend energy to help others (Batson, 1998). It has been described as both a stable trait, and a short-term state (Grant, 2008). The trait of prosocial motivation has been associated with other dispositional traits such as agreeableness

(Graziano, Habashi, Sheese, & Tobin, 2007), engagement with moral beauty (Diessner, Iyer, Smith & Haidt, 2013) and empathy (Penner, Dovidio, Piliavin, & Schroeder, 2005). The short-term state consists of a brief motivation to promote or protect the welfare of another person (Batson, 1998; Grant, 2008). This shorter-term motivational state can be encouraged by inducing certain emotions (Schnall, Roper, & Fessler, 2010; Van de Vyver & Abrams, 2015), meditation (Condon, Desbordes, Miller, & DeSteno, 2013), playing prosocial video games (Greitemeyer & Osswald, 2010), and by contact with someone in need (Batson, 1998, Grant, 2007). Prosocial motivation that leads to action, is referred to as prosocial action or prosocial behaviour (Penner et al., 2005; Snyder & Omoto, 2007), and this encompasses a range of behaviours such as helping, sharing, kindness, generosity, cooperation, and solidarity. Philanthropy, described as "voluntary action for public good" (Payton & Moody, 2008, p. 3), is a related term that is more commonly used in other fields in the social sciences. Philanthropic action often refers to charitable giving on a large scale. In a sense, philanthropic actions are often less interpersonal than the types of prosocial behaviours that we describe in this thesis, however, they still come under the umbrella term of prosociality.

Altruism

Prosocial behaviours can be driven by different motives (Svetlova, Nichols, & Brownell, 2010). Egotistic behaviours, are motivated by the desire to benefit the self, for example, someone may volunteer to help others in order to improve their curriculum vitae. In contrast, altruistic behaviours, are defined as those that are primarily intended to benefit others (Carlo, 2014, p. 210). These behaviours are performed with the recipient's wellbeing as the end goal, and with no expectation of reward (Piliavin & Charng, 1990). Altruistic behaviours are often described as being costly to the donor (Grusec, Davidov, & Lundell, 2002). Kindness is often used to describe positive, other-orientated behaviours (such as doing

favours and good deeds) in common parlance. Similar to altruistic behaviours, kind behaviours are driven by feelings of compassion and genuine concern (Peterson & Seligman, 2004), rather than external reward or punishment (Eisenberg, Fabes, & Spinrad, 2006). It can be difficult to determine the motives (e.g., altruism or egoism) behind some displays of prosocial behaviour.

Moral Behaviour

The terms moral behaviour and prosocial behaviour are often used interchangeably, though, theoretically, they are driven by distinct motives. Moral motivation is defined as "readiness to abide by a moral rule that a person understands to be valid, even if this motivation is in conflict with other, amoral desires and motives" (Malti, Gummerum, Keller, & Buchmann, 2009, p. 443). On this wise, moral behaviour is directed by the desire to act in line with one's moral standards and principles (Tangney, Stuewig, & Mashek, 2007). In comparison, the motivation behind prosocial behaviour is to improve the welfare of others (Penner et al., 2005). In reality, it is quite difficult to isolate these motivations and behaviours, and prosocial behaviours are likely to be motivated by a combination of both concern about the welfare of others and one's own desires and moral standards.

The Development of Prosocial Behaviour

Prosocial behaviours such as comforting and helping are displayed early in life, however, the frequency and the complexity of these behaviours, along with the motivational factors behind them varies over the course of development (see Paulus & Moore, 2012 for an overview). Empathetic reactions and comforting behaviours such as touching, patting and hugging are exhibited as early as 1-2 years old (e.g., Roth-Hanania, Davidov, & Zahn-Waxler, 2011; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). At around the same age, infants will engage in instrumental (i.e., action or goal based) helping, such as

picking up an object that has been dropped by someone (Warneken & Tomasello, 2007). Although young children demonstrate impromptu comforting and helping behaviour, they are less likely to engage in unprompted sharing (Brownell, Svetlova, & Nichols, 2009). Voluntary and costly prosocial behaviour may become more customary with age. For example, Paulus and colleagues found that both 3.5- and 5-year-olds engaged in helping behaviour when communicative cues were present (i.e., help was explicitly requested), however, when there were no communicative cues only 5-year-olds provided help (see Paulus & Moore, 2012). Costly behaviour has been investigated with dictator games, in which participants are given a number of resources to divide between themselves and another person. Studies like this have shown that both 3-4- and 7-8-year-olds are willing to share their resources, however the number of children who give, and the number of resources given increases with age (e.g., Fehr, Bernhard, & Rockenbach, 2008).

In general, prosocial behaviours seem to increase over the course of development. Fabes and Eisenberg (1998) conducted a meta-analysis of 179 studies and found a significant positive relationship between prosocial behaviours and age. For example, they found that prosocial behaviour increased in infants (up to 3 years old) and in children aged 3-6 years old. Interestingly, the amount of helping and comforting behaviours did not differ between 7-12- and 13-18-year-olds. However, 13-18-year-olds demonstrated higher sharing and donating behaviours, than children aged 7-12 years (see Fabes, Carlo, Kupanoff, & Laible, 1999).

Intergroup Prosocial Behaviour

Prosocial behaviours are not directed equally towards all individuals; factors such as the recipients age, gender and race often contribute to the likelihood of them being in receipt of prosocial behaviour. According to Social Identity Theory (Tajfel & Turner, 1979), people

tend to identify more strongly with, and strive to be viewed positively by, others who belong to their own social group (i.e., ingroup members), rather than those who belong to a different group (i.e., outgroup members). Intergroup bias is displayed early in development .[1] At 3 years old, children become aware of social categories such as race and ethnicity, and develop an ingroup preference for the group that they belong to (Aboud, 1988, 2003; Hirschfeld, 2008; Rutland et al., 2005). Intergroup bias manifests in numerous ways. Children expect group members to be loyal, act prosocially towards, and to share resources with each other (e.g., Misch, Over, & Carpenter, 2014). As such, in social contexts, children will often exclude outgroup members in favour of ingroup members (Nesdale, 2004; Verkuyten & Steenhuis, 2005). Moore (2009) conducted a resource allocation study with 4.5- and 6-year-olds in which the recipient was manipulated to be either a friend, a non-friend or a stranger. In the prosocial trials (i.e., children were given the option of having one sticker for themselves, or allocating one sticker to the recipient and one sticker for themselves later), children were equally likely to allocate resources to a friend and a stranger. However, in the sharing trials, when there was a cost to themselves (i.e., children were given the option of having two stickers for themselves, or allocating one sticker to the recipient and one for themselves later), they were less likely to allocate stickers to a stranger – that is, the stranger was treated like a non-friend. Furthermore, in the Fehr, Bernhard and Rockenbach (2008) study, mentioned previously, children aged 3-4 years old were more likely to share with ingroup (e.g., children who attended their playgroup) than outgroup members. Similarly,

[1] There is a wealth of research on intergroup bias and prejudice in childhood, however there is no general consensus on the developmental phases or stages in which these biases appear (e.g., age related differences), and/or the importance of cognitive factors and social context (Nesdale, 2004). Although these are important issues to consider when researching intergroup prosociality in children, here we focus on illustrating the biases that children show early in life. An integrative discussion of the theories behind how and why biases develop is beyond the scope of this thesis.

Abrams et al., (2015) found that young children were more likely to help ingroup members, especially in a competitive context. In addition, some studies have shown that children believe that members of the same social group should actively avoid harming one another (e.g., within-group harm), however, between-group harm is only wrong when there are explicit rules in place that disallow it (Rhodes & Chalik, 2013).

Moreover, studies on bystander interventions have shown that both children and adolescents may be more likely to intervene in an instance of verbal aggression when the victim is an ingroup member than an outgroup member (Palmer, Rutland, & Cameron, 2015). Although preference for ingroup does not necessarily equate to outgroup dislike, it can develop into intergroup prejudice (i.e., negative attitudes about a person based on their social group membership, Aboud, 1988), which can facilitate intergroup divisions, and maltreatment towards outgroup members (Durkin, 1995). Behaviours towards the outgroup may be moderated by identification with the ingroup, perceptions of threat and group norms (Nesdale et al., 2005; Rutland et al., 2005). Intergroup bias (e.g., favouring the ingroup and/or derogating the outgroup) is displayed by both children and adults, in various contexts and settings. In light of this evidence, it is essential to develop and test strategies that can effectively reduce intergroup bias and promote outgroup prosocial responses across all stages of development.

Promoting Prosocial Behaviour

As mentioned above, there is a large body of research that has investigated ways to motivate people to engage in prosocial behaviours (i.e., via video games, meditation, emotions and contact). More recently, researchers have begun to pay more attention to the role of emotions, such as guilt and empathy (Penner et al., 2005; Dickert, Sagara, & Slovic, 2011), and the emotional response to viewing prosocial acts (i.e., moral elevation, Algoe &

Haidt, 2009; Haidt, 2001), in adults' prosocial motivations and behaviour. Although some researchers argue that the motivations behind certain prosocial behaviours differ (e.g., Cialdini et al., 1987), there is a general consensus that people have an intuitive motivation to help others, and that the underpinning mechanisms are mostly affective (Batson, Lishner, & Stocks, 2014; Cialdini, 1991).

A number of studies have examined the impact of viewing prosocial role models on prosocial behaviour in childhood and adolescence (e.g., Kosse, Deckers, Pinger, Schildberg-Horisch, & Falk, 2020; Ottoni-Wilhelm, Estell, & Perdue, 2014), however, not many studies have looked at the mechanisms, and those that have, often interpret the positive effects through cognitive-behavioural mechanisms such as imitation, modelling and social learning (e.g., Bandura & McClelland, 1977). There are several socio-cognitive and socio-emotional factors that support the development and display of prosocial behaviour, however an increasing number of researchers have highlighted the need to consider the underlying mechanism of emotions, like empathy, sympathy and guilt, in children's prosociality (e.g., Eisenberg, Fabes & Spinrad, 2006; Catherine & Schonert-Reichl, 2011; Sierksma, Thijs, & Verkuyten, 2014). Especially as increases in the experience of emotions such as empathy and sympathy may contribute to some of the age-related changes in prosocial behaviour (e.g., see Eisenberg, Fabes & Spinrad, 2006).

Emotions

Defining Emotions

Emotions can be difficult to define.[2] Giner-Sorolla (2012) proposed that emotion is a multi-dimensional concept, and that:

[2] Emotions are considered to be similar to feelings, as both feelings and emotions can be divided on the dimension of affect (i.e., you can have pleasant/positive and unpleasant/negative feelings and emotions). However, emotions have been described as being

> Emotions arise from sensory and cognitive input, elaborated to a greater or lesser degree. From sources in the brain they activate peripheral nervous, endocrine, cardiovascular, and other physiological responses. At the same time they activate hard-to-control bodily expressions that can be read by other people, in our faces, voices, and posture. As with many other psychological states, humans reflect on emotions and give them names, so that emotions take on a semantic life. And humans cannot help but speak about and learn about emotions within the context of a culture, leading to cultural differences in emotion expression and knowledge. (p. 6).

Similarly, Scherer (2001) conceptualised emotion as a:

> hypothetical construct describing a process of interrelated changes in several components of psychobiological functioning, namely the evaluation of objects or events with respect to the organism's goals or needs and the ensuing changes in physiological arousal, motor expression, behavior [*sic*] preparation, and subjective feeling. (p. 4472).

Taken together, these quotes give a comprehensive definition of emotions.

Several theories have offered explanations for how and why emotions are experienced. Early emotion theories focussed on the valence of emotions, and some researchers have suggested that "the only relevant aspect of emotion is their valence" (e.g., Elster, 1998, p. 64, from Han, Lerner, & Keltner, 2007). Contemporary emotion theorists typically define emotions as component processes and categorise the emotional experience into component features, such as, physiological responses, subjective feelings, motor expressions (such as facial expressions), cognitive appraisals, and action tendencies (e.g.,

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distinct from moods, as moods often last longer than emotional experiences and they usually have less of a connection to a specific stimulus (Giner-Sorolla, 2012).

Frijda, 1986; Lazarus, 1991; Scherer, 2001). Different theories and models of emotion describe different components or phases of the emotional experience.

The functional conflict theory (Giner-Sorolla, 2012) proposes that emotions have four main functions:

(1) they are part of a system of motivated appraisals of the current environment, leading to appropriate action tendencies [the appraisal function]; (2) they are an associative learning system, more simple and rigid than other types of learning, that forms emotionally based attitudes by associating pleasurable or painful emotions with an object [the associative learning function]; (3) they are also a self-regulation system that responds to feedback about one's own actions [the self-regulation function]; and (4) they are a social communication system that provides output and cues to others [the social communication function]. (p. 24).

Exposure to particular stimuli can elicit emotional reactions, and guide subsequent actions (Penner et al., 2005), and so, the experience of emotions can play a central role in shaping human behaviour (Thomas, McGarty, & Mavor, 2009). As this thesis will focus on routes to increasing prosociality, via emotions, the appraisal function – that describes how appraisals of the environment can motivate specific action tendencies – is particularly relevant.

The Appraisal Tendency Framework

The appraisal tendency framework (ATF; e.g., Lerner & Keltner, 2000; Horberg, Oveis, & Keltner, 2011) builds on cognitive appraisal and functional theories of emotion to explain how emotions influence judgements and choice. The ATF is based on the idea that each emotion, classified by a unique set of cognitive appraisals (e.g., evaluations of the environment), and affective components (e.g., feelings, and sensations that comprise the emotional state), precede particular action tendencies. Cognitive appraisals are theorised to be

central to the experience of emotions, and were initially conceptualised as the cause of emotion, however some appraisal theory critics have stated that people often feel emotions without knowing why, or being aware of the appraisal beforehand (Frijda, 1986; Parkinson, Fischer, & Manstead, 2005). In response, appraisal theorists have asserted that emotion-related appraisals are fast and unconscious, but that they can also be slow and conscious (see Ekman, 1992; Lazarus, 1991). However, this is quite challenging to measure empirically (Parkinson, Fischer, & Manstead, 2005). Furthermore, appraisal theorists have stated that appraisals may not necessarily play a causal role in experiencing an emotion and that "it is sufficient to assume that a discrete set of cognitive dimensions differentiates emotional experience and effects" (Han, Lerner, & Keltner, 2007, p. 160). Moreover, a full emotional experience involves both the cognitive appraisals and affective components (Clore, 1994; Frijda, 1994; Lazarus, 1994) and "emotions and appraisals have a recursive relationship, each making the other more likely" (Han, Lerner, & Keltner, 2007, p. 160).

The ATF suggests that emotions have distinctive effects on judgments and behaviours. The ATF hypothesises that the appraisal theme (but not the valence of emotions), guides subsequent action, by prioritising specific concerns that are related to the theme (e.g., Ellsworth & Scherer, 2003; Horberg, Oveis, & Keltner, 2011; Lazarus, 1991; Smith, 1989). For example, news of a deadly car accident due to reckless driving, may activate an appraisal of danger in one person (leading to fear), but an appraisal of injustice in another person (leading to anger). Both fear and anger are negatively valenced emotions, however, they are associated with different appraisal themes and action tendencies, and therefore prepare people to act in opposing ways (e.g., fear may lead to avoidance of driving, and anger may motivate one to take action and to support campaigns that challenge reckless driving). On the other

hand, emotions with opposite valence (such as moral outrage and moral elevation) can motivate similar (prosocial) actions (Van de Vyver & Abrams, 2015).

Emotions and Prosociality

Positive emotions. Fredrickson's (1998) Broaden and Build theory suggests that positively valenced emotions – in which the overall subjective experience is pleasant – are associated with opening up and accepting new things. Positive emotions have the ability to stimulate people to broaden their modes of thinking and to build their physical, social and intellectual resources (Fredrickson, 2001). Happiness, is positively related to life satisfaction (Diener, Lucas, & Oishi, 2002) and prosocial behaviours such as volunteering (Thoits & Hewitt, 2001) and donating (Aknin et al., 2013). However, the appraisal associated with happiness is progression towards a goal, and the associated action tendency is not to directly help others, but to celebrate and expend energy (i.e., it has a low prosocial action tendency, Algoe & Haidt, 2009). Similarly, joy, interest, love and contentment are all positive emotions that encourage people to open up, explore, create and play, however, they are not directly associated with promoting other's wellbeing, and therefore are not considered moral emotions (see Fredrickson, 2004, for a detailed account on positive emotions).

Moral emotions. Moral emotions have been broadly described as "those that are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent" (Gerwirth, 1984, in Haidt, 2003b, p. 853). Specifically, moral emotions are those that are self-evaluative or other-orientated and elicited by moral themes (e.g., rights, justice, harm/care; Horberg, Oveis, & Keltner, 2011). Haidt's (2003b) model of moral emotion prototypicality focusses on the harm/care (i.e., prosocial) motive.[3] He posits that

[3] Though early work on morality focused on the cognitive components of moral reasoning as driving moral judgement, Haidt's approach puts our intuitions such as our moral emotions at

moral emotions can be identified by how well they satisfy two proto-typical features, of elicitors and action tendencies. According to Haidt (2003b), the most prototypical moral emotions have disinterested elicitors – that is, they are triggered by events that do not directly affect the self – and, they should also motivate a prosocial action tendency.

Moral Emotion families. Haidt (2003b) used these component features to categorise (moral) emotions into four families. These are: self-conscious emotions such as shame, guilt and embarrassment; other-suffering emotions such as compassion; other-condemning emotions such as contempt, anger and disgust; and other-praising emotions (that are felt in response to others' exemplary actions) such as moral elevation and admiration.

Haidt (2003b) described moral outrage, moral elevation, guilt and compassion, as the most prototypical moral emotions, as they are associated with the welfare of others (reducing harm and increasing care) and encourage prosociality. Moral outrage arises from appraisals related to the moral theme of justice; it is felt in response to perceived injustice and stimulates the desire to restore justice (see Van de Vyver & Abrams, 2015, for work on moral outrage and prosociality). Compassion is elicited by appraisals of other-suffering, and it motivates the desire to help those who are suffering (Haidt, 2003b, Horberg, Oveis, & Keltner, 2013). Guilt is felt in response to a wrongdoing, that has caused harm to another person (Zeelenberg & Breugelmans, 2008), and it motivates actions that amend or rectify the harm (Baumeister, Stillwell, & Heatherton, 1994). Research on moral elevation has suggested that the underlying moral appraisal theme is benevolence – preserving and enhancing the welfare of others (Horberg, Oveis, & Keltner, 2011; Van de Vyver & Abrams, 2017). Specifically, moral elevation is instigated by an appraisal of another person's moral virtue (or moral

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the forefront. In support of these ideas, some studies have illustrated that moral action covaries with moral emotion more than with moral reasoning (Haidt, 2001, p. 815).

beauty, referred to interchangeably) and the subsequent action tendency involves benevolence-oriented motivation, including wanting to emulate the exemplar and become a better person, which manifests as prosocial actions (Van de Vyver & Abrams, 2015).

Moral Elevation

In the English language, there is no single word that is commonly used to describe the emotional response to witnessing acts of moral beauty. Haidt (2003a) argued that Thomas Jefferson's choice of the word "elevation" is the most appropriate to describe this emotional response. Thomas Jefferson (1771/1975), described the emotion of elevation in a letter to a friend. He said: "When any signal act of charity or of gratitude, for instance, is presented either to our sight or imagination, we are deeply impressed with its beauty and feel a strong desire in ourselves of doing a charitable and grateful act also" (p. 349). He suggested that literature can foster emotions like elevation, and asked, rhetorically, whether well-written accounts of virtuosity "do not dilate his [the reader's] breast, and elevate his sentiments…?" and "Does he not in fact feel himself a better man while reading them, and privately covenant to copy the fair example?" (p. 350).

Moral elevation (referred to interchangeably as elevation) is a positive, moral emotion that is felt in response to acts of moral beauty, such as those that represent kindness, compassion, charity, sacrifice, loyalty and forgiveness that are usually above and beyond the normal standards of behaviour (Haidt, 2003a; Haidt, 2003b). Though relatively under-researched, the emotion of elevation has been described in Japanese, Indian, and American culture (Haidt, 2003a).

The state of elevation is embodied by physical feelings of warmth, lightness, openness and expansion, as well as feelings of inspiration, love, and admiration for the person who performed the virtuous act. Elevation stimulates the desire to better the self, and to open up

and to also engage in virtuous acts for the benefit of others (Algoe & Haidt, 2009; Haidt, 2003a). Congruently, elevation increases activation in the parasympathetic and the sympathetic nervous system; a response that appears in situations that necessitate both arousal and social engagement (Piper, Saslow, & Saturn, 2015). It seems that elevation acts as a reminder of humanity's higher nature – it may restore one's faith in humanity – and can therefore function as a reset button, causing a *virtuous ripple effect* (Haidt 2000, 2003a). Haidt (2003b) suggested that this reminder of morality is powerful because it may tie us to something greater than ourselves – and that is each other.

Research into elevation and the experimental effects. Haidt and colleagues (2002) initially explored the emotion of elevation by asking participants to recall events that involved displays of moral virtues. Specifically, participants were asked to recall a time when they saw a manifestation of humanity's "higher" or "better" nature and to describe their thoughts and feelings. Many participants reported stories of people helping others who were in need, without expectation of reward. They also described feelings of warmth and tingling on the skin, wanting to be more like the persons who were engaged in the acts, and wanting to help other people.

Moral elevation has since been induced experimentally via video clips and stories. Elevation, elicited via watching morally elevating video clips, has been linked to the promotion of third-party prosocial intervention including increased willingness to volunteer (Schnall, Roper, & Fessler, 2010), donations to charity (Van de Vyver & Abrams, 2015), and the likelihood of the prosocial division of resources (Aquino, McFerran, & Laven, 2011). Furthermore, Silvers and Haidt (2008) found that elevation, elicited with video clips, produced nurturant behaviour in nursing mothers, and an increase in the production of the neurotransmitter oxytocin, which is associated with the experience of love and bonding.

Another study that investigated the potential of moral elevation in offsetting intergroup bias found that exposure to morally elevating stimuli (i.e., video clips and written stories), elicited feelings of elevation, and positively influenced White participants donations to charities that supported Black people (Freeman, Aquino, & McFerran, 2009).

A field study by Cox (2010), found that college students who participated in a service trip to Nicaragua experienced increased elevation and that these feelings significantly affected volunteering behaviour three months later. In addition, Landis et al. (2009) found that the frequency of self-reported experiences of elevation positively correlated with self-reported altruistic behaviour, as well as the personality traits of extraversion, openness to experience and agreeableness. Thus, the growing empirical research on elevation shows that it can effectively promote a range of prosocial outcomes among adults in a range of settings (see Pohling & Diessner, 2016; Thomson & Siegel, 2017 for reviews). In turn, in this thesis, we were interested in exploring the prosocial effects of elevation in children and adolescents.

Emotions related to elevation.

Awe. Elevation is closely related to the emotional experience of awe, which is elicited by experiences of natural beauty, artistic beauty and exemplary human behaviour. However, the emotion of awe differs from elevation as it is not entirely triggered by disinterested elicitors nor does it primarily encourage prosocial action tendencies. Although some studies have shown that awe decreases feelings of personal entitlement and increases feelings of the small self, which have been related to increased prosocial behaviour (Piff et al., 2015), the action tendency most commonly associated with awe is to stop and admire the person or object that elicited the emotional state (Fridja, 1986). Some researchers have described moral elevation as a component of awe (i.e., moral awe, see Kristjánsson, 2017, for a discussion).

In line with Haidt (2000a), we refer to this idea of "awe inspired by moral perfection" as elevation.

Gratitude. Gratitude, is also an other-praising emotion, that is felt in response to morally beautiful behaviour, and promotes prosocial behaviour. Elevation and gratitude have similar subjective feelings, however, gratitude is elicited by an act of another that is perceived to benefit the self, whereas, elevation is elicited by acts that do not directly involve the self (see Siegel, Thomson, & Navarro, 2014). Moreover, the subsequent behaviour related to gratitude is based on reciprocity and so the prosocial behaviour is primarily directed towards the benefactor. Elevation, on the other hand, is associated with the tendency to engage in prosocial actions to help others in a more general sense (e.g., to become a better human for the sake of others). Kristjánsson (2017) suggested that it is possible to feel both gratitude and elevation in response to an event that involves the self, and so elevation and gratitude are likely to amplify one another (see Kristjánsson, 2017, for a discussion).

Admiration. Darwin (1872, p. 289) described admiration as "surprise associated with some pleasure and a sense of approval". Similar to elevation, admiration is felt in response to behaviour that is considered to be above the normal standards of behaviour. The term admiration is often used to describe the emotional response to moral exemplars in common parlance, however, in line with past research on the topic (e.g., Algoe & Haidt, 2009; Onu, Kessler, & Smith, 2016), we describe admiration as the emotional response to acts of non-moral excellence such as skill, talent or achievement whereas, elevation describes the emotional response to acts of moral excellence. Another reason why it is favourable to use this definition of admiration, is because admiration for skilfulness and admiration for moral virtue (i.e., what we are referring to as admiration and elevation, respectively) are associated with different outcomes at the physiological, psychological and social level (Algoe & Haidt,

2009; Immordino-Yang et al., 2009), which supports examining them as distinct emotions (Onu, Kessler, & Smith, 2016).

Schindler, Paech and Löwenbrück (2015) elicited admiration by asking participants to recall instances of outstanding achievement, and found that feelings of admiration increased self-expansion motivations. Schindler and colleagues suggested that the experience of admiration may trigger one to search for, and engage in activities that they find interesting and important. Admiration is also associated with the desire to affiliate with the target, which can also motivate self-improvement (Schindler et al., 2013, 2015). In line with these findings, studies using fMRI have shown that admiration is associated with activity in the neural systems related to the self (Immordino-Yang et al., 2009; Immordino-Yang & Sylvan, 2010).

Inspiration. Inspiration has been described as feelings of energy mixed with pleasure, and a motivation to reach a higher potential. Inspiration has been described as more of a motivational state than an emotion, but it forms part of many emotional episodes (Thrash & Elliott, 2004). Feelings of inspiration often manifest energy for immediate expenditure, whereas, elevation is a more unobtrusive emotion, that "may not lead to immediate altruistic action when such action is difficult" (Algoe & Haidt, 2009, p. 30).

Emotional Development

The growing body of empirical research on elevation shows that it can effectively promote a range of prosocial outcomes among adults in a range of settings (see Pohling & Diessner, 2016; Thomson & Siegel, 2017 for reviews). However, research has not yet established whether children engage with the appraisals, feelings and prosocial effects associated with elevation. Most emotion researchers agree that there are several basic primary emotions that are present from birth, namely, anger, sadness, fear, disgust, joy, interest and surprise (Ackerman, Abe, & Izard, 1998). As children develop, their emotional competence

also develops, as does their understanding of their own and others' emotions, needs and desires. During middle childhood (from approximately 4 years old to the onset of puberty), children start to show more complex secondary, self-conscious and moral emotions.

The development of moral emotions. Moral emotions are those that are self-evaluative or other-orientated, and are elicited by moral themes. Developmental models of moral emotion (e.g., Malti & Dys, 2015) propose that in order to experience moral emotions, one must possess the ability to take the perspective of the self and others, an understanding of socio-moral norms and values, and the ability to coordinate affective experiences with judgements, which becomes increasingly integrated with development. The experience of moral emotions signifies that the self feels committed to a norm (Malti, Gummerum, Keller, & Buchmann, 2009) and so both positive and negative moral emotions arise when behaviour is either concurrent or incongruent with one's moral ideals (Malti & Keller, 2010).

While no research to our knowledge, has explored the developmental trajectory of elevation, studies on sympathy, guilt and shame (key moral emotions) have shown that children are able to make moral judgments and engage in related moral/prosocial action from early childhood (e.g., Malti, 2016; Malti, Gummerum, Keller, & Buchmann, 2009). Preschool aged children judge moral transgressions that result in harming a victim as wrong (see Smetana, 2006, for more information on this topic), however they also attribute positive emotions to perpetrators who satisfy their desires whilst engaging in moral transgressions. The "happy victimizer paradigm" demonstrates that when children are presented with stories involving moral transgressions (e.g., pushing another child to get in front in a queue, or stealing a chocolate bar from another child's bag), 4-year-olds attribute happiness to the perpetrator, whereas 8-year-olds attribute guilt, which suggests that the experience of moral emotions becomes more nuanced during middle childhood (see Arsenio, 2013 for a review).

It has also been suggested that the happy victimizer findings with young children, may correspond with their level of social-cognitive competence (Malti, 2016). Moreover, studies using Face readers (i.e., equipment that records facial expressions), have shown that both 4-8- and 12-year-olds show spontaneous happiness in response to moral transgressions, however, displays of spontaneous sadness increased with age (Malti & Dys, 2015). Furthermore, children attribute positive emotions to protagonists who suppress their personal desires to help others, and the likelihood of children assigning these positive attributions also increases with age (Lagattuta, 2005; Weller & Lagattuta, 2013). This may be because during middle childhood, children begin to make decisions that actively suppress their own morally deviant desires or behaviour, in place of more morally acceptable or prosocial behaviour (Hasegawa, 2016).

Moral reasoning refers to how individuals think about situations involving, justice, fairness or welfare. Moral reasoning is closely related to the development of moral emotions and moral/prosocial behaviour. Piaget (1932/1965) and Kohlberg's (1976) stages of moral development are based on how children reason about justice-orientated dilemmas that involve the violation of freedoms and human rights. Prosocial moral reasoning on the other hand, involves thinking about dilemmas in which the needs of one person are in conflict with those of another. There is an extensive body of research that has investigated the link between prosocial moral reasoning, moral emotions and prosocial behaviour. In one study, 4-8-year-olds heard a short vignette about a child who did not engage in a prosocial action (e.g., who kept two cupcakes to themselves instead of sharing them), then they were asked to put themselves in the protagonist's shoes and to describe how they would feel (e.g., moral emotion) and why (i.e., moral reasoning). The findings showed that both younger and older children who justified the anticipated emotions by referring to moral norms or mentioning

concern for the victim, were more likely to engage in prosocial action (Ongley, Nola & Malti, 2014). Other studies have shown that this kind of prosocial moral reasoning is positively related to perspective taking, sympathy, and prosocial behaviour and negatively related to aggression (see Eisenberg, Fabes, & Spinrad, 2006; Laible, Eye, & Carlo, 2008).

Recently, gratitude has been championed as an important emotion for both personal and general wellbeing. Studies have shown that practising mindful gratitude on a regular basis can increase optimism, positive affect and feelings of connectedness in children and adolescents (Froh et al., 2014; Froh, Sefick, & Emmons, 2008; Layous & Lyubomirsky, 2014, see also Lyubomirsky & Layous, 2013 for work with adults). The moral theme associated with both gratitude and elevation is benevolence (i.e., promoting the welfare of others). Benevolence is considered a universal moral principle (Giner-Sorolla, 2012, p. 13), and children demonstrate benevolent (e.g., prosocial) behaviours from early childhood. In addition to attributing positive emotions to prosocial protagonists, children show respect for people who display 'good', and especially prosocial behaviour (Malti, Peplak, & Zhang, 2020). Therefore, it is likely that during middle childhood, children will appraise third-party acts of moral beauty (e.g., benevolent acts that do not directly affect themselves) positively, and in turn experience the associated cognitive, affective and motivational effects. In this thesis (*Studies 1-5*) we test whether and how elevation can be elicited and measured, and whether the prosocial effects manifest in children and adolescents.

Engagement with Moral Beauty

Diessner, Iyer, Smith and Haidt (2013) suggested that people engage with, and appreciate different types of beauty, for example, moral beauty, natural beauty and artistic beauty. The trait, or character strength of *engagement with moral beauty* (i.e., the extent to which people are affected by acts of moral beauty), is a key component in understanding who

is more, or less prone to experiencing elevation. Diessner and colleagues (2013, Study 2) conducted a study based on Algoe and Haidt (2009) in which they elicited the emotions of elevation and admiration. They found that engagement with moral beauty moderated participants desire to become a better person, and to *do good* in the elevation condition, but not in the admiration condition. Engagement with natural beauty also predicted participant's desire to do good, but not to be a better person, however there was no interaction with either the elevation or admiration condition. There was no significant effect of engagement with artistic beauty and there were no significant interactions with condition. In sum, those high in the trait of engagement with moral beauty, were most influenced by the elevation-inducing video.

Diessner, Rust, Solom, Frost and Parsons (2006) conducted another study that looked at the effects of regularly engaging with natural, artistic and moral beauty. In their study, undergraduates filled in a weekly "beauty log" of moral, artistic and natural beauty. Specifically, participants were asked to describe something that they felt was beautiful in human behaviour (good deeds in their broadest definition), something beautiful that was human-made (arts and crafts in its broadest definition) and something beautiful from nature, once a week over the course of 12 weeks. The moral beauty accounts typically included stories about people who had sacrificed their time to support or help another person, artistic beauty accounts included children's artistic creations, household items, architectural design and pieces of music, and the accounts of natural beauty included sunsets, skies and flowers. The results showed that reflecting on different types of beauty in this way led to increases in engagement with moral beauty and in trait hope, but not in increases in engagement with artistic or natural beauty. The results also showed that engagement with moral beauty was more strongly related to trait hope than the other two types of beauty. Moreover, Diessner

and colleagues suggested that the trait of engagement with moral beauty can be developed, and so, it may be an important aspect to focus on in moral education programmes (e.g., it may be beneficial to develop curricula that focusses on acts of moral beauty in various school subjects).

Other traits such as love for and connectedness to humanity, empathy, moral identity, agreeableness, extraversion and openness to experience have been shown to have a *special* relationship with engagement with moral beauty (Diessner et al., 2013). In addition, Landis et al. (2009) found that agreeableness, extraversion, openness to experience, and self-transcendence positively correlated with self-reported experiences of elevation. Hence, traits like these may play a key part in how people respond to witnessing acts of moral beauty, and experience moral elevation and the related effects. The aim of this thesis is to explore the prosocial impact of elevation in childhood and adolescence, and so it would be both interesting and beneficial to see how concepts such as engagement with moral beauty, elevation, moral identity and self-efficacy interconnect, in a younger population. We explore the associations between some of these concepts in *Studies 6-8*.

The Arts and Prosociality

Artistic practices have occurred historically as well as cross-culturally. The arts include a broad and inclusive range of individual and collaborative activities where creativity and self-expression are key (Broadwood et al., 2012). Van de Vyver and Abrams (2018) investigated the impact of engaging with the arts using *Understanding Society* data (a nationally representative longitudinal sample of 30,476 people in the UK). They examined both arts attendance (e.g., going to events such as the opera, cinema, circus) and arts participation (e.g., taking part in activities such as dancing, singing, painting), and found that, regardless of age, education and income, adults who engage more with the arts also donate

more to charity and spend more time volunteering. We (Van de Vyver et al., 2019) also tested the impact of a participatory arts intervention in a school setting and found that arts engagement increased prosocial intentions in children aged 7-10 years old.[4]

Two conceptual frameworks (Broadwood et al., 2012; Tay, Pawelski, & Keith, 2018) inform our understanding of the socio-emotional impact of the arts. Both of these models suggest that arts engagement can foster positive outcomes, such as social and emotional wellbeing and prosociality via four psychological processes: emotion or immersion (e.g., experiencing emotions, getting carried away), learning or embeddedness (e.g., building socio-cognitive competencies such as self-efficacy and creativity), reflecting on values, and social connection (i.e., creating connections and identities). As the arts have the capacity to elicit strong emotional reactions, incorporating arts-based practices into research on emotions and prosociality is particularly promising. As mentioned previously, a number of studies have used videos and stories to elicit emotions like elevation, amusement, admiration and joy successfully. In this thesis (*Studies 1-5*) we opted to use the medium of video clips to elicit the emotion of elevation.

Humans have an innate desire to express themselves (e.g., Kirschner & Tomasello, 2010) and both exposure to, and engaging in the arts may facilitate this desire. Beauregard (2014) conducted a meta-analysis on the impact of classroom-based creative expression programmes. She concluded that creative expression programmes can lead to increases in self-esteem, coping, resilience, hope and prosocial behaviour. Also, non-verbal art making

[4] It should be noted that this thesis was funded in part by, and conducted in collaboration with People United, an innovative arts charity that champions using the arts as a catalyst for positive societal change. In addition to the studies presented in this thesis, we conducted six studies in schools and community settings, that tested the impact of the arts on prosocial behaviour via the mediators mentioned in Broadwood's (2012) model (i.e., social connections, values, emotions and learning, see https://peopleunited.org.uk/resources/ for further details).

(e.g., drawing) can facilitate emotional expression and enable children to better process life experiences (Malchiodi, 1998). Relatedly, engaging with theatre and drama may provide a unique and therapeutic way to reflect on and explore experiences (Hanrahan & Banerjee, 2017). Accordingly, taking stock of experiences and engaging in self-reflection (coupled with the opportunity to express) may be a simple and effective way to amplify the effects of exposure to moral beauty, elevation and the associated motivations. Based on the aforementioned evidence, we incorporated some aspects of self-expression in our studies on engagement with moral beauty (i.e., *Studies 6-8*).

Summary and Conclusions

This chapter aimed to introduce some of the key areas of interest in this thesis. It described what prosocial behaviour is, how it develops and why it is becoming increasing important to find ways to promote both general and intergroup prosociality in our societies. It highlighted the potential of emotions, the growing body of research on moral elevation, and the potential that it has to motivate prosocial behaviour. It also presented some of the concepts related to elevation, that may facilitate the experience and effects of the emotion. Furthermore, we incorporated literature and discussed each of these topics, from a developmental perspective.

Gaps in the Literature

As mentioned above, our societies are becoming increasingly diverse and divided. Although people may be intuitively motivated to engage in some forms of prosocial action, they often do not act, and it is even less likely in intergroup contexts. Intergroup biases are present from a young age, so it is critical to test means to encourage prosociality and positive intergroup relations, at different stages of development. A number of studies have examined the impact of viewing prosocial role models on prosocial behaviour in childhood and

adolescence (e.g., Kosse et al., 2020) and an increasing number of researchers have highlighted the need to consider the underlying mechanism of emotions in children's prosociality (e.g., Sierksma, Thijs, & Verkuyten, 2014). Research with adults has shown that elevation may be a promising and powerful tool to promote prosocial orientation toward groups of different types, however, to our knowledge, no studies have measured elevation in childhood or adolescence. This thesis set out to fill these gaps in the literature by investigating whether and how, elevation can be elicited and measured, and whether it has the same prosocial effects in childhood and adolescence as it does in adulthood.

The ATF posits that emotions are triggered by specific appraisal themes and that these themes influence subsequent action. Research has suggested that elevation is instigated by an appraisal of another person's moral virtue and that the subsequent action tendency is benevolence-oriented which often manifests as prosocial action (Van de Vyver & Abrams, 2015). Algoe and Haidt (2009, Study 2a) suggested that the conscious experience of elevation was the *active ingredient* that connected the appraisals and action tendencies of elevation. In addition, Van de Vyver and Abrams (2015) found a significant indirect effect of an elevation-inducing video on prosocial behaviour (donations), via positive appraisals of the behaviour in the video and then self-reported feelings of elevation. However, when the order of appraisals and elevation was reversed, the full pathway from the elevation-inducing stimulus to donations was no longer significant. These findings support the theoretical models in which emotions are evoked by their relevant appraisals, and not the reverse (Frijda, Kuipers, & ter Schure, 1989). While there is empirical support for an appraisal tendency model of elevation among adults, research has not yet established whether children distinguish between the appraisals and the emotions associated with elevation, or what sequence they might follow (e.g., cognition-emotion or emotion-cognition). So, an examination of the experience of

elevation during childhood is useful both to advance theoretical models of elevation and to understand its potential to promote children's prosociality.

To address this gap in the literature, first, we focussed on whether and how elevation can be elicited in children and adolescents. A number of methods have been used to elicit emotional states, such as affective pictures, vignettes, music and odours (see Coan & Allen, 2007). We considered using vignettes describing moral behaviours (e.g., Malti, Gummerum, Keller & Buchmann, 2009) to elicit elevation, but decided to use videos in the first instance. Videos have been shown to be effective in eliciting emotions, and are capable of inducing activation across various components of emotions (Von Leupoldt et al., 2007). We believed that videos were the most suitable material for children as most children enjoy watching films, and videos include dynamic and rich visuals that allow the viewers to see and hear how the action pans out. Furthermore, videos are readily standardised and content can be well controlled. Also, Algoe and Haidt (2009) and Van de Vyver and Abrams (2015), used video to elicit elevation in adults successfully. There are a plethora of videos that are publicly available (on video sharing websites like YouTube) that depict different types of behaviours between different types of people, and so we were able to view a number of videos until we found the most suitable. We started by searching for videos (e.g., news stories, educational and home videos) of children engaging in prosocial behaviours, then we created a shortlist of videos that met our specific demographic criteria – that is including young people who were outgroup members (in terms of Nationality e.g., non-British) as both the protagonists and the recipients of the prosocial behaviour, and that depicted real-life rather than staged behaviour. We discussed the shortlist of videos with teachers and pilot tested the videos with adults and children (i.e., in S.A's Msc. thesis), before selecting the video that was deemed the most suitable to use in the studies in this thesis.

We measured the experience of elevation, with reference to the ATF, by adapting the existing self-report measures used with adults, and by conducting qualitative work with children to explore how they responded to the elevation-inducing stimulus (i.e., the video of prosocial behaviour) and described the experience in their own words. We were also interested in investigating some of the similarities and differences in how children experience the emotions of elevation and admiration – a comparison that has also not yet been explored in children. We decided to do this by eliciting both of these emotions via video, and comparing the effects on cognitive appraisals, emotion words and behavioural motivation. Investigating the conceptualisation and effects of elevation (and related emotions like admiration) in a younger sample offers a new context in which to test the theoretical foundations of the ATF and Haidt's (2003b) model moral emotions, which is a novel contribution to the field.

There is a growing body of research on the positive effects of mindfulness and gratitude diaries with both children and adults. However, to our knowledge there are no studies that have explored the effects of actively engaging with, and reflecting on acts of other-orientated (third-party) prosociality in childhood, especially over an extended period of time. In our final studies, we addressed this gap in the literature by designing a longitudinal engagement with moral beauty intervention that examined whether children, adolescents and students could recall acts of kindness, and by measuring feelings of elevation, prosocial motivation, moral identity and self-efficacy afterwards. As mindful/gratitude studies have been successfully conducted in schools (e.g., Froh et al., 2014; Froh, Sefick, & Emmons, 2008; Layous & Lyubomirsky, 2014), we were particularly interested in exploring the potential of conducting these studies on engagement with moral beauty with teachers in primary school, secondary school and university settings.

Developmental researchers (e.g., Malti & Dys, 2015) suggest that there are several socio-cognitive and socio-emotional factors that contribute to the experience of moral emotions and the development and display of prosocial behaviour. We were interested in examining any changes in the response to elevation-inducing stimuli, the experience of elevation, and prosocial motivation over the course of development, so we conducted our studies with children and adolescents of different ages. Taken together, the studies in this thesis not only add to the body of research on the development of moral emotions and prosocial behaviour, but can also shed light on some of the potential ways in which emotions and their related effects can support the positive development of young people. From a practical standpoint, the developmental lens can also give insight into how and when (e.g., at what age) positive emotion/behaviour interventions based on these findings can be further applied in schools and educational settings.

The Current Research

In this thesis, we draw on the findings and theories described above and present eight empirical studies focussed on the emotion of elevation. In *Chapter 2* and *3* (*Studies 1-3*) we use video clips to induce elevation and measure appraisals, feelings of elevation and subsequent actions in children and young adolescents. In *Studies 1** and *1b* (see Appendix A) we further explore how elevation is conceptualised in childhood by focussing on children's qualitative accounts of the experience of elevation, happiness and love. In *Chapter 4* (*Studies 4* and *5*) we compare the effects of elevation and admiration in children.

In *Chapter 5* (*Studies 6-8*), we incorporate findings from engagement with moral beauty studies and literature on the value of the arts, to test a longitudinal intervention designed to increase engagement with moral beauty, elevation and prosociality. We also explore the link between some of the associated concepts such as self-efficacy and moral

identity. In the final chapter (*Chapter 6*), we discuss and give a general overview of our findings, we also note some of the limitations of our work and put forward future avenues for research.

Hypotheses. The ATF suggests that an elevation-inducing stimulus (i.e., a morally beautiful/ prosocial act) will be appraised positively, which should lead to an affective experience of elevation, and motivate prosociality. Previous studies have used mediation analysis to test the indirect effects proposed by the ATF. For example, Algoe & Haidt (2009) tested whether cognitive appraisals predicted motivations, and whether feelings of elevation mediated the effect. Van de Vyver & Abrams (2015) used sequential mediation analysis to show that positive appraisals and then feelings of elevation fully mediated the effect of an elevation-inducing video on prosocial behaviour. We wanted to explore the effect of an elevation-inducing video on prosocial motivation, and whether it was mediated by the emotion of elevation (e.g., an indirect effect). In line with the ATF, we were interested in the relationship between the theorised components of elevation (i.e., cognitive appraisals and feelings of elevation) and so we opted to conduct sequential mediation analyses to examine each part of the indirect pathway from the emotion-inducing video to the associated motivation. We were also interested in exploring developmental differences in the experience of elevation, admiration and engagement with moral beauty, as it would add to the existing work on emotional/behavioural development, and help with future application of findings in educational settings (e.g., what is the optimal age for children to engage with an elevation-based intervention). So, in Study 4 we decided to directly compare two different age groups of children, and in Studies 6, 7, and 8, participants of different ages engaged in the same moral beauty intervention. We used the theoretical foundations (e.g., moral emotions, ATF),

study design and findings from the literature on the emotion of elevation with adults as a spring board, and broke down our hypotheses as follows:[5]

Hypothesis 1 (Condition-intergroup preference hypothesis). Ingroup preference will be higher than outgroup preference (H1a) and the elevation stimulus will not affect intergroup preference (H1b, *Study 2* in *Chapter 2*, *Study 3* in *Chapter 3* and *Study 5* in *Chapter 4*).

Hypothesis 2 (H2, Elevation condition hypothesis). The elevation stimulus will positively affect positive appraisals, feelings of elevation, general prosocial motivation (*All studies in Chapters 2-4*), outgroup prosocial motivation and outgroup prosocial behaviour (*Study 2* in *Chapter 2*, *Study 3* in *Chapter 3* and *Study 5* in *Chapter 4*).

Hypothesis 3 (H3, Positive appraisal hypothesis). In line with the ATF, positive appraisals will predict, feelings of elevation, and then general prosocial motivation (*All studies in Chapters 2-4*), outgroup prosocial motivation and outgroup prosocial behaviour (*Study 2* in *Chapter 2*, *Study 3* in *Chapter 3* and *Study 5* in *Chapter 4*) in a sequential mediation model.

Hypothesis 4 (H4, Affective (elevation)-motivation hypothesis). In line with the ATF, feelings of elevation will positively predict general prosocial motivation (*All studies in Chapters 2-4*), outgroup prosocial motivation and outgroup prosocial behaviour (*Study 2* in *Chapter 2*, *Study 3* in *Chapter 3* and *Study 5* in *Chapter 4*), in a sequential mediation model.

Hypothesis 5 (H5, Outgroup prosociality hypothesis). Outgroup prosocial motivation will positively predict outgroup prosocial behaviour (*Study 2* in *Chapter 2*, *Study 3* in *Chapter 3* and *Study 5* in *Chapter 4*), in a sequential mediation model.

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[5] Here, for simplicity, we refer to the affective experience of both admiration and elevation as *feelings of elevation*. In our studies we measure these feelings using various emotion words, and so we also refer to these feelings as "emotion words" in some of our studies.

Hypothesis 6 (H6, Admiration condition hypothesis). The admiration stimulus will positively affect admiration appraisals, feelings of elevation and self-improvement motivation (*Study 4* and *5*, *Chapter 4*).

Hypothesis 7 (H7, Admiration appraisal hypothesis). Admiration appraisals will positively predict feelings of elevation, and then self-improvement motivation (*Study 4* and *5*, *Chapter 4*), in a sequential mediation model.

Hypothesis 8 (H8, Affective (admiration)-motivation hypothesis). Feelings of elevation will positively predict self-improvement motivation (*Study 4* and *5*, *Chapter 4*), in a sequential mediation model.

Hypothesis 9 (H9, Repeated elevation hypothesis). Repeated engagement with moral beauty will positively affect feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation (*Study 6, 7* and *8*, *Chapter 5*).

We consider developmental differences in the generality of this set of hypotheses. For example, as mentioned in the introduction above, studies have found that at around 8 years old, children respond to moral behaviour and show complex moral emotions (e.g., guilt) in a way that is similar to adults. So, we were interested to see if there were similar developmental differences in our studies.

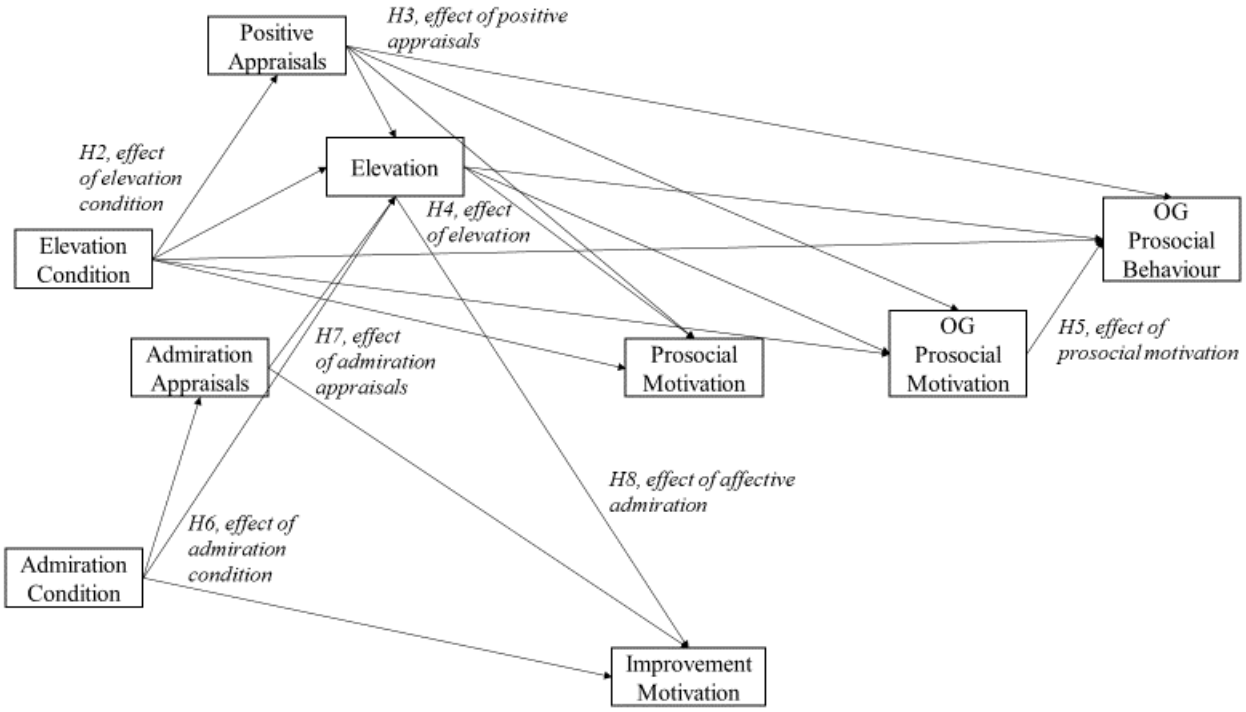

Figure 1. Schematic depiction of the hypothesised pathways.

Chapter 2

The Prosocial Effects of Moral Elevation in Childhood

Study 1 and 2

Chapter Overview

Our societies are becoming increasingly diverse (Eurostat, 2018). However, with diversity often comes the potential for division. Salient differences in group membership can lead to intergroup bias in both children and adults (Rutland, Cameron, Milne, & McGeorge, 2005; Dovidio, Gaertner, & Pearson, 2016), and so it is important to identify means of promoting prosocial orientation toward outgroups of all types. In this chapter we report two studies (N = 91, N =125) that tested whether and how moral elevation promotes prosocial responses in children aged 5-11 years. Both studies demonstrate that an elevation-inducing (vs. control) stimulus significantly increased children's feelings and appraisals of moral elevation and their general prosocial motivation. In Study 2, we also found that moral elevation significantly increased children's prosociality towards outgroup members. The findings demonstrate that elevation can be an effective tool for promoting prosociality during middle childhood.

Introduction

Prosocial Behaviour

Prosocial behaviours are motivated by the desire to increase the welfare of others (Eisenberg, Fabes, & Spinrad, 2006). However, prosocial behaviours are not directed equally towards all individuals. For example, young children are more likely to share with ingroup than outgroup members (Fehr, Bernhard, & Rockenbach, 2008), and to help ingroup members, especially in a competitive context (Abrams et al., 2015). Therefore, it is essential to develop and test strategies that can effectively promote general as well as outgroup

prosocial responses.

Researchers have begun to pay more attention to the role of emotions, such as guilt, empathy and moral elevation in adults' prosocial intentions and behaviour (Cialdini, 1991; Haidt 2001; Penner, Dovidio, Piliavin, & Schroeder, 2005; Algoe & Haidt, 2009). Likewise, developmental researchers have highlighted the need to consider the underlying mechanism of emotions in children's prosociality. Sierksma, Thijs, and Verkuyten (2014) examined the effect of inducing empathetic understanding on intergroup helping. Empathy entails affective and cognitive aspects, and involves both sharing and understanding the emotional states of others. Sierksma and colleagues (2014) found that, in general, 8-13-year-olds intended to help friends more than non-friends. However, when empathy was induced, they intended to help friends and non-friends equally. Thus, encouraging children to share and understand the feelings of others offers an effective strategy for reducing intergroup bias in helping. The current studies will extend on this research by testing whether inducing feelings of moral elevation can function in a similar way as empathy and reduce children's intergroup bias in prosociality.

Moral Elevation

Moral elevation is a positive emotion that is felt in response to acts of moral beauty or moral virtue – such as displays of kindness, compassion, and sacrifice that are above and beyond the normal standards of behaviour. The state of elevation is embodied by feelings of warmth and expansion, as well as feelings of inspiration, love, and admiration for the person who performed the virtuous act (Haidt, 2003). In this regard, elevation is a self-transcendent emotion that arises out of other-oriented appraisals and shifts attention towards the needs and concerns of others, rather than the self (Stellar et al., 2017). Amongst adults, the experience of elevation elicits the desire to be a better person, and the specific motivation to emulate the

exemplar behaviour and engage in virtuous acts for the benefit of others (Algoe & Haidt, 2009; Van de Vyver & Abrams, 2017).

Elevation has been experimentally induced in adults via witnessing, reading, and thinking about acts of moral beauty. For example, viewing morally elevating video clips (e.g., of people engaging in virtuous behaviour) increases people's willingness to volunteer (Schnall, Roper, & Fessler, 2010) and their donations to charity (Van de Vyver & Abrams, 2015). A number of studies have shown that elevation may promote a self-other overlap, which increases feelings of connectedness, favourable attitudes, and prosocial behaviour towards diverse others (e.g., Aquino, McFerran, & Laven, 2011; Lai, Haidt, & Nosek, 2014; Oliver et al., 2015). Thus, the growing empirical research on elevation shows that it can effectively promote a range of prosocial outcomes among adults in a range of settings (see Pohling & Diessner, 2016; Thomson & Siegel, 2017 for reviews). However, research has not yet tested the impact(s) of elevation in childhood.

The Appraisal Tendency Framework

According to the ATF (Horberg, Oveis, & Keltner, 2011), emotions are instigated by appraisals linked to specific themes. These themes remain salient throughout the entire emotional state, and colour subsequent responses by prioritising specific socio-moral concerns that are related to that theme. Recent research on elevation has suggested that the moral appraisal theme underlying elevation is benevolence – preserving and enhancing the welfare of others (Horberg, Oveis, & Keltner, 2011; Van de Vyver & Abrams, 2017). Specifically, elevation is instigated by an appraisal of another person's moral virtue and the subsequent action tendency involves benevolence-oriented motivation, such as prosocial behaviour (Van de Vyver & Abrams, 2015). While there is empirical support for an appraisal tendency model of elevation among adults, research has not yet established whether children

distinguish between the appraisals and the emotions associated with elevation, or what sequence they might follow. An examination of the experience of elevation during childhood is useful both to advance theoretical models of elevation and to understand its potential to promote children's prosociality.

The Current Research

In two studies, we examine the impact of an elevation-inducing stimulus on children's appraisals, self-reported emotional responses, general prosociality (Study 1) and outgroup prosociality (Study 2). This enables us to test the effect of elevation on general prosociality, as well as whether it can reduce or even overcome intergroup bias in prosociality during childhood.

In line with social psychological models of moral emotion, we hypothesise that an elevation-inducing stimulus will produce an appraisal of a moral virtue, feelings of elevation, and prosocial responses. Our hypotheses are as follows:

Hypothesis 1 (Condition-intergroup preference hypothesis). Ingroup preference will be higher than outgroup preference (H1a, Study 2) and the elevation stimulus will not affect intergroup preference (H1b, Study 2).

Hypothesis 2 (H2, Elevation condition hypothesis). The elevation stimulus will positively affect positive appraisals, feelings of elevation, general prosocial motivation (Study 1 and 2), outgroup prosocial motivation and outgroup prosocial behaviour (Study 2).

Hypothesis 3 (H3, Positive appraisal hypothesis). In line with the ATF, positive appraisals will positively predict feelings of elevation, and then general prosocial motivation (Study 1 and 2), outgroup prosocial motivation and outgroup prosocial behaviour (Study 2) in a sequential mediation model.

Hypothesis 4 (H4, Affective (elevation)-motivation hypothesis). In line with the

ATF, feelings of elevation will positively predict general prosocial motivation (Study 1 and 2), outgroup prosocial motivation and outgroup prosocial behaviour (Study 2) in a sequential mediation model.

Hypothesis 5 (H5, Outgroup prosociality hypothesis). Outgroup prosocial motivation will positively predict outgroup prosocial behaviour (Study 2) in a sequential mediation model.

We consider developmental differences in the generality of this set of hypotheses.

Study 1

Methods

Participants and design. Ninety-one children aged 5-11 years (M = 8.06, SD = 1.62; 50% boys, 2 unreported) were recruited from an ethnically diverse primary school in South East England. Written parental consent and individual verbal assent were obtained before testing began. Research was conducted in accordance with the British Psychological Society's ethical guidelines. Children were randomly assigned to a control (n = 31), or an elevation condition (n = 60, the conditions were unequal due to a procedural error[6]). Studies

[6] Originally, participants were randomly assigned to one of three conditions; control (n = 31), elevation (n = 33) or creative elevation (n = 27). Participants in both the elevation conditions viewed the same video, and then responded to appraisal, elevation and motivation items. Participants in the creative elevation condition completed an additional drawing task, however, due to a procedural error the task was completed at the end, rather than at the beginning of the study and so we collapsed the two elevation conditions in to one. One-way ANOVA showed that there were no significant differences between the two elevation conditions on positive appraisals ($M_{\text{elevation1}}$ = 4.14, SD = 0.81, $M_{\text{elevation2}}$ = 4.46, SD = 0.63; F (1,58) = 3.75, p =.103), feelings of elevation ($M_{\text{elevation1}}$ = 3.93, SD = 0.89, $M_{\text{elevation2}}$ = 3.78, SD = 0.87; F (1,58) = 0.42, p =.520), and prosocial motivation ($M_{\text{elevation1}}$ = 4.17, SD = 0.68, $M_{\text{elevation2}}$ = 3.84, SD = 0.68; F (1,58) = 3.41, p =.070).
Our sample size was determined based on Van de Vvver and Abrams (2015) and Algoe and Haidt (2009). These published studies revealed medium to large effect sizes for effects of elevation-inducing stimuli on outcomes. An *a-priori* statistical power analysis (GPower 3.1.9.2) indicated the need for an approximate sample size N = 84 (3 groups) in order to have 80% power to detect a medium to large effect size (F = 0.35) with error probability .05. When we collapsed the two conditions, post hoc analysis, based on the sample size (N = 91,

with adults (see Algoe & Haidt, 2009) have shown that elevation differs from more general positive affect (e.g., joy and amusement) and so we focused on comparing elevation to a neutral video.

Materials and measures. Participants in the elevation condition viewed an elevation-inducing video (4.30-minutes, used in all of the elevation studies in this thesis) of primary school children in Canada raising money for a disadvantaged school in Kenya. In line with Van de Vyver and Abrams (2015) we ensured that all targets in the experimental video were not members of participants' ingroup. Participants in the control condition viewed an emotionally neutral video (1.34-minutes).[7] As there are no current measures of elevation that have previously been used with children, all measures were adapted from existing self-report measures used among adult samples (Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015) using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*), age-appropriate visual cues were also included. Elevation has been conceptualised as comprising of a cognitive component (appraising a moral virtue), an affective component (feeling elevated), and a motivational or action tendency component (wanting to act prosocially). We measured each of these components among our sample. Principle Component Analyses were performed, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the remaining items. See Appendix B for details on full scales.

Positive appraisals. Positive appraisals were measured using six items (e.g., Do you

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with unequal group *n*s), indicated sensitivity to detect a medium to large effect size (d = 0.65) size with 1-β = .82 power in a two tailed *t*-test assuming an alpha value of .05.

[7] Pilot testing with adults and children showed that the elevation-inducing video that we selected elicited significantly higher positive appraisals and feelings of elevation than the control video. Results were written up previously in S.A's Msc. thesis.

think the people in the video behaved in a way that is *better* than how people usually behave?). Two negatively worded items (i.e., *shouldn't, worse*) were omitted due to low factor loadings. The final scale consisted of four items, $\alpha = .65$. The target of each question (e.g., the children who were fundraising) was made explicit.

Feelings of elevation. Affective experience (feeling elevated) was measured using nine emotion words.[8] We established children's comprehension of the words by asking them if they knew what each word meant (yes or no), and if they answered *yes* they were asked to rate the extent to which they felt the emotion on a 5-point Likert scale. Fewer than 50% of the participants in our sample reported that they knew the words *awe*, *admiration* and *uplifted* which are commonly used to measure the experience of elevation in adults. A higher number of participants reported that they knew the words *moved* (62.5%), *inspired* (62.6%), *gratitude (grateful/thankful,* 74.2%), *proud* (81.1%), *love* (96.6%) and *happy* (96.7%). Our final emotion word scale consisted of six words (i.e., inspiration, pride, gratitude, moved, happy and love, $\alpha = .74$).

Prosocial motivation. Subsequent motivation was measured using nine items adapted from Algoe and Haidt (2009). One negatively coded item was removed due to a low factor loading, the final scale consisted of eight items, $\alpha = .78$. The motivational component associated with elevation (e.g., wanting to emulate the behaviour and act prosocially) was also specifically measured using a mean score of the three items that were most commonly associated with prosocial motivation in adults (i.e., items 1, 2 and 3, in our scale, Algoe & Haidt, 2009).

Procedure. All children were tested in a quiet setting at their school with a paper and

[8] We also asked children to describe how they felt using their own words. Responses are discussed in Study 1* in Appendix A.

pen questionnaire, in the presence of a female researcher. The majority of children (aged 5-8) were tested individually; they viewed the video on a laptop and then completed the questionnaire in the presence of the researcher. Older children (aged 9-11), with proficient reading abilities, viewed the video on a large screen (approximately 4 children at a time, sat on separate desks), and then completed the questionnaire under the supervision of the researcher.

Results

To address the *elevation condition hypothesis* (H2), one-way ANOVA showed that the elevation-inducing video elicited significantly higher positive appraisals ($M_{elevation}$ = 4.29, SD = 0.75, $M_{control}$ = 3.66, SD = 0.97; F (1,89) = 11.70, p =.001, η_p^2 =.12), feelings of elevation ($M_{elevation}$ = 3.88, SD = 0.79, $M_{control}$ = 3.29, SD = 1.01; F (1,89) = 9.63, p =.003, η_p^2 =.10),[9] and prosocial motivation ($M_{elevation}$ = 4.02, SD = 0.70, $M_{control}$ = 3.38, SD = 0.96; F (1,89) = 13.39, p <.001, η_p^2 =.13) than the control video.[10]

Sequential Mediation

To address the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4) we conducted a sequential mediation analysis on condition > positive appraisals > feelings of elevation > prosocial motivation (using Hayes' 2017 PROCESS V3.4, model 6, 5000 bootstraps, see Figure 2). Specifically, we examined whether the impact of condition on prosocial motivation was sequentially mediated through positive

[9] Additional analyses with the three most understood emotion words (happy, love, proud) revealed that they loaded onto one factor. One-way ANOVA on the 3-item mean showed that the elevation-inducing video elicited significantly higher feelings of elevation ($M_{elevation}$ = 3.92, SD = 0.92, $M_{control}$ = 3.43, SD = 1.11, F (1,86) = 4.96, p =.029, η_p^2 =.05). Bivariate *Pearson* Correlations between the 3-item and 6-item elevation words scales showed that the scales were significantly correlated r =.916, p <.001.

[10] One-way ANOVA on the 3-item prosocial motivation mean showed that the elevation-inducing video elicited significantly higher prosocial motivation than the control ($M_{elevation}$ = 4.04, SD = 0.79, $M_{control}$ = 3.52, SD = 1.00, F (1,89) = 7.46, p =.008, η_p^2 =.08).

appraisals and then feelings of elevation. Condition had a significant positive direct effect on positive appraisals and elevation and a non-significant direct effect on prosocial motivation. Positive appraisals had a non-significant direct effect on feelings of elevation and a positive significant direct effect on prosocial motivation. Feelings of elevation had a significant positive direct effect on prosocial motivation.

The significant total effect of the elevation-inducing video on prosocial motivation (*B* =.64, *SE* = .18, *t* = 3.66, *p* <.001, *CI* 0.29/0.99, R^2 =.13) was reduced to non-significant in the direct model (direct effect: *B* =.23, *SE* = .17, *t* = 1.40, *p* =.165, *CI* -0.10/0.56). The indirect effect via positive appraisals was significant (*B* =.24, *SE* = .10, *CI* 0.07/0.47), the indirect effect via feelings of elevation was significant (*B* =.15, *SE* = .07, *CI* 0.03/0.30) and the indirect effect via positive appraisals and then feelings of elevation was non-significant (*B* =.02, *SE* = .03, *CI* -0.02/0.08, R^2 =.38, *p* <.001).

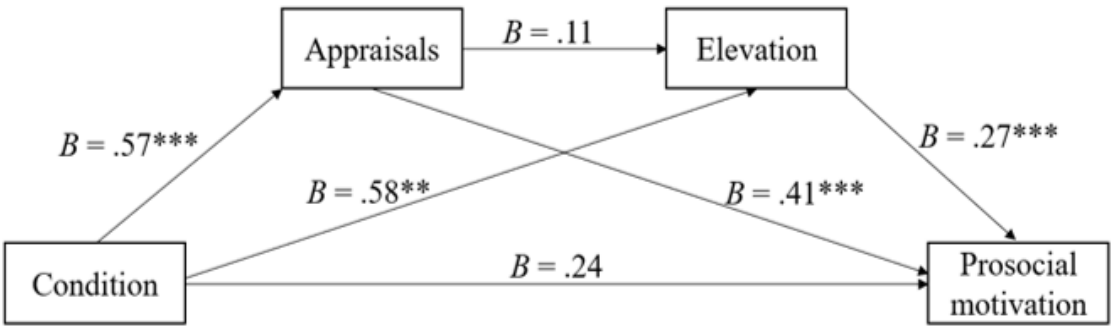

Figure 2. Study 1: Sequential mediation between condition, positive appraisals, feelings of elevation and prosocial motivation. *B* = Unstandardised *B* coefficients.
*p <.05, **p <.01, ***p <.001.

Reverse Sequential Mediation[11]

Van de Vyver and Abrams (2015) found a full indirect effect of an elevation-inducing video on prosocial behaviour, via positive appraisals and then self-reported feelings of elevation. However, when the order of appraisals and elevation was reversed, the full pathway from the elevation-inducing video to prosocial behaviour was no longer significant. Thus, we also wanted to check the reverse indirect pathway in our studies. In addition, Study 1 and 2 were submitted to a journal for publication and reviewers asked whether we considered an alternative/reverse model. So, a sequential mediation analysis reversing the sequence between feelings of elevation and positive appraisals (condition > feelings of elevation > positive appraisals > prosocial motivation) was performed using Hayes' 2017 PROCESS V3.4 macro, model 6, 5000 bootstraps). As we found no theoretical basis for it, it is purely an aposteriori analysis. As expected, condition had a significant positive direct effect on positive appraisals and feelings of elevation but no significant direct effect on prosocial motivation (*B* =.23, *SE* = .17, *t* = 1.40, *p* =.165, *CI* -0.10/0.56). Both positive appraisals and feelings of elevation had significant direct effects on prosocial motivation. The significant total effect of the elevation-inducing video on prosocial motivation, was reduced to non-significant in the direct model, and the indirect effect of condition via positive appraisals was significant (*B* =.17, *SE* = .07, *CI* 0.05/0.34), as was the indirect effect via feelings of elevation (*B* =.21, *SE* = .10, *CI* 0.05/0.44). However, the indirect effect via feelings of elevation and then positive appraisals was non-significant (*B* =.03, *SE* = .03, *CI* -0.02/0.10). Therefore, the 2-stage indirect pathway in neither the sequential nor the reverse

[11] A linear regression analysis was conducted to further examine the relationship between condition, positive appraisals, feelings of elevation and prosocial motivation. Both positive appraisals and feelings of elevation predicted prosocial motivation, however the model was a better predictor when feelings of elevation were included (i.e., the variance explained (R^2) increased). See Appendix B and General Discussion (Chapter 6) for further details.

model was supported. Rather, it seems that the cognitive and affective responses to the elevating video were, in this instance, operating in parallel, to motivate prosociality

Developmental Differences

Bivariate *Pearson* correlations between age and key variables across conditions showed only one significant correlation. Prosocial motivation reduced significantly with age (see Table 1). When we re-ran the serial mediation with age (in months) as a covariate the same paths were significant. We were unable to perform further tests of developmental differences, such as whether age interacted with conditions, due to insufficient statistical power (see Table 4). Examination of bivariate *Pearson* correlations within each condition (see Table 2) showed that age correlated negatively with prosocial motivation in the control condition but not in the elevation condition.

Table 1

S*tudy 1: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables*

	M	*SD*	2	3	4	5
1. Appraisals	4.07	0.87	.21*	.51***	-.11	-.09
2. Elevation	3.68	0.91	–	.44***	.13	.10
3. Prosocial motivation	3.80	0.85		–	-.23*	.18
4. Age (years)	8.06	1.62			–	.05
5. Gender	1.51	.50				–

Note. The pattern and significance of bivariate *Pearson* correlations remained the same even when gender was included as a covariate.
*p <.05, **p <.01, ***p <.001 (2-tailed).

Discussion

This is the first study, to our knowledge, to have tested the impacts of elevation on prosociality in childhood. It introduced several innovations including the adaptation of previous measures designed for adults. The results were consistent with the *elevation condition hypothesis* (H2) and the *affective (elevation)-motivation hypothesis* (H4). The *positive appraisal hypothesis* (H3) was only partially supported as the mediation model revealed that positive appraisals were not significantly related to feelings of elevation, but they were significantly related to general prosocial motivation. This might reflect that children find it hard to introspect and link their appraisal and emotion responses rather than that appraisals are not implicated in the processes that link exposure to elevating stimuli with emotions and prosociality. Overall, the findings are in line with previous studies with adults (e.g., Van de Vyver & Abrams, 2017) and provide initial support for a relationship between morally-elevating stimuli, the experience of elevation, and prosocial motivation during childhood.

Table 2

Study 1 and 2: Bivariate Pearson Correlation Coefficients between age and variables within each condition

	Study 1		Study 2	
Measure	Correlation coefficient		Correlation coefficient	
	Control	Elevation	Control	Elevation
Appraisals	-.22	-.07	-.27*	-.06
Elevation	.05	.18	-.43**	-.01
General motivation	-.46**	-.12	–	–
Ingroup motivation			-.25	-.06
Outgroup motivation			-.15	-.08
Ingroup behaviour			.01	.52***
Outgroup behaviour			.20	.23

Note. For Study 1 and 2, the pattern and significance of bivariate *Pearson* correlations remained the same even when gender was included as a covariate.
*$p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed).

Table 4

Study 1 and 2: Age frequencies split by condition

	Study 1				Study 2			
	Control		Elevation		Control		Elevation	
Age	Freq	%	Freq	%	Freq	%	Freq	%
5	1	3.2	3	5	15	25	13	20
6	7	22.6	9	15	12	20	15	23.1
7	3	9.7	10	16.7	14	23	17	26.2
8	9	29.0	7	11.7	9	15	10	15.4
9	4	12.9	16	26.7	7	11.7	5	7.7
10	5	16.1	10	16.7	3	5	5	7.7
11	2	6.5	2	3.3	-	-	-	-

Note. In Study 1, three data points were missing in the elevation condition.

Study 2

Study 2 tests the impact of elevation-inducing stimulus on children's outgroup prosociality. This study is particularly important because whereas it is relatively easy to elicit prosociality toward ingroup members, it is more challenging to elicit prosociality toward outgroup members, both amongst adults (Levine & Crowther, 2008) and children (Abrams et al., 2015). Following previous developmental research that established the relevance of national ingroups and outgroups as an intergroup context (Abrams, Rutland, Pelletier, & Ferrell, 2009), measures of intergroup prosocial motivation and behaviour were defined in terms of nationality (English children as the ingroup, German children as the outgroup).

Method

Participants and design. One hundred and twenty-five participants (61% boys) aged 5-10 years (M = 6.87, SD = 1.49) were recruited at a data collection event held at a University

in the East Midlands of England. The majority of participants (96%) were White British. No participants reported having German nationality. Participants were randomly assigned to the control (n = 60) or elevation (n = 65) condition. *A priori* statistical power analysis (GPower 3.1.9.2) indicated the need for an approximate sample size N = 110 (2 groups) in order to have 95% power to detect a medium to large effect size (F = 0.35) with error probability .05.

Materials. Participants in the elevation condition viewed the video described in Study 1. The control video was changed to a school cooking project (4.43-minutes) which was more comparable in length and in context to the elevation-inducing video.

Procedure. Participants were tested in a university seminar room with a paper and pen questionnaire. All children were tested individually; they viewed the video on a laptop and then completed the questionnaire in the presence of a researcher.

Measures. In order to optimise measurement and keep the questionnaire to a reasonable length, measures from Study 1 were adapted (e.g., all negatively coded items were removed and items with high factor loadings were retained). Variables were computed using the same procedure as in Study 1 (See Appendix C for further details on materials and measures).

Positive appraisals. Positive appraisals were measured using two items (e.g., Do you think the person in the video behaved in a way that is *better* than how people usually behave?). Spearman-Brown coefficient =.44, p <.001.

Feelings of elevation. We reconsidered the measurement of affect to ensure that it captured both the awe and warmth elements identified by Algoe and Haidt (2009). Specifically, to capture the "awe" aspect, we included the terms *impressed* and *amazing/ awesome* as age-appropriate synonyms for *awe*. *Admiration* was changed to "*I admired (looked up to) the children in the video*" and *gratitude* was changed to *grateful/ thankful.* We

wondered whether the concept of love was comparable to the other elements. Love has been described as "a micro moment of warmth and connection that you share with another living being" (Frederickson, 2013, p. 10), and therefore encompasses many positive emotions, including interest, joy and contentment (Izard, 1977) but it also suggests a commitment to others. Thus, we were concerned that it might imply a confound with prosociality toward a specific other. The final measure consisted of eight items with the stem "I felt": *inspired, impressed, amazing, grateful/thankful, good, happy, proud* and *I admired (looked up to) the children in the video,* α =.81.

Intergroup measures. Intergroup preference was measured using three ingroup items (e.g., I like living in England, α =.57) and one outgroup item (e.g., I would like to live in Germany).

***Intergroup prosocial motivation*.** Intergroup prosocial motivation was measured using 10 items adapted from Abrams et al. (2015). Children were asked about their intentions to help, comfort, share with, and to do something good for another child. Five items referred to German children (outgroup, α =.71) and five items referred to English children (ingroup, α =.72). Intergroup measures were counterbalanced.

Intergroup prosocial behaviour. Participants were asked to choose two stickers from an array of six. Then they were presented with two envelopes labelled "England" and "Germany" and asked to make a decision in private about whether they wanted to keep or donate some of their stickers to children in either country. The number of stickers in each envelope served as our prosocial behaviour measure. This measure was adapted from studies with children (e.g., Ongley, Nola & Malti, 2014) and is comparable to adult studies on elevation that have focused on costly giving in the form of donations to charity (e.g., Aquino, McFerran, & Laven, 2011; Van de Vyver & Abrams, 2015).

Results

Positive Appraisals and Feelings of Elevation

Variables were computed with item mean scores and ANOVAs were run to address H2. A one-way ANOVA revealed that children in the elevation condition had significantly higher positive appraisal scores (M = 4.27, SD = 0.83) than those in the control condition (M = 3.84, SD = 1.03), F (1,124) = 6.57, p =.012, η_p^2 =.05. The elevation condition also produced higher feelings of elevation (M = 3.63, SD = 0.85), than did the control condition (M = 3.16, SD = 1.00), F (1,124) = 7.77, p =.006, η_p^2 =.06.

Intergroup Preference[12]

To check that children showed evaluative ingroup preference (H1a) and whether there were any differences in intergroup preference across conditions (H1b), we conducted a repeated measures ANOVA on the group preference measure with condition as a between-subjects factor and group (mean score of ingroup items, one outgroup item) as a within-subjects factor. There was a significant main effect of group; children preferred the ingroup (M = 4.24, SD = 0.76), compared to the outgroup (M = 1.76, SD = 1.16); F (1,122) = 367.24, p <.001, η_p^2 =.75. However, there was no significant difference in group preference between conditions F (1,122) = .0, p =1.00, η_p^2 =.0. The interaction between condition and group was non-significant; F (1,122) = .03, p =.857, η_p^2 =.0. This supports H1a and H1b and confirms that the intergroup context was meaningful and had activated preference for ingroup, across the sample.

Intergroup Prosocial Motivation

[12] We also conducted a paired sample t-test with one ingroup (i.e., I like living in England) and one outgroup item (i.e., I would like to live in Germany). Children preferred the ingroup (M = 4.56, SD = 0.82), compared to the outgroup (M = 1.76, SD = 1.16); t (123) = 21.60, p <.001, η_p^2 =.79.

To examine the effect of condition on outgroup prosocial motivation (H2), we conducted a repeated measures ANOVA on the intergroup prosocial motivation measure with condition as a between-subjects factor and group (as a within-subjects factor). There was a significant main effect of group. Children showed higher prosocial motivation towards the ingroup (M = 4.17, SD = 0.80), compared to the outgroup (M = 3.35, SD = 0.99); F (1,123) = 131.94, p <.001, η_p^2 =.52. There was no significant difference in intergroup prosocial motivation between conditions, F (1,123) = 1.86, p =.176, η_p^2 =.02. However, the interaction between condition and group was significant; F (1,123) = 7.26, p =.008, η_p^2 =.06.

Simple effects showed that participants in the elevation condition reported significantly higher ingroup prosocial motivation (M_{ingroup} = 4.17, SD =.71) compared to outgroup prosocial motivation (M_{outgroup} = 3.54, SD =.95), F (1,123) = 40.26, p < .001, η_p^2 = .25. Similarly, participants in the control condition had significantly higher ingroup prosocial motivation (M_{ingroup} = 4.17, SD = .89) compared to outgroup prosocial motivation (M_{outgroup} = 3.15, SD=.99), F (1,123) = 96.67, p < .001, η_p^2 = .44.

However, and most importantly, outgroup prosocial motivation was significantly higher in the elevation condition than in the control motivation, F (1,123) = 5.01, p = .027, η_p^2 =.039. There was no significant difference in ingroup prosocial motivation in the elevation condition compared to the control condition, F (1,123) = 0.65, p = .990, η_p^2 =.0.

Intergroup Prosocial Behaviour

To examine the effect of condition on outgroup prosocial behaviour (H2), we conducted a repeated measures ANOVA on the intergroup prosocial behaviour measure with condition as a between-subjects factor and group (as a within-subjects factor). There was a significant main effect of group, F (1, 122) = 4.74, p = .031, η_p^2 = .037. Interestingly, participants donated more stickers to the outgroup (M = 0.55, SD = 0.66), than the ingroup

(M = 0.39, SD = 0.52). There was no significant difference between conditions, F (1,122) = 2.22, p =.139, η_p^2 =.02. The interaction between condition and group was non-significant; F (1,122) = 2.90, p =.091, η_p^2 =.02.

Although there was no significant interaction, we were interested in whether there were any differences between ingroup and outgroup prosocial behaviour between conditions. Simple effects showed that, participants in the elevation condition were more likely to donate stickers to the outgroup (M = 0.66, SD = 0.69) than to the ingroup (M = 0.38, SD = 0.49), F (1,122) = 7.90, p = .006, η_p^2 = .061. In contrast, participants in the control condition showed no significant difference in stickers donated to the outgroup (M = 0.42, SD = 0.59) or the ingroup (M = 0.39, SD = 0.56), F (1,122) = 0.11, p = .744, η_p^2 = .001.

Outgroup prosocial behaviour was significantly higher in the elevation condition than in the control condition, F (1,122) = 4.19, p = .043, η_p^2 = .033. There was no significant difference in ingroup prosocial behaviour in the elevation condition compared to the control condition, F (1,122) = 0.01, p = .956, $\eta_p^2 < .001$.

Correlations

Ingroup and outgroup prosocial motivation scores were positively correlated (see Table 3). Therefore, we decided to use ingroup prosociality as a covariate to examine the effect of condition on outgroup prosociality, and vice versa to examine the effect of condition on ingroup prosociality.

Table 3

Study 2: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables

	M	*SD*	1	2	3	4	5	6	7	8	9	10
1 Positive appraisals	4.06	0.95	–	.43***	.33***	.10	.12	.08	-.02	-.05	-.16	.04
2 Elevation	3.40	0.95		–	.25**	.19*	.41**	.47**	.16	.01	-.22*	.15
3 Ingroup preference	4.24	0.76			–	-.07	.33*	.03	.06	-.16	.04	-.03
4 Outgroup preference	1.76	1.16				–	.01	.23*	.07	.18*	.10	-.01
5 Ingroup prosocial motivation	4.17	0.80					–	.59***	.07	.02	-.16	.07
6 Outgroup prosocial motivation	3.35	0.99						–	-.02	.23**	-.11	.04
7 Ingroup prosocial behaviour	0.39	0.52							–	.09	.26**	.09
8 Outgroup prosocial behaviour	0.55	0.65								–	.21*	-.03
9 Age (years)	6.87	1.49									–	.12
10 Gender	1.61	0.49										–

Note. The pattern and significance of bivariate *Pearson* correlations remained the same when gender was included as a covariate.

The absence of a significant correlation between ingroup prosocial motivation and ingroup prosocial behaviour may be partly attributable to the high mean score on ingroup prosocial motivation, which might limit the variability in that measure. In addition, the particular items in the ingroup motivation measure do not specifically mention giving, whereas one of the items in the outgroup prosocial motivation measure does, and this might explain why the correlation is significant in the latter case. However, the important point for the mediational analysis is that the primary concern is what motivates and causes outgroup prosociality after accounting for ingroup prosociality.

*p <.05, **p <.01, ***p <.001 (2-tailed).

One-way analysis of covariance (ANCOVA)

Ingroup prosocial motivation. One-way ANCOVA controlling for outgroup prosocial motivation showed that there was no significant effect of condition on ingroup prosocial motivation ($M_{elevation}$ = 4.17, *SD* = 0.71, $M_{control}$ = 4.17, *SD* = 0.89, *F* (1,122) = 2.70, *p* =.103).

Ingroup prosocial behaviour. One-way ANCOVA controlling for outgroup prosocial behaviour showed that there was no significant effect of condition on ingroup prosocial behaviour ($M_{elevation}$ = 0.38, *SD* = 0.49, $M_{control}$ = 0.39, *SD* = 0.56, *F* (1,121) = 0.06, *p* =.814).

Outgroup prosocial motivation. One-way ANCOVA controlling for ingroup prosocial motivation revealed that children in the elevation condition displayed significantly higher outgroup prosocial motivation (*M* = 3.53, *SD* = 0.95) than those in the control condition (*M* = 3.15, *SD* = 0.99; *F* (1,122) = 7.78, *p* =.006, η_p^2 =.06.

Outgroup prosocial behaviour. One-way ANCOVA controlling for ingroup prosocial behaviour revealed that children in the elevation condition displayed more outgroup prosocial behaviour (*M* = 0.66, *SD* = 0.69) than those in the control condition (*M* = 0.42 *SD* = .59), *F* (1,121) = 4.21, *p* =.042, η_p^2 =.03.

Sequential Mediation

To address H3, H4 and H5, we used Hayes' 2017 PROCESS V3.4, Model 6 with 5000 bootstraps to test the overall model of condition > positive appraisals > feelings of elevation > outgroup prosocial motivation > outgroup prosocial behaviour (see Figure 3). We included ingroup prosocial motivation and behaviour as covariates. The paths remained the same when they were removed.

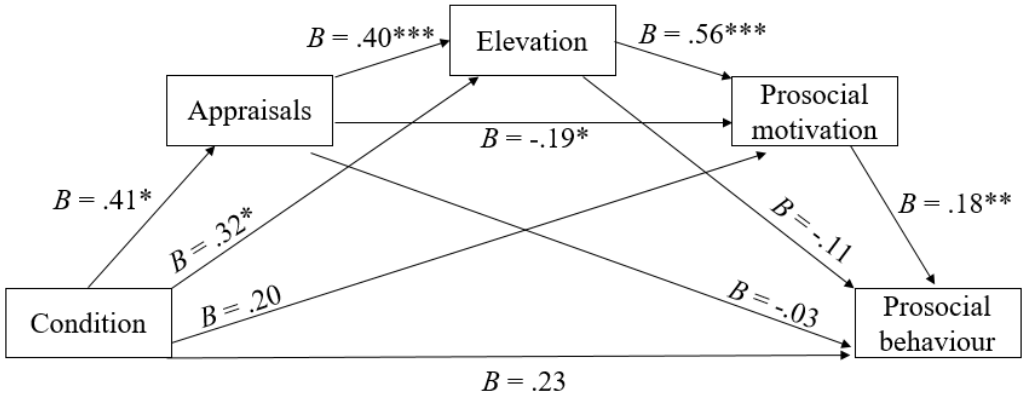

Figure 3. Study 2: Sequential mediation between condition, positive appraisals, feelings of elevation, outgroup prosocial motivation and outgroup prosocial behaviour. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

Condition had a significant positive direct effect on positive appraisals and feelings of elevation, a non-significant direct effect on prosocial motivation and a non-significant direct effect on prosocial behaviour. Positive appraisals had a positive significant direct effect on feelings of elevation, a negative significant direct effect on prosocial motivation and a non-significant direct effect on prosocial behaviour. Feelings of elevation had a significant positive direct effect on prosocial motivation and a non-significant direct effect on prosocial behaviour. Prosocial motivation had a significant direct effect on prosocial behaviour. There was a significant total effect of the elevation-inducing video on prosocial behaviour (*B* =.24, *SE* = .12, *t* = 2.05, *p* =.043, *CI* 0.01/0.47, R^2 =.03). Importantly, the total effect of condition on behaviour was reduced to non-significance in the direct model (*B* =.21, *SE* = .12, *t* = 1.73, *p* =.087, *CI* -0.03/0.45). Specifically, the full indirect path from condition to prosocial behaviour was significant (*B* =.01, *SE* = .01, *CI* 0.01/0.04, R^2 =.10). The indirect path from condition to prosocial behaviour via feelings of elevation and then prosocial motivation was also significant (*B* =.03, *SE* = .02, *CI* 0.01/0.08) and so was the indirect path from condition to prosocial behaviour via just prosocial motivation (*B* =.07, *SE* = .05, *CI* 0.01/0.17). Further analyses attempted to examine the distinct effects of elevation rather than general positive

affect, and the potential reverse sequential mediation whereby elevation affected appraisals rather than vice versa.

Sequential mediation to distinguish between the effect of elevation compared to general positive affect. We tested the overall model of condition > positive appraisals > feelings of elevation > outgroup prosocial motivation > outgroup prosocial behaviour, and removed the single emotional word item "I felt good" from the elevation scale and included the item as a covariate. Condition had a significant positive direct effect on positive appraisals and feelings of elevation, a non-significant effect on prosocial motivation and a non-significant effect on prosocial behaviour. Positive appraisals had a positive significant direct effect on feelings of elevation, a negative significant direct effect on prosocial motivation and a non-significant effect on prosocial behaviour. Prosocial motivation had a significant positive direct effect on prosocial behaviour. Feelings of elevation had a significant positive direct effect on prosocial motivation and a non-significant effect on prosocial behaviour. The covariate "I felt good" had a positive significant direct effect on positive appraisals and elevation, and a non-significant effect on prosocial motivation and prosocial behaviour. The total effect of the elevation-inducing video on prosocial behaviour was non-significant (*B* =.23, *SE* = .12, *t* = 1.94, *p* =.054, *CI* -0.01/0.46, R^2 =.03). The direct effect of condition on behaviour was non-significant (*B* =.23, *SE* = .13, *t* = 1.83, *p* =.070, *CI* -0.02/0.48). The total indirect path from condition to prosocial behaviour was non-significant (*B* =.01, *SE* = .06, *CI* -0.11/0.13). The indirect path from condition to prosocial behaviour via positive appraisals and then prosocial motivation was significant (*B* = -.02, *SE* = .01, *CI* -0.06/-0.01), the indirect path from condition to prosocial behaviour via feelings of elevation and then prosocial motivation (*B* =.05, *SE* = .02, *CI* 0.01/0.12) and the full indirect path from condition to prosocial behaviour via positive appraisals, feelings of elevation and then

prosocial motivation was also significant (*B* =.01, *SE* = .01, *CI* 0.01/0.04, R^2 =.10, *p* =.037).

Reverse sequential mediation analysis (condition > feelings of elevation > positive appraisals > outgroup prosocial motivation > outgroup prosocial behaviour).[13]

Condition had a significant positive direct effect on feelings of elevation, a non-significant effect on positive appraisals, a significant effect on prosocial motivation and a non-significant effect on prosocial behaviour. Positive appraisals had a negative significant direct effect on prosocial motivation and a non-significant effect on prosocial behaviour. Feelings of elevation had a significant positive direct effect on positive appraisals and prosocial motivation, and a non-significant effect on prosocial behaviour. There was a significant total effect of the elevation-inducing video on prosocial behaviour (*B* =.24, *SE* = .12, *t* = 2.05, *p* =.043, *CI* 0.01/0.47, R^2 =.04). The total effect of condition on behaviour was reduced to non-significance in the direct model (*B* =.21, *SE* = .12, *t* = 1.73, *p* =.087, *CI* -0.03/0.45). Specifically, the full indirect path from condition to prosocial behaviour was not significant, (*B* = -.01, *SE* = .01, *CI* -0.03/0.01). The indirect path from condition to prosocial behaviour via feelings of elevation and then prosocial motivation was significant (*B* =.04, *SE* = .02, *CI* 0.01/0.09), and so was the indirect path from condition to prosocial behaviour via prosocial motivation (*B* =.07, *SE* = .04, *CI* 0.01/0.17).

Neither the reverse analysis or the analysis focusing on positive affect qualified the findings or conclusions from analyses reported here.

[13] A linear regression analysis was conducted to further examine the relationship between condition, positive appraisals, feelings of elevation, outgroup prosocial motivation and outgroup prosocial behaviour. The model was significant and explained the most variance when positive appraisals, feelings of elevation and outgroup prosocial motivation were included. See Appendix C for further details.

Developmental Differences

Bivariate *Pearson* correlations (see Table 3) showed that across conditions, age correlated negatively with feelings of elevation. Age correlated positively with prosocial behaviour. This suggests that age may have operated as a suppressor variable (discussed further below), perhaps explaining the absence of a significant path from elevation emotions to outgroup prosocial behaviour.

Bivariate *Pearson* correlations within conditions (see Table 2) showed that in the control condition, age correlated negatively with appraisals and feelings of elevation, but in the elevation condition they were not significantly related.

Despite the larger sample size, we did not have sufficient power (see Table 4) to conduct Age x Condition analyses. When we re-ran the serial mediation with age (in years) as a covariate the same paths were significant.

General Discussion

Together, these two studies provide the first test of whether and how moral elevation affects prosociality during childhood. Overall, we found clear evidence that elevation is an emotion that can be elicited and measured in middle childhood, and that it promotes prosociality. These are both important new findings for developmental research and can provide the basis for new studies and approaches to promoting prosociality across groups.

Elevation Stimulus

Across both studies, children evaluated the behaviour in the elevation-inducing video as more positive than the behaviour in the control video and they reported feeling significantly stronger feelings of elevation. This shows that between 5-11 years old, children positively appraise (i.e., acknowledge and approve) third-party benevolent behaviour, and emotionally respond to benevolent behaviour.

In both studies, the elevation condition increased children's prosocial motivation compared to the control. Also, in Study 2, viewing the elevation-inducing video increased children's prosocial behaviour compared to the control. Thus, the basic paradigm for using elevation-inducing stimuli to promote prosociality appears to transfer well from adults to children. These findings show that, condition had a significant effect on positive appraisals, feelings of elevation, and prosociality and so the *elevation condition hypothesis* (H2) was fully supported. Moreover, the elevation stimulus significantly increased prosocial motivation and behaviour toward the outgroup, which is a particularly important threshold to cross.

Positive Appraisals

Appraisals predicted prosociality, but its mechanisms differed slightly between the two studies. In Study 1, the effect of condition on prosocial motivation was mediated independently but not sequentially by positive appraisals and feelings of elevation. In Study 2 the effect of condition on outgroup prosocial behaviour was fully mediated sequentially by positive appraisals, then feelings of elevation, and then outgroup prosocial motivation. Moreover, in Study 2, when accounting for the effects of feelings of elevation, the relationship between positive appraisals and outgroup prosocial motivation became significant and negative. This suggests a suppression effect whereby positive effects of positive appraisals on outgroup prosocial motivation are fully mediated by feelings of elevation, however there is also a remaining negative relationship between positive appraisals and outgroup prosociality. It may be plausible that this negative independent relationship may reflect feelings of threat regarding the status of the ingroup when viewing an elevating act carried out by third-party outgroup members. Overall, however, the involvement of appraisals and thus the *positive appraisal hypothesis* (H3) received partial support in Study 1 and full support in Study 2. Specifically, in Study 1, there was no significant relationship between

positive appraisals and feelings of elevation, and so the indirect effect via positive appraisals and then feelings of elevation was non-significant. In Study 2, there was a significant relationship between positive appraisals and elevation, and so the full indirect path from condition to outgroup prosocial behaviour was significant.

Feelings of Elevation

In Study 1, self-reported feelings of elevation were positively related to prosocial motivation. Moreover, the effect of condition on prosocial motivation was also mediated independently by feelings of elevation. In Study 2, self-reported feelings of elevation were positively related to outgroup prosocial motivation, and indirectly (via outgroup prosocial motivation) to outgroup prosocial behaviour. These results therefore support the *affective (elevation)-motivation hypothesis* (H4) as elevation emotions were significantly related to prosociality. The reverse pathway (elevation and then appraisals) was not supported in either study.

Measurement. An important objective in the present research was to establish the viability of measuring elevation in 5-11-year-olds. Study 1 revealed that children did not understand some of the key emotion words used to measure the affective component of elevation in adult samples. Children's reported *feelings of love* may capture an important part of the experience of elevation in 5-11-year-olds, but we regarded it as problematic in terms of ensuring discriminant validity from prosociality. However, the relationship between the emotions of love and elevation clearly warrants further investigation (see Appendix A, Study 1b). Study 2 simplified the measure of elevation by using age-appropriate synonyms for some of the original emotion words. The revised scale yielded less missing data, and had higher inter-item reliability, and we look forward to further research to further explore and consolidate its validity and reliability.

The relationship between self-reported positive appraisals and self-reported feelings of elevation varied between Study 1 and Study 2. Across both studies, there was an overall effect of condition on appraisals, elevation and prosocial responses, which is consistent with the appraisal tendency theory (i.e., witnessing benevolence increases benevolence), however, the link between appraisals and elevation may not be consistent at an individual level in this age group.

We hope this will stimulate further work along several lines. In line with other efforts to refine the ATF, it is important to explore developmental differences in appraisals and elevation, how appraisals and elevation inter-relate during childhood, and how they become translated into prosocial action (Han, Lerner & Keltner, 2007). Future research may test whether age moderates the effects of elevation-inducing stimuli on appraisal, emotional, and prosocial outcomes.

Prosocial Motivation and Behaviour

In Study 2, children indicated ingroup preference, however this was not affected by condition. This supports H1a and H1b and is similar to findings from previous research (e.g., Abrams et al., 2009). Nevertheless, viewing an elevation-inducing video significantly increased children's intentions to share with, comfort, help and do something good for outgroup members compared to the control. Similarly, viewing an elevation-inducing video also significantly increased children's' outgroup donations compared to in the control condition. In addition, mediation models showed that outgroup prosocial motivation positively predicted outgroup prosocial behaviour (which supports H5, the *outgroup prosociality hypothesis*). Taken together, elevation may be particularly effective for promoting prosociality toward outgroup members. This is in line with previous work on elevation and strengthens the conclusion that elevation can be a self-transcendent emotion

that encourages individuals to transcend their own desires and focus on those of another (Stellar et al., 2017).

Developmental Differences

Correlations revealed that there may be counteracting effects associated with children's age. In Study 1, age correlated negatively with prosocial motivation in the control but not the elevation condition. One explanation for this developmental difference could be children's understanding of the potential cost of the behaviour (e.g., House et al., 2013). The prosocial motivation items in Study 1 were quite abstract (e.g., doing something good for someone) and did not include concrete examples of prosocial behaviour. Therefore, children were unable to determine the potential personal cost of helping nor the benefit for the recipient.

In Study 2, we found that older children were more likely to behave prosocially but less likely to feel elevated, a seeming contradiction. Interestingly, the negative relation between age and feelings of elevation in the control condition, was disrupted in the elevation condition. This suggests that, although in general, older children may report less positive emotions, the elevation stimulus was effective in eliciting feelings of elevation across this age range. Across conditions, age correlated positively with ingroup and outgroup prosocial behaviour, in line with existing research that shows that prosocial behaviour, such as sharing, increases with age (see Eisenberg, Fabes, & Spinrad, 2006).

In sum, we were unable to directly test developmental trajectories but correlations did reveal differences in how 5-11-year-olds' feelings of elevation relate to their prosocial responses. These findings indicate that there are likely to be additional developmental processes that may be involved in translating elevating stimuli or situations into active prosocial responses.

Conclusion

These are the first studies, to our knowledge that have explored the experience and effects of elevation in childhood. The current research shows that children aged 5-11 years respond to acts of moral beauty, in a way that is broadly comparable to adults. Our results show that inducing moral elevation leads to increases in general prosocial motivation as well as outgroup-targeted prosocial motivation and behaviour. Overall, elevation may be an effective tool for promoting prosociality during middle childhood.

Chapter 3

The Prosocial Effects of Moral Elevation in Adolescence

Study 3

Chapter Overview

Study 1 and 2 showed that an elevation-inducing (vs. control) stimulus significantly increased feelings and appraisals of moral elevation and general prosocial motivation in children aged 5-11 years old. In Study 2 we also showed that moral elevation significantly increased children's prosociality towards outgroup members. The findings demonstrate that elevation can be an effective tool for promoting prosociality in middle childhood. In Study 3 (N = 150), using a similar design to Study 1 and 2, we tested whether and how moral elevation promotes prosocial responses in adolescents aged 13-14 years old. We found that an elevation-inducing (vs. control) stimulus significantly increased adolescent's feelings and appraisals of moral elevation and their general prosocial motivation, but not their prosociality towards outgroup members.

Pilot Study

First, we conducted a pilot study with a sample of 16-18-year-olds to check the suitability of the materials and measures. Specifically, we wanted to test whether the videos (involving child protagonists) and the prosocial motivation measures that we had previously used with children in Study 1 and 2 were suitable for use with teenagers. We also wanted to test whether these new measures mapped onto those used in prior research (e.g., Algoe & Haidt's (2009) studies were conducted with students ranging from 17-25 years old, with a mean age of 18).

Similar to Studies 1 and 2, in line with social psychological models of moral emotion we hypothesised that the elevation-inducing stimulus would produce an appraisal of a moral

virtue, feelings of elevation, general and intergroup prosocial responses. We also hypothesised that the elevation-inducing stimulus would not affect intergroup preference. The hypotheses were:

Hypothesis 1 (Condition-intergroup preference hypothesis). Ingroup preference will be higher than outgroup preference (H1a) and the elevation stimulus will not affect intergroup preference (H1b).

Hypothesis 2 (H2, Elevation condition hypothesis). The elevation stimulus will positively affect positive appraisals, feelings of elevation, general prosocial motivation, outgroup prosocial motivation and outgroup prosocial behaviour.

Method

Participants and design. Forty (21 male, 17 female, 2 unreported) teenagers aged 16-18 years (M = 17.27, SD = 0.73) were recruited from an ethnically diverse secondary school in South East England. Participants were primarily from middle income families. Written parental consent and individual verbal assent were obtained before testing began. Research was conducted in accordance with the British Psychology Society's ethical guidelines. Participants were randomly assigned to a control condition (n= 21) or an elevation condition (n = 19).

Materials. Participants in the elevation condition viewed an elevation-inducing video of primary school children in Canada raising money for a disadvantaged school in Kenya (4.30-minutes, used in all of the elevation studies in this thesis). Participants in the control condition viewed an emotionally neutral video of a children's cooking class (3.12-minutes, also used in Study 5 with 9-11-year-olds).

Measures. Elevation has been conceptualized as comprising of a cognitive component (appraising a moral virtue), an affective component (feeling elevated), and a

motivational or action tendency component (wanting to act prosocially). We measured each of these components among our sample. Measures were initially adapted from existing self-report measures used with adults (e.g., Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015), for use with children in Study 1 and 2. We edited some of the wording (e.g., the activities in the prosocial motivation scenarios) to better suit an older age-group. All items were measured using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Principal Component Analyses (PCA) extracting one component were performed, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the remaining items.

Positive appraisals. Positive appraisals were measured using six items (e.g., Do you think the person in the video behaved in a way that is *better* than how people usually behave? α = .86).

***Feelings of elevation*.** Elevation was measured by asking participants how much they felt 18 emotion words (i.e., inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, awe, love, α = .95) adapted from studies with adults and our qualitative work with children (e.g., see Study 1*/1b in Appendix A for further details).

General prosocial motivation. Subsequent motivation was measured with seven items (α = .89). Three items specifically measured prosocial motivation (e.g., I feel like being a better person/ helping other people/ doing something good for another person, α = .89).

***Intergroup preference*.** Intergroup preference was measured using three ingroup items (e.g., I like living in England, α = .78) and two outgroup items (e.g., I would like to live in Germany, Spearman-Brown coefficient = .58, $p < .001$).

Intergroup prosocial motivation. Intergroup prosocial motivation was measured using 11 items adapted from Abrams et al. (2015). Participants were instructed to imagine that they were on a school trip at a park and asked to think about whether they would help, comfort or share with another student. Six items referred to German students (outgroup, α =.80) and five items referred to English students (ingroup, α =.84). Intergroup measures were counterbalanced.

Prosocial behaviour. Participants were presented with pictures of two £10 Amazon gift cards on the screen and asked whether they wanted to donate them to students in Germany, students in England or to a prize draw (which they were part of). This acted as our intergroup prosocial behaviour measure.

Results

One-way analyses of variance (ANOVA) were conducted to test the impact of Condition (Elevation vs. Control) on the cognitive, affective, and motivational components of elevation (i.e., H2, the *elevation condition hypothesis*).

Positive Appraisals

Positive appraisal scores were significantly higher among participants who viewed the elevation-inducing video (M = 4.29, SD = 0.75) than those who viewed the control video (M = 3.66, SD = 0.97), F (1, 38) = 11.70, p = .001, η_p^2 = .12.

Feelings of Elevation[14]

Feelings of elevation were significantly higher for participants who viewed the elevation-inducing video (M = 3.86, SD = 0.88), than those who viewed the control video (M

[14] Feelings of elevation (using the mean score of the 8 items from Study 2) were significantly higher for students who viewed the elevation-inducing video (M = 2.76, SD = 0.95), than those who viewed the control video (M = 1.77, SD = 0.72), F (1, 38) = 14.10, p =.001.

= 3.22, *SD* = 1.07), *F* (1, 38) = 9.33, *p* =.003, η_p^2 = .10.

General Prosocial Motivation[15]

Prosocial motivation scores were significantly higher among participants who viewed the elevation-inducing video (*M* = 4.02, *SD* = 0.70), compared to those in the control condition (*M* = 3.38, *SD* = 0.96), *F* (1, 38) = 13.39, *p* < .001, η_p^2 = .13.

Intergroup Preference

To check that participants showed evaluative ingroup preference (H1a) and to examine whether there were any differences in intergroup preference across conditions (H1b), we conducted a repeated measures ANOVA on the group preference measure with condition as a between-subjects factor and group as a within-subjects factor. Ingroup preference (*M* = 3.22, *SD* = 0.99) was significantly higher than outgroup preference (*M* = 2.31, *SD* = 0.99), *F* (1, 38) = 12.58, *p* = .001, η_p^2 = .25. There was no main effect of condition, *F* (1, 38) = 0.78, *p* = .381, η_p^2 = .02. There was no significant interaction between condition and group, *F* (1, 38) = 1.88, *p* = .142, η_p^2 = .05.

Intergroup Prosocial Motivation

To examine the effect of condition on outgroup prosocial motivation (H2), we conducted a repeated measures ANOVA on the intergroup prosocial motivation measure with condition as a between-subjects factor and group (as a within-subjects factor). There was a significant main effect of group. Adolescents showed higher prosocial motivation towards the ingroup (*M* = 4.08, *SD* = 0.77), compared to the outgroup (*M* = 3.42, *SD* = 1.01); *F* (1,38) = 15.58, *p* <.001, η_p^2 =.29. There was no significant difference in intergroup prosocial

[15] Scores on the full motivation scale were also significantly higher for students who viewed the elevation-inducing video (*M* = 2.61, *SD* = 1.04), than those who viewed the control video (*M* = 1.86, *SD* = 0.85), *F* (1, 38) = 6.22, *p* =.017.

motivation between conditions, F (1,38) = 2.16, p =.150, η_p^2 =.05. However, the interaction between condition and group was significant; F (1,38) = 4.64, p =.038, η_p^2 =.11.

Simple effects showed that participants in the elevation condition reported no significant difference between ingroup prosocial motivation ($M_{ingroup}$ = 4.07, SD =.77) compared to outgroup prosocial motivation ($M_{outgroup}$ = 3.78, SD =.71), F (1,38) = 1.53, p = .224, η_p^2 = .04. Participants in the control condition had significantly higher ingroup prosocial motivation ($M_{ingroup}$ = 4.10, SD = .77) compared to outgroup prosocial motivation ($M_{outgroup}$ = 3.09, SD=1.14), F (1,38) = 19.59, p < .001, η_p^2 = .34.

However, and most importantly, outgroup prosocial motivation scores were significantly higher in the elevation condition than in the control condition, F (1,38) = 4.98, p = .032, η_p^2 =.12. There was no significant difference in ingroup prosocial motivation in the elevation condition compared to the control condition, F (1,38) = 0.01, p = .919, η_p^2 =.0.

Intergroup Prosocial Behaviour

To examine the effect of condition on outgroup prosocial behaviour (H2), we conducted a repeated measures ANOVA on the intergroup prosocial behaviour measure with condition as a between-subjects factor and group (as a within-subjects factor). There was a significant main effect of group, F (1, 38= 7.29, p = .010, η_p^2 = .17. Participants donated more vouchers to the ingroup (M = 0.87, SD = 0.73), than the outgroup (M = 0.44, SD = 0.55). However, there was no significant difference between conditions, F (1,38) = 1.21, p =.279, η_p^2 =.03. The interaction between condition and group was non-significant; F (1,138) = 0.53, p =.470, η_p^2 =.01.

Although there was no significant interaction, we were interested in whether there were any differences between ingroup and outgroup prosocial behaviour between conditions. Simple effects showed that, participants in the elevation condition showed no differences in

donations to the outgroup (M = 0.42, SD = 0.69) compared to the ingroup (M = 0.74, SD = 0.49), F (1,37) = 1.89, p = .177, η_p^2 = .05. In contrast, participants in the control condition donated significantly more to the ingroup (M = 1.00, SD = 0.59) compared to the outgroup (M = 0.45, SD = 0.56), F (1,37) = 6.04, p = .019, η_p^2 = .14.

There was no significant difference in outgroup prosocial behaviour in the elevation condition compared to in the control condition, F (1,38) = 0.03, p = .873, η_p^2 = .001. There was no significant difference in ingroup prosocial behaviour in the elevation condition compared to the control condition, F (1,37) = 1.27, p = .267, η_p^2 = .03.

Correlations

Ingroup and outgroup prosocial motivation scores were positively correlated (see Table 5). Assuming that this might reflect the presence of individual differences in prosociality, and that in-group prosociality reflects these differences, we decided to use ingroup prosociality as a covariate to examine the effect of condition on outgroup prosociality, and vice versa to examine the effect of condition on ingroup prosociality.

Table 5

Study 3a (Pilot Study): Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables

	M	*SD*	1	2	3	4	5	6	7	8	9
1 Positive appraisals	3.58	0.91	–	.37*	.37*	-.02	.31*	-.21	.18	-.32*	-.17
2 Elevation	2.03	0.86		–	.78***	-.01	.26	.11	.32*	-.30	.02
3 Prosocial motivation	2.39	1.24			–	-.08	.15	.27	.40*	-.36*	-.10
4 Ingroup preference	3.22	0.99				–	.30	.46**	.06	-.14	-.19
5 Outgroup preference	2.31	1.00					–	-.26	.25	-.08	-.01
6 Ingroup prosocial motivation	3.16	0.74						–	.43**	-.02	.04
7 Outgroup prosocial motivation	2.26	0.85							–	-.22	.02
8 Ingroup prosocial behaviour	0.87	0.73								–	-.18
9 Outgroup prosocial behaviour	0.44	0.55									–

*p <.05, **p <.01, ***p <.001 (2-tailed).

One-Way Analysis of Covariance (ANCOVA)

Ingroup prosocial motivation. One-way ANCOVA controlling for outgroup prosocial motivation showed that there was no significant effect of condition on ingroup prosocial motivation ($M_{\text{elevation}} = 3.06$, $SD = 0.78$, $M_{\text{control}} = 3.25$, $SD = 0.71$, $F(1,37) = 3.14$, $p = .084$).

Ingroup prosocial behaviour. One-way ANCOVA controlling for outgroup prosocial behaviour showed that there was no significant effect of condition on ingroup prosocial behaviour ($M_{\text{elevation}} = 0.74$, $SD = 0.73$, $M_{\text{control}} = 1.00$, $SD = 0.73$, $F(1,36) = 1.35$, $p = .253$).

Outgroup prosocial motivation. One-way ANCOVA controlling for ingroup prosocial motivation revealed that those in the elevation condition displayed significantly higher outgroup prosocial motivation ($M = 2.49$, $SD = 0.92$) than those in the control condition ($M = 2.06$, $SD = 0.74$; $F(1,37) = 5.09$, $p = .030$, $\eta_p^2 = .12$.

Outgroup prosocial behaviour. One-way ANCOVA controlling for ingroup prosocial behaviour revealed no significant difference in outgroup prosocial behaviour in the elevation condition ($M = 0.42$, $SD = 0.51$) compared to the control condition ($M = 0.45$, $SD = .60$), $F(1,36) = 0.14$, $p = .711$, $\eta_p^2 = .004$.

Discussion

This pilot study showed that 16-18-year-olds showed a general preference for their ingroup, specifically they preferred the ingroup (English students) to the outgroup (German students), which is similar to findings from previous research (e.g., Abrams et al., 2009). There was no significant difference in intergroup preference between conditions. This supports the *condition-intergroup preference hypothesis* (H1a and H1b) and suggests that the intergroup context was meaningful in this age-group.

Participants appraised the behaviour in the elevation video as more benevolent than the behaviour in the control video. Participants also reported feeling increased elevation and general prosocial motivation in the elevation condition compared to the control condition. The findings with positive appraisals, feelings of elevation and general prosocial motivation support the *elevation condition hypothesis* (H2). These findings also support our findings from Study 1 and 2, and suggest that the elevation video is suitable to elicit positive appraisals, feelings of elevation, and increased prosocial motivation in 16-18-year-olds. Thus, the video and the measures should also be suitable for use with 13-14-year-olds.

We observed no difference in ingroup prosocial motivation or ingroup prosocial behaviour scores between conditions. However, teenager's prosocial responses to outgroup members depended on whether they had first watched an elevating video. The outgroup prosocial motivation findings replicate the findings in Study 2, however the prosocial behaviour findings differed. Specifically, outgroup prosocial motivation scores were higher in the elevation condition compared to the control condition, which support the *elevation condition hypothesis* (H2). In contrast, outgroup prosocial behaviour did not differ significantly between conditions. This may be due to the nature of the prosocial behaviour measure, the age-group or the relatively low power. *Post hoc* statistical power analysis (GPower 3.1.9.2) indicated that our sample size $N = 40$ (2 groups) had only .57 power to detect a medium to large effect size ($F = 0.35$) with error probability .05, and so we looked forward to investigating the effects in a larger sample in the main study.

Study 3

Main study

In Study 3, we test the impact of elevation-inducing stimuli on general and outgroup prosociality with 150 adolescents aged 13-14 years old. *A priori* statistical power analysis

(GPower 3.1.9.2) indicated the need for an approximate sample size $N = 110$ (2 groups) in order to have 95% power to detect a medium to large effect size ($F = 0.35$) with error probability .05.

Similar to Studies 1 and 2, in line with social psychological models of moral emotion we hypothesise that elevation-inducing stimulus will produce an appraisal of a moral virtue, feelings of elevation, and prosocial responses. Our hypotheses were:

Hypothesis 1 (Condition-intergroup preference hypothesis). Ingroup preference will be higher than outgroup preference (H1a) and the elevation stimulus will not affect overall intergroup preference (H1b).

Hypothesis 2 (H2, Elevation condition hypothesis). The elevation stimulus will positively affect positive appraisals, feelings of elevation, general prosocial motivation, outgroup prosocial motivation and outgroup prosocial behaviour.

Hypothesis 3 (H3, Positive appraisal hypothesis). In line with the ATF, positive appraisals will positively predict elevation, and then general prosocial motivation, outgroup prosocial motivation and outgroup prosocial behaviour, in a sequential mediation model.

Hypothesis 4 (H4, Affective (elevation)-motivation hypothesis). Feelings of elevation will positively predict general prosocial motivation, outgroup prosocial motivation and outgroup prosocial behaviour, in a sequential mediation model.

Hypothesis 5 (H5, Outgroup prosociality hypothesis). Outgroup prosocial motivation will positively predict outgroup prosocial behaviour, in a sequential mediation model.

Method

Participants and design. One hundred and fifty (146 female, 4 prefer not to say) adolescents aged 13-14 years ($M = 13.11$, $SD = 0.32$) were recruited from a girls' secondary

school in South East England. All students in Year 9 took part in the study and each tutor group was randomly assigned to either the control condition (n = 61, three tutor groups) or the elevation condition (n = 89, four tutor groups). Participants were primarily from middle income families (3.7% of pupils were eligible for free school meals). Written parental consent and individual verbal assent were obtained before testing began. Research was conducted in accordance with the British Psychology Society's ethical guidelines.

Materials. Participants in the elevation condition viewed an elevation-inducing of primary school children in Canada raising money for a disadvantaged school in Kenya (4.30-minutes, used in the pilot and in all other elevation studies in this thesis). Participants in the control condition viewed an emotionally neutral video of a children's cooking class (3.12-minutes, also used in the pilot and in Study 5 with 9-11-year-olds). Participants watched the video on a projector screen in their classrooms, then they completed a pen and paper questionnaire.

Measures. Elevation has been conceptualized as being comprised of a cognitive component (appraising a moral virtue), an affective component (feeling elevated), and a motivational or action tendency component (wanting to act prosocially). We measured each of these components among our sample. Measures were adapted from existing self-report measures used among adult samples (Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015) and were piloted with 16-18-year-olds prior to this study. All items were measured using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). See Appendix D for details on full scales. Principal Component Analyses were performed, extracting one factor, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the remaining items.

Positive appraisals. Positive appraisals were measured using six items (e.g., Do you think the person in the video behaved in a way that is *better* than how people usually behave? α = .81).

Feelings of elevation. Elevation was measured by asking participants how much they felt 18 emotion words (i.e., inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, awe, love, α = .97).

General prosocial motivation. Subsequent motivation was measured with eight items (α = .92). Four items specifically measured prosocial motivation (e.g., I feel like being a better person/ helping other people/ doing something good for another person/being friends with the people [i.e., the protagonists] in the video, α = .91).

Intergroup preference. Intergroup preference was measured using three ingroup items (e.g., I like living in England, α = .84) and two outgroup items (e.g., I would like to live in Germany, Spearman-Brown coefficient = .439, $p < .001$).

Intergroup prosocial motivation. Intergroup prosocial motivation was measured using 11 items adapted from Abrams et al. (2015). Participants were instructed to imagine that they were on a school trip at a park and asked to think about whether they would help, comfort or share with another child. Six items referred to German students (outgroup, α = .79) and five items referred to English students (ingroup, α = .72). Intergroup measures were counterbalanced.

Prosocial behaviour. The last question in the questionnaire acted as our intergroup prosocial behaviour measure. Participants were presented with pictures of two £10 Amazon gift cards and asked whether they wanted to donate them to students in Germany, students in England or to a prize draw (which they were part of). The text was as follows:

> "We aim to work with lots of students in different countries. Right now we are focussing on students in Germany and students in England.

> We would like to give Amazon vouchers to some of the students that take part.
>
> Here are 2 Amazon vouchers, worth £10/ €10 each. You can decide what you want to do with each one.
>
> Some of these vouchers will be used for a prize draw for people taking part in this study today, which includes you.
>
> With each voucher, please decide whether to give it to students from Germany or students from England or to the prize draw."

At the end of the session, all students had a chance to take part in a prize draw to win the Amazon vouchers.

Results

One-way analyses of variance (ANOVA) were conducted to test the impact of condition (Elevation vs. Control) on each of the cognitive, affective, and motivational components of elevation (i.e., the *elevation condition hypothesis,* H2).

Positive Appraisals

Positive appraisal scores were significantly higher among adolescents who viewed the elevation-inducing video (M = 4.20, SD = 0.65) than those who viewed the control video (M = 3.77, SD = 0.61), F (1, 148) = 17.34, $p < .001$, $\eta_p^2 = .11$.

Feelings of Elevation[16]

Feelings of elevation were significantly higher for adolescents who viewed the elevation-inducing video (M = 3.22, SD = 0.91), than those who viewed the control video (M = 2.17, SD = 0.85), F (1, 148) = 50.94, $p <.001$, $\eta_p^2 = .26$.

[16] Feelings of elevation (using the 8-item variable from Study 2) were significantly higher for students who viewed the elevation-inducing video (M = 3.45, SD = 0.91), than those who viewed the control video (M = 2.31, SD = 0.83), F (1, 148) = 60.38, $p <.001$.

General Prosocial Motivation[17]

Scores on the prosocial motivation scale were significantly higher among adolescents who viewed the elevation-inducing video (M = 3.51, SD = 0.97), compared to those in the control condition (M = 3.37, SD = 0.94), F (1, 148) = 51.05, $p < .001$, $\eta_p^2 = .26$.

Intergroup Preference

To check that adolescents showed evaluative ingroup preference (H1a) and whether it differed across conditions (H1b), we conducted a repeated measures ANOVA on the group preference measure with condition as a between-subjects factor and group as a within-subjects factor. There was a significant main effect of group. Students preferred the ingroup (M = 3.51, SD = 1.03), compared to the outgroup (M = 2.95, SD = 0.92); F (1,148) = 23.75, p <.001, η_p^2 =.14. There was no significant difference in group preference between conditions, F (1,148) = 0.28, p =.598, η_p^2 =.002. The interaction between condition and group was non-significant; F (1,148) = 0.67, p =.416, η_p^2 =.004. This confirms that the intergroup context was meaningful and supports H1a and H1b.

Intergroup Prosocial Motivation

To examine the effect of condition on outgroup prosocial motivation (H2), we conducted a repeated measures ANOVA on the intergroup prosocial motivation measure with condition as a between-subjects factor and group (as a within-subjects factor). There was a significant main effect of group. Adolescents showed higher prosocial motivation towards the ingroup (M = 4.45, SD = 0.57), compared to the outgroup (M = 4.12, SD = 0.71); F (1,148) =

[17] Scores on the full motivation scale were significantly higher for students who viewed the elevation-inducing video (M = 3.28, SD = 0.94), than those who viewed the control video (M = 2.34, SD = 0.98, F (1, 148) = 35.09, p <.001. All individual items were higher in the elevation condition compared to the control condition, except for the 'new activity' item; scores were significantly higher in the control condition (M = 2.66, SD = 1.45), compared to the elevation condition (M = 2.16, SD = 1.33, F (1, 148) = 5.07, p =.026.

76.54, p <.001, η_p^2 =.34. However, there was no significant difference in intergroup prosocial motivation between conditions, F (1,148) = 2.41, p =.123, η_p^2 =.02. The interaction between condition and group was non-significant; F (1,148) = 0.08, p =.779, η_p^2 =.001.

Intergroup Prosocial Behaviour

To examine the effect of condition on outgroup prosocial behaviour (H2), we conducted a repeated measures ANOVA on the intergroup behaviour measure with condition as a between-subjects factor and group as a within-subjects factor. There was a non-significant main effect of group, a non-significant main effect of condition and a non-significant interaction.

Correlations

Table 6

S*tudy 3: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables*

	M	*SD*	1	2	3	4	5	6	7	8	9
1 Positive appraisals	4.02	0.67	–	.54***	.57***	.02	.18*	.36***	.21*	-.01	-.11
2 Elevation	2.79	1.02		–	.84***	.21**	.23**	.49***	.37***	.03	.15
3 Prosocial motivation	3.05	1.11			–	.15	.28**	.54***	.44***	.02	.12
4 Ingroup preference	3.51	1.03				–	-.06	.38***	.17*	.18*	.01
5 Outgroup preference	2.95	0.93					–	.31***	.40	.04	.21**
6 Ingroup prosocial motivation	4.01	0.60						–	.65***	.14	.09
7 Outgroup prosocial motivation	3.49	0.70							–	-.04	.18**
8 Ingroup prosocial behaviour	0.58	0.52								–	.57***
9 Outgroup prosocial behaviour	0.60	0.52									–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Sequential Mediation[18]

To address H3 and H4, we conducted a sequential mediation analysis on condition > positive appraisals > feelings of elevation > general prosocial motivation (using Hayes' 2017 PROCESS V3.4, model 6, 5000 bootstraps).

Condition had a significant positive direct effect on positive appraisals (*B* =.22, *SE* = .05, *t* = 4.16, *p* <.001, *CI* 0.12/0.32), feelings of elevation (*B* =.38, *SE* = .07, *t* = 5.54, *p* <.001, *CI* 0.25/0.52) and prosocial motivation (*B* =.12, *SE* = .06, *t* = 2.02, *p* =.045, *CI* 0.01/0.23). Positive appraisals had a significant positive direct effect on feelings of elevation (*B* =.65, *SE* = .10, *t* = 6.37, *p* <.001, *CI* 0.45/0.85) and prosocial motivation (*B* =.27, *SE* = .09, *t* = 3.15, *p* =.002, *CI* 0.10/0.44). Feelings of elevation had a significant positive direct effect on prosocial motivation (*B* =.76, *SE* = .06, *t* = 12.24, *p* <.001, *CI* 0.63/0.88).

The significant total effect of the elevation-inducing video on prosocial motivation (*B* =.57, *SE* = .08, *t* = 7.14, *p* <.001, *CI* 0.41/0.73, R^2 =.26, *p* >.001), remained significant in the direct model (see above). The indirect effect via positive appraisals was significant (*B* =.06, *SE* = .03, *CI* 0.01/0.12), the indirect effect via feelings of elevation words was significant (*B* =.29, *SE* = .06, *CI* 0.19/0.41) and the indirect effect via positive appraisals and then feelings of elevation words was significant (*B* =.11, *SE* = .03, *CI* 0.05/0.18, R^2 =.73, *p* <.001). These results show that the effect of condition on prosocial motivation was partially mediated by appraisals and feelings of elevation.[19]

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[18] Linear regression analysis was conducted to further examine the relationship between condition, positive appraisals, feelings of elevation and prosocial motivation. Both positive appraisals and feelings of elevation predicted prosocial motivation, however the model was a better predictor when feelings of elevation were included (i.e., the variance explained (R^2) increased). See Appendix D and General Discussion (Chapter 6) for further details.

[19] An additional sequential mediation analysis with age (in months) included as a covariate, showed a comparable pattern of (significant and non-significant) results. Age had a non-significant effect on appraisals, feelings of elevation and prosocial motivation.

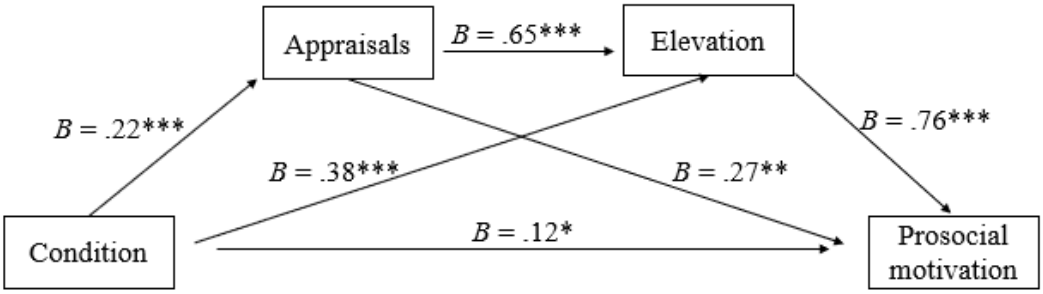

Figure 4. Study 3: Sequential mediation between condition, positive appraisals, feelings of elevation and prosocial motivation. *B* = Unstandardised *B* coefficients. Paths remained the same when age (in months) was included as a covariate. **p* <.05, ***p* <.01, ****p* <.001.

Reverse Sequential Mediation

In line with comments from reviewers in Study 1 and 2, a reverse sequential mediation analysis, reversing the sequence between feelings of elevation and positive appraisals (condition > feelings of elevation > positive appraisals > prosocial motivation) was performed using Hayes' 2017 PROCESS V3.4 macro, model 6, 5000 bootstraps). Condition had a significant direct effect on feelings of elevation (*B* =.52, *SE* = .17, *t* = 7.14, *p* <.001, *CI* 1.29/1.99), a non-significant direct effect on positive appraisals (*B* =.04, *SE* = .05, *t* = 0.82, *p* =.413, *CI* -0.06/0.15), and a significant direct effect on prosocial motivation (*B* =.12, *SE* = .06, *t* = 2.02, *p* =.045, *CI* 0.01/0.23). Feelings of elevation had a significant positive direct effect on positive appraisals (*B* =.33, *SE* = .05, *t* = 6.37, *p* <.001, *CI* 0.23/0.44). Both positive appraisals (*B* =.27, *SE* = .09, *t* = 3.15, *p* =.002, *CI* 0.10/0.44), and feelings of elevation (*B* =.76, *SE* = .06, *t* = 12.24, *p* <.001, *CI* 0.63/0.88), had significant positive direct effects on

A sequential mediation analysis with the 8-item emotion word scale used in Study 2, also showed a comparable pattern of (significant and non-significant) results in both the original and the reverse model. The only difference was that the direct pathway was non-significant so the effect of condition on prosocial motivation was fully mediated by all the indirect pathways.

prosocial motivation. The significant total effect (*B* =.57, *SE* = .08, *t* = 7.14, *p* <.001, *CI* 0.41/0.73, R^2 =.51, *p* >.001), was remained significant in the direct model. The indirect effect of condition via positive appraisals was non-significant, the indirect effect via feelings of elevation was significant (*B* =.40, *SE* = .07, *CI* 0.27/0.53), and the indirect effect via feelings of elevation and then positive appraisals was significant (*B* =.05, *SE* = .02, *CI* 0.01/0.09, R^2 =.73, *p* <.001).

Discussion

Elevation Stimulus

Our results showed that adolescents aged 13-14-years-old appraised the behaviour in the elevation-inducing video as more positive than the behaviour in the control video, and they reported feeling significantly stronger feelings of elevation. These findings support the *elevation condition hypothesis* (H2). They also extend our findings from Study 1 and 2, and show that both children aged 5-11 years old, and adolescents aged 13-14 years old positively appraise (i.e., acknowledge and approve) and emotionally respond to third-party benevolent behaviour.

Participants reported feeling increased general prosocial motivation (e.g., the desire to be a better person and to help others) in the elevation condition compared to in the control condition. This finding also supports the *elevation condition hypothesis* (H2). However, there were no significant differences in intergroup prosocial motivation or behaviour between conditions.

Positive Appraisals and Feelings of Elevation

As there were no significant differences between conditions on intergroup prosociality, we focussed on the general prosocial motivation variable to test the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4).

We ran a sequential mediation model that showed that positive appraisals predicted feelings of elevation and general prosocial motivation. Feelings of elevation also predicted prosocial motivation. There was a full indirect effect; the effect of condition on general prosocial motivation was partially mediated, independently and sequentially by positive appraisals and then feelings of elevation (R^2 (total effect) = .26, p >.001, R^2 (full indirect pathway) = .73, p >.001). These findings support the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4) with the general prosocial motivation variable.

Interestingly, the full indirect pathway in the reverse mediation model (i.e., condition > feelings of elevation > positive appraisals > general prosocial motivation) was also significant. This shows that the 2-stage indirect pathway in both the sequential and the reverse model received support. Thus, the link between appraisals and elevation and the direction of the pathway, may not be as sequentially fixed in this age group, as it is in adulthood. It is important now to explore developmental differences in appraisals and elevation, how appraisals and elevation inter-relate during childhood and early adolescence, and how they become translated into prosocial action (Han, Lerner & Keltner, 2007).

Intergroup Prosociality

Adolescents showed evaluative ingroup preference across conditions (which supports H1a and H1b). However, there were no significant differences between conditions on intergroup prosociality, so we did not test the effect of condition on outgroup prosocial motivation and behaviour (i.e., the *outgroup prosociality hypothesis*, H5).

The experimental manipulation affected general prosocial motivation, however, it did not produce differences in ingroup and outgroup prosociality. Specifically, the elevation condition, did not have a significant effect on participants' motivation to help, comfort, share

with, or donate to the English or German students, compared to the control. Contrarily, participants reported increased ingroup (compared to outgroup) prosocial motivation across conditions.

Prosocial behaviour was measured by asking participants to decide whether to give Amazon vouchers to students in England, Germany or to a prize draw in which they could partake in. Condition did not have a significant effect on whether participants allocated the Amazon vouchers to English or German students, however, further analysis showed that across conditions, participants were more likely to opt for the Amazon vouchers to be added to the prize draw. Although participants were told that they were able to take part in the prize draw, there was no guarantee that they would receive the Amazon vouchers themselves, and so they may have interpreted all of the allocation options as being prosocial. In addition, there was less of an element of self-sacrifice compared to in Study 2, however the resource may have also been viewed as more valuable than in Study 2 (i.e., stickers vs. Amazon vouchers) which may have affected participants decisions. Thus, future studies could explore the effect of the degree of self-sacrifice involved in the task (e.g., by adding another option in which participants could keep the voucher for themselves). Another possible variation would be to ask participants to distribute a higher/odd number of resources (e.g., five) so that they would have to show a preference one way or the other.

Age and Gender

A major limitation of the current study is that it was conducted in a girls' secondary school and therefore the results cannot be generalised to boys. Studies with adults have shown that women may be more susceptible to engagement with moral beauty and feelings of elevation (e.g., Algoe & Haidt, 2009; Diessner et al., 2008; Landis et al., 2009), thus, it is important to include boys in future studies. Moreover, Participants were all aged 13 (n = 132)

or 14 years old (n = 17), and so it would also be beneficial to conduct future studies with an extended age range.

Conclusion

Overall, our findings suggest that participants appraised the fundraising behaviour as positive and benevolent, and they reported increased feelings of elevation and general prosocial motivation after viewing the elevation video. The findings demonstrate that elevation can be an effective tool for promoting prosocial motivation in girls aged 13-14 years old, however further research is needed to investigate how and when this translates into intergroup prosocial action and to explore these effects in a mixed gender/aged sample.

Taken together, Studies 1, 2 (Chapter 2) and 3 (Chapter 3) show that elevation can be elicited and measured in children and adolescents, and that it can promote prosociality. These are important new findings that extend the existing literature, and open up new avenues for research. For example, do children differ in their sensitivity to elevation-inducing stimuli, and do different types of positive behaviours elicit different elements of positive affect? Any elevating video is likely to include some inspirational behaviour, but it is not known whether, and how similar that behaviour should be to the target outcome behaviour. A further question is, to what extent elevating stimuli need to involve other elements in order to motivate intergroup prosociality in adolescents.

Chapter 4

Exploring the (Dis)similarities of the Experience of Admiration and Elevation in Childhood

Study 4 and 5

Chapter Overview

In Study 1, 2 and 3 (Chapter 2 and 3) we found that children aged 5-11 years and adolescents aged 13-14 years appraised and responded to moral behaviour in a way that is similar to adults – that is they appreciated and acknowledged fundraising behaviour and reported feeling elevation. We also found that elevation increased general prosocial motivation (Study 1 and 3) and outgroup prosocial responses (Study 2). Following on from these findings, it is important to discover whether children differ in their sensitivity to stimuli that elicit different elements of positive affect (e.g., that arises from different types of behaviour), and to investigate the specific motivations that follow.

In this chapter we explore the (dis)similarities of the experience of moral elevation – an emotion felt in response to moral excellence (i.e., displays of moral virtue or beauty) – and admiration – an emotion felt in response to non-moral excellence such as skill and achievement. In Study 4 (N = 213), we show that there are some differences in how children in aged 5-7 and 8-11 years old, appraise and respond to elevation and admiration stimuli. In Study 5 (N = 203), considering this developmental difference, we investigate the affective, cognitive and motivational components of elevation and admiration, in children aged 9-11 years old. Across the two studies we find differences in the appraisals of, and responses to, elevation- and admiration-inducing stimuli. We compare these findings across age groups.

Introduction

The Appraisal Tendency Framework

The ATF (Lerner & Keltner, 2000), posits that emotions are instigated by appraisals that are linked to specific themes that influence subsequent responses by prioritizing specific concerns that are related to that theme. Elevation and admiration are both positively-valenced other-praising emotions, that are felt in response to others' exemplary actions (see Haidt, 2003; Schindler, Zink, Windrich, & Menninghaus, 2013). However, there are specific differences in the type of events that elicit these two emotions, and the motivations or action tendencies that follow (Algoe & Haidt, 2009).

Elevation

Elevation has been described as the emotional response to acts of moral beauty, such as those that represent kindness, compassion, charity, sacrifice and forgiveness (Haidt, 2003a; Haidt, 2003b). Empirical research shows that elevation is instigated by an appraisal of another person's moral virtue and that the subsequent action tendency involves benevolence-oriented motivation, including wanting to emulate the exemplar and become a better person (Van de Vyver & Abrams, 2015).

Admiration

Although the term admiration is often used to describe the emotional response to excellence in several domains, we describe admiration as the emotional response to acts of non-moral excellence such as skill, talent or achievement (whereas elevation describes the emotional response to acts of moral excellence). Schindler, Paech and Löwenbrück (2015) found that admiration can be elicited by displays of outstanding achievement and that it can motivate one to search for, and engage with what they find interesting and important.

(Dis)similarities of Elevation and Admiration

Algoe and Haidt (2009) investigated the cognitive, affective and motivational components of elevation, admiration and amusement. In their studies, admiration was induced via a video clip of Michael Jordan's basketball skills, and elevation with a clip of a man named Trevor, who had started a homeless shelter in his youth. They found that the admiration video was most associated with feelings of admiration, respect, inspiration, awe, and being moved, and the elevation video with feelings of love and gratitude. Participants in the admiration condition also reported feeling bodily sensations such as increased heart rate, energy and tensed muscles, whereas participants in the elevation condition reported warm feelings in the chest and relaxed muscles. In terms of subsequent motivations, participants in the elevation condition were more likely to report prosocial motivations, such as the desire to be a better person and to do something kind or caring for other people, than those in the admiration condition. The most characteristic effect of feeling admiration was the desire to achieve success oneself (i.e., cultivating skill or talent) especially in the domain of fitness and exercise, but also in other fields such as academic success.

Furthermore, in line with the ATF, Algoe & Haidt (2009) found that feelings of admiration, respect, awe, inspiration and being moved (a summed score that they referred to as the "admiration factor") partially mediated the effect of skill appraisals on success motivations, and the effect of virtue appraisals on prosocial motivations. They also found that feelings of gratitude and love (referred to as the 'warmth factor', which was distinctive of elevation), partially mediated the effect of virtue appraisals on prosocial motivations but did not mediate the effect of skill appraisals on success motivations.

Developmental Differences

In Study 1 and 2 (Chapter 2) we showed that an elevation-inducing video had a

positive effect on positive appraisals, feelings of elevation and prosocial motivation, in children aged 5-11 years. However, we were unable to directly test developmental trajectories in this age-range due to low power. Thus, it is still not clear whether the appraisals, affective experience and motivations associated with elevation follow a developmental trajectory. To our knowledge there is no work that has investigated this, nor the appraisals, affective experience and motivations associated with admiration in childhood.

Cognitive development theories propose that children gradually learn the differences between moral principles (e.g., of justice or rights) and non-moral conventions over the course of development. Piaget (1932/1965) suggested that during early childhood, children's morality is heteronomous, and their evaluation of the rightness or goodness of an act is often dependent on authority figures' approval of the act. At around 9-10 years old, children begin to develop autonomous morality, whereby they start to take their own, and others' emotions and perspectives into account when making moral decisions. It is likely that children will appraise morally excellent and non-morally excellent behaviours differently, however little is known about whether and how the emotional experience, and the subsequent motivations differ. It is also likely that there will be differences between younger and older children's responses.

The Current Research

In two studies we explore the (dis)similarities of the emotions of admiration and elevation by inducing the emotions via video clips and measuring the cognitive, affective and motivational effects. In line with social psychological models of moral emotions, we hypothesise that an elevation-inducing stimulus will produce an appraisal of moral excellence (or moral virtue), an affective experience and prosocial motivation. We also hypothesise that an admiration-inducing stimulus will produce an appraisal of non-moral excellence, an

affective experience and the motivation to self-improve (e.g., to work towards success). Our hypotheses were as follows:[20]

Hypothesis 1 (Condition-intergroup preference hypothesis). Ingroup preference will be higher than outgroup preference (H1a, Study 5) and the elevation stimulus will not affect intergroup preference (H1b, Study 5).

Hypothesis 2 (H2, Elevation condition hypothesis). The elevation stimulus will positively affect positive appraisals, feelings of elevation, general prosocial motivation (Study 4 and 5), outgroup prosocial motivation and outgroup prosocial behaviour (Study 5).

Hypothesis 3 (H3, Positive appraisal hypothesis). In line with the ATF, positive appraisals will positively predict feelings of elevation, and then general prosocial motivation (Study 4 and 5), outgroup prosocial motivation and outgroup prosocial behaviour (Study 5), in a sequential mediation model.

Hypothesis 4 (H4, Affective (elevation)-motivation hypothesis). Feelings of elevation will positively predict general prosocial motivation (Study 4 and 5), outgroup prosocial motivation and outgroup prosocial behaviour (Study 5), in a sequential mediation model.

Hypothesis 5 (H5, Outgroup prosociality hypothesis). Outgroup prosocial motivation will positively predict outgroup prosocial behaviour (Study 5), in a sequential mediation model.

Hypothesis 6 (H6, Admiration condition hypothesis). The admiration stimulus will positively affect admiration appraisals, feelings of elevation and self-improvement motivation (Study 4 and 5).

[20] Here, for simplicity, we refer to the affective experience of both admiration and elevation as *feelings of elevation*.

Hypothesis 7 (H7, Admiration appraisal hypothesis). Admiration appraisals will positively predict feelings of elevation, and then self-improvement motivation (Study 4 and 5), in a sequential mediation model.

Hypothesis 8 (H8, Affective (admiration)-motivation hypothesis). Feelings of elevation will positively predict self-improvement motivation (Study 4 and 5), in a sequential mediation model.

We consider developmental differences in the generality of this set of hypotheses. For example, studies have found that at around 8 years old, children respond to moral behaviour and show complex moral emotions (e.g., guilt) in a way that is similar to adults. So, we were interested to see if there were similar developmental differences with elevation and admiration.

Study 4

Method

Participants. Two hundred and thirteen (97 male, 114 female, 2 unreported) children aged 5-11 years were recruited from two ethnically diverse primary schools in South East England. Participants were primarily from low-mid income families – approximately 59% of the pupils in the schools were eligible for free school meals. Research was conducted in accordance with the British Psychology Society's ethical guidelines. Written parental consent and individual verbal assent were obtained before testing began.

Age groups. To test developmental differences, children were grouped based on school year. The younger age group consisted of 82 (44 male, 37 female, 1 unreported) children in grades one and two, aged 5-7 years (M = 6.51, SD = 0.61), randomly assigned to the control (n = 33), admiration (n = 21) or elevation condition (n = 28). The older age group consisted of 131 (53 male, 77 female, 1 unreported) children in grades three to six, aged 7-11

years (M = 8.65, SD = 0.94), randomly assigned to the control (n = 46), admiration (n = 33) or elevation condition (n = 52).

Our sample size was determined based on Van de Vvver and Abrams (2015) and Algoe and Haidt (2009). These published studies revealed medium to large effect sizes for effects of elevation-inducing stimuli on outcomes. *A priori* statistical power analysis (GPower 3.1.9.2) indicated the need for an approximate sample size N = 130 (6 groups of 22) in order to have 95% power to detect a medium to large effect size (F = 0.35) with error probability .05, in an ANOVA (fixed effects, special, main effects and interactions).

Materials. Past research on elevation and admiration (e.g., Algoe & Haidt, 2009) has shown that elevation can be successfully induced via viewing videos of people engaging in moral behaviour that surpasses normal standards of behaviour, and that admiration can be induced via viewing videos of people displaying extraordinary skill, talent or achievement (e.g., athletes). Participants in the elevation condition viewed an elevation-inducing video of school children in Canada raising money for a disadvantaged school in Kenya (4.30-minutes, used in all of the elevation studies in this thesis). Participants in the admiration condition watched a video about Jordan Chiles, a highly skilled 13-year-old female gymnast (3.01-minutes). The video showed clips of her training in the gym, at home and at school. Participants in the control condition viewed an emotionally neutral video of a school cooking project (4.48-minutes, also used in Study 2, Chapter 2).

Measures and procedure. We measured the cognitive, affective and motivational components of elevation and admiration among our sample using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Measures were adapted from studies with adults (e.g., Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015) and our previous work with children (e.g., in Study 1 and 2). Age-appropriate visual cues were also included.

All children were tested in a quiet setting at their school. The study was conducted on iPads; children viewed the video with headphones and then filled out the questionnaire using the touch screen feature. Younger children (in grades one, two and three, aged 5-8) were tested individually – the researcher read the questions and scale responses aloud, and made sure that the child clicked on their chosen response. Older children (in grades five and six, aged 9-11), with proficient reading abilities, completed the questionnaire independently, in the presence of a researcher.

For each measure, Principal Component Analyses (PCA), extracting one factor were performed, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the remaining items.

Positive appraisals (cognitive component).[21] Positive appraisals were measured using four items (i.e., Do you think the person in the video behaved in a way that people… *should* behave / is *better/kinder/nicer* than how people usually behave?, α = .596).

Admiration appraisals (cognitive component). Admiration appraisals were measured using two items (e.g., Do you think the person in the video was more *skilful/ talented* than most other people?, Spearman-Brown coefficient = .446, $p < .001$).

Emotion words (affective component). The affective component of the emotions was measured by asking children how much they felt eight emotion words, as in Study 2 (i.e., inspired, admired, grateful, happy, proud, good, impressed, amazing, α = .857).

[21] Some children in this study also took part in an informal discussion about the behaviour in the videos e.g., why they thought the protagonists were carrying out the behaviour. This helped to inform the additional appraisal items (e.g., to do with goodness and rightness of the behaviour) that were included in Study 3 and 5.

Subsequent motivation (motivational component). Subsequent motivation was measured using six items adapted from Algoe and Haidt (2009). Three items measured prosocial motivation (i.e., I feel like being friends with the people in the video/ being a better person/ helping other people, $\alpha = .706$). Three items measured self-improvement motivation (i.e., I feel like achieving success/ doing a physical activity or playing a sport/ trying a new activity or club, $\alpha = .635$).

Results

To test the impact of condition (e.g., H2 and H6) and age on each of the cognitive, affective, and motivational components of elevation and admiration, 2 (Age: younger vs. older) x 3 (Condition: Control vs. Admiration vs. Elevation) one-way analyses of variance (ANOVA) were conducted. Significant main effects were followed up with post-hoc tests with Tukey correction. Effect sizes (Cohen's *D*) were computed for significant pairwise comparisons. As we were interested in exploring whether there were differences in younger and older children's responses in regards to cognitive appraisals of behaviour, affective experience and subsequent motivations, we report simple effects for significant and non-significant interactions. See Table 7 for means and standard deviations for each group and Table 8 for correlations between variables.

Table 7

Study 4: Means and Standard deviations for pairwise comparisons for each group

Measure	Condition		
	Elevation	Admiration	Control
	M (*SD*)	*M* (*SD*)	*M* (*SD*)
Positive appraisals (post hoc)	4.22 (0.67) a	3.94 (0.74) ab	3.87 (0.76) b
Younger	3.99 (0.67) a	4.17 (0.66) a	3.98 (0.69) a
Older	4.35 (0.65) a	3.79 (0.77) b	3.79 (0.80) b
Admiration appraisals (post hoc)	2.88 (1.21) a	3.89 (1.10) b	3.09 (1.05) a
Younger	3.21 (1.17) a	3.76 (1.19) a	3.38 (0.99) a
Older	2.69 (1.19) a	3.97 (1.05) b	2.89 (1.05) a
Emotion words (post hoc)	3.74 (0.99) ab	4.08 (0.87) b	3.47 (1.09) a
Younger	3.68 (0.85) b	4.27 (0.84) a	3.67 (0.89) b
Older	3.77 (1.07) a	3.95 (0.88) a	3.33 (1.21) b
Prosocial motivation (post hoc)	4.21 (0.96) b	3.95 (0.91) ab	3.60 (1.19) a
Younger	3.93 (1.19) a	4.19 (0.99) a	3.93 (0.94) a
Older	4.37 (0.77) a	3.80 (0.83) b	3.37 (1.30) b
Self-improvement (post hoc)	3.65 (1.21) a	4.23 (1.01) b	3.75 (1.27) ab
Younger	3.89 (1.10) a	4.14 (1.22) a	3.77 (1.31) a
Older	3.52 (1.25) b	4.29 (0.87) a	3.74 (1.26) b

Note. Letters next to the means indicate significant differences between conditions, $p \leq 0.05$.

Positive Appraisals

There was no significant main effect of age, F (1, 207) = 0.45, p = .505. The main effect of condition was nearly significant, F (2, 207) = 3.02, p =.051, η_p^2 = .028. Post hoc tests showed that there was no significant difference between the elevation (M = 4.22, SD = 0.67) and the admiration condition (M = 3.94, SD = 0.74), p = .064. There was no significant difference between the admiration and the control condition (M = 3.87, SD = 0.76), p = .845. However, positive appraisal scores were significantly higher in the elevation compared to the control condition, p = .006, d = 0.49. There was a significant interaction between age and condition, F (2, 207) = 4.74, p = .010, η_p^2 = .044.

Simple effects of condition within age.

Younger children. There was no significant difference in positive appraisal scores between conditions, F (2, 207) = 0.53, p = .588, all ps > .342.

Older children. There was a significant main effect of condition, F (2, 207) = 9.60, p < .001, η_p^2 = .085. Positive appraisal scores were significantly higher in the elevation (M = 4.35, SD = 0.65) compared to the admiration condition (M = 3.79, SD = 0.77), p = .001, d = 0.79. There was no significant difference between the admiration and the control condition, (M = 3.79, SD = 0.80), p = .988. Positive appraisal scores were significantly higher in the elevation compared to the control condition, p < .001, d = 0.77.

Age within condition. In the elevation condition, older children's positive appraisal scores were significantly higher than younger children's scores (M = 3.99, SD = 0.67), F (1, 207) = 1.36, p = .032, η_p^2 = .022.

Admiration Appraisals

There was no significant main effect of age, F (1, 207) = 2.82, p = .095. There was a significant main effect of condition, F (2, 207) = 10.91, p < .001, η_p^2 = .095. Post hoc tests

showed that admiration appraisal scores were significantly higher in the admiration condition (M = 3.89, SD = 1.10) compared to both the elevation (M = 2.88, SD = 1.21), $p < .001$, d = 0.87, and the control conditions (M = 3.09, SD = 1.05), $p < .001$, d = 0.74. There was no significant difference between the control and elevation condition, p = .426. There was no significant interaction between age and condition, F (2, 207) = 1.97, p = .142.

Simple effects of condition within age. Although there was no significant interaction between age and condition on admiration appraisals, pairwise comparisons showed that younger and older children responded differently.

***Younger children*.** There were no significant differences in admiration appraisals between conditions, F (2, 207) = 1.50, p = .226, all ps > .089.

***Older children*.** Scores mirrored the post hoc effects, F (2, 207) = 14.44, $p > .001$, η_p^2 = .122. Admiration appraisal scores were significantly higher in the admiration condition (M = 3.97, SD = 1.05) compared to both the elevation (M = 2.69, SD = 1.19), $p < .001$, d = 1.14, and the control conditions (M = 2.89, SD = 1.05), $p < .001$ d = 1.03. There was no significant difference between the elevation compared to the control condition, p = .377.

Age within condition. Younger children's admiration appraisal scores (M = 3.21, SD = 1.17), were significantly higher than older children's in the elevation condition, F (1, 207) = 4.03, p = .046, η_p^2 = .019, and marginally higher than older children's in the control condition, F (1, 207) = 3.71, p = .056, η_p^2 = .018.

Emotion Words[22]

There was no significant main effect of age, F (1, 207) = 2.17, p = .142. There was a significant main effect of condition, F (2, 207) = 6.37, p = .002, η_p^2 = .058. Post hoc tests showed that there was no significant difference between the admiration (M = 4.11, SD = 0.82) compared to the elevation condition (M = 3.76, SD = 1.01), p = .104. Emotion word scores were significantly higher in the admiration compared to the control condition (M = 3.48, SD = 1.04), p = .001, d = 0.67. There was no significant difference between the control and elevation condition, p = .185. There was no significant interaction between age and condition, F (2, 207) = 1.07, p = .346.

Simple effects of condition within age. Although there was no significant interaction between age and condition on emotion words, pairwise comparisons showed that younger and older children responded differently.

Younger children. There was no significant main effect of condition, F (2, 207) = 2.82, p = .062. Emotion words scores were significantly higher in the admiration condition (M = 4.29, SD = 0.76) compared to both the elevation (M = 3.71, SD = 0.80), p = .041, d = 0.74, and the control conditions (M = 3.70, SD = 0.83), p = .031, d = 0.74. There was no difference between the elevation and the control condition, p = .967.

***Older children*.** There was a significant main effect of condition, F (2, 207) = 4.97, p = .008, η_p^2 = .046. There was no difference between the admiration (M = 3.99, SD = 0.83)

[22]ANOVA with a 2-item variable (*inspired* and *admired*, based on Algoe & Haidt, 2009) yielded similar results to the 8-item variable; the simple effects were the same, however the Age x Condition interaction was significant.
ANOVA with the single item "gratitude" showed a significant main effect of condition, and a non-significant main effect of age and interaction. Post-hoc and simple effect tests showed that for younger and older children, gratitude was significantly higher in the elevation compared to the control condition. For older children, gratitude was also significantly higher in the elevation compared to the admiration condition.
See Appendix E for further details on these analyses.

compared to the elevation condition (M = 3.78, SD = 1.11), p = .333. Emotion words scores were significantly higher in the admiration compared to the control condition (M = 3.33, SD = 1.14), p = .003, d = 0.66. Emotion words scores were also significantly higher in the elevation compared to the control condition, p = .023, d = 0.40.

Prosocial Motivation

There was no significant main effect of age, F (1, 207) = 1.39, p = .241, η_p^2 = .007. There was a significant main effect of condition, F (2, 207) = 4.66, p = .011, η_p^2 = .043. Post hoc tests showed that there was no significant difference between the elevation (M = 4.21, SD = 0.96) compared to admiration condition (M = 3.95, SD = 0.91), p = .312. There was no significant difference between the admiration compared to the control condition (M = 3.60, SD = 1.19), p = .133. Prosocial motivation scores were significantly higher in the elevation compared to the control condition, p = .001, d = 0.56. There was a significant interaction between age and condition, F (2, 207) = 4.94, p = .008, η_p^2 = .046.

Simple effects of condition within age.

Younger children. There was no significant difference in younger children's prosocial motivation scores between conditions, F (2, 207) = 0.52, p = .598, all ps > .359.

Older children. There was a significant main effect of condition, F (2, 207) = 11.79, p < .001, η_p^2 = .102. Prosocial motivation scores were significantly higher in the elevation (M = 4.37, SD = 0.77), compared to the admiration (M = 3.80, SD = 0.83), p = .013, d = 0.71, and the control condition (M = 3.37, SD = 1.30), p < .001, d = 0.94. There was no significant difference between the admiration and the control condition, p = .067.

Age within condition. In the control condition, younger children's prosocial motivation scores (M = 3.93, SD = 0.94), were significantly higher than older children's scores, F (1, 207) = 5.80, p = .017, η_p^2 = .027.

Self-improvement Motivation

In this study, three items measured self-improvement motivation (i.e., I feel like achieving success/ doing a physical activity or playing a sport/ trying a new activity or club). In Study 5 (the next study reported in this chapter), self-improvement was measured with just one item (I feel like achieving success). To compare, we ran one GLM with the *sports* and *new club* variables combined (referred to as self-improvement motivation), and one with the individual *success* item.

Self-improvement motivation. There was no significant main effect of age, F (1, 190) = 1.05, p = .308, η_p^2 = .005. There was a significant main effect of condition, F (2, 190) = 4.91, p = .008, η_p^2 = .049. Post hoc tests showed that self-improvement motivation scores were significantly higher in the admiration (M = 4.24, SD = 1.12), compared to the elevation condition (M = 3.45, SD = 1.30), p = .002, d = 0.65. There was no difference between the control condition (M = 3.87, SD = 1.23), and the admiration condition, p = .075, or the elevation condition, p = .330. There was no significant interaction between age and condition, F (2, 190) = 0.09, p = .918, η_p^2 = .001.

Simple effects of condition within age. There was no significant interaction between age and condition on self-improvement motivation, however, pairwise comparisons showed that younger and older children responded differently.

Younger children. There were no significant differences in self-improvement motivation between conditions, F (2, 190) = 1.79, p = .170, η_p^2 = .018, all ps > .074.

Older children. There was a significant main effect of condition, F (2, 190) = 4.14, p = .017, η_p^2 = .042. Self-improvement motivation scores were significantly higher in the admiration (M = 4.17, SD = 1.19), compared to the elevation condition (M = 3.38, SD = 1.36), p = .004, d = 0.62. There was no significant difference between the admiration and the

control condition (M = 3.71, SD = 1.29), p = .105. There was no significant difference between the control and elevation condition, p = .187.

Success item. There was no significant main effect of age, F (1, 190) = 1.49, p = .225. There was no significant main effect of condition, F (2, 190) = 2.27, p = .106. Post hoc tests showed no significant differences in success motivation between conditions, ps > .097. There was no significant interaction between age and condition, F (2, 190) = 0.41, p = .662.

Condition within age.

Younger children. There were no significant differences in success motivation between conditions, F (2, 190) = 0.78, p = .460, all ps > .215.

Older children. There was no significant main effect of condition, F (2, 190) = 2.34, p = .099. Success motivation scores were significantly higher in the admiration condition (M = 4.27, SD = 1.10), compared to the control (M = 3.61, SD = 1.58), p = .042, d = 0.48. There was no significant difference between the admiration and the elevation condition (M = 3.71, SD = 1.35), p = .077. There was no significant difference between the control and elevation condition, p = .721.

Table 8

Study 4: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables

	M	*SD*	2	3	4	5	6	7	8
1. Positive appraisals	4.02	0.72	.26***	.33***	.23***	.01	.16*	.05	-.01
2. Admiration appraisals	3.21	1.19	–	.29***	.02	.18**	.20**	-.19**	-.10
3. Emotion words	3.74	0.99		–	.57***	.40***	.61***	-.04	.12
4. Prosocial motivation	3.92	1.07			–	.32***	-.51***	-.05	.11
5. Self-improvement motivation	3.80	1.26				–	.38***	-.13	.04
6. Success motivation	3.74	1.43					–	.16	.03
7. Age (years)	7.83	1.33						–	.18*
8. Gender	1.54	.50							–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Moderated Sequential Mediation

ANOVA showed a significant Condition x Age interaction on the positive appraisal and prosocial motivation scores; there was no significant difference in positive appraisal and prosocial motivation scores between conditions for younger children, however, for older children, the positive appraisal and prosocial motivation scores were significantly higher in the elevation condition compared to the admiration and the control conditions.

Given that the Condition x Age interaction was significant on positive appraisals and prosocial motivation scores, we deemed it appropriate to conduct a moderated sequential mediation analysis, using Hayes' 2017 PROCESS V3.4, Model 85, which tests whether the

effect of X on M1, M2 and Y is moderated by W (See Figure 5).

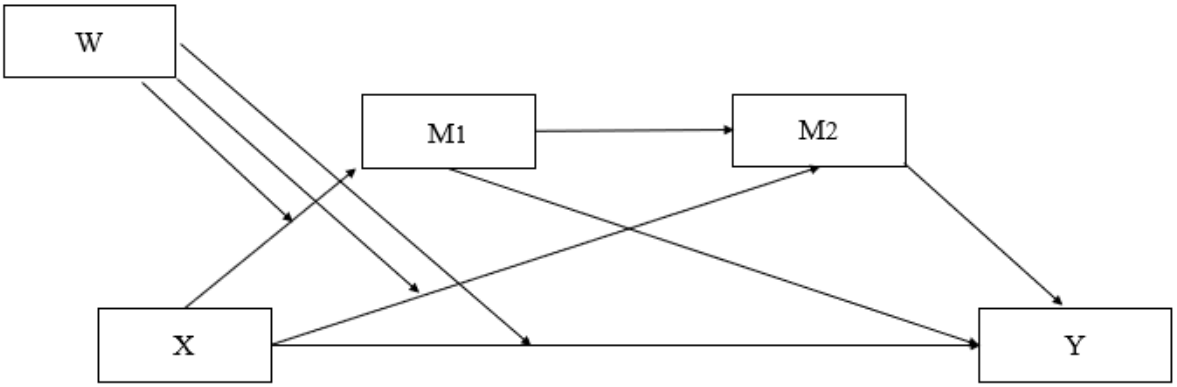

Figure 5. Study 4: Schematic depiction of Model 85.

As mentioned in Chapter 1, studies have found that at around 8 years old, children respond to moral behaviour and show complex moral emotions (e.g., guilt) in a way that is similar to adults. We wanted to see if there were similar developmental changes in our studies with elevation- and admiration-inducing stimuli. The following models and effects correspond to our sequential mediation hypotheses that examine each part of the indirect pathway from the elevation- and admiration-inducing video to the associated motivation (i.e., Hypotheses 3, 4, 5, 7 and 8).

We conducted a moderated mediation analysis (Model 85) with age (in years) as the moderating variable between condition and appraisals/emotion words/prosocial motivation, and on the indirect pathways between the variables. Condition was entered as a multi-categorical variable (X1 was coded as admiration vs. both the control and elevation conditions, X2 was coded as elevation vs. both the control and admiration conditions).

Condition > positive appraisals > emotion words > prosocial motivation.

Positive appraisals. Age had a non-significant direct effect on positive appraisals (*B* = -.06, *SE* = .06, *t* = -1.01, *p* =.313, *CI* -0.19/0.06). Positive appraisals had a significant direct

effect on emotion words (*B* =.44, *SE* = .08, *t* = 4.96, *p* <.001, *CI* 0.27/0.61), and a non-significant direct effect on prosocial motivation (*B* = -.03, *SE* = .09, *t* = -0.31, *p* =.759, *CI* -0.20/0.14).

The admiration-stimulus had a non-significant direct effect on positive appraisals (*B* = -.14, *SE* = .74, *t* = -0.19, *p* =.848, *CI* -1.60/1.32), and there was a non-significant Admiration x Age interaction (*B* =.03, *SE* = .09, *t* = 0.30, *p* =.765, *CI* -0.16/0.21).

The elevation-stimulus had a non-significant direct effect on positive appraisals (*B* = -1.32, *SE* = .70, *t* = -1.89, *p* =.060, *CI* -2.69/0.06), and there was a significant Elevation x Age interaction (*B* =.21, *SE* = .09, *t* = 2.42, *p* =.016, *CI* 0.04/0.39). In line with the previous ANOVA, there was a significant direct effect of the elevation-stimulus on positive appraisals for 8-year-olds (*B* =.39, *SE* = .12, *t* = 3.39, *p* < .001, *CI* 0.16/0.62), and 9-year-olds (*B* =.60, *SE* = .16, *t* = 3.89, *p* <.001, *CI* 0.30/0.91), but not 6-year-olds.

Emotion words. Age had a non-significant direct effect on emotion words (*B* = -.16, *SE* = .08, *t* = -1.90, *p* =.059, *CI* -0.32/0.01). Emotion words had a significant direct effect on prosocial motivation (*B* =.59, *SE* = .06, *t* = 9.16, *p* <.001, *CI* 0.46/0.72).

The admiration-stimulus had a non-significant direct effect on emotion words (*B* =- .71, *SE* = .95, *t* = -0.75, *p* =.456, *CI* -2.58/1.16), and there was a non-significant Admiration x Age interaction (*B* =.17, *SE* = .12, *t* = 1.40, *p* =.163, *CI* -0.07/0.40).

The elevation-stimulus had a non-significant direct effect on emotion words (*B* = -1.17, *SE* = .90, *t* = -1.29, *p* =.197, *CI* -2.94/0.61), and there was a non-significant Elevation x Age interaction (*B* =.17, *SE* = .11, *t* = 1.44, *p* =.151, *CI* -0.06/0.39).

Prosocial motivation. Age had a significant negative direct effect on prosocial motivation (*B* = -.16, *SE* = .08, *t* = -2.08, *p* =.039, *CI* -0.31/-0.01).

The admiration-stimulus had a non-significant direct effect on prosocial motivation (*B*

= -.68, *SE* = .88, *t* = -0.77, *p* =.442, *CI* -2.41/1.06), and there was a non-significant Admiration x Age interaction (*B* =.09, *SE* = .11, *t* = 0.78, *p* =.437, *CI* -0.13/0.31).

The elevation-stimulus had a significant negative direct effect on prosocial motivation (*B* = -1.72, *SE* = .84, *t* = -2.06, *p* =.040, *CI* -3.37/-0.08), and there was a significant Elevation x Age interaction (*B* =.28, *SE* = .11, *t* = 2.64, *p* =.009, *CI* 0.07/0.49). There was a significant direct effect of the elevation-stimulus on prosocial motivation for 8-year-olds (*B* =.52, *SE* = .14, *t* = 3.68, *p* <.001, *CI* 0.24/0.79), and 9-year-olds (*B* =.80, *SE* = .19, *t* = 4.16, *p* <.001, *CI* 0.42/1.17), but not 6-year-olds.

Significant indirect effects.[23] The full indirect pathway (elevation condition > positive appraisals > emotion words > prosocial motivation) was significant for 8-year-olds (*B* =.10, *SE* = .04, *CI* 0.04/0.19), and 9-year-olds (*B* =.16, *SE* = .06, *CI* 0.06/0.29), but not 6-year-olds.

There was also a significant indirect pathway from the admiration condition > emotion words > prosocial motivation for 8-year-olds (*B* =.37, *SE* = .11, *CI* 0.17/0.59), and 9-year-olds (*B* =.47, *SE* = .15, *CI* 0.19/0.76), but not 6-year-olds.

[23] **Reverse moderated mediation; Condition > emotion words > positive appraisals > prosocial motivation.** The full indirect pathway was not significant. The indirect path from the admiration condition and the elevation condition via emotion words was significant for 9-year-olds (and 8-year-olds in the admiration condition). See Appendix E for further details.

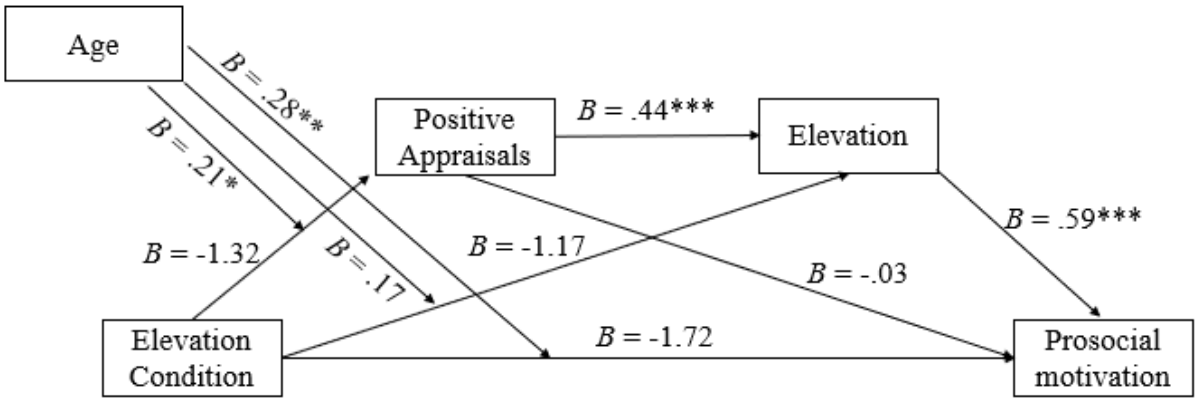

Figure 6. Study 4: Moderated sequential mediation between Elevation condition (X2), positive appraisals, feelings of elevation and prosocial motivation, with Age x Condition interactions. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

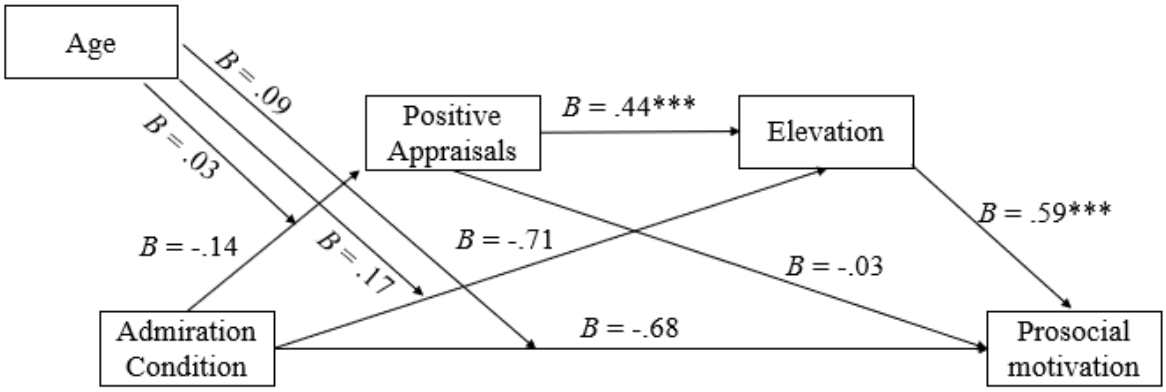

Figure 7. Study 4: Moderated sequential mediation between Admiration condition (X1), positive appraisals, feelings of elevation and prosocial motivation, with Age x Condition interactions. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

Condition > admiration appraisals > emotion words > self-improvement motivation (mean of the sports and club items).

Admiration appraisals. Age had a significant negative direct effect on admiration appraisals (*B* =-.26, *SE* = .10, *t* = -2.65, *p* =.009, *CI* -0.45/-0.07). Admiration appraisals had a significant direct effect on emotion words (*B* =.22, *SE* = .06, *t* = 3.65, *p* <.001, *CI* 0.10/0.34), and a non-significant direct effect on self-improvement motivation (*B* =-.02, *SE* = .07, *t* = -0.25, *p* =.806, *CI* -0.17/0.13).

The admiration-stimulus had a non-significant direct effect on admiration appraisals (*B* = -1.54, *SE* = 1.13, *t* = -1.37, *p* =.173, *CI* -3.77/0.68), and there was a significant Admiration x Age interaction (*B* =.30, *SE* = .14, *t* = 2.11, *p* =.036, *CI* 0.02/0.58). There was a significant direct effect of the admiration-stimulus on admiration appraisals for 8-year-olds (*B* =.86, *SE* = .19, *t* = 4.44, *p* <.001, *CI* 0.48/1.25), and 9-year-olds (*B* =1.16, *SE* = .26, *t* = 4.56, *p* <.001, *CI* 0.66/1.67), but not 6-year-olds.

The elevation-stimulus had a non-significant direct effect on admiration appraisals (*B* = -.07, *SE* = 1.06, *t* = -0.07, *p* =.946, *CI* -2.17/2.02), and there was a non-significant Elevation x Age interaction (*B* = -.02, *SE* = .13, *t* = -0.11, *p* =.911, *CI* -0.28/0.25).

Emotion words. Age had a non-significant direct effect on emotion words (*B* = -.13, *SE* = .08, *t* = -1.50, *p* =.135, *CI* -0.29/0.04). Emotion words had a significant direct effect on self-improvement motivation (*B* =.51, *SE* = .08, *t* = 6.12, *p* <.001, *CI* 0.35/0.68).

The admiration-stimulus had a non-significant direct effect on emotion words (*B* = -.44, *SE* = .98, *t* = -0.45, *p* =.657, *CI* -2.37/1.49), and there was a non-significant Admiration x Age interaction (*B* =.11, *SE* = .12, *t* = 0.92, *p* =.358, *CI* -0.13/0.36).

The elevation-stimulus had a non-significant direct effect on emotion words (*B* = -1.73, *SE* = .92, *t* = -1.89, *p* =.060, *CI* -3.54/0.07), and there was a significant Elevation x Age interaction (*B* =.26, *SE* = .12, *t* = 2.27, *p* =.024, *CI* 0.03/0.49).

There was a significant direct effect of the admiration-stimulus on emotion words for 8-year-olds (*B* =.48, *SE* = .18, *t* = 2.73, *p* =.007, *CI* 0.13/0.83), and 9-year-olds (*B* =.59, *SE* = .23, *t* = 2.57, *p* =.011, *CI* 0.14/1.05), but not 6-year-olds.

There was a significant direct effect of the elevation-stimulus on emotion words for 8-year-olds (*B* =.37, *SE* = .15, *t* = 2.44, *p* =.015, *CI* 0.07/0.67), and 9-year-olds (*B* =.63, *SE* = .20, *t* = 3.10, *p* =.002, *CI* 0.23/1.04), but not 6-year-olds.

Self-improvement motivation. Age had a non-significant negative direct effect on self-improvement motivation (*B* = -.05, *SE* = .10, *t* = -0.48, *p* =.635, *CI* -0.25/0.15).

The admiration-stimulus had a non-significant negative direct effect on self-improvement motivation (*B* = -.31, *SE* = 1.18, *t* = -0.27, *p* =.791, *CI* -2.64/2.01), and there was a non-significant Admiration x Age interaction (*B* =.05, *SE* = .15, *t* = 0.36, *p* =.722, *CI* -0.24/0.35).

The elevation-stimulus had a non-significant direct effect on self-improvement motivation (*B* =1.22, *SE* = 1.11, *t* = 1.10, *p* =.272, *CI* -0.97/3.42), and there was a non-significant Elevation x Age interaction (*B* = -.21, *SE* = .14, *t* = -1.47, *p* =.144, *CI* -0.49/0.08).

Significant indirect effects.[24] The full indirect pathway (i.e., admiration condition > admiration appraisals > emotion words > self-improvement motivation) was significant for 8-year-olds (*B* =.10, *SE* = .04, *CI* 0.03/0.20), and 9-year-olds (*B* =.13, *SE* = .06, *CI* 0.04/0.29).

There was also a significant indirect pathway from the admiration condition > emotion words > self-improvement motivation for 8-year-olds (*B* =.25, *SE* = .10, *CI* 0.06/0.45), and 9-year-olds (*B* =.30, *SE* = .13, *CI* 0.04/0.57).

The elevation condition > emotion words > self-improvement motivation pathway was also significant for 8-year-olds (*B* =.19, *SE* = .09, *CI* 0.03/0.38), and 9-year-olds (*B* =.32, *SE* = .13, *CI* 0.10/0.58).

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[24] **Reverse mediation; Condition > emotion words > admiration appraisals > self-improvement motivation.** The full indirect pathway was not significant. The indirect path from the admiration condition and the elevation condition via emotion words was significant for 8- and 9-year-olds.
We also conducted a sequential mediation analysis with the success motivation item. The full indirect effect was significant (i.e., admiration condition > admiration appraisals > emotion words > success motivation). We ran further mediation models with the alternative appraisals (e.g., positive appraisals replaced with admiration appraisals, and vice versa). See Appendix E for further details.

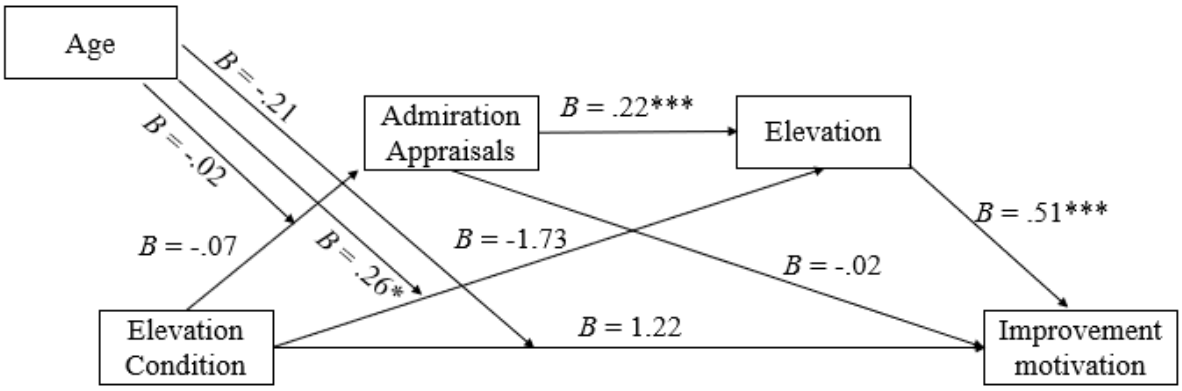

Figure 8. Study 4: Moderated sequential mediation between Elevation condition (X2), admiration appraisals, feelings of elevation and self-improvement motivation, with Age x Condition interactions. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

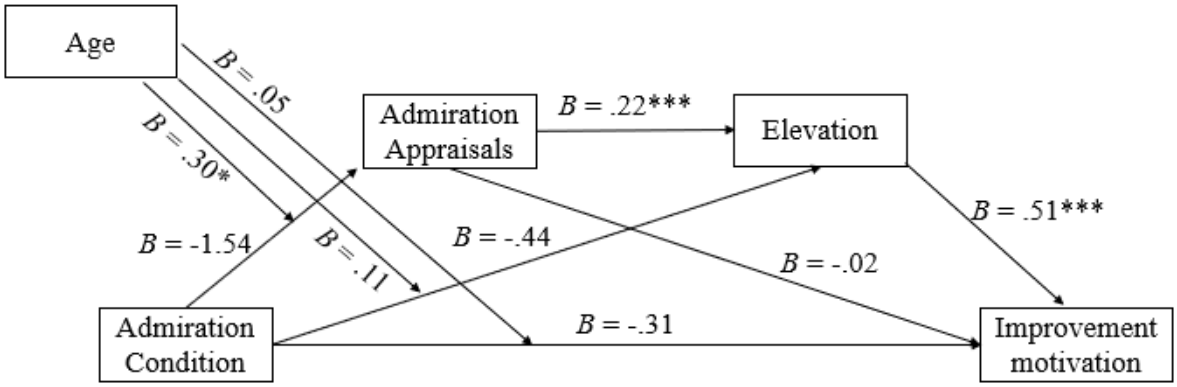

Figure 9. Study 4: Moderated sequential mediation between Admiration condition (X1), admiration appraisals, feelings of elevation and self-improvement motivation, with Age x Condition interactions. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

Discussion

Elevation and Admiration Stimuli

All of our hypotheses were supported with older children, but not younger children. The elevation stimulus increased positive appraisals, feelings of elevation and general prosocial motivation for children aged 7-11 years old. Also, the admiration stimulus increased admiration appraisals, feelings of elevation and self-improvement motivation for children aged 7-11 years old. Thus, both the *elevation condition hypothesis* (H2) and the

admiration condition hypothesis (H6) were supported in older children.

Our findings suggest that there are differences in how children aged 5-7 and 7-11 years old evaluate and respond to displays of morally and non-morally excellent behaviours. The simple effects showed that younger children reported no significant differences in positive appraisals, admiration appraisals, prosocial motivation and self-improvement motivation between conditions. However, simple effects with older children showed a significant main effect of condition on all of our dependent variables. Our results showed that from around 7-8 years old, children appraised the behaviour in the elevation and the admiration videos differently. That is, older children, but not younger children appraised the fundraising behaviour in the elevation video as more positive than the behaviour in both the admiration and the control videos. They also appraised the gymnast's behaviour in the admiration video as more admirable (e.g., skilful, talented) than the behaviour in the elevation and the control videos. Interestingly, across conditions, age correlated negatively with admiration appraisals – that is, younger children were more likely to report higher admiration appraisals scores than older children. Simple effects showed that younger children's admiration appraisal scores were significantly higher than older children's in the elevation condition, and marginally higher than older children's in the control condition. Taken together, this suggests that in general younger children may be more impressionable than older children, however, their evaluations of skills and talent are less nuanced.

Older children reported more prosocial motivation in the elevation condition compared to both the admiration and the control conditions, and more self-improvement motivation in the admiration condition compared to the elevation condition. There was no difference between the admiration and elevation conditions on the single "success motivation" item, which is in line with previous findings with adults.

Both the admiration and the elevation stimulus increased feelings of elevation. Our results show that across the sample, children reported feeling significantly more emotion words in the admiration condition compared to the control condition. Interestingly, although there was no significant Condition x Age interaction on emotion words, simple effects showed that there were differences between younger and older children's reported emotions. For younger children there was no significant main effect of condition, but, simple effects showed that emotion word scores were also higher in the admiration condition compared to both the control and the elevation conditions. On the other hand, for older children, there was a significant main effect of condition. Older children reported no difference in emotion words in the admiration compared to the elevation condition. However, they reported feeling more emotion words in both the admiration and the elevation conditions, compared to the control condition. This finding suggests that it may not be until middle childhood, that displays of morally-excellent behaviours elicit feelings of elevation. Also, in the elevation condition, older children's positive appraisal scores were significantly higher than younger children's scores. This suggests that older children evaluated the fundraising behaviour as more benevolent than younger children did, which may have strengthened their self-reported feelings of elevation in the elevation condition.

The Appraisal Tendency Framework

Positive appraisals and feelings of elevation. A moderated sequential mediation model showed that overall, positive appraisals had a significant direct effect on emotion words but not on prosocial motivation. Emotion words had a significant direct effect on prosocial motivation. There was a full indirect pathway (partial mediation); the effect of the elevation condition on prosocial motivation was mediated sequentially but not independently by positive appraisals and then feelings of elevation (i.e., elevation condition > positive

appraisals > feelings of elevation > prosocial motivation), in 8- and 9-year-olds. Thus, the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4) received support in older children. In the reverse mediation model, the indirect pathway via emotion words was significant for both conditions, in older children.

Admiration appraisals and feelings of elevation. A moderated sequential mediation model showed that overall, admiration appraisals had a significant direct effect on emotion words but not on self-improvement motivation. Emotion words had a significant direct effect on self-improvement motivation. The full indirect pathway (i.e., admiration condition > admiration appraisals > feelings of elevation > self-improvement motivation), and the indirect pathway via feelings of elevation, was significant in children aged 8- and 9-years-old. Thus, the *admiration appraisal hypothesis* (H7), and the *affective (admiration)-motivation hypothesis* (H8) received support in older children.[25]

These findings show that both of the full indirect pathways (i.e., elevation condition > positive appraisals > emotion words > prosocial motivation, and admiration condition > admiration appraisals > emotion words > self-improvement), were significant in 8- and 9-year-olds, but not 6-year-olds. Neither the reverse analyses (i.e., emotions and then appraisals), or the additional analyses swapping the positive appraisals and admiration appraisals, revealed a full indirect effect of either condition on subsequent motivation (see

[25] Moderated sequential mediation analyses using Model 85 in PROCESS do not show the total effect of the model, so for increased consistency between studies, and to cross reference findings in this study, we ran sequential mediation analyses (Model 6) with the older group of children (7-11 years old). These additional models showed that although there was a full indirect pathway, there was no total effect of either condition on self-improvement motivation, and so it cannot be described as a full mediation (See Appendix E for further details). Although past research has highlighted the need to focus on the relationship between the independent and dependent variables both before and after mediation testing, more recent research has suggested that attention should be shifted to the magnitude and significance of indirect effects when examining mediation models (see Rucker, Preacher, Tormala, & Petty, 2011, for a discussion).

Appendix E for further details). However, the indirect effect via emotion words remained significant in all of the additional models. This suggests that the affective experience of the emotions, rather than cognitive appraisals of the behaviour in the stimuli, may play a bigger role in the link between emotion-inducing stimuli and subsequent motivation in this age group.

Conclusion

These findings extend our findings from Study 1, 2 and 3, and show that at around 7-8 years old, children may begin to respond to appraise and respond to elevation- and admiration-inducing stimuli in a way that is similar to adults (e.g., Algoe & Haidt, 2009). Our findings also show that at this age, children begin to distinguish between the appraisals and motivations of morally excellent and non-morally excellent behaviours. Further research on the measurement and role of the cognitive and affective experience of these emotions, and how these may translate into subsequent action would be beneficial.

Study 5

Study 4 revealed that it may not be until around 7-8 years old that children appraise and respond to morally-excellent and non-morally excellent behaviours differently. Taking this into consideration, in this study, we tested the effects of elevation- and admiration-inducing stimuli on the cognitive, affective and motivational components, in a sample of children aged 9-11 years-old. We also included measures of intergroup prosocial motivation and behaviour.

Method

Participants and design. Two hundred and three (92 male, 109 female, 2 unreported) children aged 9-11 years (M = 10.12, SD = 0.72, in grades five and six) were recruited from a cluster of three ethnically diverse primary schools in South East England. Participants were

primarily from low-mid income families – approximately 58.4% of the pupils in the schools were eligible for free school meals. The data collection procedure and ethical considerations were identical to Study 4. Participants were randomly assigned to a control condition *(n* = 68), an admiration condition (*n* = 70) or an elevation condition (*n* = 65). *A priori* statistical power analysis (GPower 3.1.9.2) indicated the need for an approximate sample size *N* = 132 (3 groups of 44) in order to have 95% power to detect a medium to large effect size (*F* = 0.35) with error probability .05, in a one-way ANOVA with fixed effects.

Materials. The elevation-inducing video was the same video as in Study 4 (and all previous studies in this thesis). The admiration video was changed to a video of Jashaun Agosto, a highly skilled, 11-year-old basketball player (3.02-minutes). The video showed Jashaun performing various skills such as shooting, dribbling and running (the was more similar in content to the video of Michael Jordan that has commonly been used to elicit admiration in adults). During data collection, the control video from Study 4 became unavailable due to new European General Data Protection Regulation laws, so approximately half of the participants watched the video of a school cooking project, used in Study 4 (4.48-minutes, *n* = 35) and half of the participants watched a similar video of a children's cooking class (3.12-minutes, *n* = 34).[26]

Measures. All measures were adapted from previous studies with adults (e.g., Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015) and our previous work with children. The cognitive, affective and motivation components of elevation and admiration were measured using a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Age-appropriate visual cues were included and intergroup measures were counterbalanced. For each measure,

[26] ANOVA with both of the control videos revealed no significant differences in participant's positive or admiration appraisal scores.

Principal Component Analyses (PCA), extracting one factor were performed, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the remaining items.

Positive appraisals (cognitive component). Positive appraisals were measured using six items (also used in Study 3 – four items as in Study 4 (*kinder, nicer, better, should*), plus two additional items (*good, right*), α =.497.

Admiration appraisals (cognitive component). Admiration appraisals were measured using the same two items as in Study 4 (i.e., *skilful/ talented*). Spearman-Brown coefficient = .318, $p < .001$.

Emotion words (affective component).[27] Emotion words was measured by asking children how much they felt sixteen emotion words (α = .951), consisting of the eight emotion words, used in Study 2 and 4 (i.e., inspired, admired, grateful, happy, proud, good, impressed, amazing, α =.912), and eight additional words from children's qualitative responses in Study 1*, which were also used in Study 3 with young adolescents (i.e., excited, nice, moved, confident, joyful, motivated, uplifted and glad).

Subsequent motivation (motivational component). Subsequent motivation was measured using four items. Three items measured prosocial motivation (e.g., motivation to be a better person, to help others, and to be friends with the protagonist, α = .786). One item measured motivation to achieve success. As some studies have shown that both admiration and elevation can increase the desire to achieve success, and Study 4 showed no difference between the two conditions, we had no specific prediction for this item.

[27] Children were also asked to describe any physical sensations that they felt whilst watching the video, however only seven participants mentioned bodily sensations. See Table A9 in Appendix F for further details.

Intergroup preference. Children with noticeable physical disabilities were used as the stigmatized outgroup. First children read about a school for disabled children: "There are lots of children and lots of primary schools in London. Rosemary Green is a school for children with physical disabilities. Children with physical disabilities have the same thoughts and feelings as other children but they often have to use equipment like wheelchairs to move around." Then, intergroup preference was measured using two ingroup items and two outgroup items (e.g., How do you feel about your school/Rosemary Green school?, How important is your school/Rosemary Green school to you?). Spearman's rho was .615, $p < .001$ for the ingroup items, and .470, $p < .001$ for the outgroup items.

Intergroup prosocial motivation. Intergroup prosocial motivation was measured using 10 items adapted from Abrams et al. (2015). Participants were instructed to imagine that they were at a beach or a park and asked to think about whether they would help, comfort or share with another child. Five scenarios involved an outgroup member ($\alpha = .738$) and five involved an ingroup member ($\alpha = .834$).

Prosocial behaviour. At the beginning of the study, the researcher placed a pile of packets of pens at the front of the classroom. At the end of the study, children were presented with pictures of the packets of pens, and asked to divide them between the two schools. That is, they were asked to specify how many packets they wanted to go to their school (box labelled "My school") or "Rosemary Green School". Participants were presented with five trials - they were asked to allocate 1, 2, 3, 4 and 5 packets of pens. Their autonomy over the decision was made explicit. The number of packets of pens given to each school acted as our intergroup prosocial behaviour measure. At the end of the study, children were told that their schools would actually receive Amazon vouchers that could be used by the teachers to buy a variety of resources for the school. The allocations for each trial were measured separately

and then summed into a total prosocial behaviour score which acted as our intergroup prosocial behaviour measure.

Results

To examine H2, one-way ANOVAs were conducted with condition (i.e., elevation vs. admiration, admiration vs. control, elevation vs. control) as the independent variable and the cognitive, affective and motivational components as the dependent variables. We used planned contrasts, in line with previous findings (e.g., Algoe & Haidt, 2009), and previous studies in this thesis.

Positive Appraisals

There was a significant main effect of condition, F (2, 200) = 16.55 $p < .001$, η_p^2 = .142. Positive appraisal scores were significantly higher in the elevation condition (M = 3.76, SD = 0.58) compared to both the admiration (M = 3.23, SD = 0.56, $p < .001$, d = 0.93) and the control conditions (M = 3.37, SD = 0.51, $p < .001$, d = 0.71). There was no significant difference between the admiration and the control condition, p = .134.

Admiration Appraisals[28]

There was a significant main effect of condition, F (2, 141) = 11.92, $p < .001$, η_p^2 = .145. Admiration appraisal scores were significantly higher in the admiration condition (M = 3.64, SD = 0.55) compared to both the elevation (M = 2.79, SD = 1.39) $p < .001$, d = 0.80, and the control conditions (M = 2.85, SD = 1.23) $p < .001$, d = 0.83. There was no significant difference between the elevation and control condition, p = .787.

[28] Due to a procedural error, not all of the participants in the control and the elevation condition responded to the admiration appraisal items (in the control condition 48 out of 69 responded, in the elevation condition 27 out of 66 responded). An additional GLM showed no significant main effect of whether participants had responded to the admiration appraisals or not, on any of the dependent variables, ps > .325 (see additional analyses in Appendix F).

Emotion Words[29]

There was a significant main effect of condition, F (2, 200) = 6.13, p = .002, η_p^2 = .058. There was no significant difference in emotion word scores between the elevation (M = 3.59, SD = 1.12), and the admiration condition (M = 3.48, SD = 1.04), p = .551. Emotion words scores were significantly higher in the admiration compared to the control condition (M = 2.96, SD = 1.20), p = .007, d = 0.46. Emotion word scores were significantly higher in the elevation compared to the control condition, p = .001, d = 0.54.

Prosocial Motivation

There was a significant main effect of condition, F (2, 200) = 7.59, p = .001, η_p^2 = .071. Prosocial motivation scores were significantly higher in the elevation (M = 3.75, SD = 1.13) compared to both the admiration (M = 3.25, SD = 1.16), p = .014, d = 0.44, and the control conditions, p < .001, d = 0.66. There was no significant difference in prosocial motivation scores between the admiration compared to the control condition (M = 2.97, SD = 1.24), p = .155.

Success

The main effect of condition was non-significant, F (2, 200) = 2.43, p = .090. There

[29] ANOVAs with different variations of the scale (e.g., the 8-item scale from Study 2, the 2-item and 4-item scales (i.e., inspired, admired, impressed and amazing) adapted from Algoe & Haidt, 2009) showed the same results as the 16-item scale. For the 8-item scale, there was a significant main effect of condition, F (2, 200) = 7.88, p = .001, η_p^2 = .073. There was no significant difference in emotion word scores between the elevation (M = 3.75, SD = 1.08), and the admiration condition (M = 3.56, SD = 1.01), p = .300. Emotion words scores were significantly higher in the admiration compared to the control condition (M = 3.03, SD = 1.15), p = .005, d = 0.64. Emotion word scores were significantly higher in the elevation compared to the control condition, p = .001, d = 0.49. We used the 8-item scale in the subsequent mediation models.
ANOVA with the *gratitude* item showed a significant main effect of condition. Gratitude was significantly higher in the elevation condition compared to the admiration and the control conditions. It was also higher in the admiration compared to the control condition (see Appendix F for further details).

was no significant difference in success scores between the elevation (M = 3.68, SD = 1.47) and the admiration condition (M = 3.60, SD = 1.14), p = .761. There was no significant difference between the admiration and the control condition (M = 3.16, SD = 1.56), p = .080. Success scores were significantly higher in the elevation compared to the control condition, p = .044, d = 0.34.

Intergroup Preference

To check that children showed evaluative ingroup preference (H1a), and whether there were any differences in intergroup preference between conditions (H1b) we conducted a repeated measures ANOVA on the group preference measure with condition as a between-subjects factor and group as a within-subjects factor. There was a significant main effect of group. Children preferred the ingroup (M = 3.92, SD = 1.10), compared to the outgroup (M = 3.54, SD = 1.15); F (1,195) = 15.30, p <.001, η_p^2 =.07. There was no significant difference in group preference between conditions, F (2,195) = 1.97, p =.142, η_p^2 =.02. The interaction between condition and group was non-significant; F (2,195) = 0.76, p =.468, η_p^2 =.008. This confirms that the intergroup context was meaningful and supports the *condition-intergroup preference hypothesis* (H1a and H1b).

Intergroup Prosocial Motivation

To examine the effect of condition on outgroup prosocial motivation (H2), we conducted a repeated measures ANOVA on the group motivation measure with condition as a between-subjects factor and group as a within-subjects factor. There was a non-significant main effect of group, a non-significant main effect of condition and a non-significant interaction. There were no significant simple effects.

Intergroup Prosocial Behaviour

To examine the effect of condition on outgroup prosocial behaviour (H2), we

conducted a repeated measures ANOVA on the group behaviour measure with condition as a between-subjects factor and group as a within-subjects factor. There was a non-significant main effect of group, a non-significant main effect of condition and a non-significant interaction. There were no significant simple effects.

Correlations

Table 10

S*tudy 5: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables*

	M	*SD*	1	2	3	4	5	6	7
1. Positive appraisals	3.44	0.59	–	-.15	.19**	.32***	.14*	-.11	.12
2. Admiration appraisals	3.22	1.07		–	.01	-.04	-.02	.02	-.03
3. Emotion words	3.34	1.15			–	.69***	.57***	-.05	.12
4. Prosocial motivation	3.32	1.22				–	.56***	-.06	.11
5. Success	3.48	1.47					–	-.11	.06
6. Age (years)	10.12	0.72						–	.01
7. Gender	1.46	.50							–

Note. The pattern and significance of bivariate *Pearson* correlations was similar even when gender (male was coded as 0, female was coded as 1) was included as a covariate.
*p <.05, **p <.01, ***p <.001 (2-tailed).

Sequential Mediation

To address H3 and H4, we examined whether the impact of elevation condition on general prosocial motivation is sequentially mediated through positive appraisals and then feelings of elevation. We conducted mediation analyses, using Hayes' 2017 PROCESS V3.4

macro, model 6, 5000 bootstraps. Condition was entered as a multi-categorical variable (X1 was coded as admiration condition vs. both the control and elevation conditions, X2 was coded as elevation condition vs. both control and admiration conditions).

Condition > positive appraisals > emotion words > prosocial motivation.[30] The admiration-stimulus had a non-significant direct effect on positive appraisals (*B* = -.14, *SE* = .09, *t* = -1.51, *p* =.134, *CI* -0.33/0.04), a significant direct effect on emotion words (*B* =.57, *SE* = .19, *t* = 2.99, *p* =.003, *CI* 0.19/0.94) and a non-significant direct effect on prosocial motivation (*B* = -.02, *SE* = .15, *t* =- 0.14, *p* =.891, *CI* -0.32/0.28).

The elevation-stimulus had a significant positive direct effect on positive appraisals (*B* =.39, *SE* = .10, *t* = 4.07, *p* <.001, *CI* 0.20/0.58), a significant direct effect on emotion words (*B* =.50, *SE* = .20, t = 2.52, *p* =.013, *CI* 0.11/0.90), and a non-significant direct effect on prosocial motivation (*B* =.23, *SE* = .16, *t* = 1.44, *p* =.151, *CI* -0.08/0.54).

Positive appraisals had a significant direct effect on emotion words (*B* =.34, *SE* = .14, *t* = 2.38, *p* =.018, *CI* 0.06/0.62), and a significant direct effect on prosocial motivation (*B* =.33, *SE* = .11, *t* = 2.98, *p* =.003, *CI* 0.11/0.55). Emotion words had a significant direct effect on prosocial motivation (*B* =.68, *SE* = .05, *t* = 12.44, *p* <.001, *CI* 0.57/0.79).

For the admiration-stimulus, the total effect of the admiration-inducing video on prosocial motivation was non-significant, (*B* =.29, *SE* = .20, *t* = 1.43, *p* =.155, *CI* -0.11/0.68) and so was the direct effect (see above). The indirect effect via positive appraisals was non-significant, the indirect effect via emotion words was significant (*B* =.38, *SE* = .13, *CI*

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[30] **Reverse mediation; Condition > emotion words > positive appraisals > prosocial motivation**. For the admiration condition (X1) there was a non-significant total effect. For the elevation condition the total, direct and indirect effects, remained the same.
Alternative appraisals; Condition > admiration appraisals > emotion words > prosocial motivation. The admiration condition (X1) and elevation condition (X2) had a non-significant total effect. There were no significant indirect effects.
See Appendix F for further details.

0.14/0.66) and the indirect effect via positive appraisals and then emotion words was non-significant.

For the elevation-stimulus, the significant total effect of the elevation-inducing video on prosocial motivation, (*B* =.79, *SE* = .20, *t* = 3.86, *p* <.001, *CI* 0.39/1.19, R^2 = .07) was reduced to non-significant in the direct model (see above). The indirect effect via positive appraisals was significant (*B* =.13, *SE* = .06, *CI* 0.03/0.27), the indirect effect via emotion words was significant (*B* =.34, *SE* = .15, *CI* 0.05/0.64), and the indirect effect via positive appraisals and then emotion words also significant (*B* =.09, *SE* = .05, *CI* 0.01/0.20, R^2 = .51, *p* <.001).

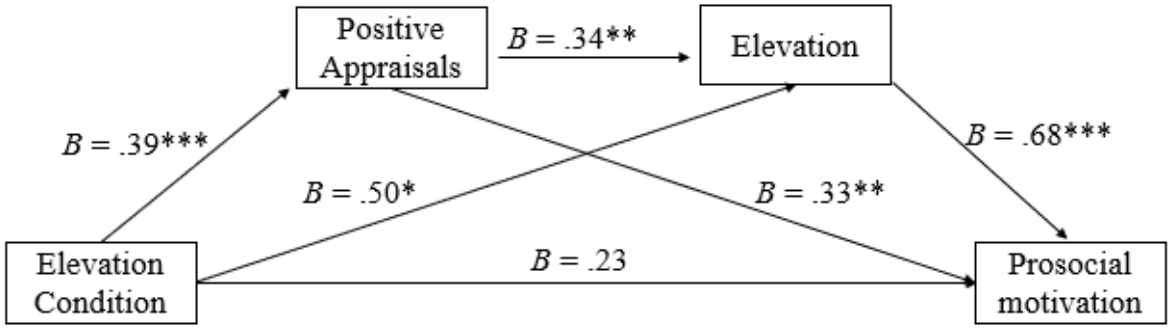

Figure 10. Study 5: Sequential mediation between Elevation condition (X2), positive appraisals, feelings of elevation and prosocial motivation. *B* = Unstandardised *B* coefficients, **p* <.05, ***p* <.01, ****p* <.001.

Condition > admiration appraisals > emotion words > success motivation.

To address H7 and H8, we examined whether the impact of admiration condition on success motivation is sequentially mediated through admiration appraisals and then feelings of elevation.

The admiration-stimulus had a significant direct effect on admiration appraisals (*B* =.79, *SE* = .19, *t* = 4.21, *p* <.001, *CI* 0.42/1.16), a non-significant direct effect on emotion words (*B* =.39, *SE* = .22, *t* = 1.76, *p* =.080, *CI* -0.05/0.84) and a non-significant direct effect on success motivation (*B* =.11, *SE* = .25, *t* = 0.42, *p* =.672, *CI* -0.39/0.60).

The elevation-stimulus had a non-significant positive direct effect on admiration appraisals (*B* = -.07, *SE* = .24, *t* =- 0.27, *p* =.787, *CI* -0.55/0.42), a non-significant direct effect on emotion words (*B* =.40, *SE* = .27, *t* = 1.48, *p* =.142, *CI* -0.14/0.95), and a non-significant direct effect on success motivation (*B* =.22, *SE* = .31, *t* = 0.71, *p* =.479, *CI* -0.39/0.83).

Admiration appraisals had a non-significant direct effect on emotion words (*B* = -.03, *SE* = .09, *t* = -0.31, *p* =.759, *CI* -0.22/0.16), and a non-significant direct effect on success motivation (*B* = -.04, *SE* = .11, *t* = -0.38, *p* =.708, *CI* -0.25/0.17). Emotion words had a significant direct effect on success motivation (*B* =.68, *SE* = .09, *t* = 7.26, *p* <.001, *CI* 0.50/0.87).

For the admiration-stimulus, the total effect of the admiration-inducing video on success motivation was non-significant, (*B* =.33, *SE* = .27, *t* = 1.20, *p* =.231, *CI* -0.21/0.87, R^2 = .02), the direct effect was non-significant (see above). There were no significant indirect effects.

For the elevation-stimulus, the total effect of the elevation-inducing video on success motivation was non-significant (*B* =.50, *SE* = .36, *t* = 1.40, *p* =.163, *CI* -0.20/1.20), the direct effect was non-significant (see above). There were no significant indirect effects.[31]

[31] There was no indirect effect of emotion words on success motivation so we did not run a reverse mediation model. However, we did run a model replacing admiration appraisals with positive appraisals. **Condition > positive appraisals > emotion words > success motivation.** For the admiration (X1), the total effect was non-significant but the indirect effect via emotion words was significant. For the elevation condition (X2), the total effect of the elevation-inducing video on success motivation was significant, the direct effect was non-significant. The indirect effect via appraisals was non-significant, the indirect effect via emotion words was significant and the indirect effect via appraisals and then emotion words was significant. The pathway from the elevation condition to success motivation was fully mediated sequentially by positive appraisals and then emotion words, and independently by emotion words. See Appendix F for further details.

Discussion

Elevation and Admiration Stimuli

The elevation stimulus increased positive appraisals, feelings of elevation and general prosocial motivation, which supports the *elevation condition hypothesis* (H2). Also, the admiration stimulus increased admiration appraisals and feelings of elevation which supports the *admiration condition hypothesis* (H6).

Children appraised the fundraising behaviour in the elevation video as more positive than the behaviour in both the admiration and the control videos, and the basketball skills in the admiration video as being more admirable (e.g., skilful, talented) than the behaviour in the other videos. Children reported feeling more emotion words in both the admiration and the elevation conditions compared to the control condition, however there was no difference in reported emotions between the admiration and the elevation condition. Children reported increased prosocial motivation in the elevation condition compared to both the admiration and the control conditions. Similar to Study 4, there was no significant difference between the elevation and the admiration condition on success motivation.

Sequential Mediations

As there were no significant differences between conditions on intergroup prosociality, we focussed on the general prosocial motivation variable to test the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4).

Condition > positive appraisals > emotion words > prosocial motivation. The effect of the elevation condition on prosocial motivation was fully mediated by positive appraisals and emotion words, sequentially and independently. This supports the the *positive appraisal hypothesis* (H3) and the *affective (elevation)-motivation hypothesis* (H4). However, the reverse mediation model (swapping positive appraisals and emotion words) also showed a

full mediation individually and sequentially.

Condition > admiration appraisals > emotion words > success motivation. Admiration appraisals did not have a significant effect on emotion words or success motivation. Emotion words had a significant direct effect on success motivation. There were no significant indirect effects, so, the *admiration appraisal hypothesis* (H7) was not supported and the *affective (admiration)-motivation hypothesis* (H8) was partially supported with the success motivation item. An additional mediation model, swapping admiration appraisals with positive appraisals showed a full indirect effect (i.e., elevation condition > positive appraisals > emotion words > success motivation); the effect of elevation condition on success motivation was fully mediated sequentially by positive appraisals and then emotion words, and independently by emotion words.

Intergroup Prosociality

Participants preferred the ingroup, across conditions (which supports the *condition-intergroup preference hypothesis,* H1a and H1b). The experimental manipulation affected general prosocial motivation, but there was no main effect of condition on intergroup prosocial motivation or behaviour (i.e., it did not produce differences in ingroup and outgroup prosociality). So, we were unable to run a mediation model to test the effect of condition on outgroup prosociality (or the link between outgroup motivation and outgroup behaviour i.e., the *outgroup prosociality hypothesis,* H5).

Specifically, the elevation condition, did not have a significant effect on participants' motivation to help, comfort, share with the children in their school, or disabled children from "Rosemary Green school", compared to the control or the admiration conditions. Prosocial behaviour was measured by asking participants to decide whether to give packets of pens to their school or to Rosemary Green school. Condition did not have a significant effect on

whether participants allocated the pens to either school, across any of the trials. As in Study 3, perhaps participants did not interpret the behavioural task as being prosocial or moral. Future studies could explore the effect of the degree of self-sacrifice involved in the task, and the status of the groups involved (See General Discussion, Chapter 6, for further discussion).

General Discussion

Appraisals

Our results showed that the elevation video increased positive appraisals, and the admiration video increased admiration appraisals in children aged 7-11 and 9-11 years old. In Study 4, 5-7-year-olds appraised the behaviour in all three videos as equally positive, talented and skilful. However, Study 4 and 5 showed that 7-11-year-olds, appraised the act of fundraising as more benevolent than cooking and sporting activities, but they also acknowledged that more skills are needed to perform sports like gymnastics and basketball. These findings suggest that between the ages of 5-11 years-old, children's appraisals of both morally excellent and non-morally excellent behaviours become more nuanced.

Emotion Words

The post hoc tests from Study 4 show that across the sample, children aged 5-11 felt more emotions in response to the admiration video compared to the control video. Simple effects showed that younger children also felt more emotions in response to the admiration video compared to the elevation video. On the other hand, 7-11-year-olds felt increased emotions in response to the elevation video compared to the control video, but not between the admiration and the elevation video. This pattern of results with 7-11-years-olds was mirrored with 9-11-year-olds in Study 5.

Algoe and Haidt (2009) found that one emotion word factor (i.e., admiration, respect, awe, inspiration and being moved) was associated with admiration and another factor (i.e.,

gratitude and love) was distinctive of elevation, and so we ran additional one-way ANOVAs with the *admiration*, *inspiration* and *gratitude* items (See Appendices E and F for further details on these analyses).

Inspiration and Admiration. The results with this 2-item scale were similar to the 8-item emotion word scale. In Study 4, there was a significant interaction between age and condition that showed that younger children felt increased admiration and inspiration in response to the admiration video compared to the elevation video. Older children felt increased admiration and inspiration in response to both the admiration and the elevation video compared to the control video. These findings were mirrored in Study 5, with 9-11-year-olds. This suggests that younger children may be particularly impressed by non-morally excellent behaviours, such as explicit displays of sporting talent. However, children may begin to acknowledge and appreciate morally excellent behaviours, such as other-orientated fundraising behaviour, during middle childhood. This is in line with past research that shows that children's empathy, perspective taking, understanding of social issues and morals, and their experience of moral emotions become more advanced over the course of middle childhood (Ongley, Nola, & Malti, 2014; Weller & Lagattuta, 2013).

Gratitude. In Study 4, both younger and older children reported increased feelings of gratitude in the elevation condition compared to the control. However, 7-11-year-olds and 9-11-year-olds also felt increased feelings of gratitude in response to the elevation video compared to the admiration video. Interestingly, in Study 5, 9-11-year-olds also felt increased feelings of gratitude in response to the admiration video compared to the control video. These findings partially support Algoe and Haidt's (2009) warmth factor and show that feelings of gratitude may be a key component in the affective experience of elevation during middle childhood. However, follow up questions would help to uncover what may have driven

children's feelings of gratitude in the admiration condition.

Prosocial Motivation

Children aged 7-11 and 9-11 years old reported increased prosocial motivation after watching the elevation video, compared to both the admiration and the control videos. This suggests that from about 8 years old, children's motivational response to fundraising behaviour may be similar to that of adults. These findings are in line with the general increase in prosocial behaviours that has been documented over the course of development (see Eisenberg & Fabes, 1998).

ATF. In Study 4 and 5, the full indirect effect was significant. In Study 4, the effect of the elevation condition on prosocial motivation was partially mediated sequentially by positive appraisals and then emotion words, in older children. In addition, for reverse/alternative models (e.g., when appraisals and emotions were swapped around or when positive appraisals were replaced with admiration appraisals), there was also an indirect effect via emotion words in the elevation condition.

In Study 5, the effect of the elevation condition on prosocial motivation was fully mediated, by positive appraisals and emotion words, sequentially and independently. The model replacing elevation with admiration appraisals showed no significant indirect effects.

Across both studies, there was an overall effect of the elevation condition on positive appraisals and emotion words which is consistent with the ATF. In the theorised models, positive appraisals had a significant direct effect on emotion words, and in the reverse models, emotion words had a significant direct effect on positive appraisals. Together our findings show that in the elevation condition, benevolence appraisals and emotions, but not admiration appraisals and then emotions were related to prosocial motivation. Thus, the

relationship between positive appraisals and feelings of elevation may not be as sequentially fixed in this age-group as it is in adulthood.

Self-improvement

In Study 4, self-improvement motivation was measured with the motivation to *play a sport* and *try a new club*. Simple effects showed that there was no difference in younger children's self-improvement motivation across condition, however, older children's scores were significantly higher in the admiration condition compared to the elevation condition.

ATF. In Study 4, the indirect pathway (i.e., admiration condition > admiration appraisals > emotion words > self-improvement motivation) and the pathway via just emotion words was significant. When emotion words and admiration appraisals were switched around, and when admiration appraisals were replaced with positive appraisals, there was an indirect effect of the admiration condition via emotion words. However, these models did not show a full mediation.

Success

In both studies, there was no main effect of condition on the desire to achieve success, and no significant difference between the elevation and admiration conditions. In Study 5, simple effects showed that success motivation was higher in the elevation condition compared to the control condition. Sequential mediation models showed a significant indirect effect; the effect of the elevation condition on success motivation, was fully mediated by positive appraisals and then emotion words, and via just emotion words.

In Study 4, simple effects showed that for older children the motivation was higher in the admiration compared to the control condition. Mediation models showed a full indirect pathway; the effect of the admiration condition on success motivation was fully mediated sequentially by admiration appraisals and then emotion words. There was also a full indirect

pathway from the elevation condition > positive appraisals > emotion words > success motivation, however, the total effect of the elevation condition was non-significant, so it cannot be considered a full mediation. Taken together, these findings suggest that both admiration and elevation may increase the desire to achieve success in this age group.

Limitations

The previous qualitative work we did on elevation, and the research on adults suggest that love is a key word in the experience of elevation, however the word "love" was not included in the emotion word scales in these studies. Furthermore, it may also be beneficial to conduct qualitative work on how children describe the experience of admiration, in their own words. In line with this, additional open-ended questions on what children were motivated to do after viewing the videos would also be beneficial. Thus, in future studies, the self-improvement measurement could include items that describe successes that are both specifically related to the content in the videos, and that cover broader areas.

Chapter Summary

The findings from these studies suggest that over the course of middle childhood and early adolescence, children evaluate and respond to morally excellent and non-morally excellent behaviours differently. The affective experience of the emotions of elevation and admiration may have some similarities (e.g., both may elicit feelings of inspiration) however, there are some differences in the cognitive and motivational experiences. Our results suggest that from about 8 years old, elevation can be elicited by displays of morally-excellent behaviour, and it promotes prosocial motivation, whereas admiration can be elicited by non-moral excellent behaviour and may promote more of a desire to engage in an activity of interest.

Chapter 5

Engagement with Moral Beauty – a Longitudinal Intervention

Study 6, 7 and 8

Chapter Overview

In this series of three studies, we examine the impact of a longitudinal moral beauty intervention. Specifically, we tested the impact of repeatedly recalling acts of moral beauty (e.g., acts of kindness or goodness) over either a 4-week or 12-week period, in children (Study 6), adolescents (Study 7) and undergraduate students (Study 8). Feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation were measured before and after the intervention. For Study 6, there was no increase in any of the variables after the intervention. For Study 7 and 8, participants reported significantly more feelings of elevation after the intervention, however, changes on the other variables varied between studies.

Introduction

Elevation and Engagement with Moral Beauty

A number of studies have shown that elevation, elicited via video clips, stories and recall of acts of moral beauty, can have many positive effects. Diessner, Iyer, Smith and Haidt (2013) suggested that repeatedly witnessing and reflecting on acts of moral beauty may increase the frequency of feelings of elevation and prosociality. In line with this, Erickson et al. (2017) found that brief and regular elevation induction via video or recall, increased daily feelings of elevation, positive affect and prosocial responses.

Diessner, Parsons, Solom, Frost and Davidson, 2008, (p. 141) stated that: “Elevation is an emotional state; engagement with moral beauty, on the other hand, is the disposition to experience elevation, a trait for which there are individual differences”. Moreover, Diessner

and colleagues suggested that the dispositional trait of engagement with moral beauty (i.e., the extent to which people are affected by acts of moral beauty) can be developed over time. Diessner, Rust, Solom, Frost and Parsons (2006) found that reflecting on acts of moral beauty once a week over the course of 12 weeks led to increases in students self-reported engagement with moral beauty, and in trait hope.

Moreover, Diessner et al. (2013) conducted an extensive study that explored the psychological concepts relevant to engagement with moral beauty and in turn, the experience of elevation. Over 5000 participants completed various self-report measures including the Engagement with Beauty Scale (EBS; Diessner et al., 2008), which measured emotional and cognitive engagement with artistic, natural, and moral beauty and the Schwartz Value Survey (Schwartz, 1992) which measured values such as benevolence and universalism. They also completed the Moral Identity Scale (MIS; Aquino & Reed, 2002), which consisted of the moral action subscale (symbolisation) and the moral self-concept subscale (internalisation) that measure moral self-relevance. Diessner et al. (2013) concluded that "the story of engagement with moral beauty may be considered a story of love and connectedness; it is uniquely predictive of caring for, being empathic of, loving, and valuing benevolence toward others" (p. 139). In turn, those high in these traits may be more likely to experience (more intense) moral elevation.

Moral identity. Moral identity is described as the extent to which being a moral person is central to one's identity (Hardy & Carlo, 2011). In Diessner's (2013) study, engagement with moral beauty correlated highly with how much participants viewed themselves as moral actors (symbolisation) and whether they considered moral traits to be central to their self-image (internalisation). Aquino, Mcferran and Laven (2012) found that participants with high moral identity were more likely to recall acts of moral beauty, to

experience more intense elevation, and to report engaging in more prosocial behaviour. Moral identity has also been positively linked to outgroup concern, and negatively linked to antisocial behaviours in adolescents (Hardy, Bean, & Olsen, 2015; Hardy, Bhattacharjee, Reed, & Aquino, 2010). In line with these findings, it has been suggested that the ideals and characteristics that we regard as important, may be the most cognitively accessible to us (Lapsley & Narvaez, 2004). Moreover, observing acts of moral beauty may increase cognitive access to one's moral self-schemas and in turn, the centrality of one's moral identity (Aquino, McFerran, & Laven, 2011; Diessner et al., 2013). Thus, Diessner et al. (2013, p. 154) suggested that "an important direction for future research would be to examine whether repeated exposure to acts of moral beauty, or other means of increasing students' trait of engaging with moral beauty (viz. Diessner et al., 2006) would increase students' level of moral identity centrality (or vice versa; would helping students increase their moral identity centrality lead to deeper and more frequent engagement with moral beauty)".

Self-efficacy. Self-efficacy has been defined as the ability to effectively direct one's actions to achieve one's goals (Bandura, 1993). Personal experiences and vicarious experiences often influence feelings of self-efficacy (Schunk & Meece, 2005). People with high self-efficacy are more likely to work towards their goals as they feel confident that they will be able to solve problems that they encounter and to achieve their goals. Relatedly, Patrick, Bodine, Gibbs and Basinger (2018) found that self-efficacy beliefs and moral identity predicted some types of prosocial behaviours in adolescents. Taken together, we were interested in investigating the associations between engaging with moral beauty, elevation, moral identity, self-efficacy and prosocial motivation.

The Current Research

In the following studies we aimed to measure the impact of a 12-week (Study 6, with 9-11-year-olds) or a 4-week (Study 7, with 11-12-year-olds and Study 8 with undergraduate students) moral beauty intervention on feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation. We predicted that there would be an increase on all of the measures after the intervention. We were also interested in examining the correlations between the variables. Children spend a high proportion of their time in schools, and school settings can be crucial for applied interventions that foster the development of other-orientated, moral behaviour (see Malti, Chaparro, Zuffiano & Colasante, 2016), and so we designed our moral beauty intervention with this in mind. Our hypothesis was:

Hypothesis 9 (H9, Repeated elevation hypothesis). Repeated engagement with moral beauty will positively affect feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation (Study 6, 7 and 8).

Study 6 (9-11-year-olds)

Methods

Participants and design. Children were recruited from an ethnically diverse primary school in South East England. Written parental consent and individual verbal assent were obtained before testing began. Research was conducted in accordance with the British Psychological Society's ethical guidelines. We used a within-subjects design to measure the impact of a moral beauty intervention at Time 1 (preceding the intervention) and Time 2 (after engaging with the intervention weekly for 12 weeks).

Time 1. Seventy-one children aged 8-11 years (M = 9.34, SD = 0.97, 37 boys, 31 girls, demographic data missing for three participants) in year 4 (n= 25), year 5 (n= 21), and

year 6 (*n*= 25), completed the Time 1 questionnaire in December 2018 (during the last week of term before the Christmas break). Children completed the questionnaire on an online survey platform (Qualtrics), in their school computer room, under the supervision of the researcher and the class teacher.

Intervention. Two weeks after they completed the questionnaire (after the Christmas holidays), participants in years 5 and 6 started the intervention – the moral beauty log[32]. In the first moral beauty session, children watched a "Kindness Boomerang" video (5-minutes) which showed people of different demographics engaging in various prosocial behaviours such as helping to carry heavy bags, picking up dropped items and comforting people who were hurt or upset. Children were asked to discuss what they had seen in the video and to think about similar behaviours that they had seen themselves.

Next, they were given the moral beauty log worksheet (a pen and paper task), which consisted of an outline of a hand and the following instructions: "Please take some time to think about the good and kind things that you have seen other people do this week. Please use the space below to describe one of the things that you are thinking about, or you can label the fingers [of the hand outline]: 'who', 'did what', 'where', 'when', 'why' and then write down the key things you remember on each finger" (see Appendix G for further details). The moral beauty log took approximately 15 minutes to complete.

Teachers were trained to deliver the intervention session weekly in their classrooms over a 12-week period. Every week, children would fill out the moral beauty log and a few children were asked to share their accounts with the rest of the class. At the end of the session, they were asked to pay special attention to the kind and good things that they saw

[32] Due to school timetabling, children in Year 4 were unable to take part in the intervention or complete the time 2 questionnaire.

others do over the next week. Year 5 completed the beauty logs on Thursdays and Year 6 on Fridays. The class teachers were in regular contact with the researcher over the course of the intervention.

Time 2. Forty-two children aged 9-11 years (M = 10.21, SD = 0.73, 20 boys, 19 girls, demographic data missing for three participants) in year 5 (n= 15), and year 6 (n= 27), completed the questionnaire again in April 2019 (due to school timetabling, children in year 6 completed the Time 2 questionnaire one week after the beauty log last session, however, children in year 5 completed the Time 2 questionnaire three weeks after their last session). We were able to match up Time 1 and Time 2 data for 36 participants in years 5 and 6.

Measures

The questionnaire included measures of feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation (see Appendix G for full scales). All items were measured on a 5-point Likert scale from 1 (*not at all*) to 5 (*very much*) unless otherwise stated. Principal Component Analyses were performed, extracting one factor, and items with a factor loading of less than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the items.

Feelings of elevation. Participants were asked to think back to the "last couple of weeks" (Time 1) or "the last couple of weeks when you were thinking about the **good and kind** things that you saw people doing" (Time 2) and to report how much they had felt 18 emotion words (i.e., inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, love, hope, α = .947).

Engagement with moral beauty. Engagement with moral beauty was measured with five items (e.g., It's easy for me to think about kind and caring things that people do; When I

see people doing kind things, it makes me feel emotional, α = .734) adapted from Diessner et al. (2008).

Self-efficacy. Self-efficacy was measured using one item (i.e., I feel like I can make a difference).

Moral identity. Moral identity was measured with the Moral Self-Relevance Measure developed for 10-16-year-olds, by Pattrick and Gibbs (2008). Children in this study completed the Likert scale portion of the instrument only. Participants were presented with an image of concentric circles and asked to imagine that they were in the middle of the circles. Then, they were asked to think about how important 16 traits were to them on a Likert scale from 1 (*not important to me*) to 5 (*extremely important*). Eight of the traits were considered moral (e.g., sincere or genuine, considerate or courteous, understanding or sympathetic, honest or truthful, helpful or kind, fair or just, careful or cautious, generous or giving). We computed a mean score for these eight items.

Prosocial motivation (to socially include peers). Children were asked to imagine that two new children joined their school, and asked whether they would "play with the new peer at break time, sit next to them at lunch time and invite them to their birthday party" on a Likert scale from 1 (*definitely not*) to 5 (*definitely would*). One of the children was described as being competent and engaged in classwork (i.e., fast at doing classwork and asks lots of interesting questions, α = .783) and the other child was described as less competent (i.e., needs a lot of time and support to do classwork, α = .828).

Results

We ran paired samples *t*-tests to analyse differences in scores at Time 1 and Time 2.

Feelings of Elevation

There was no significant difference between the mean emotion word scores at Time 1 (M = 3.57, SD = 1.05) and Time 2 (M = 3.35, SD = 1.19), t (35) = 1.12, p =.269.

Engagement with Moral Beauty

Engagement with moral beauty scores were significantly higher at Time 1 (M = 3.68, SD = 0.81) than Time 2 (M = 3.41, SD = 0.98), t (35) = 2.09, p =.044.

Self-efficacy

There was no significant difference between self-efficacy scores at Time 1 (M = 4.17, SD = 1.12) and Time 2 (M = 3.77, SD = 1.40), t (35) = 1.12, p =.095.

Moral Identity

There was no significant difference between moral identity scores at Time 1 (M = 3.96, SD = 0.92) and Time 2 (M = 3.81, SD = 1.01), t (35) = 1.17, p =.250.

Prosocial Motivation

Social inclusion of high competence peer. There was no significant difference between scores at Time 1 (M = 3.93, SD = 0.86) and Time 2 (M = 3.64, SD = 0.75), t (35) = 1.72, p =.095.

Social inclusion of low competence peer. There was no significant difference between scores at Time 1 (M = 3.94, SD = 0.83) and Time 2 (M = 3.64, SD = 0.75), t (35) = 1.99, p =.054.

Gender and Age

We split the sample by gender/year group and re-ran the paired *t*-tests with all of the mean variables. No variables were significantly higher at Time 2 for girls or boys. No

variables were significantly higher at Time 2 for children in year 5 or year 6.

Correlations

Bivariate *Pearson* correlations were conducted with all of the computed Time 2 variables. All variables were significantly correlated with each other.

Table 11

S*tudy 6: Means, Standard Deviations and Pearson Correlation Coefficients Among Variables* at *Time 2*

	M	*SD*	2	3	4	5	6	7
1. Elevation	3.35	1.19	.73***	.75***	.56***	.67***	-.11	-.17
2. Engagement with moral beauty	3.41	0.91	–	.59***	.53***	.47**	-.29	-.11
3. Self-efficacy	3.77	0.85		–	.60***	.39*	-.07	-.18
4. Moral Identity Likert	3.81	1.01			–	.43**	-.04	-.22
5. Prosocial Motivation total	3.64	0.76				–	.02	.43
6. Age (years)	10.29	0.72					–	.32
7. Gender	1.57	.50						–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Discussion

None of the scores on the measures were significantly higher after the intervention. Moreover, mean scores for all variables were above the midscale point at Time 1, and children's scores on the engagement with moral beauty measure was significantly higher at Time 1 than at Time 2. These findings suggest that children in this study were quite engaged with acts of moral beauty before starting the moral beauty log. Furthermore, people who are

receptive to moral beauty, may also be receptive to moral ugliness (Diessner et al., 2013), so completing the moral beauty log may have increased children's reflection on behaviours in general (e.g., good and bad). This may have had a counteractive effect on some of our predictions, and offers an explanation as to why some of the scores on our measures did not increase after the intervention.

In addition, there may have been adaptation effects from repeatedly recalling and reflecting on acts of kindness over a 12-week period. The theory of hedonic adaptation proposes that repeated exposure to situations that enhance our positive affect, may elicit an initial boost in positive emotions and feelings of wellbeing, however, the effects may lessen over time, as we adapt to the "new normal" (Lyubomirsky, Sheldon, & Schkade, 2005). To explore adaptation effects, future studies could measure dependent variables such as feelings of elevation and prosocial motivation at different time points throughout the intervention (e.g., immediately after the weekly log is completed as well as longitudinally). Furthermore, the timing of the intervention in the school year may have affected our results – children completed the Time 1 questionnaire in the last week of school before the Christmas holidays and so may have been feeling more general positive affect than usual during that time, and they completed the Time 2 questionnaire whilst revising for their SAT exams, which is a more stressful period of the school year. Also, children in year 6 completed the Time 2 questionnaire one week after they had completed the 12-week beauty log, however, due to school time tabling, children in year 5 completed the Time 2 questionnaire 3 weeks after their last beauty log session, so effects may have lessened by that time.

Study 7 (11-12-year-olds)

In Study 7 we improved the intervention design and tested it with a slightly older age group. We shortened the length of the intervention to 4 weeks, and we ensured that the Time

1 questionnaire was completed 1 week before starting, and that the Time 2 questionnaire was completed 1 week after the last beauty log.

Methods

Participants and design. Children in year 7 (aged 11-12-years-old) were recruited from a girl's secondary school in South East England. Written parental consent and individual verbal assent were obtained before testing began. Research was conducted in accordance with the British Psychological Society's ethical guidelines.

One hundred and sixty-seven participants completed the questionnaire at Time 1. One hundred and seventy-two participants completed the questionnaire are Time 2. We were able to match up the Time 1 and Time 2 questionnaires for 150 participants (M= 11.35, SD= 0.48).

Procedure. Participants completed Time 1 questionnaire in their classrooms under the supervision of the class teacher. After completing the Time 1 questionnaire, participants watched the "Kindness Boomerang" video (as in Study 6) which showed people engaging in kind and helpful behaviours. After watching the video, they were asked to pay special attention to the *good* and *kind* things that they saw others do over the next week. One week later, participants completed their first moral beauty log which was identical to Study 6 (see Appendix G for further details). Teachers were trained to deliver the session weekly in their classrooms, once a week for 4 weeks. The Time 2 questionnaire was completed a week after the last moral beauty log.

Measures. The questionnaire measured the same dependent variables as in Study 6 (i.e., feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation). All items were measured on a 5-point Likert scale from 1 (*not at all*) to 5 (*very much*), unless otherwise stated (see Appendix G for full scales). Principal Component Analyses were performed, extracting one factor, and items with a factor loading of less

than .32 were excluded (Costello & Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the items.

Feelings of elevation. Elevation was measured using the same 18 emotion words in Study 6 (i.e., inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, love, hope, α = .935). Participants were asked to think back to the past week and to report how much they felt any of the emotion words.

***Engagement with moral beauty*.** Engagement with moral beauty was measured using six items (e.g., I notice kind things, α = .856).

Self-efficacy. Self-efficacy was measured with four items: one item from Study 6 (i.e., I feel like I can make a difference) and three items adapted from Schwarzer and Jerusalem (1995, i.e., I can always manage to solve difficult problems if I try hard enough; It is easy for me to stick to my aims and accomplish my goals; I can usually handle whatever comes my way, α = .805).

***Moral identity*.** Moral identity was measured with the Moral Self-Relevance Measure developed by Pattrick & Gibbs (2008). Participants in this study completed both parts of the measure (Likert scale and *Pick 8* task). Participants were presented with an image of concentric circles and asked to imagine that they were in the middle of the circles. Then they were asked to think about how important 16 traits were to them, eight of which were considered moral characteristics (e.g., sincere or genuine, considerate or courteous, understanding or sympathetic, honest or truthful, helpful or kind, fair or just, careful or cautious, generous or giving) on a Likert scale from 1 (*not important to me*) to 5 (*extremely important*). Then, they were shown the same 32 traits and asked to "Pick the 8 qualities that you think are MOST extremely important to you as a person."

We used Pattrick and Gibbs's (2008) scoring instruction to compute a total moral identity score that combined the mean score for the eight moral items on the Likert scale and the *Pick 8* scores. In line with Study 6, we also computed a score of just the moral items from the Likert scale portion of the measurement.

Prosocial motivation (to socially include peers). Children were asked to imagine that two new children joined their school and to report the likelihood that they would "hang out with them, sit next to them, share their notes with them and help them find their classes" on a Likert scale from 1 (*definitely not*) to 5 (*definitely would*). One of the children was described as being competent and engaged in classwork (i.e., fast at doing classwork and asks lots of interesting questions, $\alpha = .787$) and the other child was described as less competent (i.e., needs a lot of time and support to do classwork, $\alpha = .726$).

Results

Feelings of Elevation[33]

Scores were significantly higher at Time 2 ($M = 3.38$, $SD = 0.91$) than at Time 1 ($M = 3.22$, $SD = 0.84$), $t\ (145) = 2.07$, $p = .040$.

Engagement with Moral Beauty

Scores were significantly higher at Time 1 ($M = 3.68$, $SD = 0.76$) than at Time 2 ($M = 3.53$, $SD = 0.83$), $t\ (148) = 3.52$, $p = .001$.

Self-efficacy

There was no significant difference in scores at Time 1 ($M = 3.31$, $SD = 0.88$) and Time 2 ($M = 3.25$, $SD = 0.93$), $t\ (145) = 1.08$, $p = .282$.

Moral Identity

[33] Scores on the 8-item elevation scale from Study 2 were also significantly higher at time 2 ($M = 3.32$, $SD = 0.86$) than at Time 1 ($M = 3.17$, $SD = 0.86$), $t\ (145) = 2.57$, $p = .011$.

Scores on the Likert scale were significantly higher at Time 1 (M = 3.92, SD = 0.63) than at Time 2 (M = 3.83, SD = 0.69), t (147) = 2.08, p = .039.

There was no significant difference on total scores (Likert and *Pick 8*) between Time 1 (M = 21.04, SD = 4.42) and Time 2 (M = 21.14, SD = 4.95), t (132) = 0.29, p = .776.

Prosocial Motivation

Social inclusion of high competence peer. There was no difference between Time 1 (M = 3.81 SD = 0.67) and Time 2 (M = 3.73, SD = 0.97), t (149) = 1.09, p = .279.

Social inclusion of low competence peer. Scores were significantly higher at Time 1 (M = 4.06, SD = 0.58) than at Time 2 (M = 3.91, SD = 0.62), t (149) = 3.32, p = .001.

Correlations

Bivariate *Pearson* correlations were conducted with all of the computed Time 2 variables. Every variable had a positive significant correlation with every other variable.

Table 12

S*tudy 7: Means, Standard Deviations and Bivariate Pearson Correlation Coefficients Among Variables* at *Time 2*

	M	*SD*	2	3	4	5
1. Elevation	3.35	0.91	.64***	.75***	.29**	.35***
2. Engagement with moral beauty	3.53	0.83	–	.65***	.49***	.52**
3. Self-efficacy	3.26	0.93		–	.30***	.33***
4. Moral identity total	20.96	4.95			–	.46***
5. Prosocial motivation total	3.82	0.70				–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Discussion

Variables Higher at Time 2

Feelings of elevation. Feelings of elevation were significantly higher at Time 2 compared to at Time 1. This supports our hypothesis and previous studies that show that witnessing or recalling acts of moral beauty increases feelings of elevation.

Variables with No Significant Difference

None of the other variables were significantly higher at Time 2 compared to at Time 1. There was no significant difference between Time 1 and Time 2 on the self-efficacy variable. These scores were high (i.e., above the mid-point of the scale) before and after the 4-week moral beauty intervention.

Variables Higher at Time 1

Scores on the engagement with moral beauty were higher at Time 1 compared to at Time 2. These findings suggest that children were engaged with the behaviours around them before starting the moral beauty log. As mentioned above (in the Study 6 discussion), engaging in the moral beauty task may have increased children's active reflection on behaviours in general (e.g., good and bad) which may have had a counteractive effect on some of our variables.

Mixed Findings

Social inclusion. Children reported that they would be significantly more likely to socially include a peer with low academic competence at Time 1, compared to at Time 2. However, there was no significant difference on scores for the high competence peer.

Moral identity. Moral identity Likert scores were also significantly higher at Time 1 compared to at Time 2. However, there was no significant difference on the total moral identity score, in fact, the mean score was 21 (out of 32) before and after the intervention.

Conclusion

An important finding from this study is that feelings of elevation were significantly higher after the 4-week moral beauty intervention. This suggests that recalling acts of moral beauty over an extended period of time increases feelings of elevation. In addition, the Time 2 questionnaire was completed a week after the last moral beauty session, which suggests that these positive feelings of elevation can be sustained for up to a week. Our findings also have practical implications for education, as the intervention was carried out by school teachers in a school setting.

All means were above the mid-point at both Time 1 and Time 2. Apart from feelings of elevation, mean scores on all the other variables either stayed constant or decreased from Time 1 to Time 2. As mentioned in the previous discussion section (Study 6), this suggests that children were quite engaged with acts of moral beauty before starting the moral beauty log, and that there may have also been adaptation effects from repeatedly recalling and reflecting on acts of kindness over a 4-week period.

Study 8 (Undergraduate Students)

In Study 8 we made some changes to the intervention design, and tested it with undergraduate students. This study took place in a lab setting over a 4-week period. The Time 1 questionnaire and the first moral beauty log were completed in the first session. We also included an additional reflection task, whereby students had the opportunity to reflect on the positive behaviour that they had described in a more creative way. The Time 2 questionnaire was completed immediately after the last (fourth) moral beauty log.

Methods

Participants. Thirty-eight undergraduates from the University of Kent, were recruited via the Research Participation Scheme and received academic course credit in return for

taking part in the study. The majority of participants were female (1 participant was male) aged 18-31 years-old (M = 19.53, SD = 2.10).

Design and procedure. Participants were asked to book four lab sessions, three to seven days apart. In the first session, participants completed the Time 1 questionnaire, then they watched the "Kindness Boomerang" video (as in Study 6 and 7), and then they completed the moral beauty task. First, participants were given a definition of moral beauty: "People behave in different ways – sometimes people show impressive acts of loyalty, kindness, generosity, helpfulness, forgiveness, sacrifice for others or service to others. We refer to these things as acts of moral beauty." Then, participants were asked to: "think about the good things that you have seen or heard other people do in the past week" and to "describe one of the things…e.g., who, did what, where, when and why?" Next, participants were presented with a blank box and asked to express how the event made them feel in any way that they wished to do so "e.g., writing (story, prose, poetry) drawing, doodling... etc."

In the second and third sessions participants completed the moral beauty log again. In the fourth session, participants completed the moral beauty log and then they completed the Time 2 questionnaire. All sessions were conducted in a lab setting. The Time 1 and 2 questionnaires were conducted on computers using an online survey platform (Qualtrics). The moral beauty log was a paper and pen task – participants were provided with colour pencils, pencils, erasers and pens in every session.

Measures

We measured feelings of elevation, engagement with moral beauty, self-efficacy, moral identity and prosocial motivation. Principal Component Analyses were performed, extracting one factor, and items with a factor loading of less than .32 were excluded (Costello

& Osborne, 2005). We ran tests of scale reliability (α), and variables were computed with the mean scores of the items.

Feelings of elevation. Feelings of elevation were measured with the same 18 items from Study 6 and 7 (i.e., inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, love, hope, α = .939). At both Time 1 and Time 2, participants were asked to "Think back to the past week, to what extent have you felt the emotions…" on a Likert scale from 1 (*not at all*) to 5 (*extremely*).

Engagement with moral beauty. Engagement with moral beauty was measured using six items (e.g., I notice kind things, α = .843) on a Likert scale from 1 (*not at all*) to 5 (*very much*).

Self-efficacy. Self-efficacy was measured using 11 items adapted from Schwarzer and Jerusalem (1995, e.g., I can always manage to solve difficult problems if I try hard enough; It is easy for me to stick to my aims and accomplish my goals; I can usually handle whatever comes my way, α = .910) on a Likert scale from 1 (*not at all*) to 5 (*very much*).

Moral identity. Moral identity was measured with the Moral Self-Relevance Measure developed by Pattrick & Gibbs (2008). Participants in this study completed both parts of the measure (Likert scale and *Pick 8* task, as in Study 7). Participants were asked to think about how important 16 traits were to them, eight of which were considered moral characteristics (e.g., sincere or genuine, considerate or courteous, understanding or sympathetic, honest or truthful, helpful or kind, fair or just, careful or cautious, generous or giving) on a Likert scale from 1 (*not important to me*) to 5 (*extremely important*). Then they were shown the same 32 traits and asked to "Pick the 8 qualities that you think are MOST extremely important to you as a person."

As in Study 7, we used Pattrick and Gibbs's (2008) scoring instruction to compute a

total moral identity score mean score, and a separate mean score for the eight moral items on the Likert scale portion.

Prosocial motivation (to socially include peers). Participants were asked to imagine that four new students joined the university. Participants were asked to report how likely they would be to "befriend them, sit beside them in a lecture, share your notes with them and support them getting to class" on a Likert scale from from 1 (*not at all*) to 7 (*very much*).

One student was described as being highly competent (i.e., This student appears to understand lectures relatively well, is known to ask interesting questions, often has well thought out answers to difficult questions, $\alpha = .713$), one student was described as less competent (i.e., This student seems to have trouble understanding others and communicating, $\alpha = .798$), one student was described as having a physical disability (i.e., This student has a physical disability and needs a wheelchair, $\alpha = .776$) and one student was described as being socially popular (i.e., This student dresses well and appears to be well liked by your other peers, $\alpha = .779$).

Results

Feelings of Elevation

Feelings of elevation were significantly higher at Time 2 ($M = 3.37$, $SD = 0.70$) than at Time 1 ($M = 3.18$, $SD = 0.70$), $t\ (37) = 2.28$, $p = .029$[34].

Engagement with Moral Beauty

There was no significant difference between engagement with moral beauty scores at Time 1 ($M = 3.68$, $SD = 0.68$) and Time 2 ($M = 3.69$, $SD = 0.62$), $t\ (37) = 0.055$, $p = .957$.

[34] Scores on the 8-item elevation scale from Study 2 were significantly higher at time 2 ($M = 3.36$, $SD = 0.71$) than at Time 1 ($M = 3.15$, $SD = 0.70$), $t\ (37) = 2.51$, $p = .016$.

Self-efficacy

Self-efficacy was significantly higher at Time 2 (*M* = 3.59, *SD* = 0.54) compared to at Time 1 (*M* = 3.42, *SD* = 0.61), *t* (37) = 2.44, *p* = .019.

Moral Identity

Moral identity Likert scores were significantly higher at Time 2 (*M* = 4.18, *SD* = 0.53) than at Time 1 (*M* = 4.04, *SD* = 0.56), *t* (37) = 2.68, *p* = .011. The total moral identity (Likert and *Pick 8*) scores were also significantly higher at Time 2 (*M* = 24.26, *SD* = 4.04) than at Time 1 (*M* = 22.91, *SD* = 3.86), *t* (37) = 2.95, *p* = .006.

Prosocial Motivation to Socially Include Peers

High competence peer. Scores were significantly higher at Time 2 (*M* = 5.30, *SD* = 1.15) than at Time 1 (*M* = 4.68, *SD* = 1.02), *t* (37) = 2.86, *p* = .007.

Low competence peer. Scores were significantly higher at Time 2 (*M* = 5.46, *SD* = 1.14) than at Time 1 (*M* = 4.93, *SD* = 0.97), *t* (37) = 3.07, *p* = .004.

Socially popular peer. Scores were significantly higher at Time 2 (*M* = 5.07, *SD* = 1.18) than at Time 1 (*M* = 4.42, *SD* = 1.06), *t* (37) = 2.99, *p* = .005.

Physically disabled peer. Scores were significantly higher at Time 2 (*M* = 5.51, *SD* = 1.02) than at Time 1 (*M* = 5.04, *SD* = 0.90), *t* (37) = 3.53, *p* = .001.

Correlations

Bivariate *Pearson* correlations were conducted with all of the computed variables at Time 2. Elevation and engagement with moral beauty had a significant positive relationship with all variables.

Table 13

S*tudy 8: Means, Standard Deviations and Pearson Correlation Coefficients Among Variables* at *Time 2*

	M	*SD*	2	3	4	5	6
1. Elevation	3.37	0.70	.62***	.64***	.35*	.60***	.06
2. Engagement with moral beauty	3.69	0.62	–	.52**	.40*	.67***	.07
3. Self-efficacy	3.59	0.53		–	.07	.55***	.10
4.Moral Identity total	24.26	4.04			–	.26	-.02
5. Prosocial Motivation total	5.34	1.03				–	-.05
6. Age (years)	19.53	2.10					–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Table 14

S*tudy 8: Bivariate Pearson Correlation Coefficients Among Key Variables* at *Time 1 and Time 2*

	2	3	4
1. Elevation Time 1	.75***	.40*	.51**
2. Elevation Time 2	–	.21	.60***
3. Prosocial Motivation Time 1		–	.42**
4. Prosocial Motivation Time 2			–

*p <.05, **p <.01, ***p <.001 (2-tailed).

Cross-Lagged Path Analyses

We examined correlations between feelings of elevation and prosocial motivation at Time 1 and Time 2 (see Table 14) and then we ran a cross-lagged path analysis in AMOS (Computer Program, Arbuckle, 2018) to check whether the results were consistent with the idea that elevation was influencing prosocial motivation. The findings showed that feelings of elevation at Time 1, significantly predicted feelings of elevation at Time 2 (B =.79, SE = .12, p <.001) and prosocial motivation at Time 2 (B =.61, SE = .22, p =.005). Prosocial motivation at Time 1, did not predict feelings of elevation at Time 2 (B =-0.09, SE = .10, p =.394) or prosocial motivation at Time 2 (B =.32, SE = .18, p =.083). This was a fully saturated model, the chi-square was non-significant (X^2 = 0.00).

We ran a subsequent model that included just the pathway from elevation at Time 1 to prosocial motivation Time 2. Feelings of elevation at Time 1, significantly predicted feelings of elevation at Time 2 (B =.75, SE = .11, p <.001) and prosocial motivation at Time 2 (B =.57, SE = .22, p =.008). Prosocial motivation at Time 1, predicted prosocial motivation at Time 2 (B =.38, SE = .17, p =.020). The chi-square was non-significant (X^2 = 0.72, p =.397) which suggests that this model fits the data.

Another model including just the pathway from prosocial motivation Time 1 showed that it predicted prosocial motivation at Time 2 (B =.52, SE = .19, p =.005) but did not predict feelings of elevation at Time 2 (B =-0.04, SE = .10, p =.708). Feelings of elevation at Time 1 significantly predicted feelings of elevation at Time 2 (B =.65, SE = .11, p <.001). The chi-square was significant (X^2= 7.02, p =.008) which suggests that the model did not fit the data well. See Table 15 for model fit indices and Appendix G for details on these additional analyses.

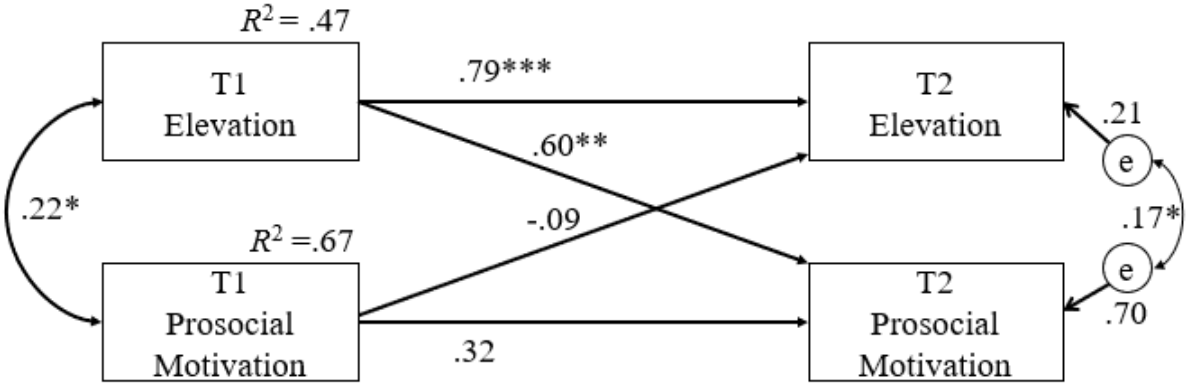

Figure 11. Study 8: Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2 (fully saturated model). Pathways show unstandardised *B* coefficients, *p <.05, **p <.01, ***p <.001.

Table 15

S*tudy 8: Model fit output for Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2*

	X^2	CFI	RMR
1. Fully saturated model	0.00	1.00	0.00
2. Including E1 to PSM2 pathway	0.72	1.00	0.02
2. Including PSM1 to E2 pathway	7.02**	0.89	0.10

*p <.05, **p <.01, ***p <.001

Discussion

Feelings of Elevation

Feelings of elevation were significantly higher at Time 2 compared to at Time 1. This supports our hypothesis and previous studies that show that witnessing or recalling acts of moral beauty increases feelings of elevation.

Moral Identity

Moral identity scores on both the Likert scale and the Likert and *Pick 8* task

combined, were significantly higher at Time 2 than Time 1. This supports the proposed relationship between moral identity and engagement with moral beauty (e.g., Aquino, Mcferran, & Laven, 2011). Perhaps, recalling acts of moral beauty increased participants cognitive access to their own moral self-schemas and in turn, their moral identity centrality (Aquino et al., 2011; Diessner et al., 2013).

Self-efficacy

Self-efficacy scores were significantly higher at Time 2 than at Time 1. Perhaps reflecting on others behaviours and noting the effect that even small actions had on others (i.e., both the recipient and the observer), empowered students to be more confident in their own behaviours and actions.

Prosocial Motivation to Socially Include Peers

Intentions to socially include a new peer (all four targets) were significantly higher at Time 2 than at Time 1. This supports previous studies that show that witnessing or recalling acts of moral beauty increases prosocial intentions.

Engagement with Moral Beauty

There was no significant difference at Time 1 and Time 2 for engagement with moral beauty. All means scores, including engagement with moral beauty, were above the mid-point at both Time 1 and Time 2. This suggests that participants had high levels of engagement with moral beauty, and this remained constant over the course of the moral beauty intervention.

Cross-Lagged Path Analyses

The cross-lagged path analyses were consistent with the idea that elevation was influencing prosocial motivation. The findings showed that feelings of elevation at Time 1, significantly predicted feelings of elevation at Time 2 and prosocial motivation at Time 2,

rather than the other way around (e.g., prosocial motivation > elevation). This is in line with what we hypothesised and found in previous chapters. It is also in line with the ATF, that posits that emotions lead to an action tendency (moral elevation > prosociality, in this case). However, a major limitation is that this analysis was conducted with a small sample size.

Conclusion

There is a growing body of research that supports the relationship between acts of moral beauty, feelings of elevation and prosociality. However, our findings suggest that it would be interesting to further explore the role of moral identity and self-efficacy, as potential moderators or mediators.

The Time 2 questionnaire was taken immediately after the last moral beauty session and so the longevity of feelings of elevation, prosociality, self-efficacy and increased moral identity is unknown. As with Study 6 and 7, it would be beneficial to incorporate measurement at additional time points throughout the intervention (e.g., weekly, as well as longitudinally).

General Discussion

The aim of these studies was to increase engagement with moral beauty via a weekly moral beauty log and to examine the subsequent effects.

In line with our hypothesis, the moral beauty intervention increased feelings of elevation in Study 7 (aged 11-12) and Study 8 (university students). This supports previous findings that show that witnessing or recalling acts of moral beauty elicit feelings of elevation. Furthermore, participants in Study 7 (11-12-year-olds), completed the Time 2 questionnaire one week after completing the fourth moral beauty log, which shows potential longitudinal effects of observing and reflecting on morally beautiful behaviour on feelings of elevation.

For Study 8 (university students), feelings of elevation, moral identity, self-efficacy and prosocial motivation scores were also higher after the moral beauty intervention. These findings support our predictions. In addition, the cross-lagged path analyses suggested that feelings of elevation predicted prosocial motivation at Time 2 (rather than vice versa e.g., prosocial motivation > feelings of elevation), which is consistent with the idea that feelings of elevation influence prosocial motivation. However, in Study 6 and 7, additional analyses with the same models showed that this pathway was not supported (see Appendix G for further details on these analyses). In line with previous studies, this suggests that the relationship between engagement with moral beauty, elevation and prosocial motivation may change over the course of development.

Future studies could investigate whether self-efficacy and/or moral identity beliefs moderate the link between exposure to, and engagement with moral beauty, feelings of elevation and prosocial motivation (Patrick, Bodine, Gibbs & Basinger, 2018). In addition, there may be other individual difference variables (e.g., values, perspective taking, empathy) that moderate the effects of elevation-inducing stimuli on emotions and prosociality.

In Study 8, participants engaged in an additional task in which they were asked to express how the event that they recalled had made them feel, which may have strengthened the effects of engaging with and reflecting on acts of moral beauty. Also, Study 8 was the only study that was conducted in a lab-setting, so attention may have been maximised in this setting.

Moreover, regularly looking out for, and reflecting on the good deeds of others, can often evoke some kind of social comparison. Monin (2007) suggested that viewing others engage in morally good behaviours may elicit an upward social comparison which can lead to either elevation, or resentment and feelings of threat, which may actually cause the observer

to be less likely to affirm their moral values. Alternatively, having the opportunity to self-affirm one's self-worth (e.g., by reflecting on one's positive traits) may motivate them to act in line with their moral beliefs (e.g., Crocker, Niiya & Mischowski, 2008). Schnall and Roper (2011) found that participants who watched an elevation-inducing video and then completed a self-affirmation task (i.e., they reflected on one of their most personally valued prosocial qualities), were more likely to engage in subsequent helping behaviour, than participants who did not self-affirm and those whose self-affirmation accounts were essentially selfish in nature. Thus, the additional creative expression task in Study 8, may have had a positive effect on subsequent prosocial motivation. Future study designs could also include weekly self-affirmation tasks to maximise the positive and prosocial effects of viewing morally beautiful behaviour.

Interestingly, in Study 6 and Study 7, scores on the engagement with moral beauty variable were significantly higher before the intervention, and there was no difference before and after in Study 8. These findings suggest that participants in these studies were already quite engaged with acts of moral beauty. One major limitation of these studies is the gender of participants; nearly all of the participants in Study 7 and 8 were female. Past studies have shown that women report higher engagement with moral, natural and artistic beauty than men (Diessner, Iyer, Smith & Haidt, 2013, Study 1), which may partially explain the high engagement with moral beauty scores that were reported even before the moral beauty intervention began. Some studies have shown that women are more susceptible to experiencing elevation, and often report feeling higher levels of elevation than men (Algoe & Haidt, 2009; Freeman et al., 2009; Landis et al., 2009).

In addition, people who are receptive to acts of moral beauty, may also be receptive to moral ugliness (Diessner et al., 2013). Accordingly, the moral beauty task required

participants to actively look out for and reflect upon others' good and kind behaviours, however, this may have increased their receptiveness for all behaviours (e.g., good and bad) which may have had a counteractive effect on some of our predictions in Study 6 and 7.

In Study 8, the moral beauty log was completed more frequently (the majority of participants completed the log 3-5 days apart) than in Study 6 and 7. Also, the Time 2 questionnaire was completed immediately after the fourth moral beauty log was completed. Future studies could measure dependent variables such as feelings of elevation and prosocial motivation at different time points throughout the intervention (e.g., immediately after the log is completed as well as longitudinally). This would enable us to explore potential habituation and adaptation effects from repeatedly recalling acts of goodness or kindness (Lyubomirsky, Sheldon, & Schkade, 2005). Another major limitation of this set of studies is the lack of a comparison condition, and so we cannot be completely certain about what exactly is driving the effects that we found. For example, is reflecting on acts of kindness/prosocial behaviour key to our findings, or would taking the time to take stock of, and reflect on behaviours in general also lead to similar results? Thus, future study designs could include additional conditions, for example those in which participants reflect on different types of behaviours (e.g., neutral, non-morally excellent), and measure elevation and prosociality over time. Future studies could also employ and compare additional tasks that may motivate participants to hone in on their positive emotions and actively engage in prosocial behaviour (e.g., via self-expression, self-affirmation or arts activities). Another exciting and important avenue for this research is to adapt it for use online, which is especially relevant in the current climate (e.g., many communities currently have socially distancing measures in place due to Covid-19). For example, participants could look for inspiration online as well as in person.

Although we had acceptable power for the majority of the studies in this thesis, the

sample size in Study 6 and 8 were particularly small. So, it would be good to examine effects of the intervention with a larger sample size, different age groups and with more equal gender distributions. To conclude, these findings suggest that repeatedly engaging in moral beauty reflection may have a positive effect on feelings of elevation, and may also encourage prosocial motivation, in teenagers and young adults, however, the findings open up various avenues for future research in the area.

Chapter 6

General discussion

Overview of Findings, Theoretical and Practical Implications, Limitations, Future Research Directions and Conclusion

The aim of this thesis was to explore the effect of moral elevation on prosociality in childhood and adolescence. Although people have an intuitive motivation to help others (Crockett et al., 2014), and prosocial behaviours are displayed early in development, there are often a number of factors that influence the likelihood of prosocial action. So, there is an apparent need to develop and test interventions that encourage people to care about others, and to engage in prosocial acts, especially towards those who belong to different groups. A growing body of research has demonstrated the prosocial effects of elevation in adults, in a range of settings (e.g., Schnall, Roper, & Fessler, 2010; Van de Vyver & Abrams, 2015), however, to our knowledge, until now, no research has examined the prosocial effects of elevation in childhood. The current thesis addressed this gap in the literature.

This thesis drew on important theoretical frameworks (e.g., theories of moral emotions, emotion development, and the appraisal tendency framework) to suggest, and demonstrate, that elevation can be elicited and measured, and that it is a promising way to promote prosociality, in children and adolescents. These are important new findings for social and emotional developmental research, and can provide the basis for new studies and approaches to promoting prosociality in different settings.

First, we discuss the findings from Studies 1-5 (All studies in Chapters 2, 3 and 4), that empirically tested the impacts of elevation on (intergroup) prosocial motivation and behaviour, largely in reference to the ATF. Then, we discuss Studies 6, 7 and 8 (Chapter 5) that examined the impact of a longitudinal engagement with moral beauty intervention on elevation and prosocial motivation.

Study 1, 2, 3, 4 and 5

Overview of Findings

The Effect of the Elevation and Admiration Stimuli. According to Haidt's (2003b) theory of moral emotions, elevation is instigated by an appraisal of another person's moral virtue and the action tendency involves benevolence-orientated motivation, such as wanting to emulate the exemplar and become a better person, which manifests as prosocial action (Van de Vyver & Abrams, 2015). We aimed to measure the effect of an elevation-inducing video on the theorised outcomes, and to examine the sequence that they might follow (e.g., in reference to the ATF). We also compared elevation to admiration – a similar emotion that is elicited by an appraisal of another's outstanding achievement, and that motivates self-improvement (Schindler et al., 2015).

The *elevation condition hypothesis* (H2), stated that the elevation stimulus would positively affect positive appraisals, feelings of elevation general prosocial motivation (Studies 1-5, in Chapters 2-4), outgroup prosocial motivation and outgroup prosocial behaviour (Study 2 in Chapter 2, Study 3 in Chapter 3 and Study 5 in Chapter 4). The *admiration condition hypothesis* (H6), stated that the admiration stimulus would positively affect admiration appraisals, feelings of elevation (referred to interchangeably as emotion words in our studies), and self-improvement motivation (Study 4 and 5 in Chapter 4).

Across Studies 1, 2 and 3, children aged 5-11 and 13-14 years old, evaluated the behaviour in the elevation-inducing video as more positive than the behaviour in the control video, and they reported feeling significantly stronger feelings of elevation and general prosocial motivation. In Study 2, children also reported increased prosocial motivation and behaviour towards outgroup members, which is a particularly difficult threshold to cross. Specifically, across the sample, children indicated an ingroup preference, however, and most importantly, outgroup prosocial motivation and behaviour was significantly higher in the

elevation condition compared to in the control condition.

Study 4 showed that there may be differences in how younger (5-7 years old) and older children (over 7 years old) evaluate and respond to elevation- and admiration-inducing stimuli (i.e., displays of morally excellent and non-morally excellent behaviour). For 5-7-year-olds, there were no significant main effects of condition on any of the cognitive appraisal, affective or motivation variables, however, there were differences between conditions for 7-11-year-olds. Children aged 7-11 (Study 4) and 9-11 years old (Study 5) evaluated the behaviour in the elevation video as more positive than the behaviour in the admiration and control videos, and they evaluated the behaviour in the admiration video as more skilful than the behaviour in the elevation and control videos. Children reported increased feelings of elevation in both the elevation and the admiration conditions compared to the control, however, there was no difference between the elevation and admiration condition. Furthermore, the subsequent motivations differed. Children who viewed the elevation video reported significantly higher prosocial motivation compared to those who viewed the admiration and control videos. Also, in Study 4, children who viewed the admiration video were more motivated *to do a physical activity* and *to join a new club*, compared to those who viewed the elevation video. There was no difference on the *desire to achieve success* between the elevation and admiration conditions, which is in line with findings with adults.

Our findings support the *elevation condition hypothesis* (H2), and the *admiration condition hypothesis* (H6), and show that from around 7-8 years old, children positively appraise (i.e., acknowledge and approve), and emotionally respond to morally beautiful (i.e., third-party fundraising) behaviour in a way that is similar to adults. At this age, children also acknowledge the skill and talent required to excel in some sporting activities, and emotionally

respond to displays of sporting excellence. These developmental findings extend the current research on the effects of elevating and admiration-inducing stimuli and the components of the emotions. Building on from this, we wanted to explore how the cognitive, affective and motivational components of elevation and admiration were linked together in children and adolescents.

Testing the Appraisal Tendency Framework

The ATF (Horberg, Oveis, & Keltner, 2011) hypothesises that emotions are instigated by cognitive appraisals, that are linked to specific themes and guide subsequent action tendencies. Hypotheses 3, 4, 5, 7 and 8, examined each part of the elevation and admiration pathway theorised by the ATF. Specifically, we used sequential mediation analysis to examine the indirect effect of condition on subsequent motivations via cognitive appraisals of the behaviour in the videos and self-reported feelings of elevation**.** We discuss these sequential mediation models below.

Condition > positive appraisals > feelings of elevation > prosocial motivation. In Study 1 (5-11-year-olds), the effect of the elevation condition on prosocial motivation was fully mediated independently but not sequentially by positive appraisals and feelings of elevation. The 2-stage indirect pathway was not supported in the sequential nor the reverse model. Rather, it seems that in this instance, the cognitive and affective responses to the elevating video were operating in parallel to motivate prosociality.

In Study 2 (5-10-year-olds), the effect of the elevation condition on outgroup prosocial behaviour was fully mediated sequentially by positive appraisals, then feelings of elevation, and then outgroup prosocial motivation. In both the sequential and the reverse model, the indirect path from condition to outgroup prosocial behaviour was also mediated sequentially by feelings of elevation and then outgroup prosocial motivation, and via just

outgroup prosocial motivation.

In Study 3 (13-14-year-olds), the effect of the elevation condition on prosocial motivation was partially mediated independently and sequentially by positive appraisals and feelings of elevation. In the reverse model, there was a partial sequential mediation via feelings of elevation and then positive appraisals (e.g., a recursive relationship), and via just feelings of elevation. The 2-stage indirect pathway was supported in both the sequential and the reverse model.

In Study 4 (8-11-year-olds), the effect of the elevation condition on prosocial motivation, was partially mediated sequentially by positive appraisals and then emotion words. In the reverse model, the effect of the elevation condition on prosocial motivation, was also partially mediated via emotion words.

In Study 5 (9-11-year-olds), the effect of the elevation condition on prosocial motivation, was fully mediated independently and sequentially by positive appraisals and emotion words. In the reverse model, the effect of the elevation condition on prosocial motivation was also fully mediated independently and sequentially by emotion words and positive appraisals (e.g., a recursive relationship). The 2-stage indirect pathway was supported in both the sequential and the reverse model.

Condition > admiration appraisals > feelings of elevation > self-improvement / success motivation.

Self-improvement. The admiration video increased the *desire to do a physical activity* and *to join a new club* compared to the elevation condition. There was an indirect effect of the admiration condition on self-improvement motivation via admiration appraisals and then emotion words. However, mediation models showed no total effect of either the admiration or elevation condition, and so the indirect pathway cannot be considered a full mediation.

Success. In both Study 4 and 5, there was no main effect of condition on the desire to achieve success, which is in line with previous findings with adults. Simple effects showed that in Study 4, success motivation was higher in the admiration compared to the control condition, and in Study 5, the motivation was higher in the elevation condition compared to the control condition. Accordingly, in Study 4, the effect of the admiration condition on success motivation, was fully mediated sequentially by admiration appraisals and then emotion words. In Study 5, the effect of the elevation condition on success motivation was fully mediated sequentially by positive appraisals and then emotion words. Across both studies, there was an indirect effect via just emotion words in the sequential and the reverse models. These findings suggest that both the elevation and admiration stimuli, and the related emotions, are associated with the motivation to achieve something. Overall, our findings from Studies 1, 2, 3, 4 and 5 support our hypotheses and add a developmental perspective to the current theory and findings on the ATF and the effect of moral elevation.

Theoretical Implications

In classic appraisal theories of emotions, cognitive appraisals are theorised to be central to the emotional response and related action tendencies. For example, the appraisal theme underlying elevation is benevolence, and the related action tendency is centred around benevolence. Algoe and Haidt (2009, Study 2a) suggested that the feeling of elevation was the *active ingredient* that connected the appraisals and action tendencies associated with elevation. In addition, Van de Vyver and Abrams (2015) found a significant indirect effect of an elevation-inducing video on prosocial behaviour, via positive appraisals of the behaviour in the video and then self-reported feelings of elevation, but not when appraisals and emotions were swapped around. Cognitive appraisals were initially conceptualised as the cause of emotions, however, more recently, researchers have suggested that cognitive

appraisals do not necessarily cause emotions, and instead, emotions and cognitions have a recursive relationship (Han, Lerner, & Keltner, 2007), which seems to be the case in some of our studies.

Positive appraisals, elevation and prosociality. In line with the ATF, our sequential mediation models showed that the full indirect pathway from the elevation stimulus to prosocial motivation (i.e., elevation condition > positive appraisals > emotion words > prosocial motivation) was supported in the majority of our studies (all except for Study l).

Our findings show that in the elevation condition, positive appraisals predicted prosociality, but that the mechanisms differed slightly between the studies. There were no significant indirect effects of condition on prosocial motivation via admiration appraisals in any study, but there were indirect effects via positive appraisals (Study 1, 3 and 5). Thus, appraising the behaviour in the videos as benevolent (e.g., kind, generous), rather than talented and skilful, was associated with prosocial motivation. Furthermore, across our studies, nearly all of the sequential models (Study 1, 3, 4 and 5) and all of the reverse models also showed a significant indirect effect via just emotion words, and some studies showed a significant full indirect effect via emotion words and then positive appraisals (i.e., Study 3 and 5 showed a recursive relationship). Thus, the direction of the pathway may not be as sequentially fixed in childhood and adolescence, as it has been found to be in adulthood.

Additional linear regression analyses were conducted to further examine the relationship between condition, positive appraisals, feelings of elevation and prosocial motivation (e.g., in Study 1 and 3, see Appendices B and D). Condition was entered in the first step, positive appraisals in the second step and feelings of elevation in the third step. In Study 1 and 3, both positive appraisals and feelings of elevation predicted prosocial motivation, however the model was a better predictor when feelings of elevation were

included (i.e., the variance explained (R^2) increased). Also, the effect of condition decreased in each step, which supports our argument that elevation (rather than modelling due to social desirability or perceived norms) influences prosociality.

Our findings support the idea that the appraisal theme of benevolence influences subsequent prosocial motivation in childhood and adolescence. However, the findings also suggest that, the affective experience of elevation (e.g., self-reported emotions) may be a better predictor in the relationship between the elevation-inducing stimulus and prosocial motivation, in this age group. Taken together, our results suggest that exposure to a morally elevating stimulus, elicits the emotion of elevation and influences prosocial motivation.

Furthermore, our findings support the idea of elevation as a self-transcendent emotion that influences other-orientated motivations. Elevation may have a positive effect on increasing outgroup prosociality, however, more work is needed to uncover the conditions and contexts that may this more likely to occur in children and adolescents (See limitations and future directions section for further discussion).

Admiration appraisals, admiration and self-motivation/success. Our findings suggest that the emotions associated with the elevation stimuli and positive appraisals are associated with success motivation. Also, the emotions associated with the admiration stimuli and admiration appraisals are associated with success motivation. Diessner, Iyer, Smith and Haidt (2013, Study 2), found no difference in the desire for success between the elevation and the admiration conditions, and so these findings support the adult literature. In both of the reverse mediation models, the pathway from condition to success was mediated by emotion words, and so it seems that the affective experience associated with these emotions encourages the motivation to achieve success in children. In Study 4, the admiration video increased the desire to *do a physical activity* and to *join a new club* compared to the elevation

video. Further research that explores whether and how the domain of the behaviour presented in the stimuli affects appraisals, emotions and subsequent motivation, may help to extend the existing theory. For example, it would be interesting to explore whether admiration motivates children to exert effort in a particular domain (e.g., in the domain of the behaviour in the video) or whether the subsequent motivation is less domain specific.

Study 6, 7 and 8

Overview of Findings

Elevation and Engagement with Moral Beauty. Studies 6, 7 and 8 are the first studies, to our knowledge, to have tested the impacts of regularly reflecting on morally beautiful behaviours (or acts of kindness), on engagement with moral beauty, feelings of elevation, prosocial motivation, self-efficacy and moral identity in children, young adolescents and young adults. In these studies, participants were asked to reflect on (and log one of) the good and kind behaviours that they had witnessed weekly, over a 4- or 12-week period. Overall, we found that regularly reflecting on morally beautiful behaviours increased feelings of elevation in 11-12-year-olds (Study 7) and undergraduate students (Study 8). We also found that reflecting on acts of moral beauty increased self-efficacy, moral identity and intergroup prosocial motivation in undergraduate students. So, *the repeated elevation hypothesis* (H9) was partially supported in Study 7 and 8.

For 9-11-year-olds (Study 6), we did not find increases on any of the variables after the intervention, and so H9 was not supported in this study. This may be because the children in Study 6 completed the moral beauty log for twelve weeks rather than for four, and so there may have been habituation and adaptation effects from repeatedly recalling acts of goodness or kindness over an extended period of time. Relatedly, the theory of hedonic adaptation proposes that repeated exposure to situations that enhance our positive affect, may elicit an

initial boost in positive emotions and feelings of wellbeing, however, the effects may lessen over time, as we adapt to the "new normal" (Lyubomirsky, Sheldon, & Schkade, 2005). This suggests that a shorter 4-week intervention may have also been more effective for children aged 9-11 years old.

Theoretical Implications

Our findings from Study 6, 7 and 8, extend Diessner's (2006) pedagogical moral beauty intervention by showing that regularly engaging with moral beauty can increase feelings of elevation in adolescents and undergraduate students. Our findings also extend Diessner's (2013) findings by offering support for the link between individual traits, engagement with moral beauty and feelings of elevation in a developing population. Engagement with moral beauty, feelings of elevation, self-efficacy, moral identity and prosocial motivation were all significantly and positively correlated in 9-11-year-olds and 11-12-year-olds. For undergraduate students, engagement with moral beauty and feelings of elevation, correlated significantly and positively with all of the variables (prosocial motivation correlated with all variables except for moral identity). Cross-lagged path analysis showed that increases in feelings of elevation likely influenced prosocial motivation after the intervention in the undergraduate sample, however, these findings were not replicated in Study 6 or 7 (i.e., there was no significant path between feelings of elevation and prosocial motivation).

Moral identity is described as the extent to which being a moral person is central to one's identity (Hardy & Carlo, 2011). Previous studies have shown that moral identity is positively associated with the ability to recall acts of moral beauty, feeling elevation, and engaging in prosocial behaviour (Aquino, McFerran, & Laven, 2011; Hardy, Bean, & Olsen, 2015; Hardy, Bhattacharjee, Reed, & Aquino, 2010). Diessner et al. (2013, p. 154) stated that

"an important direction for future research would be to examine whether repeated exposure to acts of moral beauty…would increase students' level of moral identity centrality". We found that repeatedly reflecting on acts of moral beauty may indeed increase moral identity centrality in undergraduate students. This may be because observing and reflecting on acts of moral beauty increased cognitive access to students' moral self-schemas and in turn, their moral identity (Aquino, McFerran, & Laven, 2011).

We also found that students reported higher self-efficacy after the moral beauty intervention. Self-efficacy, defined as the ability to effectively direct one's actions to achieve one's goals (Bandura, 1993), can be influenced by personal and vicarious experiences (Schunk & Meece, 2005), so perhaps, viewing others' engaging in benevolent behaviours (in accordance with their morals and values) inspired students to act in accordance with, and work towards their own goals.

Importantly, in Study 7, feelings of elevation were significantly higher one week after the last moral beauty log, which is a very promising finding in regards to the longitudinal effect of reflecting on positive behaviours and how feelings of elevation can be sustained. Also, the prosocial motivation items in these studies referred to a number of different outgroups (e.g., peers who were described as disabled, popular and needing support to complete academic work). So, the increases in prosocial motivation in undergraduate students supports the notion that elevation-inducing stimuli and feelings of elevation can encourage other-orientated and intergroup concern and care. Our findings also offer further insight into how children and adolescents describe and respond to positive emotions and behaviours such as love, happiness, charity and kindness, which adds to the growing body of research that explores how kindness is conceptualized and the influence that it has on subsequent behaviour and well-being as a whole (e.g., Cotney & Banerjee, 2019).

Limitations, Future Directions and Critical Reflection

Emotion-inducing Stimuli

An important objective in the present research was to establish the viability of eliciting and measuring elevation in children. Overall, our studies show that brief video induction is an appropriate way to elicit elevation in children and that both video and recall are appropriate for adolescents and young adults. Although the videos used in the current thesis were piloted prior to the empirical research, it is plausible that confounds existed. For example, the narrative of the elevation-inducing video employed a White Saviour trope, where relatively privileged, majority White children in Canada were trying to raise money and give charity to a "disadvantaged" school in Kenya. We ensured that both groups depicted in the video were third-parties and that participants did not belong to the groups in terms of Nationality (i.e., the majority of children in our studies were born in Britain), however, many children had parents that were not born in Britain. So, not all children, especially those of African descent may have found the video as one causing elevation (e.g., they may not have appraised the actions of the majority White, Canadian children as truly benevolent).

In Study 2, in the mediation model, when accounting for the effects of feelings of elevation, the relationship between positive appraisals and outgroup prosocial motivation became significant and negative. This suggests a suppression effect whereby positive effects of appraisals on outgroup prosocial motivation were fully mediated by feelings of elevation. The negative independent relationship may have reflected feelings of threat regarding the status of the ingroup when viewing an elevating act carried out by third-party outgroup members (i.e., majority White, Canadian children), or it may reflect that some children (e.g., non-White children) found the fundraising behaviour somewhat belittling.

Furthermore, intergroup dynamics impact prosocial and discriminatory behaviour towards others (see Sturmer & Snyder, 2010). So, it would be interesting to further explore

elevation-inducing stimuli from an intergroup perspective and to examine the effect on intergroup helping. For instance, would viewing ingroup members behaving kindly increase feelings of elevation more than viewing outgroup members? And how would this affect subsequent intergroup prosociality? Furthermore, would viewing members of a stigmatised, disliked or disadvantaged (out)group engaging in morally beautiful behaviour elicit more or less elevation than a neutral group? And how would this affect prosocial behaviour towards members of the outgroup in the future? For example, in December 2020, Sikh volunteers delivered thousands of hot meals to lorry drivers stranded in Kent, UK, whilst trying to cross the Channel to France (Choudhry, 2020). The British press reported on the story in a positive light, however, it would be interesting to see whether hearing about events like these influence attitudes and behaviour towards outgroup members, especially in an area like Kent (Majority White British residents), which has seen an increase in racially or religiously aggravated offences recently (e.g., Ault, 2020).

Researchers have theorised that elevation is one of the most prototypical moral emotions as it is elicited by exposure to third-party benevolence and motivates prosociality, but assessing moral elevation by inference from exposure to certain preceding events and/or subsequent motivations or behaviours has risks. Algoe and Haidt (2009) suggested that the conscious experience of elevation was the *active ingredient* that connected the appraisals and action tendencies of elevation. This leads us to question what the essence of elevation is, and whether we captured it as well as we could.

Overall, our studies show that brief video induction is an appropriate way to elicit elevation in children and adolescents, and although we discuss some specific limitations and improvements directly related to the video that we used in our studies, it is important to question what it is about exposure to benevolent behaviours that triggers the emotion. For

example, is it the self-sacrificing behaviour of the protagonist? The display of care towards someone that the protagonist has no affiliation with? The decrease in relative deprivation for the recipient, or the increase in their welfare that elicits elevation? In Haidt's (2002) early studies on the conceptualisation of elevation, many participants reported stories of people helping others who were in need, without expectation of reward, which suggests that elevation is elicited by *altruistic* behaviours (i.e., those that are performed with the recipient's wellbeing as the end goal, with no expectation of reward, and often at a cost to the donor). In our case, using a single elevation-inducing video increased control in our studies, and although we compared a number of videos in the initial stages of this project, an in depth analysis of, and comparison between, different aspects of third-party prosocial behaviour would help to answer some of the questions above.

A further question is to what extent elevating stimuli need to involve other elements. Any elevating video is likely to include some inspirational behaviour, however, the elevation-inducing video used in our studies also included messages such as "one person can make a difference". It is not known whether additional messages like this influence the efficacy to be more prosocial. Also, the video had a musical background, which may have also influenced children's emotions and responses. Thus, future studies could test whether additional factors such as music have an effect on children's appraisals, emotions and behaviours. In addition, it would also be good to explore whether, and how similar, behaviour in the emotion-inducing stimuli should be to the target outcome behaviour.

Feelings of Elevation

Study 1 revealed that children did not understand some of the key emotion words used to measure the affective component of elevation in adult samples. In Study 2 we simplified the measure of elevation by using age-appropriate synonyms for some of the original emotion

words, and created an 8-item scale. Across all studies, the scale had good reliability and validity, and scores were higher in the elevation condition compared to the control.

In Study 4 and 5 we found no significant difference between the admiration and the elevation conditions on the 8-item scale, or with the single emotion words of *admiration* and *inspiration*. On the other hand, children reported increased feelings of *gratitude* in the elevation condition compared to the control and the admiration condition. However, children in Study 5 (9-11-year-olds) also reported increased feelings of gratitude in the admiration condition compared to the control condition. These findings partially support Algoe and Haidt's (2009) idea of a "warmth" factor (feelings of gratitude and love) being more associated with elevation than admiration. However, future studies with follow up questions would help to uncover what may have driven children's feeling of gratitude in the admiration condition (e.g., qualitative work on how they describe gratitude and any related motivations).

Initially, we were unsure about including the term love in our elevation scale, however, in Study 1b (Appendix A), children aged 5-10 years old described feeling love in response to general feelings of connection, affection and other-orientated concern towards both known and unknown others. This suggests that children may consider the term *love* to describe part of the affective experience of witnessing third-party situations that move them. As such, adding *love* to our elevation scale, may help to distinguish elevation from similar emotions like admiration.

In Study 1, in addition to the quantitative positive appraisal, emotion words and prosocial motivation measures, children were also asked to describe how they were feeling in their own words after viewing the fundraising video (see Study 1*, Appendix A). The results showed that when given the opportunity to describe how they felt using one word, 48.3% of children mentioned a positive word, and 48.3% mentioned a negative word. When children

were given the opportunity to list multiple words, 43.3% reported feeling mixed emotions – that is, they mentioned feeling emotions of both positive and negative affect (e.g., inspired, happy, sad and surprised; or sad, grateful, excited, happy and angry). Just under a third of participants (31.7%) reported feeling purely negative emotions (four children mentioned tears or crying), and 23.3% reported feeling purely positive emotions. This is an interesting finding as it suggests that viewing this kind of prosocial behaviour may not elicit purely positive emotions in this age group. However, to our knowledge, negative affect/emotion has not been mentioned in the literature or included in any of the elevation scales with adults (e.g., Algoe & Haidt, 2009; Van de Vyver & Abrams, 2015). These findings stimulate a number of new questions regarding the emotional experience associated with viewing morally beautiful behaviour, such as: Are negative feelings a component of elevation? Or is there a change in how we respond to these types of behaviours over the course of development? Could it be that young children are more openly observant than adults? And so, did viewing the video of children fundraising for relatively deprived children elicit positive and negative feelings, perhaps associated with empathy and sympathy? Could this also be the case with adults, or do adults focus less on the struggles of the recipients and more on the 'good deeds' in these situations? Although we incorporated some of the words that children mentioned into our elevation scales in Study 3 and Study 5, we only included positively-valenced emotions, and so, measuring elevation with scales including negatively-valenced emotions would prove interesting. We look forward to further research to improve and consolidate the validity and reliability of our elevation measures.

As mentioned in the introduction of this thesis, there are several socio-cognitive and socio-emotional factors that contribute to the experience of moral emotions and the display of prosocial behaviour. Also, it has been suggested that the experience of emotions such as

empathy and sympathy may contribute to some of the age-related changes in prosocial behaviour (e.g., see Eisenberg, Fabes & Spinrad, 2006). Thus, examining how empathy, sympathy and perspective taking are related to engaging with morally beautiful behaviour and feelings of elevation would enrich the current body of work on this topic. Moreover, studies using Face readers (i.e., a software which is designed to record micro facial expressions), have shown that both 4-8- and 12-year-olds show spontaneous happiness in response to moral transgressions, however, displays of spontaneous sadness increased with age (e.g., Malti & Dys, 2015). Relatedly, we wonder whether there would be developmental differences in spontaneous displays of happiness and sadness in response to different types of elevating stimuli.

Furthermore, physical sensations are often described as a component of emotions. Algoe and Haidt (2009) found that admiration is associated with bodily sensations such as increased heart rate, energy and tensed muscles, whereas elevation is associated with warm feelings in the chest and relaxed muscles. In Study 5, we also asked children (aged 9-11 years old) to think about any sensations that they felt whilst viewing the admiration, elevation and control videos, however, only seven out of 203 children mentioned any physical sensations (see Table A9 in Appendix F). Past research on the physiology of emotions has shown that elevation is associated with an increase in the production of the neurotransmitter oxytocin, which is associated with the experience of love and bonding (Silvers & Haidt, 2008), and that admiration is associated with activity in the neural systems related to the self (Immordino-Yang et al., 2009; Immordino-Yang & Sylvan, 2010). Therefore, it would be interesting to examine the similarities and differences in the physiological arousal of elevation and similar emotions like admiration and gratitude. Implicit measures of emotional arousal (e.g., via Biopac – a software that can record and analyse various body signals or via Face readers)

may be useful when measuring emotional responses to elevation- and admiration-inducing stimuli, especially in terms of helping to conceptualise and distinguish the two emotions. Implicit measures would also help to further inform the effectiveness of the stimuli and tap into the 'essence' of elevation.

Prosociality

The basic paradigm for using elevation-inducing stimuli to promote prosociality appears to transfer well from adults to children.

General prosocial motivation. In Study 1 and 3, viewing the elevation video increased children's general prosocial motivation compared to the control video. In Study 4 and 5, viewing the elevation video increased children's general prosocial motivation compared to the control and the admiration videos. That is, children in the elevation condition reported an increased desire to be a better person, and to do something good for another person. This is in line with previous work on elevation, and strengthens the proposition that feelings of elevation influence benevolence motivation. Our findings in Study 8 suggest that engagement in moral beauty increased feelings of elevation and prosocial motivation, and that feelings of elevation likely influenced prosocial motivation. However, a major limitation of this study is the lack of a comparison condition, and so we cannot be completely certain that the specific task of recalling kind behaviours over time caused an increase in elevation and prosociality. Thus, future study designs should include additional conditions (e.g., an emotionally neutral task), to compare whether participants also report increased feelings of elevation and prosociality over time, and how they relate to one another.

Intergroup prosocial motivation and behaviour. Elevation has been described as a self-transcendent emotion that arises out of other-oriented appraisals and shifts attention towards the needs and concerns of others, rather than the self. Hence, we thought that

elevation may be particularly effective for promoting prosociality toward outgroup members. In Study 2, children in the elevation condition reported increased prosocial motivation and behaviour toward outgroup members (i.e., German children), which is a particularly important threshold to cross. Children indicated an ingroup preference, however, viewing the elevation video significantly increased children's intentions to share with, comfort, help and to donate stickers to outgroup members. Also, in Study 8, undergraduates reported increased prosocial motivation towards a range of targets (e.g., popular or disabled peers), after reflecting on acts of moral beauty weekly for four weeks. On the other hand, in Study 3 and 5 we found no significant effect of the elevation-inducing video on outgroup prosocial motivation or behaviour. There are a number of ways in which the measures of intergroup attitudes and behaviours could have been improved.

Intergroup preference. In Study 2 and 3 the intergroup preference items measured whether children wanted to live in England or Germany. In retrospect, children may have stated that they preferred to live in England as opposed to Germany for various reasons, such as not having prior knowledge of Germany or the German language, not necessarily because of how they felt towards German people. In Study 5, we changed the target outgroup to disabled children and asked children to report how good/bad/important their school and the outgroup's school was to them. Although ingroup preference scores were significantly higher than outgroup scores across conditions, and the concepts that we measured play a part in preference, we did not directly ask how children felt about members of the outgroup (instead we asked about the outgroup's country of origin and school that they attend). Thus, asking how children actually feel about members of the target group (e.g., in terms of competence or warmth, or whether they would be friends with them or pick them for a group project) may be a better gauge for intergroup preference. Relatedly, as mentioned above, future studies could

examine the effect of different outgroups engaging in, and as the recipients of, prosocial behaviour on intergroup prosociality.

Self-sacrifice. In Study 2, children were asked to choose two stickers from an array of six. Then they were asked to make a decision about whether they wanted to keep or donate none, one or both of their stickers to children in either England or Germany. The task was similar to costly sharing trials in Moore (2009) in which children were given the option of having two stickers for themselves, or allocating one sticker to the recipient and one for themselves later (in Moore's study children were less likely to allocate stickers to a stranger – and strangers were treated like non-friends). In Study 2, children in the elevation condition were more likely to give stickers to German children than to English children. An additional analysis also showed that the children in the elevation condition were more likely to give stickers to the ingroup or outgroup (and less to themselves) than in the control condition. In a way, this prosocial behaviour task included some degree of "self-sacrifice", or cost, as children were asked to give up something that was already in their possession, and exposure to the elevation-inducing video increased the likelihood of them doing so. On the other hand, the prosocial behaviour tasks in Study 3 and 5 asked children to allocate resources to different groups (e.g., their school or another school), and so there was less of an element of self-sacrifice.

Haidt (2003b) noted that behaviours that involve self-sacrifice are powerful elicitors of elevation, and elevation encourages an increased other-focus. Accordingly, future studies could explore the effect of the degree of self-sacrifice involved in the subsequent behavioural task. Relatedly, future studies could investigate the degree of self-sacrifice in the stimuli and whether the behaviour depicted in the stimuli has an effect on the type of prosocial behaviour that is motivated. For example, after viewing the video would children be more likely to

fundraise than to comfort another person? Relatedly, elevation has been described as an emotion that encourages one to self-transcend, open up, and to think about others. Thus, further measures of intergroup bias/prejudice or intergroup contact intentions would be interesting.

The potential of the arts. In Study 8, undergraduates reported increased feelings of elevation, moral identity, self-efficacy and prosocial motivation towards a range of targets after the 4-week moral beauty intervention. Each week, participants were asked to recall a good or kind thing that they had seen another person do in the past few days. Participants also completed a creative reflection task, in which they had the opportunity to reflection on, and express how the event had made them feel in an abstract, art-based way. Schnall and Roper (2011) found that participants who viewed an elevation-inducing video and then completed a self-affirmation task (i.e., they reflected on one of their most personally valued prosocial qualities), were more likely to engage in subsequent helping behaviour than participants who did not self-affirm, and those whose self-affirmation accounts were essentially selfish in nature. Thus, engaging in the creative expression task may have facilitated the link between recalling/reflecting on acts of moral beauty, feeling elevation and subsequent prosocial motivation. Hence, future studies could explore the impacts of incorporating arts-based activities into research in this field. Moreover, our work with People United has shown the positive impact of the arts on prosociality in children and adults across a range of settings (see https://peopleunited.org.uk/resources/ for further details).

Longitudinal Effects

Studies 1-5 elicited elevation via video and then measured the effects immediately after, and so, it is not known how long the effects of a viewing a single video last. On the other hand, in Study 7, children reported feeling increased feelings of elevation one week

after the last (fourth) moral beauty log. This finding is very promising, as it shows that feelings of elevation may be sustained for up to one week after engaging with morally-elevating stimuli. Future studies with a longitudinal design, that measure elevation throughout, and after the intervention would give an insight into the trajectory of feelings of elevation i.e., when significant increases appear, how long the feelings last and whether/how it can be rekindled.

Critical Reflection on Theory

In this thesis we drew on a range of developmental and social psychological theories to formulate our research questions and hypotheses. Here we give an overview of the background theories and how the work in this thesis contributes to them.

Firstly, Fredrickson's (1998) Broaden and Build theory suggests that positively valenced emotions – in which the overall subjective experience is pleasant – are associated with opening up and accepting new things. Frederickson (2004) pays particular attention to the emotions of joy, contentment, interest, and love, and how they are associated with opening up and accepting new things. Specifically, "joy sparks the urge to play, interest sparks the urge to explore, contentment sparks the urge to savour and integrate, and love sparks a recurring cycle of each of these urges within safe, close relationships" (p. 1367). Our work on happiness and love (in Study 1b, Appendix A) support Frederickson's ideas. xperiences of happiness were elicited by taking part in enjoyable activities and motivated similar behaviours (e.g., to engage in self-expressive or creative actions), which is similar to how Frederickson described joy. Experiences of love were focussed on affection and relationships with close others and the associated actions included affection, prosocial behaviour, wanting to spend time with others and to take part in enjoyable activities. This suggests that the existing Broaden and Build model may be supported in a developmental

context. Our findings also suggest that elevation and admiration may fit within this model, as we found that elevation was associated with prosocial motivation and behaviour (i.e., broadening) and admiration with building on interests and skills (i.e., building).

Haidt's (2003b) model of moral emotions posits that moral emotions can be identified by disinterested elicitors – that is, they are triggered by events that do not directly affect the self – and, that they should motivate a prosocial action tendency, and so he proposed moral elevation as one of the most prototypical moral emotions. Our findings with elevation are consistent with this suggestion, as we found that feelings of elevation were elicited by other-orientated behaviour and increased prosociality. Furthermore, in Studies 4 and 5, elevation but not admiration, was associated with increased prosocial motivation. These findings support Haidt's claims, and suggest that children and adolescents experience moral elevation and admiration in a way that is similar to adults.

The ATF is based on the idea that each emotion, classified by a unique set of cognitive appraisals and affective components, precede particular action tendencies. Classic appraisal theorists suggested that cognitive appraisals were the driving force in emotions, and that they caused the affective experience (e.g., Lazarus, 1991). However, more recently, appraisal theorists have stated that instead, that the cognitive dimension differentiates emotional experience and effects, and that cognitive appraisals and affective experiences have a recursive relationship (Han, Lerner, & Keltner, 2007, p. 160). Although we found a causal relationship in some of our studies, appraisals and feelings seemed to have a recursive relationship in the majority of our studies. In Studies 4 and 5, we found significant differences between the appraisals and motivational effects of elevation and admiration, which supports the idea that cognitive appraisals play a key role in distinguishing the emotional experience and effects. In principle, our findings support the ATF, however, they

do not fully support the findings of Algoe and Haidt (2009) or Van de Vyver and Abrams (2015, e.g., who found causal effects), which suggests that there may be additional developmental processes involved in these emotional experiences, that we did not capture in our studies.

Developmental psychologists (e.g., Malti & Dys, 2015) have proposed that in order to experience moral emotions, one must be able to to take the perspective of the self and others, have an understanding of socio-moral norms and values, and the ability to coordinate affective experiences with judgements, which becomes increasingly integrated with development. This indicates that there are likely to be additional developmental processes involved in translating elevating stimuli into active prosocial responses. Although our findings do add a fresh new developmental angle to existing theories and models of emotion, incorporating measures such as perspective taking and empathy into future studies would be beneficial, as it would give insight into some of the underlying developmental processes in the experience of elevation and the display of prosociality.

All in all, this thesis offers a novel contribution to this field, and extends some of the existing theories of emotion by providing a developmental context. Our work also stimulates a number of new research routes and has a number of practical implications.

Practical Implications

There has been a growing interest in the psychological concept of kindness (which is encompassed by the broader term of prosocial behaviour) from researchers, schools, policy makers and the general public (e.g., Kindness UK). There has also been a rapidly growing interest in strategies to increase cohesion, and equality between groups within our societies (e.g., Greater London Authority's (2018) Inclusive London report), which is particularly important to encourage early on in development. The findings from this thesis offer valuable

insight and support for initiatives in these realms. Understanding how children and adolescents describe and respond to positive behaviours, and how the associated cognitive appraisals and emotions motivate prosociality, is important for deciding whether and how to use these concepts in practical interventions such as in applied community and educational settings. The current thesis provides direct insights for schools, educational institutions, charities, and other organisations in the field, by exploring and testing effective strategies for promoting positive emotions and encouraging children and adolescents to actively engage with, and care about the wellbeing of others.

Education

Schools in the UK often have a responsibility to encourage good character development, to promote a set of values outlined by the Government (e.g., of respect and tolerance), and to have clear and effective strategies for doing so (e.g., Department of Education, 2014). In addition, the recent United Nations Educational, Cultural and Scientific Organisation report (UNESCO, 2020) outlined nine ideas for action for education, two of which are particularly relevant to philanthropic and citizenship education; action 1 to "commit to strengthen education as a common good" (p. 5), and action 4 to "promote student, youth and children's participation and rights…in the co-construction of desirable change" (p. 6).

Educational programs and school projects often aim to promote positive emotions and behaviours that are in line with the guidelines from governing bodies, and that represent specific school values. Such initiatives can be organised or commissioned by government departments (e.g., Department of Education), by charitable organisations (e.g., People United), or directly by schools.

It is common for schools to organise motivational and inspirational talks (e.g., by or

about individuals who have overcome adversary or dedicated their lives to helping others) to inspire similar behaviours and to promote core values. In the past, the effects of prosocial role models have been interpreted through cognitive mechanisms or modelling (e.g., Social Learning Theory; Bandura & McClelland, 1977), however, our studies show that the associated appraisals and emotions play a strong part in motivating subsequent behaviours. Our findings suggest that children and adolescents acknowledge and appreciate good, kind, and skilful behaviours, and that these behaviours elicit positive emotions and positive behaviours. Furthermore, our work comparing elevation- and admiration-inducing stimuli shows that reflecting on both skilful and benevolent behaviours produces feelings of (or similar to) elevation, and increases motivation to engage with, or work towards something (i.e., to achieve success). However, only the elevation-inducing video increased prosocial motivation and only the admiration-inducing video significantly influenced the motivation to engage in a sports activity. These findings suggest that if schools want to inspire a certain type of behaviour (e.g., via inspirational speakers, books or film) then, the actual content of the talk or video, and how children evaluate the eliciting behaviour is important. In the case of teaching values, the way in which a value is described, and the behaviour used as an example of upholding the value is important.

All of our studies with children and adolescents were conducted in school-settings. Importantly, Study 6 and 7, were also carried out by school teachers (i.e., during citizenship lessons and tutor time). Thus, our study designs (e.g., that employ short videos or recall tasks), may help to form the basis of simple and effective programs or interventions with the aim of increasing positive emotions and behaviours, that can be readily applied and implemented into school curricula and school settings, using minimal resources. The research findings reported in this thesis are also relevant to other sectors and institutions, such as

charitable organisations.

Charity and Philanthropy.[35] Schools often attempt to engage their pupils in charitable or philanthropic behaviours (e.g., volunteering and fundraising). Accordingly, schools play a vital role in fundraising for many charities. For example, in 2019, schools raised over £5m for *Children in Need*, and in 2020, over 7,000 primary schools participated in the *Save the Children Christmas Jumper Day* campaign. Although children are often passionate about fundraising, the mainstreaming of charity fundraising in schools poses many ethical dilemmas (Body, Lau, & Josephidou, 2020; Power & Taylor, 2018). Specifically, children's involvement in fundraising is often passive (e.g., they have little or no say in the causes that they support), and largely transactional. For example, on Red Nose Day, children are told that they can wear a red nose and bring in a donation that will help disadvantaged children, however that is often all the information that they are given. In turn, fundraising in schools in this manner may not necessarily encourage prosocial or charitable behaviours in the future. Furthermore, the transactional nature may not encourage genuine care and concern for others. Our findings show that children positively appraise, and are able to recall and describe benevolent behaviours. Thus, both primary and secondary school children may have ideas about what types of behaviours they appreciate, support and would like to engage in. So, our research, could be used by schools and teachers to explore how children feel about particular behaviours, to stimulate discussion and to help children to cultivate their own perspectives in regard to charity and philanthropy.

[35] Overall, charity campaigns should endeavour to employ strategies that are effective at increasing helping behaviours such as giving. Indeed, emotion-inducing stimuli may be an effective strategy to use with adults, however, the relationship between charities, charitable campaigns and fundraising in schools could be greatly improved. Although, emotion-inducing stimuli may increase prosociality in children, here we argue that our findings can be used to inform new frameworks in this field with the aim of using a child-centred approach to develop a more ethical way to encourage charitable behaviours in school settings.

General Conclusion

The aim of this thesis was to examine the prosocial effectiveness of moral elevation – a promising, yet under-researched emotion – in childhood and adolescence. The findings from this thesis significantly advance the existing insights into eliciting and measuring elevation and the effects. The current research shows that moral elevation can be successfully elicited by video and recall, and that from about 8-years-old, children and adolescents respond to acts of moral beauty, in a way that is broadly comparable to adults. We examined the appraisals, emotion and motivations associated with elevation and admiration in a developing population, and found that positive appraisals and feelings of elevation are associated with subsequent prosocial motivations. Elevation may also be effective in increasing some types of outgroup-targeted prosocial motivation and behaviour. Our work also opens up many avenues for future research in terms of exploring general, as well as intergroup inspiration, admiration, elevation and prosociality. The findings reported in the current thesis are particularly informative for school-based programs aimed at encouraging more positive and prosocial youth.

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Appendices

Appendix A

One of the aims of this thesis was to explore whether and how elevation can be measured in childhood. As most of the work on elevation thus far has focussed on adults, it is important to explore how children conceptualise the experience of elevation. Here we present some supplementary emotion word data collected in Study 1 (Study 1*), and we describe a follow-up study on the emotions of "love" and "happiness" (Study 1b).

Conceptualizing the Experience of Elevation in Childhood

Algoe and Haidt (2009, Study 1) examined the affective component of the emotions of elevation, admiration, gratitude and joy by asking participants to provide the single best word to describe their feelings. The results showed that 'happiness' was the modal word for all four conditions. In the elevation condition, the second most common word cluster was awe/admiration. In the gratitude condition, the second most common word cluster was gratitude and in the admiration condition, the second most common word clusters were awe/admiration and pride. In Study 2, Algoe and Haidt (2009) induced elevation, admiration and amusement and measured associated feelings with an 11-item emotion word scale. A factor analysis showed three factors; the "admiration" factor, consisting of the words *admiration, inspired, respect, awe,* and *moved,* the warmth factor (*gratitude* and *love*) and the amusement factor (*amused* and *entertained*). Scores of the admiration factor were highest in the admiration condition, followed by the elevation condition. Scores on the warmth factor were highest in the elevation condition, and scores on the amusement factor were highest in the amusement condition. Interestingly, there were differences between conditions on all emotion words, except for *happiness*, which did not load on to one factor. In line with these findings, Algoe and Haidt (2009) suggested that words related to admiration, warmth and

love are a good approximation for describing elevation, and so, elevation has been most commonly measured by asking participants to rate the extent to which they feel a number of related emotions words (e.g., Aquino et al., 2011; Freeman et al., 2009).

An important objective in the present research is to establish the viability of measuring elevation in 5-11-year-olds. Study 1 revealed that children did not understand some of the key emotion words used to measure the affective component of elevation in adult samples. Here we present some supplementary emotion word data collected in Study 1.

Study 1*

Methods

Participants. Ninety-one children aged 5-11 years (M = 8.06, SD = 1.62; 50% boys, 2 unreported) were randomly assigned to a control (n = 31), or an elevation condition (n = 60).

Measures. In addition to the quantitative positive appraisal, emotion words and prosocial motivation measures described in Study 1, children were also asked to describe how they were feeling in their own words.

Emotion words. After viewing the videos, children were asked to describe how they felt using one word. Then, they were asked to list any other words that described how they were feeling.

Results

Emotion Words

Across conditions, the responses were coded as *positive* (i.e., happy, calm, fine, good, interested, curious, caring, nice, joyful, amazed, motivated, exciting, ready, glad, confident, inspired and delighted (three participants reported that they felt ‘like helping’)), *negative* (i.e., worried, scared, unhappy, sad, upset, anxious, frightened, tearful and emotional), and *neutral*

(i.e., normal, bored). We also included an *uncodable* category for responses that did not correspond to these categories (e.g., confused).

Frequency analyses.

One word. Frequency analysis split by condition showed that in the control condition, 61.3% reported feeling positive emotions, 22.6% reported feeling neutral and 12.9% reported feeling negative emotions. One participant's response (3.2%) was uncodable. See Tables A16 and A17 for all responses.

In the elevation condition, 48.3% reported feeling positive emotions, 48.3% reported feeling negative emotions, 3.3% reported feeling neutral. The most frequently reported word was *sad* and the second most reported word was *happy*.

Multiple words. We looked at every word that each child mentioned and coded each group of words for overall affect (e.g., whether the words mentioned were all positive, all negative or mixed). Here we added a *mixed* category for responses that included emotion words with both positive and negative affect (e.g., inspired, happy, sad and surprised; or sad, grateful, excited, happy and angry). Frequency analysis split by condition showed that in the control condition, 51.6% reported feeling positive emotions, 38.7% reported feeling mixed emotions, 6.5% reported feeling neutral, and 3.2% reported feeling negative emotions.

In the elevation condition, 43.3% reported feeling mixed emotions, 31.7% reported feeling negative emotions (four children mentioned tears or crying), 23.3% reported feeling positive emotions, and 1.7% reported feeling neutral.

Discussion

Emotion Words

Control condition. When children were asked to use just one word and multiple words to describe their feelings, the majority of participants reported feeling positive.

Elevation condition. When using just one word, an equal number of children reported feeling positive and negative affect. However, when children listed multiple words, the majority of children included a mixture of words of both positive and negative effect.

Children were asked to think about the video as a whole and not specifically about the fundraising behaviour so perhaps the reported negative affect was associated with children's sympathy with the Kenyan children in the video (e.g., some children mentioned feeling sorry). In addition, the emotion words reported increased in complexity with age (e.g., younger children were more likely to report feeling basic emotion words such as *happy* and *sad* whereas some older children gave responses such as *amazed*, *delighted* and *emotional*). This suggests that children's response to elevating-stimuli and their experience of elevation may become more complex with age. We incorporated some of these words into our subsequent studies measuring elevation with children (e.g., Study 3, Study 5).

Table A16. Study 1: Frequency of words mentioned in the open-ended question in the elevation condition*

One word	
Word	Frequency
Sad	17
Happy	12
Upset	3
Helpful	3
Amazed	2
Nice	2
Ready	1
Tearful	1
Inspired	1
delighted	1
Excited	1
Anxious	1
Bad	1
Scared	1
motivated	1
frightened	1
confident	1
Normal	1
Tired	1
emotional	1
Joyful	1

Note. First, children were asked to describe how they felt using one word.

Table A17. Study 1: Frequency of words mentioned in the open-ended (multiple words) question in the elevation condition*

Multiple words	
Words that were mentioned more than once	Frequency
Sad	21
Angry	8
scared/afraid	7
upset	7
Sorry	7
Proud	5
Grateful	5
Inspired	5
Excited	5
crying/tears	5
Helpful	4
Worried	4
down in the dumps	3
Emotional	3
Heartbroken	3
Fine	2
Good	2
Disappointed	2
Hurt	2
Words that were mentioned once	
Joyful, Shocked, Disgusted, Like I was there, Touched, Unfrightened [*sic*], Euphoric, Interested, Kind, Glad, Amazed, Poor, Relieved, not angry, Over the moon, Boosted, Overwhelmed, Caring, Frustrated	1

Note. This table shows frequency of words that children mentioned when they were asked to list any other words that described how they were feeling.

Study 1b

Children's Narratives of Love and Happiness

In Study 1, feelings of elevation were originally measured using a 9-item emotion word scale adapted from studies with adults, however, the final scale consisted of 5-items: *inspired, love, happy, pride, moved* and the words that children best understood were *love* and *happy*. Also, in Study 1*, "happy" was the most commonly mentioned positively-valenced emotion. Therefore, children's reported feelings of *love* and *happiness* may capture an important part of the experience of elevation. To follow-up on this, we used a narrative approach to explore children's experiences of love and happiness.

Happiness

Happiness – often referred to interchangeably as joy or positive affect (see Mortillaro & Dukes, 2018; Stifler, Augustine & Dollar, 2020) is a basic emotion of positive valence (Ekman, 2003). Joy or happiness can be elicited in children via recall of positive events, reading amusing stories or viewing amusing video clips, such as slapstick comedy (e.g., Hughes & Kendall, 2008, see Stifler, Augustine & Dollar, 2020). Happiness has been measured by observing expressions of positive affect (e.g., smiling and laughing) and with self and other (e.g., parental and teacher) reports of happiness.

Furthermore, preschool children express happiness in sharing tasks (Lennon & Eisenberg, 1987) and some children exhibit more happiness when sharing compared to receiving objects (e.g., Aknin, Hamlin & Dunn, 2012). In addition to this, Krettenauer, Bauer and Sengsavang (2019) found that children who behaved prosocially (i.e., children who allocated a fun game to others rather than to themselves) reported feeling happier than those who behaved fairly (i.e., children who opted for games to be randomly allocated). Happiness has also been induced by presenting children with gifts and compliments, which can lead to

increased expressive behaviour such as creativity and problem solving (Greene & Noice, 1988). In a similar vein, in adults, feelings of happiness have been associated with appraisals of individual control, an increased sense of certainty (Baas, De Dreu & Nijstad, 2012; Ivanova, Treffers & Langerak, 2018; Smith & Ellsworth, 1985), increased patience, and risk-taking behaviour (Meier, 2019).

Love

Love has been described as "a micro moment of warmth and connection that you share with another living being" (Frederickson, 2013, p.10). Accordingly, the experience of love encompasses many positive emotions, including interest, joy and contentment (Izard, 1977). Love has also been described as a character strength – a positive psychological strength that people demonstrate through their behaviour, emotions and thoughts (Park & Peterson, 2006; Peterson & Seligman, 2004). According to this framework, love involves strong positive feelings, such as feelings of comfort, acceptance, commitment and sacrifice. Love is associated with diverse types of relationships (e.g., love between parents and children, mentors and mentees, and among friends).

The body of work on love, especially on eliciting and measuring the emotion from a social developmental perspective is sparse. In a recent study, from an early childhood education perspective, Hapslip, Allen-Handy and Donaldson (2019) asked teachers to take note of examples of love, kindness and forgiveness in their own actions and the actions of the children that they taught, and to describe how they expressed these character strengths. The most frequent expression of teacher's love was through physical affection, such as hugging, patting, giving high-fives and hand-holding. Love was also expressed through listening to children, smiling, by using loving words of affirmation (e.g., greetings), and by creating enjoyable activities for children. Teacher's observations of children's love included showing

concern or comfort for an upset peer (usually in the form of a hug), helping peers (e.g., with a challenging task), showing general warmth and affection towards peers (e.g., friendship) and to teachers (e.g., being courteous or apologising for misbehaviour). Both teachers and children often displayed affectionate behaviour, and concern towards children in distress. It was also common for both teachers and children to express love spontaneously.

Comparing Happiness and Love

As mentioned above, Algoe and Haidt (2009, Study 2) compared feelings elicited from elevation-, admiration- and amusement-inducing stimuli and found that participants reported feeling similar amounts of happiness across conditions, however, participants in the elevation condition reported significantly higher scores on a factor labelled *warmth*, which included the items *gratitude* and *love*.

The Broaden and Build theory (Frederickson, 2004) suggests that positively valenced emotions, such as joy, contentment, interest, and love, are associated with opening up and accepting new things. Specifically, "joy sparks the urge to play, interest sparks the urge to explore, contentment sparks the urge to savour and integrate, and love sparks a recurring cycle of each of these urges within safe, close relationships" (Frederickson, 2004, p. 1367).

Study 1 revealed that *happy* and *love* may be key emotion words when measuring the experience of elevation in childhood. In this study we explore how children describe their own experiences of happiness and love using a narrative approach.

Method

Participants. Eighty-four children (27 male, 56 female, 1 unreported) in grades reception to five, aged 5-10 years (M = 6.73, SD = 1.46) took part in the study. Research was conducted in accordance with the British Psychology Society's ethical guidelines.

To explore developmental differences, the sample was divided into two groups based on school grade: Fifty-two (17 male, 34 female, one unreported) children in reception and grade one, aged 5-6 years (M = 5.54, SD = 0.51) were recruited from a school in South East England. Thirty-two (13 male, 26 female) children in grades two to five, aged 6-10 years (M = 8.06, SD = 0.88) were recruited from a summer school programme in South East England.

Measures. All measures were self-report and the question structure and scales were based on previous studies with children (e.g., Van Deth, Abendschön & Vollmar, 2011). First children were asked whether they knew what the word happy/love meant: *Sometimes we feel different emotions like sad and angry... Love/happy is also an emotion that we can feel. Do you know what the word love/happy means? Children were asked to choose from three responses: No (sad face), Not sure (neutral face) and Yes (smiley face).*

Then, they were asked whether they could think of a time when they felt happy/love, on a 3-point scale with the same responses as above. Next, if children answered *yes* or *not sure,* they were asked to describe the experience (i.e., *Can you tell me about it?*) and whether it motivated them to do anything: *"Sometimes when we feel an emotion, it makes us want to do something or behave in certain way. Can you think back to the time when you felt love/happy. Did it make you want to do anything?".*

Materials and procedure. All children were tested individually by a female researcher. The younger children (at the school) were tested on iPads. The older children (at the summer school) were tested with a paper and pen questionnaire, and the researcher scribed the responses.

Results

A team of three researchers examined the accounts and created a coding scheme based on the main themes. Another team of two researchers (blind to the emotion instructions) coded each response (See Table A18 for coding scheme and examples).

Love Knowledge

The majority of children (77.4%) reported that they knew what the word love meant, 14.3% reported that they did not know and 8.3% were unsure (See Table A19 for frequencies). Chi-square analysis showed that, there was no difference in younger and older children's knowledge of the word love (χ^2 (2) = 0.19, p = .911).

Love Experience

Just over half of the children (59.5%, 50 participants) said that they could think of a time in which they felt love, (19.0% reported that they could not, 21.4% were unsure) and 58.3% (49 participants) described a love experience. Chi-square analysis showed that there was no difference in whether younger or older children recalled an experience of love (χ^2 (1, 84) = 1.13, p = .288).

Targets. Children explicitly mentioned someone else in the majority of their love accounts (93.9%, 46 accounts). Children were most likely to mention family members (78.3% e.g., siblings, parents and grandparents), followed by unknown others (8.7% e.g., *People who love each other*), friends (6.5%) and romantic interests (6.5%). The remaining three accounts did not mention others (6.1%, i.e., *When I passed my times table test; When I go to bed; At bedtime*). Chi-square analysis showed that, across age groups, there was no difference in whether children mentioned others or not in their love accounts (χ^2 (1) = 0.12, p = .731).

Themes. Out of the 49 accounts, 69.4% (34 accounts) were other-orientated and 26.5% (13 accounts) were self-orientated.

Other-orientated accounts included relationships with family and friends in general (26.5%, e.g., W*hen I'm with my nan*), affection (24.5%), romantic relationships (8.3%), other-orientated concern (4.1% e.g., concern for family members who were unwell) and there was one account of prosocial behaviour (2.0%).

Self-orientated accounts often included taking part in enjoyable activities such as playing (6.5%), birthdays (6.5%) and holidays (4.1%). One account mentioned other activities (e.g., *When I went to the arsenal game*). The remaining self-orientated accounts included receiving gifts or compliments (10.2%) and one account mentioned self-achievement (2.0%). Two accounts were uncodable (4.1% e.g., *At bedtime*). Chi-square analysis showed that, across age groups, there was a significant difference in whether children's experiences of love were other- or self-orientated (χ^2 (2, 84) = 9.192, p = .010). Younger children were significantly less likely than older children to recall a self-orientated experience.

Subsequent action. Thirty-nine children recalled a subsequent action; 61.4% (34 accounts) of these were other-orientated and 38.5% (15 accounts) were self-orientated. Other-orientated actions included affection (38.5% e.g., *Kiss her, Give mummy a hug*), prosocial behaviour (17.9% e.g., *Help my mummy*), and wanting to spend time with family and friends in general (5.1%; e.g., *It made me want to spend some time with my mummy and daddy*).

Self-orientated actions included taking part in enjoyable activities such as playing (17.9%) and other activities (7.7% e.g., reading). The remaining accounts (12.8%) mentioned wanting to engage in self-expressive or creative activities (e.g., *It makes me want to bounce around a lot and have fun*). Chi-square analysis showed that, across age groups, there was no

significant difference in children's subsequent motivations following an experience of love (χ^2 (1, 39) = 0.90, p = .342).

Table A19. Study 1b: Frequency of actual percentages of children's happy/love responses

	Love				Happy			
Provide an account	Yes 58.3% (49)			No 41.7% (35)	Yes 91.7% (77)			No 8.3% (7)
Themes	Other-orientated 40.5% (34)	Self-orientated 15.5% (13)	Uncodable 2.4% (2)	Missing 41.7% (35)	Other-orientated 11.9% (10)	Self-orientated 76.2% (64)	Uncodable 3.6% (3)	Missing 8.3% (7)
Actions	Other-orientated 28.6% (24)	Self-orientated 17.9% (15)	Uncodable -	Missing 53.6% (45)	Other-orientated 14.3% (12)	Self-orientated 53.6% (45)	Uncodable 2.4% (2)	Missing 29.8% (25)

Note. Total love accounts:49, total accounts for the subsequent action question: 39. Total happy accounts: 77, total accounts for the subsequent action question: 59.

Happy Knowledge

The majority of children (89.3%) reported that they knew what the word happy meant, 6.0% reported that they did not know and 4.8% were unsure. Chi-square analysis showed that, there was no difference in younger and older children's knowledge of the word happy (χ^2 (2) = 3.49, p = .175).

Happy Experience

The majority of children (86.9%, 73 participants) children said that they could think of a time in which they felt happy (2.4% reported that they could not, 10.7% were unsure) and 91.7% (77 participants) described a happy experience. Chi-square analysis showed that, across age groups, there was a significant difference in whether children recalled an experience of happiness (χ^2 (1, 84) = 4.70, p = .030). Younger children were significantly less likely than older children to recall a happy event. That is, 100% (32) of older children recalled a happy experience but only 86.5% (45) younger children recalled a happy experience.

Targets. Just over half of the children 58.4% (45 participants) explicitly mentioned someone else in their accounts and 41.6% (32 accounts) did not mention others. In the other-orientated accounts, children were most likely to mention family (53.3%), friends (42.2%) and others in general (4.4%, e.g., *When people play with me*). There were two additional accounts which alluded that others were involved in the activity (e.g., *When we got kfc; We went slip and slide and water comes*). Chi-square analysis showed that, across age groups, there was no difference in whether children mentioned others in their happy accounts (χ^2 (1) = 0.37, p = .542).

Themes. Out of the 77 accounts, 13.0% (10 accounts) were other-orientated and 83.1% (64 accounts) were self-orientated.

Self-orientated accounts included general activities of self-interest (22.1%), playing (20.8%), holidays (10.4%) and birthdays (5.2%). The remaining self-focussed accounts included receiving gifts of compliments (18.2%) and self-achievement (7.8%).

Other-orientated accounts included general relationships with family and friends (11.7%) and there was one account of prosocial behaviour (1.3%).
Three accounts were uncodable (3.9% e.g., *All the time; It's been a long time; At bedtime*).

Chi-square analysis showed that, across age groups, there was no significant difference in whether children's experiences of happiness were other- or self-orientated (χ^2 (2) = 0.76, p = .684).

Subsequent action. Fifty-nine children recalled a subsequent action; 20.3% (12) of these actions were other-orientated and 76.3% (45) self-orientated.

Other-orientated accounts included affection (3.4%, e.g., *It made me want to run home and give my dad a hug cause I missed him*), and prosocial behaviour (13.6% e.g., *I*

wanted to give out my stickers). One account mentioned relationships with family and friends in general (1.7%, e.g., *I started to talk to my friends*).

Self-orientated accounts included taking part in enjoyable activities such as playing (27.1%), and other activities (22.0%; e.g., *Go on my quad!*). A quarter of children (25.4%) mentioned wanting to engage in self-expressive or creative actions (e.g., *It made me want to do some art; I want to jump up and down*). One account related to achievement (1.7% e.g., *Keep on practising*) and one account mentioned wanting to receive something (1.7% e.g., *I was going to ask Daddy to ask my sisters to give me a picture*). Two actions were uncodable (3.4% e.g., *It didn't make me want to do anything; Makes me want to do the baskets in the classroom*).

Chi-square analysis showed that, across age groups, there was no significant difference in whether children's subsequent motivations following an experience of happiness (χ^2 (2, 59) = 1.92, p = .383).

Discussion

Emotion Words

In line with our findings from Study 1, the majority of children in our sample reported that they knew the words love (77.4%) and happy (89.3%). Children were more likely to recall a time in which they felt happy compared to a time in which they felt love. A similar percentage of younger and older children provided an account of love. However, all of the older participants provided an account of happiness, whereas the majority (86.5%), but not all of the younger children were able to do so.

The majority of love accounts were other-orientated. Children mentioned affection, relationships and activities involving family members, friends and unknown others. Self-focussed accounts of love included engaging in enjoyable activities with friends and family

members and receiving gifts from others. Younger children were significantly less likely to include self-orientated experiences of love than older children. Instead, younger children's love experiences were focussed on affection and relationships with family and friends. This suggested that children's experiences of love may change over the course of development, from simple exchanges of affection between family members to more symbolic expressions of love (e.g., giving and receiving material objects).

The majority of the happy accounts were self-focussed. Children reported feeling happy when engaging in enjoyable activities such as playing, receiving gifts or compliments and when they had achieved a goal such as saving money to buy something or getting a high score on a test. Children were more likely to engage in other-orientated actions after experiencing love and in self-focussed actions after feeling happiness.

Although we had doubts about including love as a measure of elevation in Study 2, the present research suggests that children may develop a more varied and complex understanding of the term during middle childhood. Children also described feeling love in response to both known and unknown others, and so, they may begin to consider the term love to describe the affective experience of witnessing third-party situations that move them. These findings suggest that both love and happy may be important terms to include when measuring elevation in children.

General Discussion

Our findings suggest that children's response to elevating-stimuli and their experience of elevation may become more complex with age. Study 1b, showed that children described feelings of love in response to both known and unknown others, and so they may begin to use love to describe part of the affective experience of witnessing third-party situations that move

them. Thus, both the words *love* and *happy* may be important terms to include when measuring elevation in children.

Future research would benefit from further qualitative assessment of how children describe the experience of elevation and the associated emotions, in their own words. Young children can respond to emotions before they develop the lexicon to define or express them (Reid et al., 2012), so there is also scope for developing alternative ways to measure the affective components of emotions. The use of physiological measures (e.g., skin conductance, monitoring posture, heart rate) with both developing and adult populations may help to unearth the developmental trajectory of emotions like elevation, but a challenge when extending the research to earlier ages is to find a stimulus that has a common meaning for infants as it does for school age children and adolescents.

Table A18. *Study 1b: Coding system for expressed experience within love and happiness narratives*

Category	Description	Example
Other-oriented		
Affection	Mention of giving or receiving various forms of affection such as hugging, kissing, touch and smiling. No material exchanges.	"When I hug people - my mummy, and my sister"
Other-orientated concern	Concern for those who are poorly or unwell. Mention of sympathy, empathy or compassion.	"When my mum was sick and went into hospital"
Romantic relationships	Mention of romantic partners (boyfriends and girlfriends).	"When somebody and somebody join together and get married"
General relationships	Mention of family and friends in general. Not in relation to a particular activity.	"When my granny and cousin come round" "With my mum"
Prosocial	Responses related to the domain of benevolence; kindness/ helping/ giving.	"My brother lost his slime and I gave him some of my slime"
Self-orientated		
Enjoyable activities	Enjoyable activities such as celebrations, holidays, outings and playing sports.	"When I was at a trampoline place"
Self-expression/ creative activities	Theme of self-expression via creative means or with facial expressions and bodily postures.	"Jump in the air and scream!" "Made me want to do arts and crafts"
Self-achievement	Themes of acquiring new skills/ knowledge, self-improvement/ learning/ practice and achievement.	"When i saved up enough money to buy my bike"
Self-receiving	May mention someone else in the narrative but it is the receiving that elicits the emotion.	"When i got a sand castle cake"
Other	Responses that do not fall into the other categories e.g., undifferentiated, unelaborated or ambiguous responses.	"When I go to bed"

Appendix B

Study 1 Materials and Measures

Control video: https://www.youtube.com/watch?v=mfpuH7Gc64E
Elevation video: https://www.youtube.com/watch?v=8g06HcSeTsI

Positive Appraisals
Original scale: 6 items, final scale: 4 items.
Do you think the people in the video behaved in a way that is BETTER than how people usually behave?
Do you think that the people in the video behaved WORSE than how people usually behave? (reverse coded, removed)
Do you think the people in the video behaved in a way that people SHOULD behave?
Do you think that the people in the video behaved in a way that people SHOULDN'T behave? (reverse coded, removed)
Compared with most people, do you think that the people in video are MUCH KINDER?
Compared with most people, do you think that the people in video are MUCH MORE GENEROUS?

Emotion Words
Original scale: 9 items, final scale: 6 items.
Do you know what these words mean? If yes, how much did you feel them…
Inspired
Awe (removed)
Admiration (removed)
Uplifted (removed)
Love
Gratitude
Happy
Pride
Moved

Emotion Words (qualitative)
Please think about the video you have just seen while you answer the following questions.
Please describe how you are feeling in **one word**:
What other **words** would you use to describe how you are feeling?

Prosocial motivation
Original scale 9 items, final scale: 8 items.
After watching the video…
Do you feel like being like the people in the video (doing something similar to what they are doing)?
Do you feel like being a better person?
Do you feel like doing something good for another person?
Do you feel like making sure the people in the video are taken care of in the future?
Do you feel like doing something for the people in the video?

Do you feel like saying something negative to the people in the video? (reverse coded, removed)
Do you feel like being friends with the people in the video?
Do you feel like meeting new people?
Do you feel like telling others about the people in the video?

Study 1 Additional Analysis

Linear Regression

A linear regression analysis was conducted to further examine the relationship between condition, positive appraisals, feelings of elevation and prosocial motivation. Condition was entered in the first step, the model was significant, F (89,1) = 13.39, $p < .001$, R^2 =.13. Condition significantly predicted prosocial motivation (B =.64, SE = .18, t = 3.66, p <.001).

Positive appraisals was entered in the second step, the model was significant, and the amount of variance explained increased, F (88,2) = 18.47, $p < .001$, R^2 =.30. Condition significantly predicted prosocial motivation (B =.38, SE = .17, t = 2.25, p =.027). Positive appraisals significantly predicted prosocial motivation (B =.42, SE = .09, t = 4.54, p <.001).

Feelings of elevation was entered in the third step, the model was significant, and the amount of variance explained increased, F (87,3) = 17.90, $p < .001$, R^2 =.38. The effect of condition on prosocial motivation decreased and became non-significant (B =.23, SE = .17, t = 1.40, p =.165). Positive appraisals significantly predicted prosocial motivation (B =.38, SE = .09, t = 4.37, p <.001) and feelings of elevation significantly predicted prosocial motivation (B =.29, SE = .08, t = 3.48, p =.001). Therefore, the model was a better predictor when positive appraisals and feelings of elevation were included.

When age (in months) was added in the first step, the significant and non-significant pathways in the models remained the same.

Appendix C

Study 2 Materials and Measures

Control video: Unavailable due to new European General Data Protection Regulation laws.
Elevation video: https://www.youtube.com/watch?v=8g06HcSeTsI

Positive appraisals, 2 items
Think about the video you just watched.
Do you think the person in the video behaved in a way that is better than how people usually behave?
Do you think the person in the video behaved in a way that people should behave?

Self-reported elevation, 8 items
Think again about the video you just watched. How much did you feel the emotions and feelings below:
I felt inspired
I admired (looked up to) the children in the video
I was impressed
I felt amazing/awesome,
I felt grateful/thankful
I felt good
I felt happy
I felt proud

Intergroup preference, 4 items
Read the sentences and tick the box that shows how much you agree…
Children live in lots of different countries all over the world. I want to tell you about two countries. One country is **England** and one country is **Germany**.
You live in **England**. People who live in England often like to drink tea, eat fish and chips, and go for walks outside.
Other people live in **Germany**. People who live in Germany often like to drink coffee, eat Bratwursts, and go to the cinema.

I like living in England
I feel proud to live in England
Living in England is important to me
I would like to live in Germany

Intergroup prosocial motivation, 10 items
How often do you think about…
Doing something good for other children who live in Germany?
Helping other children who live in Germany?
Doing something good for other children who live in England?
Helping other children who live in England?

Imagine you are on holiday in Germany. You are playing at a beach and there are other children from Germany there and they are building a sandcastle together. You are playing

with some other children you met and they are from England. At the moment you're building a sandcastle with the children from England.

While you are building the sandcastle with the children from the English group, you notice a cool seashell that would make the castle look nice. When you pick up the seashell, a child from the **German group** asks you if they can have it. Would you let them have it?
You go back to building the sandcastle with the children from the English group. A child from the **German group** comes over and asks if you will share your bucket with them. Would you share the bucket?
As you are building the sandcastle with the children from the English group you see a child from the **German group** running to pick up a spade. The child falls down and begins to cry. Would you go over and comfort the child?

Imagine that you are still on holiday in Germany. This time you are playing at a park and there are other children from Germany there and they are playing together. You are playing with some other children you met and they are from England.

While you are playing one of the children from the **English group** (your group) comes over to you. The child has nothing to play with and asks if you will share some of your toys. Would you share your toys with the child?
You notice that one of the children from the **English group** (your group) has kicked their ball into a tree. The child asks you if you will help to get it down. Would you help the child?
You see one of the children from the **English group** (your group) running across the park but trips over a rock and falls down. The child gets up and begins to cry. Would you go over and comfort the child?

Intergroup prosocial behaviour
I am also collecting stickers for other children. There are two envelopes below that I am using to collect stickers. If you want to give one of your stickers or both of your stickers to other children then you can put them in the envelopes below. But you don't have to give away any of your stickers if you don't want to. They are your stickers.
Children were presented with envelops labelled 'England' and 'Germany'.

Study 2 Additional Analysis

Linear Regression

Linear regression analyses were conducted to further examine the relationship between condition, positive appraisals, feelings of elevation, outgroup prosocial motivation and outgroup prosocial behaviour. Condition was entered in the first step, the model was significant, F (122,1) = 4.19, p = .043, R^2 =.03. Condition significantly predicted prosocial behaviour (B =.24, SE = .12, t = 2.05, p <.001).

Positive appraisals was entered in the second step, the model was non-significant, and the amount of variance slightly explained increased, F (121,2) = 2.66, p = .074, R^2 =.04. Condition significantly predicted prosocial behaviour (B =.27, SE = .12, t = 2.24, p =.027). Positive appraisals had a non-significant effect on prosocial behaviour (B =-0.07, SE = .06, t = -1.07, p =.289).

Feelings of elevation was entered in the third step, the model was non-significant, and the amount of variance explained remained unchanged, F (120,3) = 1.76, p = .158, R^2 =.04. The effect of condition on prosocial behaviour remained significant (B =.27, SE = .12, t = 2.20, p =.029). Positive appraisals had a non-significant effect on prosocial behaviour (B = -0.07, SE = .07, t = -0.95, p =.342) and feelings of elevation had a non-significant effect on prosocial behaviour (B =-0.004, SE = .07, t = -0.06, p =.955).

Prosocial motivation was entered in the fourth step, the model was significant, and the amount of variance increased, F (119,4) = 3.22, p = .015, R^2 =.10. The effect of condition on prosocial behaviour was non-significant (B =.23, SE = .12, t = 1.92, p =.058). Positive appraisals had a non-significant effect on prosocial behaviour (B = -0.03, SE = .07, t = -0.49, p =.627) and feelings of elevation had a non-significant effect on prosocial behaviour (B =-0.10, SE = .08, t = -1.33, p =.185). Prosocial motivation significantly predicted prosocial behaviour (B =.18, SE = .07, t = 2.71, p =.008).

When age (in years) was added in the first step, the significant and non-significant pathways in the models remained the same.

Appendix D

Study 3 Materials and Measures

Control video: https://www.youtube.com/watch?v=DSAznNHjjf0&t=1s
Elevation video: https://www.youtube.com/watch?v=8g06HcSeTsI

Positive appraisals, 6 items
Please think about the children in the video as you answer the following questions:
Do you think that the children in the video...
Behaved in a way that people SHOULD behave?
Behaved in a way that is BETTER than how people usually behave?
Behaved in a way that is MUCH KINDER than how people usually behave?
Behaved in a way that is MUCH NICER than how people usually behave?
Behaved in a GOOD way?
Behaved in the RIGHT way?

Feelings of elevation, 18 items
While you were watching the video, how much did you feel the emotions and feelings below:
I felt inspired
I admired (looked up to) the children in the video
I was impressed
I felt amazing/ awesome
I felt grateful/ thankful
I felt good
I felt happy
I felt proud
I felt nice
I felt excited
I felt moved
I felt confident
I felt joyful
I felt motivated
I felt uplifted
I felt glad
I felt awe
I felt love

General prosocial motivation, 8 items
Please click how much you agree with these sentences: After watching the video...
I feel like being friends with the people in the video – (Not included in the pilot study)
I feel like being a better person
I feel like helping other people
I feel like doing something for the children in the video – (Not included in the pilot study)
I feel like achieving success
I feel like telling others about what the children in the video were doing
I feel like doing something good for another person
I feel like trying a new activity (e.g., a club or a sport)

I feel like doing something like the children in the video were doing – (Pilot study only)

Intergroup preference, 5 items
How much do you agree with the sentences below:
I would like to live in Germany
I would like to visit Germany
I like living in England
I feel proud to live in England
Living in England is important to me

Intergroup prosocial motivation, 10 items
Do you ever think about...
Doing something good for people in Germany?
Helping other people in Germany?
Doing something good for people in England?
Helping other people in England?

Imagine you are on a school trip in Germany and stop in the park for a couple of hours to eat lunch and play some games. There are lots of other students there from Germany and they are playing together. You are with a group of students from England.

While you are playing, a student from the **German group** comes over to you. The person asks if you will lend them your ball for their football game. Would you lend them your ball?

You are doing a drawing and a student from the **German group** asks if they can borrow your new pencil to do their own. Would you let them use it?

You see a student from the **German group** twist their ankle as they try to step over a puddle. The person gets up but they look like they are in pain. Would you go over and check that they're okay?

You've just paid for your ice-cream when you see a student from the **German group** who is in the queue has dropped their money and it has rolled into the grass. Would you help them find their money?

While you are playing, a student from the **English group** (your group) comes over to you. The person has nothing to do and asks if you will share some of your games. Would you share your games with them?

You notice that a student from the **English group** (your group) has kicked their ball into a tree. The student asks you if you will help to get it down. Would you help them?

You see a student from the **English group** (your group) trip over a tree root in the park and they look as though they have been hurt. Would you go over and check that they're okay?

Prosocial behaviour
We aim to work with lots of students in different countries. Right now we are focussing on students in Germany and students in England.

We would like to give Amazon vouchers to some of the students that take part.
Here are 2 Amazon vouchers, worth £10/ €10 each. You can decide what you want to do with each one.
Some of these vouchers will be used for a prize draw for people taking part in this study today, which includes you.
With each voucher, please decide whether to give it to students from Germany or students from England or to the prize draw.
Click on each voucher and move it into whichever box you choose.

Study 3 Additional Analysis

Linear Regression

A linear regression analysis was conducted to further examine the relationship between condition, positive appraisals, feelings of elevation and prosocial motivation. Condition was entered in the first step, the model was significant, F (149,1) = 51.05, p < .001, R^2 =.26. Condition significantly predicted prosocial motivation (B =.57, SE = .08, t = 7.15, p <.001).

Positive appraisals was entered in the second step, the model was significant, and the amount of variance explained increased, F (149,2) = 58.72, p < .001, R^2 =.44. Condition significantly predicted prosocial motivation (B =.40, SE = .07, t = 5.51, p <.001). Positive appraisals significantly predicted prosocial motivation (B =.76, SE = .11, t = 7.05, p <.001).

Feelings of elevation was entered in the third step, the model was significant, and the amount of variance explained increased, F (149,3) = 128.67, p < .001, R^2 =.73. The effect of condition on prosocial motivation decreased, but remained significant (B =.12, SE = .086 t = 2.02, p =.045). Positive appraisals significantly predicted prosocial motivation (B =.27, SE = .09, t = 3.15, p =.002) and feelings of elevation words significantly predicted prosocial motivation (B =.76, SE = .06, t = 12.24, p <.001). Therefore, the model was a better predictor when both positive appraisals and feelings of elevation were included.

When age (in months) was added in the first step, the significant and non-significant pathways in the models remained the same.

Appendix E

Study 4 Materials and Measures

Control video: Unavailable due to new European General Data Protection Regulation laws.
Elevation video: https://www.youtube.com/watch?v=8g06HcSeTsI
Admiration video: https://www.youtube.com/watch?v=ywm_L4Y3xP8

Positive appraisals, 4 items
Please think about Jordan the gymnast while you answer the following questions. Do you think that Jordan...

Please think about the children at Barnes primary school while you answer the following questions. Do you think that the children in the video...

Please think about the children at Hopewell school while you answer the following questions. Do you think that the children in the video...

Behaved in a way that people SHOULD behave?
Behaved in a way that is BETTER than how people usually behave?
Behaved in a way that is MUCH KINDER than how people usually behave?
Behaved in a way that is MUCH NICER than how people usually behave?

Admiration appraisals, 2 items
Was/were MORE SKILLFUL than most other people?
Was/were MORE TALENTED than most other people?

Feelings of elevation, 8 items
While you were watching the video, how much did you feel the emotions and feelings below:
I felt inspired
I admired (looked up to) the children in the video
I was impressed
I felt amazing/ awesome
I felt grateful/ thankful
I felt good
I felt happy
I felt proud
I felt nice
I felt excited

Subsequent motivation/ general prosocial motivation, 6 items
Please click how much you agree with these sentences:
After watching the video...
I feel like being friends with the people in the video
I feel like being a better person
I feel like helping other people
I feel like achieving success

I feel like trying a new activity or club
I feel like doing a physical activity or playing a sport

Study 4 Additional Analyses

Emotion Words

Algoe and Haidt (2009) found that one emotion word factor (i.e., admiration, respect, awe, inspiration and being moved) was associated with admiration and another factor (i.e., gratitude and love) was distinctive of elevation, and so we ran additional one-way ANOVAs with the *admiration*, *inspiration* and *gratitude* items.

Admiration and Inspiration. There was a no significant main effect of age, F (1, 207) = 0.001, p = .974. There was a significant main effect of condition, F (2, 207) = 5.99, p = .003, η_p^2 = .06. There was a significant interaction between age and condition, F (2, 213) = 5.56, p = .004, η_p^2 = .05. Post hoc tests showed that there was no difference between the admiration condition (M = 3.84, SD = 1.25) compared to the elevation condition (M = 3.64, SD = 1.20), p = .613. Scores were significantly higher in the admiration condition compared to the control condition (M = 3.10, SD = 1.32), p = .002, d = 0.58. Scores were significantly higher in the elevation condition compared to the control condition, p = .018, d = 0.43.

Simple effects of condition within age.

Younger children. There was a significant difference between conditions, F (2, 207) = 4.40, p = .013, η_p^2 = .041. Emotion words scores were significantly higher in the admiration (M = 4.12, SD = 1.17) compared to both the elevation condition (M = 3.11, SD = 1.15), p = .005, d = 0.87, and the control condition (M = 3.30 SD = 1.11), p = .019, d = 0.72. There was no difference between the elevation and the control condition, p = .537.

Older children. There was a significant difference between conditions, F (2, 207) = 7.81, p = .001, η_p^2 = .070. There was no difference between the admiration (M = 3.67, SD = 1.28) compared to the elevation condition (M = 3.92, SD = 1.13), p =.351. Emotion words

scores were significantly higher in the admiration compared to the control condition (M = 2.96, SD = 1.44), p = .012, d = 0.52. Emotion words scores were significantly higher in the elevation compared to the control condition, $p < .001$, d = 0.74.

Age within condition. Older children's scores were significantly higher than younger children's in the elevation condition, F (2, 207) = 7.96, p = .005, η_p^2 = .037.

Gratitude. There was a no significant main effect of age, F (1, 211) = 2.94, p = .088. There was a significant main effect of condition, F (2, 211) = 6.03, p = .003, η_p^2 = .056. There was no significant interaction between age and condition, F (2, 211) = 1.18, p = .309. Post hoc tests showed that there was no significant difference between the admiration (M = 3.70, SD = 1.40) compared to the elevation condition (M = 4.18, SD = 1.31), p = .133. There was no significant difference between the admiration compared to the control condition (M = 3.40, SD = 1.47), p = .441. Gratitude scores were significantly higher in the elevation compared to the control, p = .002, d = 0.56.

Simple effects of condition within age. Although there was no significant interaction between age and condition on emotion words, pairwise comparisons showed that younger and older children responded differently.

Younger children. F (2, 205) = 3.31, p = .039, η_p^2 = .03. Gratitude scores were significantly higher in the elevation compared to the control condition, p = .019, d = 0.66. There was no significant difference between the admiration (M = 4.19, SD = 1.33) compared to the elevation condition (M = 4.29, SD = 1.15), p = .812. There was a marginal difference between the admiration and the control condition (M = 3.44, SD = 1.41), p = .055, d = 0.55.

Older children. F (2, 205) = 4.33, p = .014, η_p^2 = .04. Gratitude scores were significantly higher in the elevation (M = 4.12, SD = 1.40) compared to the admiration condition (M = 3.39, SD = 1.37), p = .020, and the control condition, p = .010. There was no

significant difference between the admiration and the control condition (*M* = 3.38, *SD* = 1.53), *p* = .960.

Reverse Moderated Sequential Mediations (Model 85)

Reverse moderated mediation; Condition > emotion words > positive appraisals > prosocial motivation.

Positive appraisals. Age had a non-significant direct effect on positive appraisals (*B* =-.02, *SE* = .06, *t* = -0.33, *p* =.743, *CI* -0.14/0.10). Positive appraisals had a non-significant direct effect on prosocial motivation (*B* =-.03, *SE* = .09, *t* = -0.31, *p* =.759, *CI* -0.20/0.14).

The admiration-stimulus had a non-significant direct effect on positive appraisals (*B* =.04, *SE* = .70, *t* = 0.06, *p* =.950, *CI* -1.34/1.43), and there was a non-significant Admiration x Age interaction (*B* =-.02, *SE* = .09, *t* = -0.17, *p* =.862, *CI* -0.19/0.16).

The elevation-stimulus had a non-significant direct effect on positive appraisals (*B* =-0.90, *SE* = .67, *t* = -1.35, *p* =.180, *CI* -2.21/0.42), and there was a significant Elevation x Age interaction (*B* =.15, *SE* = .08, *t* = 1.79, *p* =.076, *CI* -0.02/0.32).

There was a significant direct effect of the elevation-stimulus on positive appraisals for 8-year-olds (*B* =.31, *SE* = .11, *t* = 2.82, *p* = .005, *CI* 0.09/0.53), and 9-year-olds (*B* =.46, *SE* = .15, *t* = 3.08, *p* = .002, *CI* 0.17/0.76), but not 6-year-olds.

Emotion words. Age had a significant direct effect on emotion words (*B* =-.18, *SE* = .09, *t* = -2.13, *p* =.034, *CI* -0.35/-0.01). Emotion words had a significant direct effect on positive appraisals (*B* =.24, *SE* = .05, *t* = 4.96, *p* <.001, *CI* 0.15/0.34) and prosocial motivation (*B* =.59, *SE* = .06, *t* = 9.16, *p* <.001, *CI* 0.46/0.72).

The admiration-stimulus had a non-significant direct effect on emotion words (*B* =-.77, *SE* = 1.00, *t* = -0.77, *p* =.442, *CI* -2.75/1.20), and there was a non-significant Admiration x Age interaction (*B* =.18, *SE* = .13, *t* = 1.43, *p* =.155, *CI* -0.07/0.43).

The elevation-stimulus had a non-significant direct effect on emotion words (*B* =-1.74, *SE* = .94, *t* = -1.85, *p* =.065, *CI* -3.61/0.11), and there was a significant Elevation x Age interaction (*B* =.26, *SE* = .12, *t* = 2.17, *p* =.031, *CI* 0.02/0.49).

There was a significant direct effect of the elevation-stimulus on emotion words for 8-year-olds (*B* =.33, *SE* = .16, *t* = 2.11, *p* = .036, *CI* 0.02/0.64), and 9-year-olds (*B* =.59, *SE* = .21, *t* = 2.80, *p* = .006, *CI* 0.17/1.00), but not 6-year-olds.

There was a significant direct effect of the admiration-stimulus on emotion words for 8-year-olds (*B* =.67, *SE* = .17, *t* = 3.87, *p* < .001, *CI* 0.33/1.01), and 9-year-olds (*B* =.85, *SE* = .23, *t* = 2.74, *p* < .001, *CI* 0.40/1.30), but not 6-year-olds.

Prosocial motivation. Age had a significant negative direct effect on prosocial motivation (*B* =-.16, *SE* = .08, *t* = -2.08, *p* =.039, *CI* -0.31/-0.01).

The admiration-stimulus had a non-significant direct effect on prosocial motivation (*B* =-.68, *SE* = .88, *t* = -0.77, *p* =.442, *CI* -2.41/1.06), and there was a non-significant Admiration x Age interaction (*B* =.09, *SE* = .11, *t* = 0.78, *p* =.437, *CI* -0.13/0.31).

The elevation-stimulus had a significant negative direct effect on prosocial motivation (*B* =-1.72, *SE* = .84, *t* = -2.06, *p* =.040, *CI* -3.37/-0.08), and there was a significant Elevation x Age interaction (*B* =.28, *SE* = .11, *t* = 2.64, *p* =.009, *CI* 0.07/0.49). There was a significant direct effect of the elevation-stimulus on prosocial motivation for 8-year-olds (*B* =.52, *SE* = .14, *t* = 3.68, *p* < .001, *CI* 0.24/0.79), and 9-year-olds (*B* =.80, *SE* = .19, *t* = 4.16, *p* < .001, *CI* 0.42/1.17), but not 6-year-olds.

Significant indirect effects. There was a significant indirect pathway from the elevation condition > emotion words > prosocial motivation for 9-year-olds (*B* =.35, *SE* = .15, *CI* 0.07/0.65), but not 6-year-olds or 8-year-olds.

There was also a significant indirect pathway from the admiration condition > emotion words > prosocial motivation for 8-year-olds (*B* =.39, *SE* = .11, *CI* 0.19/0.63), and 9-year-olds (*B* =.50, *SE* = .14, *CI* 0.22/0.79), but not 6-year-olds.

Reverse moderated mediation; Condition > emotion words > admiration appraisals > self-improvement motivation.

Admiration appraisals. Age had a significant negative direct effect on admiration appraisals (*B* =-.21, *SE* = .10, *t* = -2.17, *p* =.032, *CI* -0.39/-0.02). Admiration appraisals had a non-significant direct effect on self-improvement motivation (*B* =-.02, *SE* = .07, *t* = -0.25, *p* =.806, *CI* -0.17/0.13).

The admiration-stimulus had a non-significant direct effect on admiration appraisals (*B* =-1.33, *SE* = 1.10, *t* = -1.21, *p* =.228, *CI* -3.50/0.84), and there was a non-significant Admiration x Age interaction (*B* =.25, *SE* = .14, *t* = 1.81, *p* =.072, *CI* -0.02/0.53). There was a significant direct effect of the admiration-stimulus on admiration appraisals for 8-year-olds (*B* =.68, *SE* = .20, *t* = 3.47, *p* <.001, *CI* 0.29/1.06), and 9-year-olds (*B* =0.93, *SE* = .26, *t* = 3.62, *p* <.001, *CI* 0.42/1.44), but not 6-year-olds.

The elevation-stimulus had a non-significant direct effect on admiration appraisals (*B* =.41, *SE* = 1.04, *t* = 0.40, *p* =.692, *CI* -1.64/2.46), and there was a non-significant Elevation x Age interaction (*B* =-.09, *SE* = .13, *t* = -0.66, *p* =.511, *CI* -0.35/0.17).

Emotion words. Age had a non-significant direct effect on emotion words (*B* =-.18, *SE* = .09, *t* = -2.13, *p* =.034, *CI* -0.35/-0.01). Emotion words had a significant direct effect on admiration appraisals (*B* =.28, *SE* = .08, *t* = 3.65, *p* <.001, *CI* 0.13/0.43), and significant direct effect on self-improvement motivation (*B* =.51, *SE* = .08, *t* = 6.12, *p* <.001, *CI* 0.35/0.68).

The admiration-stimulus had a non-significant direct effect on emotion words (*B* =-

.77, *SE* = 1.00, *t* = -0.77, *p* =.442, *CI* -2.75/1.20), and there was a non-significant Admiration x Age interaction (*B* =.18, *SE* = .13, *t* = 1.43, *p* =.155, *CI* -0.07/0.43).

The elevation-stimulus had a non-significant direct effect on emotion words (*B* =-1.75, *SE* = .94, *t* = -1.85, *p* =.065, *CI* -3.61/0.11), and there was a significant Elevation x Age interaction (*B* =.26, *SE* = .12, *t* = 2.18, *p* =.031, *CI* 0.02/0.49).

There was a significant direct effect of the admiration-stimulus on emotion words for 8-year-olds (*B* =.67, *SE* = .17, *t* = 3.87, *p* <.001, *CI* 0.33/1.01), and 9-year-olds (*B* =.85, *SE* = .23, *t* = 3.74, *p* <.001, *CI* 0.40/1.30), but not 6-year-olds.

There was a significant direct effect of the elevation-stimulus on emotion words for 8-year-olds (*B* =.33, *SE* = .16, *t* = 2.11, *p* =.034, *CI* 0.02/0.64), and 9-year-olds (*B* =.59, *SE* = .21, *t* = 2.80, *p* =.006, *CI* 0.17/1.00), but not 6-year-olds.

Self-improvement motivation. Age had a non-significant negative direct effect on self-improvement motivation (*B* =-.05, *SE* = .10, *t* = -0.48, *p* =.635, *CI* -0.25/0.15).

The admiration-stimulus had a non-significant negative direct effect on self-improvement motivation (*B* =-.31, *SE* = 1.18, *t* = -0.27, *p* =.791, *CI* -2.64/2.01), and there was a non-significant Admiration x Age interaction (*B* =.05, *SE* = .15, *t* = 0.36, *p* =.722, *CI* -0.24/0.35).

The elevation-stimulus had a non-significant direct effect on self-improvement motivation (*B* =1.22, *SE* = 1.11, *t* = 1.10, *p* =.272, *CI* -0.97/3.42), and there was a non-significant Elevation x Age interaction (*B* =-.21, *SE* = .14, *t* = -1.47, *p* =.144, *CI* -0.49/0.07).

Significant indirect effects. There was a significant indirect pathway from the admiration condition > emotion words > self-improvement motivation for 8-year-olds (*B* =.34, *SE* = .10, *CI* 0.16/0.57), and 9-year-olds (*B* =.44, *SE* = .14, *CI* 0.19/0.72).

The elevation condition > emotion words > self-improvement motivation pathway

was also significant for 8-year-olds (*B* =.17, *SE* = .09, *CI* 0.01/0.36), and 9-year-olds (*B* =.30, *SE* = .13, *CI* 0.08/0.58).

Reverse Sequential Mediations (Model 6)

Moderated sequential mediation analyses using model 85 do not show the total effect of the model, so we split the sample into two age groups (5-7-years-old and 7-11-years-old) and ran sequential mediation analyses with model 6 to cross reference.

Prosocial Motivation

Condition > positive appraisals > emotion words > prosocial motivation (with just the older children). The admiration condition (X1) had a non-significant total effect. The elevation condition (X2) had a significant total effect, a significant direct effect, and a significant full indirect effect. This shows a partial mediation (elevation condition > positive appraisals > emotion words > prosocial motivation).

Reverse mediation; Condition > emotion words > positive appraisals > prosocial motivation (with just the older children). The admiration condition (X1) had a non-significant total effect. The elevation condition (X2) had a significant total effect, a significant direct effect, and a significant indirect effect via emotion words. This shows a partial mediation (elevation condition > emotion words > prosocial motivation).

Alternative appraisals; Condition > admiration appraisals > emotion words > prosocial motivation (with just the older children). The admiration condition (X1) had a non-significant total effect. The elevation condition (X2) had a significant total effect, a significant direct effect, and a significant indirect effect via emotion words. This shows a partial mediation via emotion words (elevation condition > emotion words > prosocial motivation).

Self-improvement Motivation

Condition > admiration appraisals > emotion words > self-improvement motivation (with just the older children). The elevation condition (X2) had a non-significant total effect (*p* =.209), and a significant direct effect (*p* =.030). The admiration condition (X1) had a non-significant total effect (*p* =.122), and a non-significant direct effect (*p* =.884). Full indirect pathway from the admiration condition, (*B* =.16, *SE* = .07, *CI* 0.05/0.33). Indirect pathway via emotion words for elevation condition.

Reverse mediation; Condition > emotion words > admiration appraisals > self-improvement motivation (with just the older children). The elevation condition (X2) had a non-significant total effect. The admiration condition (X1) had a non-significant total effect. Indirect pathway via emotion words for both conditions.

Alternative appraisals; Condition > positive appraisals > emotion words > self-improvement motivation (with just the older children). The admiration condition (X2) had a non-significant total effect. The elevation condition (X1) had a non-significant total effect. Full indirect pathway from the elevation condition.

Condition > admiration appraisals > emotion words > new club motivation (with just the older children). The elevation condition (X2) had a non-significant total effect (*p* =.695) and a non-significant direct effect (*p* =.232). The admiration condition (X1) had a non-significant total effect (*p* =.161) and a non-significant direct effect (*p* =.538). Full indirect pathway from admiration condition, (*B* =.16, *SE* = .08, *CI* 0.04/0.35). Indirect pathway via emotion words for the elevation condition.

Condition > admiration appraisals > emotion words > physical activity motivation (with just the older children). The elevation condition (X2) had a non-significant total effect (*p* =.069), and a significant direct effect (*p* =.010). The admiration

condition (X1) had a non-significant total effect (p =.196) and a non-significant direct effect (p =.684). Full indirect pathway from admiration condition, (B =.16, SE = .07, CI 0.04/0.33) and via admiration appraisals. Indirect pathway via emotion words for the elevation condition.

Success Motivation

Condition > admiration appraisals > emotion words > success motivation (with just the older children). The elevation condition (X2) had a non-significant total effect. The admiration condition (X1) had a significant total effect, a non-significant direct effect and a significant indirect effect via admiration appraisals and then emotion words. This shows a full mediation (admiration condition > admiration appraisals > emotion words > success motivation).

Reverse mediation; Condition > emotion words > admiration appraisals > success motivation (with just the older children). The elevation condition (X2) had a non-significant total effect. The admiration condition (X1) had a significant total effect, a non-significant direct effect and a significant indirect effect via emotion words.

Alternative appraisals; Condition > positive appraisals > emotion words > success motivation (with just the older children). The elevation condition (X2) had a non-significant total effect. The admiration condition (X1) had a significant total effect, a non-significant direct effect and a significant indirect effect via emotion words (full mediation).

Appendix F

Study 5 Additional Analyses

ANOVA

Admiration appraisals. Due to a procedural error not all of the participants in the control and the elevation condition responded to the admiration appraisal items (in the control condition 48 out of 69 responded, in the elevation condition 27 out of 66 responded). We ran a GLM to check whether there was any difference between those that did and those that did not respond to the admiration appraisals.

There was a no significant main effect of whether participants had responded to the admiration appraisals or not on any of the dependent variables, *p*s > .325. There was a significant main effect of condition on all of the variables (*p*s < .001) except for success ($p = .067$). There was a significant interaction between response and condition on positive appraisals, $F(2, 203) = 4.87$, $p = .029$, $\eta_p^2 = .024$. There were no other significant interactions (*p*s < .064).

Simple effects of response within condition. Non-responder's positive appraisal scores ($M = 3.95$, $SD = 0.67$) were significantly higher than responder's ($M = 3.62$, $SD = 0.34$) in the elevation condition, $F(1, 198) = 5.24$, $p = .023$, $\eta_p^2 = .026$. *Perhaps participants who responded to all of the appraisals (positive and admiration) were prompted to think a bit more about how they evaluated the behaviour and therefore give more of a range of appraisal responses.*

Responder's prosocial motivation scores ($M = 3.15$, $SD = 1.27$) were close to being significantly higher than non-responder's ($M = 2.53$, $SD = 1.08$) in the control condition, $F(1, 198) = 3.86$, $p = .051$, $\eta_p^2 = .019$.

Gratitude. There was a significant main effect of condition, F (2, 200) = 13.93, p < .001, η_p^2 = .122. Gratitude was significantly higher in the elevation (M = 4.03, SD = 1.32), compared to the admiration condition (M = 3.37, SD = 1.32), p = .003, d = 0.50, and the control condition (M = 2.87, SD = 1.29), p < .001, d = 0.88. Gratitude was significantly higher in the admiration compared to the control condition, p = .021, d = 0.38.

Intergroup Prosocial Motivation. There was a non-significant Condition x Group interaction. However, there were some significant simple effects. Simple effects showed that participants in the elevation condition had significantly higher ingroup prosocial motivation (M_{ingroup} = 4.52, SD =.56) compared to outgroup prosocial motivation (M_{outgroup} = 4.18, SD =.65), F (1,148) = 50.12, p < .001, η_p^2 = .25. Participants in the control condition had significantly higher ingroup prosocial motivation (M_{ingroup} = 4.36, SD = .57) compared to outgroup prosocial motivation (M_{outgroup} = 4.03, SD= 0.78), F (1,148) = 30.21, p < .001, η_p^2 = .17. There was no significant difference in outgroup prosocial motivation in the elevation condition compared to the control condition, F (1,148) = 1.50, p = .223, η_p^2 =.010. There was no significant difference in ingroup prosocial motivation in the elevation condition compared to the control condition, F (1,148) = 3.10, p = .080, η_p^2 =.02. This was our most homogeneous sample (white females aged 13-14-years old), which may help to explain this finding.

Additional Sequential Mediation Models

Reverse mediation; Condition > emotion words > positive appraisals > prosocial motivation. The admiration-stimulus had a non-significant direct effect on positive appraisals (B = -.18, SE = .09, t = -1.95, p =.053, CI -0.37/0.002), a significant direct effect on emotion words (B =.52, SE = .19, t = 2.72, p =.007, CI 0.14/0.90) and a non-significant direct effect on prosocial motivation (B =-.02, SE = .15, t = -0.14, p =.891, CI -0.32/0.28).

The elevation-stimulus had a significant positive direct effect on positive appraisals (*B* =.38, *SE* = .10, *t* = 3.47, *p* <.001, *CI* 0.15/0.53), a significant direct effect on emotion words (*B* =.64, *SE* = .19, *t* =3.27 *p* =.001, *CI* 0.25/1.02), and a non-significant direct effect on prosocial motivation (*B* =.23, *SE* = .16, *t* = 1.44, *p* = .151, *CI* -0.08/0.54).

Emotion words had a significant direct effect on appraisals (*B* =.08, *SE* = .03, *t* = 2.38, *p* =.018, *CI* 0.01/0.15), and a significant positive direct effect on prosocial motivation (*B* =.68, *SE* = .05, *t* = 12.44, *p* <.001, *CI* 0.57/0.79). Appraisals had a significant direct effect on prosocial motivation (*B* = .33, *SE* = .11, *t* = 2.98, *p* =.003, *CI* 0.11/0.55).

For the admiration-stimulus, the total effect of the elevation-inducing video on prosocial motivation was non-significant, (*B* =.29, *SE* = .20, *t* = 1.43, *p* =.155, *CI* -0.11/0.68) and so was the direct effect (see above). The indirect effect via appraisals was non-significant, the indirect effect via emotion words was significant (*B* =.35, *SE* = .13, *CI* 0.10/0.63) and the indirect effect via emotion words and then appraisals was significant (*B* =.01, *SE* = .01, *CI* 0.01/0.04).

For the elevation-stimulus, the significant total effect of the elevation-inducing video on prosocial motivation, (*B* = 0.79, *SE* = .20, *t* = 3.86, *p* <.001, *CI* 0.39/1.19, R^2 = .07) was reduced to non-significant in the direct model (see above). The indirect effect via appraisals was non-significant, the indirect effect via emotion words was significant (*B* =.43, *SE* = .14, *CI* 0.16/0.71), and the indirect effect via emotion words and then appraisals was significant (*B* =.02, *SE* = .01, *CI* 0.01/0.05).

Alternative appraisals; Condition > positive appraisals > emotion words > success motivation. There was no indirect effect of emotion words on success motivation so we did not run a reverse mediation model. However, we did run a model replacing admiration appraisals with positive appraisals.

The admiration-stimulus had a non-significant direct effect on positive appraisals (*B* = -0.14, *SE* = .09, *t* = -1.51, *p* =.134, *CI* -0.33/0.04), a significant direct effect on emotion words (*B* =.58, *SE* = .18, *t* = 3.15, *p* =.002, *CI* 0.22/0.94) and a non-significant direct effect on success motivation (*B* =.07, *SE* = .22, *t* = 0.32, *p* =.750, *CI* -0.36/0.50).

The elevation-stimulus had a significant positive direct effect on positive appraisals (*B* =.39, *SE* = .10, *t* = 4.07, *p* <.001, *CI* 0.20/0.58), a significant direct effect on emotion words (*B* =.57, *SE* = .19, *t* = 2.98, *p* =.003, *CI* 0.19/0.95), and a non-significant direct effect on success motivation (*B* =-0.04, *SE* = .23, *t* = -0.17, *p* =.867, *CI* -0.49/0.41).

Positive appraisals had a significant direct effect on emotion words (*B* = .37, *SE* = .14, *t* = 2.70, *p* =.008, *CI* 0.10/0.64), and a non-significant direct effect on success motivation (*B* = .08, *SE* = .16, *t* = 0.50, *p* =.615, *CI* -0.24/0.40). Emotion words had a significant direct effect on success motivation (*B* =.73, *SE* = .08, *t* = 8.87, *p* <.001, *CI* 0.57/0.89).

For the admiration-stimulus, the total effect of the admiration-inducing video on success motivation was non-significant, (*B* =.44, *SE* = .25, *t* = 1.76, *p* =.080, *CI* -0.05/0.93, R^2 = .02), the direct effect was non-significant (see above). The indirect effect via positive appraisals was non-significant, the indirect effect via emotion words was significant (*B* =.42, *SE* = .14, *CI* 0.15/0.72), and the indirect effect via positive appraisals and then emotion words was non-significant.

For the elevation-stimulus, the total effect of the elevation-inducing video on success motivation was significant (*B* = 0.52, *SE* = .25, *t* = 2.03, *p* =.044, *CI* 0.01/1.02), the direct effect was non-significant (see above). The indirect effect via positive appraisals was non-significant, the indirect effect via emotion words was significant (*B* =.42, *SE* = .16, *CI* 0.13/0.74), and the indirect effect via positive appraisals and then emotion words also significant (*B* =.10, *SE* = .05, *CI* 0.02/0.21, R^2 = .31, *p* <.001).

Study 5 Materials and Measures

Control video: https://www.youtube.com/watch?v=DSAznNHjjf0&t=1s
Elevation video: https://www.youtube.com/watch?v=8g06HcSeTsI
Admiration video: https://www.youtube.com/watch?v=BIqVvRh_cEY

Across two age groups, control condition *(N* = 79), admiration condition (*N* = 54) or an elevation condition (*N* = 80).

Positive appraisal, 6 items
Please think about the child/children while you answer the following questions:
Do you think that the child/children in the video...

Behaved in a way that people SHOULD behave?
Behaved in a way that is BETTER than how people usually behave?
Behaved in a way that is MUCH KINDER than how people usually behave?
Behaved in a way that is MUCH NICER than how people usually behave?
Behaved in a GOOD way?
Behaved in the RIGHT way?

Admiration appraisals, 2 items
Was more SKILLFUL then most other people?
Was more TALENTED than most other people?

Emotion words, 16 items
While you were watching the video, how much did you feel the emotions and feelings below:
I felt inspired
I admired (looked up to) the children in the video
I was impressed
I felt amazing/ awesome
I felt grateful/ thankful
I felt good
I felt happy
I felt proud
I felt nice
I felt excited
I felt moved
I felt confident
I felt joyful
I felt motivated
I felt uplifted
I felt glad

Subsequent motivation/ general prosocial motivation, 4 items
Please click how much you agree with these sentences:

After watching the video...
I feel like being friends with the people in the video

I feel like being a better person
I feel like helping other people
I feel like achieving success

Intergroup preference, 4 items
There are lots of children and lots of primary schools in London. Rosemary Green is a school for children with physical disabilities. Children with physical disabilities have the same thoughts and feelings as other children but they often have to use equipment like wheelchairs to move around.
Here are some questions about your school and Rosemary Green school.

Use the smiley face scales to help you answer.

How do you feel about **your school**?
How do you feel about **Rosemary Green school**?
How important is **your school** to you?
How important is **Rosemary Green school** to you?

Intergroup prosocial motivation, 10 items
How often do you think about…
Doing something good for other children who have disabilities?
Helping other children who have disabilities?
Doing something good for other children?
Helping other children?

Imagine you are playing in the park and there are lots of other children there.
You notice that a child from **your school** has kicked their ball into a tree. The child asks you if you will help to get it down. Would you help the child?

You see a child from **your school** who is in the queue for an ice-cream drop their money and it rolls into the grass. You have £1.00, just enough money for one ice-cream. Would you help the child find their money, this would mean waiting longer to get your ice-cream?
You see a child from **your school** running across the park but trips over a rock and falls down. The child gets up and begins to cry. Would you go over and comfort the child?
While you are playing a child from **Rosemary Green** comes over to you. The child has nothing to play with and asks if you will share some of your toys. Would you share your toys with the child?
Some children are making fun of another child from **Rosemary Green school** and the child is getting upset. Would you go over and comfort the child?
A child from **Rosemary Green school** asks if they can borrow one of your crayons to colour a picture. However, it is a crayon that you are using. Would you let the child use it?

Intergroup prosocial behaviour
We are working with lots of children in lots of schools.
We would like to give stationary to the schools.

Here are 2/3/4/5 packets of pens [picture of pens].

How many would you like to go to your school and how many would you like to go to Rosemary green school?

Physical sensation (qualitative)
Please think about the video that you just watched. Please use the box below to describe any feelings of sensations that you felt in your body whilst you were watching the video.

Table A9. *Study 5: Children's physical sensation responses*

Age	Condition	Response
6	**1**	**Like my bones were wiggling inside my body**
6	1	Happy
6	2	Very shocked
6	2	Good, excellent, excited
6	2	a little bit frightened
6	2	Confident
6	3	Sad because there wasn't [*sic*] any people that had a school
6	3	Mixed
6	3	I feel surprised.
6	3	I felt very bad
7	1	the film made me hungry
7	1	I was feeling happy
7	2	Interested
7	2	I felt that if you dream it comes true and I never knew that
7	2	I wanted to be a gymnast like her
7	2	Happy
7	2	Happy
7	2	It was better
7	2	Happy
7	2	Surprised that she was so good
7	2	Nothing
7	3	Sad
7	**3**	**Arm was hurting**
7	3	I feel sad for the people
7	3	I felt sad
8	1	I felt quite happy
8	1	Nothing
8	1	It felt like the children had an interesting education
8	2	I thought that Jordan was very talented and a good gymnast girl
8	2	Amazing
8	2	I felt happy for her
8	2	That it was cool
8	2	Good
8	2	I felt like I was there
8	2	Happy for her
8	3	Sad because those children don't have proper schools and have to sit on the ground
8	3	I felt like I understand them
8	3	Worried about the other school in Kenya
9	1	I felt happy to cook
9	1	I didn't understand but they made sushi
9	1	I felt that they had an education
9	1	I felt like these children were getting experience
9	2	I felt happy for her
9	2	Surprised that she can do all them stunts

9	2	I felt very amazed that a young child like her could do all those stunts
9	2	Excited
9	3	Sad and happy
9	3	Saddest
9	**3**	**Something weird I felt in my stomach**
9	3	Happy
9	3	Happy, sad, helpful
9	3	I felt sad in the video because they're poor
10	1	Hungry
10	1	Happy
10	**1**	**I felt normal and my body felt lighter**
10	1	I feel happy for those little children
10	2	Happy and amazed
10	2	I felt like I wanted to be a gymnast when I have grown up
10	2	Excited and happy
10	2	Inspired
10	2	She was brave
10	3	I felt grateful, sorry for the children in Kenya .
10	3	I felt really emotional and touched and I wanted to help Kenya
10	3	I felt really sorry for the children in need but happy because the other children were helping then even not knowing them
10	3	I felt like they were really determined to help the people that have less in Solio
10	**3**	**I felt my head bobbing**
10	**3**	**My body was shivering**
10	3	Astonished, happy, sad and love
10	3	I felt sorry
11	1	Hungry
11	**2**	**When the watching the video I felt a rush of energy, like I wanted to try something new and I could do it no matter anything.**
11	2	I felt proud and happy for Jordan because she is following her dreams and I feel happy for her.
11	3	Kindness

Note. Responses that mention physical or bodily sensations are bolded. Conditions are coded as 1 (Control), 2 (Admiration) and 3 (Elevation).

Appendix G

Study 6, 7 and 8 Materials and Measures

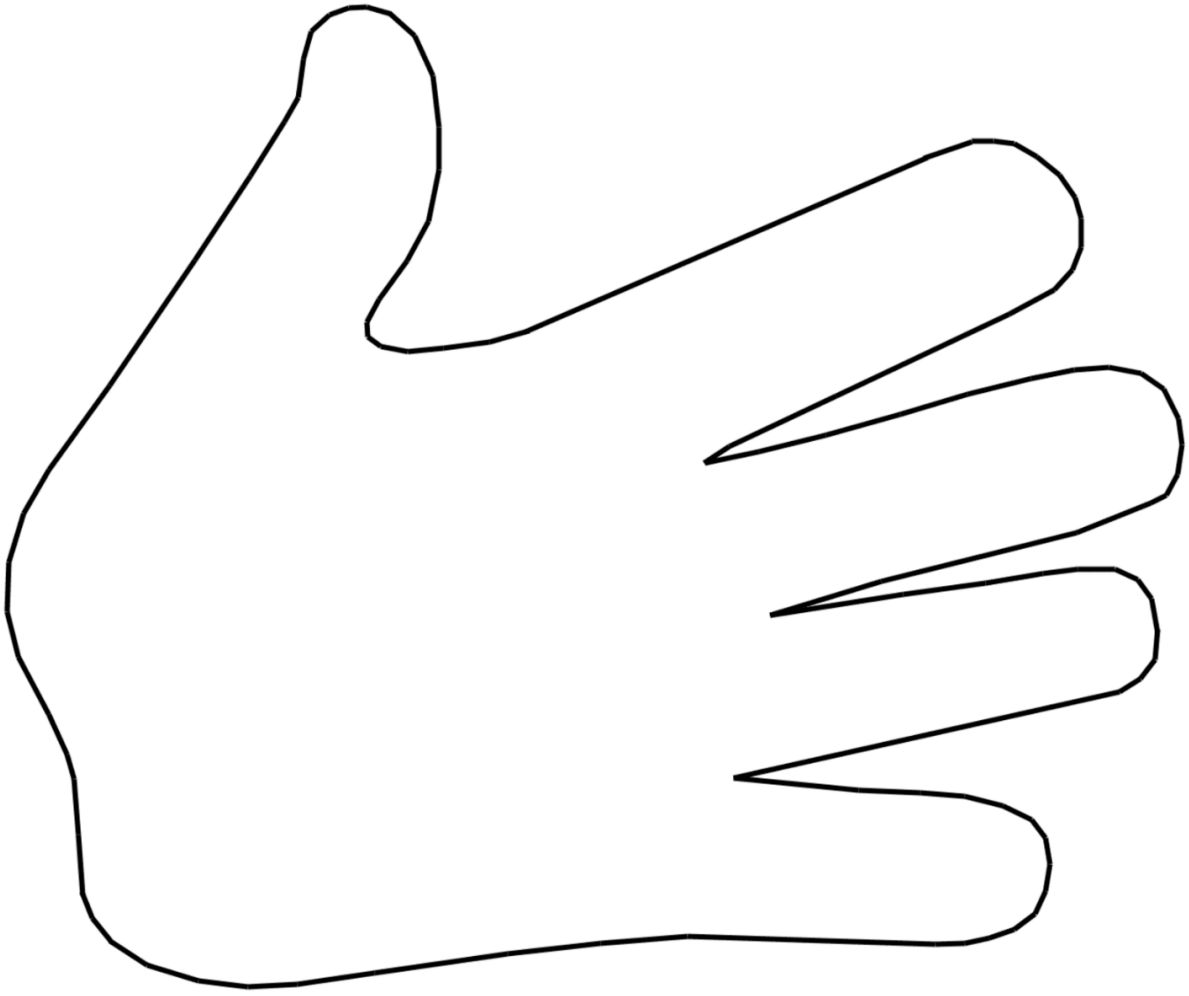
Moral beauty log for Study 6 and 7

Please take some time to think about the <u>good</u> and <u>kind</u> things that you have seen other people do this week.

Please use the space below to describe one of the things that you are thinking about:

_____

_____



Or you can label the fingers: ‘who’, ‘did what’, ‘where’, ‘when’, ‘why’ and then write down the key things you remember on each finger.

Moral Beauty Log for Study 8

Participant code: DATE:

People behave in different ways - sometimes people show impressive acts of loyalty, kindness, generosity, helpfulness, forgiveness, sacrifice for others or service to others.

We refer to these things as acts of moral beauty.

Take some time to think about the good things that you have seen or heard other people do in the past week.

For example; someone overcoming their fear, someone helping another, people donating to charity, etc.

Can you describe one of the things that you saw (e.g., who, did what, where, when and why)?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please turn over

How did this make you feel?

Please express this in the box below. You are free to express this however you wish, e.g., writing (story, prose, poetry) drawing, doodling... etc.

Engagement with Moral beauty, Study 6, 5 items
Different people tend to notice different things.
For example, if 2 friends are watching a film together, 1 may remember what the characters were wearing and 1 may remember how the characters were behaving.
People behave in lots of different ways too - sometimes people show kind, generous or helpful behaviour.
Please read the sentences below and think about whether they describe you:
I remember when people do kind things
It's easy for me to think about kind and caring things that people do
When I see people doing kind things, it makes me feel emotional
When I see people doing kind things, I feel happy
When I see people doing kind things, I want to do something kind too

Engagement with Moral beauty, Study 7, 6 items
Different people tend to notice different things. For example, if 2 friends are watching a film together, 1 may remember what the characters were wearing and 1 may remember how the characters were behaving.
People behave in lots of different ways - sometimes people show kind, generous or helpful behaviour.
Please read the sentences below and think about whether they describe you:
It's easy for me to think about kind and caring things that people do.
I remember when people do kind things.
When I see people doing kind things, it makes me feel emotional.
When I see people doing kind things, I feel happy.
When I see people doing kind things, I want to do something kind too.
I notice when people do something kind

Engagement with Moral beauty, Study 8, 6 items
People behave in different ways - sometimes people show impressive acts of loyalty, kindness, generosity, helpfulness, forgiveness, sacrifice for others or service to others.
We refer to these things as acts of moral beauty.
To what extent would you say the following statements apply to you?
It's easy for me to think about kind and caring acts that I have witnessed.
I remember when people do kind things for others
I notice when people do something kind
When I see people doing kind things, it makes me emotional.
I get moved by kind acts easily
When I see people doing kind things, I want to do something kind too.

Prosocial motivation, Study 6, 8 items
There are lots of children in the world. Different children have different things that they are good at, things that they are not so good at and things that they need some help with. Imagine that a new child joins your school.

Peer descriptions:
a. The child needs a lot of time and support to do classwork.
b. This child is fast at doing classwork and asks lots of interesting questions.

Would you play with them at break time/ sit next to them at lunch time/ invite them to your party?

Prosocial motivation, Study 7, 8 items
There are lots of children in the world. Different children have different things that they are good at, things that they are not so good at and things that they need some help with.

Peer descriptions:

a. Imagine that a new child joins your school. The child needs a lot of time and support to do classwork.

b. Now imagine that another new child joins your school. This child is fast at doing classwork and asks lots of interesting questions.

Would you hang out with them at break time?
Would you sit next to them during lunch time?
Would you share your notes with them?
Would you help them find their classes?

Prosocial motivation, Study 8, 16 items
Imagine that there is a new student in your lectures.

Peer descriptions:

a. This student has a physical disability and needs a wheelchair.
b. This student seems to have trouble understanding others and communicating.
c. This student appears to; understand lectures relatively well, is known to ask interesting questions, often has well thought out answers to difficult questions.
d. This student dresses well and appears to be well liked by your other peers.

How likely are you to:
Share your notes with them
Support them getting to class
Befriend them
Sit beside them in a lecture

Elevation, Study 6, 7, 8, 18 items
Participants were asked to think back to the "*last couple of weeks*" (time 1) or "*the last couple of weeks when you were thinking about the* ***good and kind*** *things that you saw people doing*" (time 2) and to report how much they had felt 18 emotion words (i.e., *inspired, admired, impressed, amazing, grateful, good, happy, proud, nice, excited, moved, confident, joyful, motivated, uplifted, glad, love, hope*).

Self-efficacy, Study 6, 1 item.
I feel like I can make a difference

Self efficacy, Study 7, 4 items
I feel like I can make a difference
I can always manage to solve difficult problems if I try hard enough
It is easy for me to stick to my aims and accomplish my goals

I can usually handle whatever comes my way

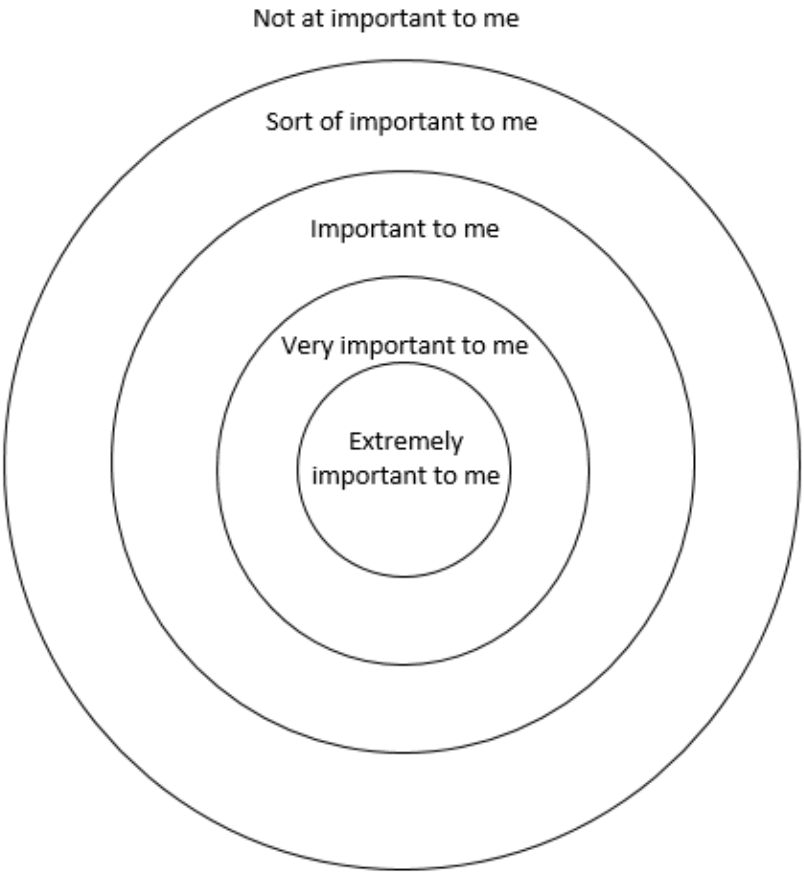
Self-efficacy, Study 8, 10 items
Please read each item carefully before responding.
Answer as honestly as you can.

I can always manage to solve difficult problems if I try hard enough
If someone opposes me, I can find the means and ways to get what I want
It is easy for me to stick to my aims and accomplish my goals
I am confident that I could deal efficiently with unexpected events
Thanks to my resourcefulness, I know how to handle unforeseen situations
I can solve most problems if I invest the necessary effort
I can remain calm when facing difficulties because I can rely on my coping abilities
When I am confronted with a problem, I can usually find several solutions
If I am in trouble, I can usually think of a solution
I can usually handle whatever comes my way

Moral identity, Study 6, 7 and 8
On the following pages, you will be presented with qualities or characteristics that may or may not describe you.

You will be asked to answer questions about how important these qualities are to who you are as a person.

It may help to imagine yourself as the picture below when deciding how important you think a quality it to you.



- Some qualities will be **extremely important** to you
- Some qualities will be **very important** to you
- Some qualities will be **important** to you
- Some qualities will be **sort of important** to you
- Some qualities will be **not be important** to you

Likert scale task:

How important is it to you that you are:

Creative or imaginative
Considerate or courteous
Careful or cautious
Honest or truthful
Outgoing or sociable

Kind or helpful
Athletic or agile
Understanding or sympathetic
Funny or humorous
Generous or giving
Logical or rational
Sincere or genuine
Independent or self-reliant
Fair or just
Active or energetic
Responsible or dependable

Pick 8 task:
Pick the 8 qualities that you think are MOST extremely important to you as a person and circle them. Please remember to <u>circle 8 words</u>.

Athletic Sincere Logical

Energetic Smart Physical Stylish

Considerate Popular Clever Sympathetic

Fast Skilled Funny Strong Honest

Helpful Organized Talkative

Independent Outgoing Fair Careful

Sensible Generous Imaginative Accepted

Relaxed Lucky Clean

Dependable Proud

Study 6 Additional Analyses

Table A20. S*tudy 6: Model fit output for Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2.*

	X^2	CFI	RMR
1. Fully saturated model	0.00	1.00	0.00
2. Including E1 to PSM2 pathway	0.75	1.00	0.04
2. Including PSM1 to E2 pathway	0.23	1.00	0.03

*p <.05, **p <.01, ***p <.001

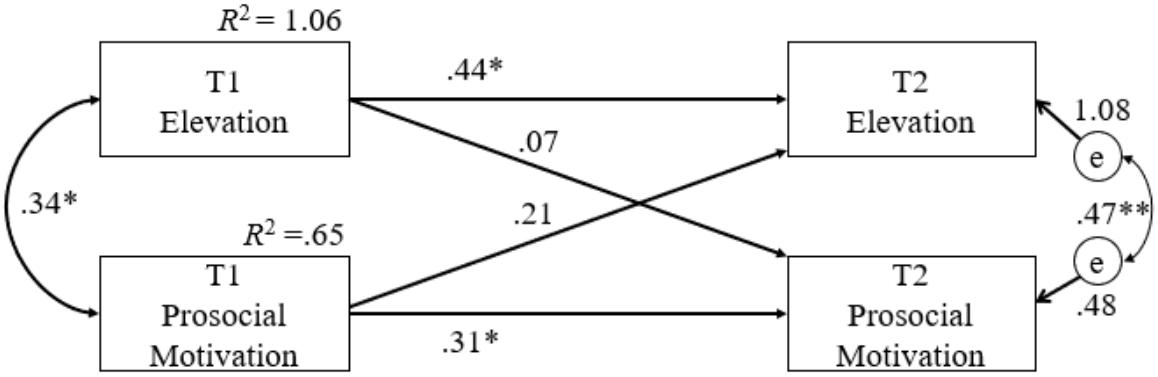


Figure A12. Study 6: Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2 (fully saturated model). Pathways show unstandardised *B* coefficients.
*p <.05, **p <.01, ***p <.001.

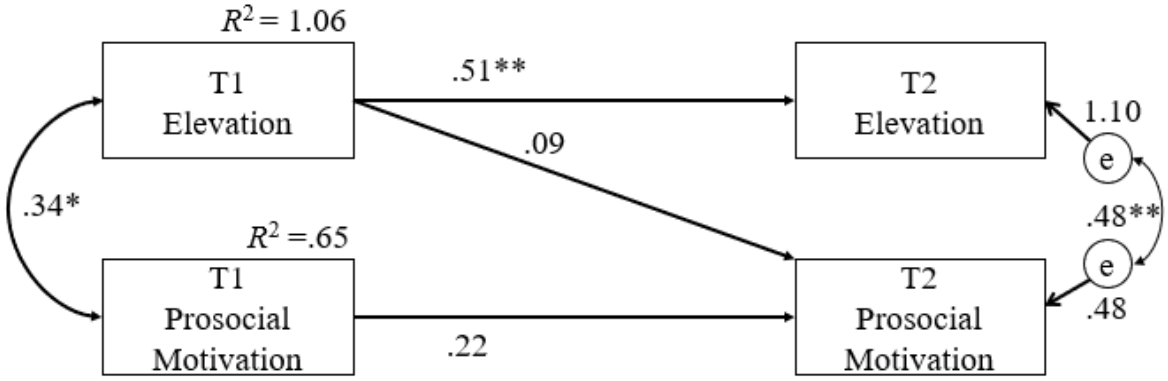


Figure A13. Study 6: Cross-lagged path analysis including feelings of elevation Time 1 > prosocial motivation Time 2 pathway. Pathways show unstandardised *B* coefficients.
*p <.05, **p <.01, ***p <.001.

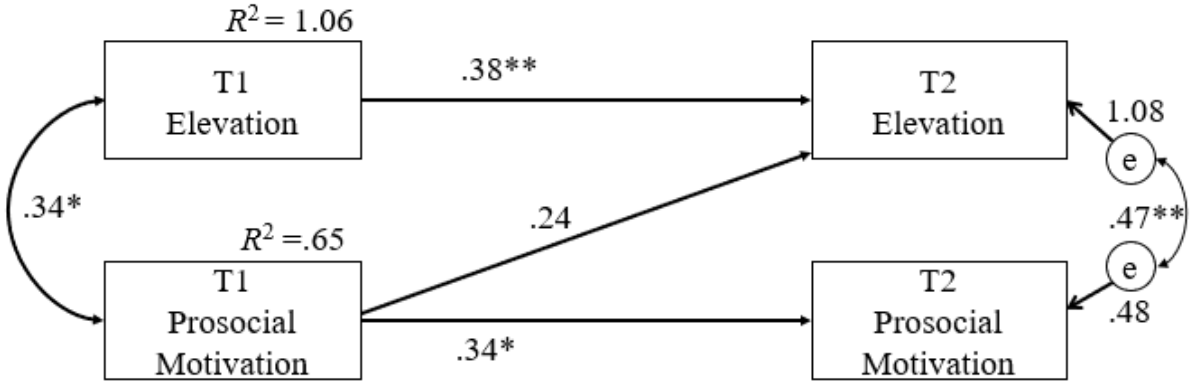


Figure A14. Study 6: Cross-lagged path analysis including prosocial motivation Time 1 > feelings of elevation Time 2 pathway. Pathways show unstandardised *B* coefficients.
*p <.05, **p <.01, ***p <.001.

Study 7 Additional Analyses

Table A21. S*tudy 7: Model fit output for Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2.*

	X^2	CFI	RMR
1. Fully saturated model	0.00	1.00	0.00
2. Including E1 to PSM2 pathway	2.42	0.99	0.02
2. Including PSM1 to E2 pathway	1.69	1.00	0.02

*p <.05, **p <.01, ***p <.001

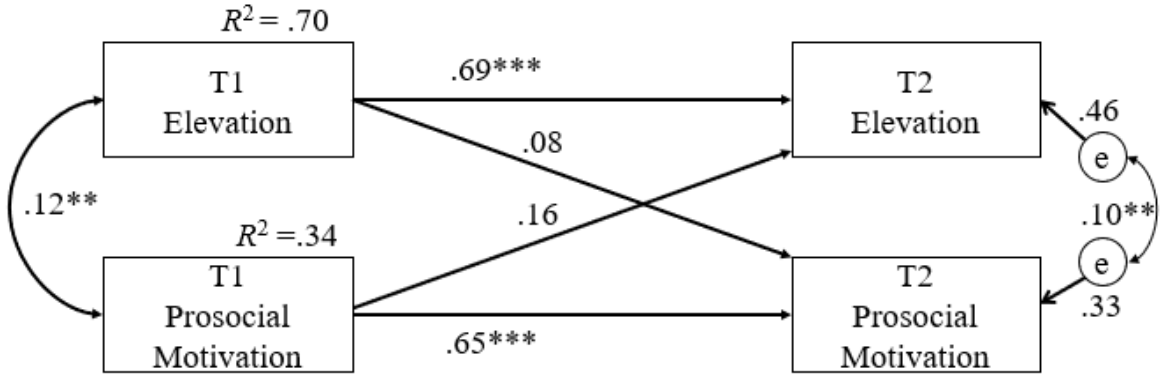


Figure A15. Study 7: Cross-lagged path analysis between feelings of elevation and prosocial motivation at Time 1 and Time 2 (fully saturated model). Pathways show unstandardised *B* coefficients.
*p <.05, **p <.01, ***p <.001.

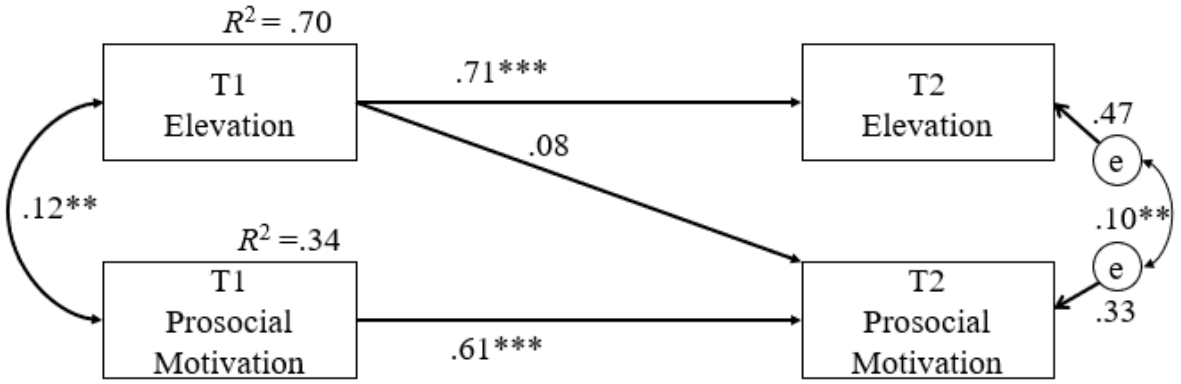


Figure A16. Study 7: Cross-lagged path analysis including feelings of elevation Time 1 > prosocial motivation Time 2 pathway. Pathways show unstandardised *B* coefficients. *p <.05, **p <.01, ***p <.001.

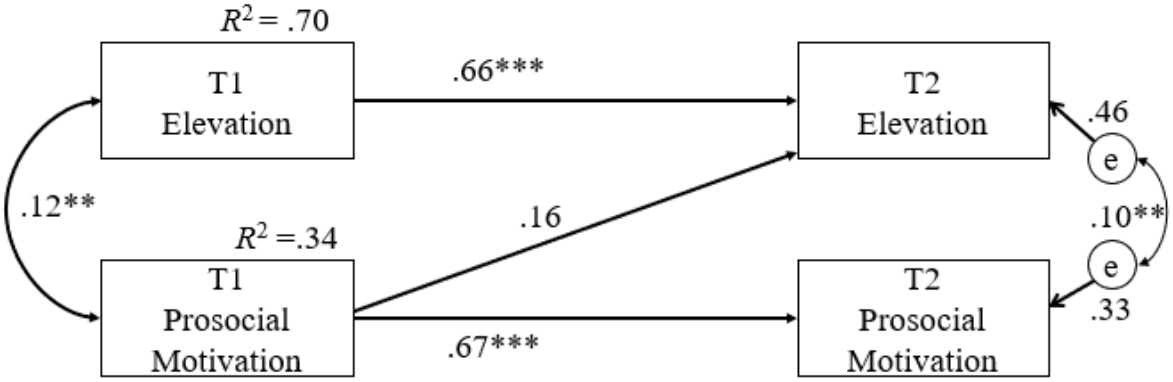


Figure A17. Study 7: Cross-lagged path analysis including prosocial motivation Time 1 > feelings of elevation Time 2 pathway. Pathways show unstandardised *B* coefficients. *p <.05, **p <.01, ***p <.001.

Study 8 Additional Analyses

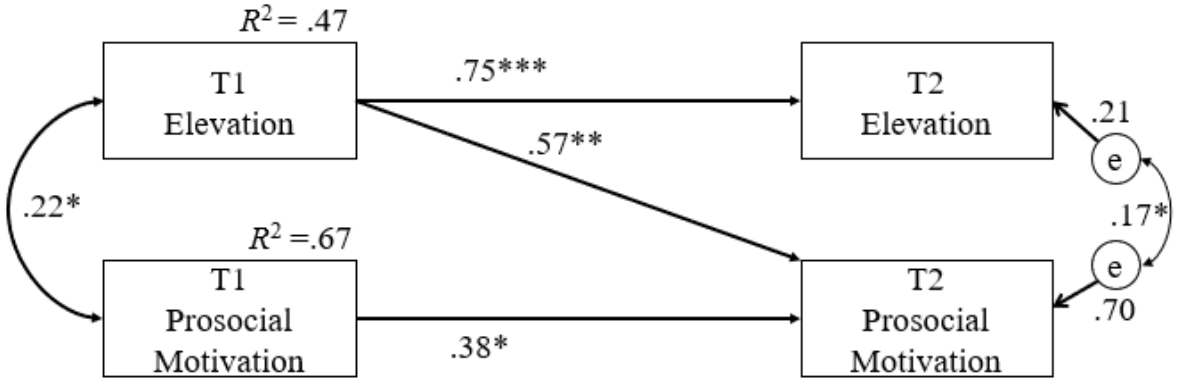


Figure A18. Study 8: Cross-lagged path analysis including feelings of elevation Time 1 > prosocial motivation Time 2 pathway. Pathways show unstandardised *B* coefficients. *p <.05, **p <.01, ***p <.001.

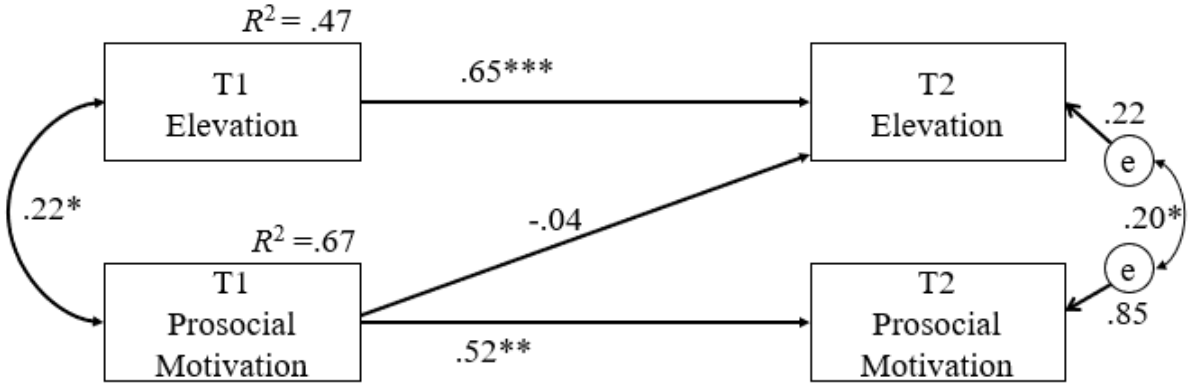


Figure A19. Study 8: Cross-lagged path analysis including prosocial motivation Time 1 > feelings of elevation Time 2 pathway. Pathways show unstandardised *B* coefficients. **p* <.05, ***p* <.01, ****p* <.001.