

RESEARCH ARTICLE

Understanding prosocial and antisocial behaviours: The roles of self-focused and other-focused motivational orientations

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Abstract

We examine how individual differences in self-focused and other-focused orientations relate to prosocial (e.g., helping, volunteerism) and antisocial (e.g., theft, violence) behaviours/attitudes. Using four datasets (total $N = 176,216$; across 78 countries), we find that other-focused orientations (e.g., socially focused values, intimacy motivation, compassionate/communal traits) generally relate positively to prosocial outcomes and negatively to antisocial outcomes. These effects are highly consistent cross-nationally and across multiple ways of operationalizing constructs. In contrast, self-focused orientations (e.g., personally focused values, power motivation, assertive/agentive traits) tend to relate positively to both antisocial and prosocial outcomes. However, associations with prosocial outcomes vary substantially across nations and construct operationalizations. Overall, the effects of other-focused orientations are consistently larger than those of self-focused orientations. We discuss the implications of these findings for interventions that target self-focused and other-focused motivations to influence prosocial and antisocial outcomes.

KEYWORDS

antisocial behaviour and aggression, egoistic and altruistic motivations, interpersonal circumplex, other-focused orientations, prosocial behaviour, self-focused orientations

1 | INTRODUCTION

Fundamental to the concerns of many social scientists are behaviours that benefit others (i.e., *prosocial behaviours*; Batson & Powell, 2003; Schroeder & Graziano, 2015) and behaviours that harm others (i.e., *antisocial behaviours*; DeWall et al., 2012). Although researchers often consider overlapping causes for prosocial and antisocial behaviours, the literatures on these two types of behaviours have largely operated in isolation from each other. This makes it difficult to determine how variables simultaneously affect both kinds of behaviours. This is an important concern, both theoretically and practically. For example, having observed that social inhibitions impede prosocial acts (e.g., Q. Guo et al., 2018), an interventionist may apply these findings to teach

people to overcome their inhibitions. However, lowered inhibitions may also promote antisocial behaviours (Hirsh et al., 2011). Thus, such an intervention may increase prosocial behaviours (as intended) but also have the unintended consequence of increasing antisocial behaviours.

To address the dynamics of prosocial and antisocial behaviours within a common theoretical framework, we examine the role of two broad types of motivational variables thought to underlie much interpersonal behaviour: *self-focused orientations*, which focus on obtaining outcomes for oneself, and *other-focused orientations*, which focus on building/maintaining relationships and achieving outcomes for others. In developing this framework, we begin by defining each variable and describe how self- and other-focused orientations can each promote

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TABLE 1 Definitions of prosocial and antisocial behaviours.

Concept	Definition	Examples
Prosocial behaviours	Behaviours which increase positive/beneficial (or decrease negative/harmful) outcomes for others. Outcomes can be material, physical, psychological, tangible or intangible. Prosocial behaviours generally include acts that are supportive of others' goals, wants or needs.	<ul style="list-style-type: none"> - Emotional support - Volunteerism - Donating blood/organs - Donating to charities - Doing favours for others
Antisocial behaviours	Behaviours which increase negative/harmful (or decrease positive/beneficial) outcomes for others. Outcomes can be material, physical, psychological, tangible or intangible. Antisocial behaviours generally include acts that are against (or interfere with) others' goals, wants or needs.	<ul style="list-style-type: none"> - Physical violence - Verbal/social aggression - Theft - Sabotaging others' work - Damaging others' property

and inhibit prosocial and antisocial behaviours. We then argue that the associations between the four variables at a global level should operate in a more generalizable way and present four studies to quantify the general associations between the variables.

1.1 | Defining prosocial and antisocial behaviours

Prosocial behaviours are acts that have positive or beneficial outcomes for others (Dovidio et al., 2006; Eisenberg & Miller, 1987; Snyder & Dwyer, 2012), and *antisocial behaviours* are acts that have negative or harmful outcomes for others (Bandura, 1978; Buss, 1961; Loeber & Hay, 1997). Both types of behaviours can take many forms.

Prosocial behaviours can be planned or spontaneous (e.g., looking after a person's pet in their absence vs. spontaneously helping a stranger; Amato, 1990; Latané & Darley, 1968), have direct or indirect benefits for others (e.g., giving money to the homeless vs. engaging in pro-environmental behaviours; De Groot & Steg, 2009; Rushton et al., 1981), be informal or formal (e.g., comforting a friend vs. formal volunteerism; Omoto & Snyder, 1995; A. J. Walker et al., 1995) and enacted with or without deliberate intentions (e.g., donating blood vs. recycling out of habit; Kurz et al., 2015; Ouellette & Wood, 1998; Verplanken & Aarts, 1999).

Antisocial behaviours can similarly be planned or spontaneous (e.g., playing a debasing prank on someone vs. hitting someone after being insulted; Kempes et al., 2005), direct or indirect (e.g., physically hitting someone vs. spreading rumours; Card et al., 2008), legal or illegal (e.g., acting rudely vs. stealing something; Anderson, 1987; Porath & Erez, 2007) and active or passive (e.g., lying to someone vs. withholding information from someone; Buller & Burgoon, 1996; Connelly et al., 2012). Many antisocial acts are forms of *aggression*, which involves explicit intention to harm another (Anderson & Bushman, 2002; DeWall et al., 2012). However, antisocial behaviours can also occur without explicit intentions, such as through reflexive acts (e.g., automatically engaging in harmful acts without realizing it; Todorov & Bargh, 2002) and antisocial negligence (e.g., harming others due to a *lack* of regard for them, rather than intending to; Albert & Thilagavathy, 2013; J. F. Mills et al., 2004; Swanson et al., 1994).

Table 1 provides elaborated definitions for prosocial and antisocial behaviours that capture the breadth of examples we have given. Although prosocial and antisocial behaviours have sometimes been discussed as conceptual opposites (Batson, 1998; Gomà-i-Freixanet, 1995; Krueger et al., 2001; Wispé, 1972), we define them separately as evidence indicates they should be treated as distinct behavioural dimensions. For instance, factor analytic work supports that prosocial and antisocial behaviours are distinct (Harris et al., 1996; Krueger et al., 2001), and the typical association between these behaviours has neither been large (e.g., Dalal, 2005; Eron & Huesmann, 1984) nor consistent (sometimes even positive: Card et al., 2008; Duncan et al., 2002). Moreover, certain behaviours have both prosocial and antisocial elements (e.g., extreme political activism can help one group while harming another; Long & Burke, 2015). Accordingly, our definitions ensure that the core features of each behaviour (e.g., prosocial behaviours providing benefits to someone) do not preclude features of the other (e.g., bringing harm to others), allowing any given behaviour to be conceived along both dimensions. However, we acknowledge that other definitions exist (e.g., DeWall et al., 2012; Eisenberg & Miller, 1987), and the Appendix provides further considerations that inform our definitions.

1.2 | Exploring the common and distinct etiologies of prosocial and antisocial behaviours

Because prosocial and antisocial behaviours are distinct dimensions, variables that predict them can follow several patterns of associations, each with unique practical implications.

First, some variables predict prosocial behaviours, but not antisocial behaviours. For example, extraversion appears to positively predict volunteerism (Carlo et al., 2005) but to be largely unrelated to antisocial behaviours (Jones et al., 2011; Miller & Lynam, 2001). Targeting such variables (e.g., creating situations to elicit extraverted states; Fleenor et al., 2002; Rauthmann et al., 2014) could be useful to obtain desired effects of increasing prosocial behaviours, while being safe to avoid undesired consequences (increasing antisocial behaviours).

Second, some variables predict antisocial behaviours but have negligible associations with prosocial behaviours. For instance, anger and

negative affectivity are well-known predictors of aggression (DeWall et al., 2012; Hershcovis et al., 2007) but have much weaker associations with prosocial behaviours (e.g., Krueger et al., 2001; Organ & Ryan, 1995). Such variables could also generally be useful and safe targets – this time to decrease antisocial behaviours.

Third, some variables predict prosocial and antisocial behaviours in opposite directions. For example, self-control, empathy, and agreeableness are typically positively related to prosocial behaviours (DeWall et al., 2008; Eisenberg & Miller, 1987; Habashi et al., 2016), but negatively related to antisocial behaviours (Denson et al., 2012; Jolliffe & Farrington, 2004; Vize et al., 2018). Such variables represent ideal targets for interventions by simultaneously increasing prosocial behaviours and decreasing antisocial behaviours.

Fourth, some variables predict prosocial and antisocial behaviours in the same direction. For instance, disinhibition can increase both prosocial and antisocial behaviours (Q. Guo et al., 2018; Hirsh et al., 2011), and so can threat to self-evaluations (Felson, 1978; Griskevicius et al., 2010; McAndrew & Perilloux, 2012). Although targeting such variables can have benefits, it can also lead to undesirable effects. For instance, an intervention that increases prosocial behaviours by reducing social inhibitions could inadvertently increase antisocial acts.

Given the above, the current project aims to examine which patterns best capture two variables that have long been proposed as key predictors of social behaviours: self- and other-focused orientations.

1.3 | Self-focused and other-focused orientations: A dominant division of motivational orientations in psychology

One of the most common distinctions made in theories of personality and motivation is that between self- and other-focused orientations. Broadly, *self-focused orientations* are a class of variables that reflect dispositions to seek beneficial outcomes for oneself, whereas *other-focused orientations* are a class of variables that reflect dispositions to seek beneficial outcomes for others and/or to build and maintain social relationships (see Table 2 for more specific definitions; for similar definitions, see also Abele & Wojciszke, 2007; Miyamoto et al., 2018). This fundamental dichotomy can be found in diverse frameworks on personality traits, motivations, goals, needs and values. Notable frameworks include the interpersonal circumplex tradition, which distinguishes between the dimensions of *agency* versus *communion* (Abele & Wojciszke, 2007; Trapnell & Wiggins, 1990), frameworks of human values that distinguish between *personal/individual focus values* versus *social/collective focus values* (Mueller & Wornhoff, 1990; Schwartz et al., 2012b), models of cultural differences that distinguish between *individualistic/independent* versus *collectivistic/interdependent* orientations (C. H. Hui & Triandis, 1986; Markus & Kitayama, 1991) and more (e.g., Abele & Wojciszke, 2014; Chulef et al., 2001; De Dreu & Nauta, 2009; Gerbasi & Prentice, 2013; Wicker et al., 1984). Table 2 provides and defines six frameworks representative of this dichotomy that we examine in our studies.

Although important differences exist between these frameworks, each contrasts dimensions that focus on individuals being motivated to obtain personal outcomes – with a consistency in themes such as self-expression, power, stimulation and mastery – to dimensions that focus on seeking outcomes tied to interpersonal others – with a consistency in themes of caring for others' well-being – and acting in ways that promote/maintain social relationships and ingroup harmony. The striking similarity between these frameworks has been noted by many researchers and is so pronounced that measures and constructs are frequently repurposed between the frameworks (e.g., Abele & Wojciszke, 2014; Buchanan & Bardi, 2015; Frimer et al., 2011; Helgeson, 1994; Locke, 2000; Miyamoto et al., 2018; Oishi et al., 1998; Ponikiewska et al., 2020; Trapnell & Paulhus, 2012; Verplanken et al., 2009; Wood & Eagly, 2015). Table A1 of the Appendix lists works that discuss and document ties between each framework in Table 2.

On the whole, the two dimensions can be thought of as superordinate motivational categories that regroup a range of more specific construct types, including values, goals, desires, traits and any variable reflecting tendencies to pursue self- and other-oriented outcomes. Further, these are high-level inclinations which can manifest in more specific domains of motivation. That is, similarly to how broad personality traits like conscientiousness and neuroticism are composed of lower order aspects/facets (e.g., facets or aspects like orderliness and volatility; DeYoung, 2015; Soto & John, 2017), self-focused motivations regroup lower order concerns such as values and motives to seek 'power', 'achievement' or 'hedonistic pleasures', which are more specific types of concerns that all share a core element of pursuing something for the self. Likewise, other-focused orientations regroup lower order concepts such as tendencies to seek 'affiliation', 'benevolence' or 'protecting others', where the core focus is on interpersonal others (including specific individuals or larger groups). Given our goal to predict broad patterns in prosocial and antisocial behaviours, we prioritize a study of higher order, chronic differences in motivation to maximize *bandwidth* in our predictions. That is, constructs that cover broad tendencies across a range of motivational domains (e.g., a global other-focused orientation) should better predict general classes of behaviours (e.g., general engagement in a range of prosocial behaviours) than would more narrowly defined subordinate concepts. Subordinate concepts (e.g., pro-environmental values) may instead better predict behaviours that are similarly narrowly defined (e.g., pro-environmental behaviours). Such ideas are frequently discussed within the bandwidth-fidelity trade-off in personality research (Hogan & Roberts, 1996; Ones & Viswesvaran, 1996; Soto & John, 2017).

That said, there are multiple ways to conceptualize high-level tendencies in self- and other-focused orientations (Table 2). For instance, one may operationalize tendencies at the level of stable personality traits. Notably, the interpersonal circumplex tradition describes the traits of agency and communion as representing two primary human motivations: 'getting ahead' versus 'getting along' (Abele et al., 2016; Horowitz et al., 2006). Additionally, the motivations can be represented at the level of human values. According to Schwartz and colleagues (2012b), basic values can be organized at the highest level

TABLE 2 Definitions and synthesis of self-focused and other-focused orientations.**Core definitions for self-focused and other-focused orientations**

Self-focused orientations: Orientations describing the degree to which a person focuses on, pays attention to and seeks out outcomes that benefit them personally or seeks to increase their own personal agency/control over such personal outcomes.

Other-focused orientations: Orientations describing the degree to which a person focuses on, pays attention to and seeks out outcomes for the benefit of others, to build and maintain relationships with others or to support others' goals/wants.

Example frameworks distinguishing self-focused and other-focused orientations

1. *Interpersonal circumplex:* A widely used framework for organizing interpersonal space (covering elements such as people's behaviours, traits, goals, motivations, values, needs) according to two central dimensions.
 - (a) *Agency:* Interpersonal dimension concerned with differentiating and promoting outcomes for the self through themes such as power and mastery. The dimension of agency is sometimes referred to using other labels such as dominance and assertiveness.
 - (b) *Communion:* Interpersonal dimension concerned with creating and maintaining connections with others, such as through agreeable and caring behaviours. The dimension of communion is sometimes referred to using other labels such as nurturance, affiliation and warmth.

References: Abele and Wojciszke (2007, 2014), Bakan (1966), Freedman et al. (1951), Gurtman (2009), Hiller and Philliber (1985), Leary (1957), Leonard (1997), Locke (2000), Trapnell and Wiggins (1990), Wiggins (1996) and Wiggins and Holzmueller (1981).

2. *Schwartz's theory of basic human values:* An influential framework for understanding human values. Distinguishes between 19 values, which are organized along a circular continuum defined by the presence of higher order values. At the highest level, each value can be organized according to whether it has a social focus or a personal focus.
 - (a) *Personal focus values:* Values that concern outcomes for the self. Subsumes *self-enhancement values*, which focus on directly pursuing one's own interests, and *openness to change values*, which focus on gaining exposure to new experiences, ideas and skills.
 - (b) *Social focus values:* Values that concern outcomes for others and for how one relates to others. Subsumes *self-transcendence values*, which focus on concerns for the welfare of others, and *conservation values*, which focus on maintaining social order and avoiding social disruption/change.

References: Rudnev et al. (2018), Schwartz (1994a, 2012), Schwartz and Boehnke (2004) and Schwartz et al. (2012b).

3. *Masculinity and femininity (as captured in scales like the BSRI):* Two personality traits perceived as differentially desirable for men and women.^a Distinction between the two trait dimensions draws heavily from the two axes of the interpersonal circumplex.
 - (a) *Masculinity:* A general orientation tied to themes of instrumentality, assertiveness, power and independence.
 - (b) *Femininity:* A general orientation tied to themes of expressiveness, nurturance and communality, along with a general concern for others.

References: Bakan (1966), Bem (1974), Bem et al. (1976), Heilbrun and Bailey (1986), Lippa (2001) and Wood and Eagly (2015).

4. *Independent versus interdependent self-construal:* Individual differences in how people construe their sense of self, along with their relationship to the world around them. Frequently understood as an individual-level manifestation of group-based differences in individualistic/collectivistic cultural values.
 - (a) *Independent self-construal:* Degree to which people construe their sense of self as highly individualized and independent from others. People high in independent self-construal value independence and act in ways to express/strengthen it. Tied to constructs such as individualism, egocentrism and idiocentrism.
 - (b) *Interdependent self-construal:* Degree to which people construe their sense of self as interconnected with others around them. People high in interdependent self-construal value relationship maintenance and acting in accordance with established norms. Tied to constructs such as collectivism, sociocentrism and allocentrism

References: Hofstede (1980, 2011), C. H. Hui and Triandis (1986), Kitayama et al. (2019), Markus and Kitayama (1991), Singelis (1994) and Triandis (1995, 2001).

5. *Self- and other-interest:* Individual difference measure of the extent to which people are motivated to act in their own self-interest or the interest of others.
 - (a) *Self-interest:* Orientation towards the pursuit of personal gains in socially valued domains such as achieving social status/power, happiness and occupational success.
 - (b) *Other-interest:* Orientation towards the pursuit of gains for others in socially valued domains (e.g., social status/power, happiness and occupational success).

References: Gerbasi (2011) and Gerbasi and Prentice (2013).

6. *Power and achievement versus affiliation and intimacy motives:* Four highly studied motivational dimensions tied to basic psychological needs. Frequently discussed in relation to the interpersonal circumplex and captured by similar values in Schwartz's model.
 - (a) *Power and achievement:* Power is the motive for having personal influence over others, along with personal success and status, whereas achievement is the motive for learning and mastering tasks, along with achieving excellent work.
 - (b) *Affiliation and intimacy:* Affiliation is the motive for building and maintaining friendly relationships with others in general, whereas intimacy is the motive for forming profound relationships with close others and engaging in behaviours such as self-disclosures and meaningful mutual exchange.

References: Brunstein et al. (1998), Heckhausen and Heckhausen (2008), Mansfield and McAdams (1996), McAdams and Constantian (1983), Schönbrodt and Gerstenberg (2012), Sokolowski (2008), Sokolowski et al. (2000), Winter (1991) and Winter et al. (1998).

^aAlthough masculinity/femininity continue to correspond closely to the agency/communion distinction, the usefulness of the dimensions to represent gender-normative traits has been criticized as gender roles and tendencies have deviated from a close correspondence to the two dimensions (e.g., Auster and Ohm, 2000; Donnelly and Twenge, 2017; Twenge, 1997).

according to whether they focus on social (e.g., benevolence, conformity) or personal (e.g., hedonism, power) concerns. Other frameworks delineate basic motivational tendencies in more specific terms (e.g., outlining motives for affiliation and intimacy, or achievement and power; Schönbrodt & Gerstenberg, 2012), but the categories usually still reflect broad differences in chronic self- and other-focused concerns. In this project (particularly Study 4), we will sample different ways of operationalizing the motivational tendencies to draw more generalizable conclusions. This will also allow us to track how much heterogeneity exists between operationalizations.

1.3.1 | How divergent are self- and other focused orientations?

Most theories view self- and other-focused orientations as distinct dimensions, and empirical findings support this view (e.g., De Dreu & Nauta, 2009; Markus & Kitayama, 1991; Trapnell & Wiggins, 1990; but see Meglino & Korsgaard, 2004). Although early research frequently described the two dimensions as either independent or opposing, several works have since posited theoretical reasons to expect them to be positively related and often supportive or mutually reinforcing (Heilbrun & Bailey, 1986; Leonard, 1997). For example, fostering close relationships with others can be the first step to receiving support from them (Kitayama et al., 2010), and the development of an internalized sense of self-compassion can help one develop compassion towards others (Neff & Pommier, 2013). There are also cases when self-focused and other-focused orientations directly lead people to pursue similar endpoints. For example, both collectivism (other-focused) and performance/status motives (self-focused) can lead young adults to pursue prestigious employment (e.g., Fouad et al., 2008; Haase & Lautenschlager, 2011). For other-focused individuals, this pursuit may arise from wishing to meet the expectations of others (e.g., parents; Fouad et al., 2008), whereas for self-focused individuals, the goal may be to achieve prestige (though what is considered prestigious and successful is still defined by broader social norms; Gerbasi & Prentice, 2013).

In addition to these perspectives, a positive association between self-focused and other-focused orientations could also emerge as the result of a general motivational factor, reflecting a disposition to act in goal-directed ways. For instance, some individuals are chronically motivated to act to fulfil their motivations, but others may find themselves in chronic states of amotivation/apathy (Husain & Roiser, 2018). Such a general factor has been described by researchers in several areas, spanning both the motives and values literature (Batey et al., 2011; Borg & Bardi, 2016; Gunnell & Gaudreau, 2015). For example, Borg and Bardi (2016) posit a 'value guidedness' factor underlying human values, representing a general disposition to act in pursuit of one's values.

Theoretical positions that self-focused and other-focused orientations should be positively correlated also hold empirical grounds. Studies have frequently found measures of self-focused (e.g., agency, personal focus values, independence) and other-focused (e.g., communion, social focus values, interdependence) orientations to be correlated between $r = 0$ and 0.5, with the magnitude of that correlation

depending on the specific construct evaluated (e.g., Abele & Wojciszke, 2007; Datu, 2015; DeYoung et al., 2007, 2013; Gerbasi & Prentice, 2013; Heilbrun & Bailey, 1986; Howell & Buro, 2017; Joyal-Desmarais et al., 2020; Schwartz & Boehnke, 2004; Singelis, 1994; Trapnell & Paulhus, 2012; Wang & Wang, 2016; Ward et al., 2006; Weisberg et al., 2011). Taking these findings into account, we expect that the true average correlation between the two dimensions is likely located in the middle of the above range (moderate and positive).

1.4 | How do self-focused and other-focused orientations relate to prosocial and antisocial behaviours?

In the literature on *prosocial* behaviours, there has long been debate about whether people engage in prosocial acts predominantly for altruistic (other-focused) or selfish (self-focused) reasons (Batson, 1987; Rothstein & Pierotti, 1988; Schaller & Cialdini, 1988; Schroeder et al., 1988). Over the years, studies have indicated that people can and do engage in prosocial behaviours for both types of reasons (Snyder & Dwyer, 2012). For example, research on volunteerism (Carpenter & Myers, 2010; Clary et al., 1998) shows that people commonly volunteer for both self-oriented reasons (e.g., to improve one's career prospects or reputation) and other-oriented reasons (e.g., to fulfil humanitarian values or conform with social norms). Interventions have also successfully leveraged both types of reasons to encourage prosocial behaviour (e.g., Clary & Snyder, 1999; Simpson & Willer, 2008).

Yet, the relative importance of the two types of motivations remains unclear. Additionally, research has mostly examined whether these motivational factors can promote specific prosocial behaviours (e.g., volunteerism), rather than prosocial behaviours in general. This is an important omission, as although each type of motivational orientation can be leveraged to promote a given prosocial behaviour, it is also possible for them to lower other forms of prosocial behaviours. For example, self-focused reasons can lead to more helping (e.g., to feel better about oneself; Clary & Snyder, 1999) and less helping (to protect personal resources; Joyal-Desmarais et al., 2018, 2023). Therefore, a global perspective on how the two types of motivational orientations relate to prosocial behaviours is warranted.

There is also substantial evidence that people can engage in or refrain from antisocial behaviours for either self- or other-focused reasons (Baron, 1971; Baumeister et al., 1996; Borden & Taylor, 1973; Halevy et al., 2008; Lambe et al., 2018; Nagin & Pogarsky, 2003; Wispé, 1972). For instance, a person may harm someone to re-establish a positive self-image following an insult (Lambe et al., 2018) or to express power-related motivations (Adams et al., 1995; Henry et al., 2005) – both self-focused reasons. However, a person can also harm others for other-focused reasons, such as to protect others (Böhm et al., 2016), to further a social cause (Long & Burke, 2015), to fulfil someone's request (Borden & Taylor, 1973) or to enforce/impose a group's social norms (Chowdhry, 1997; Faragó et al., 2019). Certain self-focused and other-focused orientations have shown specific relations with specific types of antisocial behaviours. For example,

self-enhancement values (self-focused) generally positively predict aggression, whereas self-transcendence values (other-focused) inhibit it (Benish-Weisman, 2015, 2019). Yet, as with prosocial behaviour research, the overall associations between self-focused orientation, other-focused orientations and antisocial behaviours are not fully documented.

Although self- and other-focused orientations can each motivate or inhibit prosocial and antisocial behaviours (e.g., depending on contextual factors), the overall associations between these variables should operate in systematic ways. One important factor in determining the strength and direction of each association may be the degree to which a type of behaviour functions either as an *end* or a *mean* to achieve motivational outcomes. Engaging in a behaviour is an *end* if doing so (or not) is inherently a 'success' in relation to fulfilling central concerns for a motivational orientation (i.e., does the behaviour inherently impact a desired outcome?). In this way, just as eating inherently fulfils hunger needs, engaging in prosocial behaviours (e.g., helping a neighbour) directly fulfils other-focused concerns by increasing positive outcomes for others and/or helping build and maintain relationships (the core concerns of other-focused orientations). In contrast, antisocial behaviours (verbal aggression) directly threaten these same core concerns (e.g., harming others is antithetical to benefiting others and actively harms relationships), and thus avoiding such behaviours can be inherently deemed a success (i.e., an end).

Generally, we can expect that motivational orientations will manifestly predispose individuals towards the ends of pursuing behaviours that inherently fulfil or express their core concerns and avoiding behaviours that inherently threaten or are detrimental to such concerns (Joyal-Desmarais et al., 2023). Individuals will, of course, vary in their *perceptions* (explicit or implicit) of the extent to which any given behaviour impacts the specific type of other-focused concerns they hold. Yet, on average, there should be a strong link between holding other-focused motivations and seeing prosocial (antisocial) behaviours as ends for one's motivational pursuits. Thus, individuals who have greater other-focused orientations should engage in substantially more frequent prosocial behaviours and fewer antisocial behaviours (see Bardi & Schwartz, 2003, for a similar rationale). For example, those with strong communal tendencies (concerned with building/maintaining relationships and caring for others) and those with strong universalism values (concerns for the welfare of all people) should show strong tendencies towards helping and cooperating with others and against harming others.

In contrast, engaging in a behaviour is a *means* if the action (or inaction) is indirectly (rather than directly) serving to fulfil a motivational concern. For instance, many individuals work, not because work is inherently a desired outcome, but because of its by-products, such as a salary that can support other needs like self-preservation by enabling one to buy sustenance. Thus, working does not fulfil self-preservation, but it acts as a means towards that motivational concern. Similarly, a highly self-focused person can engage in prosocial or antisocial behaviours not for the inherent impacts on others, but to serve their own benefits (e.g., to improve one's reputation; Carpenter & Myers, 2010). If self-serving outcomes can readily be attained from

many prosocial and antisocial behaviours – an assertion many interventions depend on (e.g., Clary & Snyder, 1999; Simpson & Willer, 2008) – then people with strong self-focused orientations should be attuned to these possibilities and be ready to profit from them. For instance, they may readily act on obvious opportunities (e.g., theft of unattended valuables) or be motivated to reshape acts to their favour (e.g., request public recognition prior to accepting to donate). Such persons may focus their attention mostly on how prosocial/antisocial behaviours serve self-focused concerns (Derryberry & Tucker, 1994; Dijksterhuis & Aarts, 2010) and may overlook the inherent impacts of these behaviours on others, which emerge as by-products of their self-focused pursuits (Rothstein & Pierotti, 1988). Of course, self-focused individuals will also be attuned to avoid situations when prosocial and antisocial behaviours will be detrimental to their self-focused pursuit (e.g., they may avoid donating funds unless personal benefits outweigh the costs). But, they should still be eager to engage in such behaviours when doing so serves their interests. Additionally, agency and seeking to assert oneself are key aspects of self-focused orientations (Table 2) – which may generally lead people towards action over inaction.

In contrast, those with weak self-focused orientations may lack the motivation to attend to and exploit prosocial or antisocial behaviours in the same way. That is, they have little motivation to engage in self-serving behaviours (be they prosocial or antisocial), but likewise have little reason to engage in behaviours that do not serve the self either. If so, these dynamics should generate positive associations between self-focused orientations and *both* prosocial and antisocial behaviours. This is because one group (low self-motivation) is unlikely to engage in prosocial or antisocial behaviours, whereas the other group (high self-motivation) will engage in the behaviours at least when personal benefits are to be gained. However, because prosocial and antisocial behaviours do not always afford personal benefits, the associations between the behaviours and self-focused orientations should be weaker than those between the behaviours and other-focused orientations (where prosocial/antisocial acts always do impact others).

1.5 | Hypotheses and current research

All in all, the theoretical discussions above allow us to propose a series of hypotheses about the general impact of self-focused and other-focused orientations on prosocial and antisocial behaviours. First, we expect self-focused orientations to be a positive predictor of the two behaviours:

H 1. Self-focused orientations should have a positive association with antisocial behaviours, independent of the effect of other-focused orientations

H 2. Self-focused orientations should have a positive association with prosocial behaviours, independent of the effect of other-focused orientations

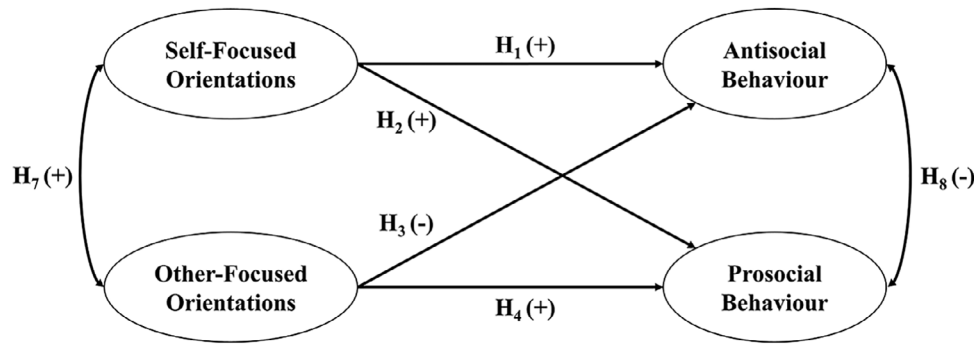


FIGURE 1 Our general model and predictions (direction of prediction for each predictive pathway is indicated in parentheses).

Second, we expect other-focused orientations to predict the two behaviours in opposite directions:

H 3. Other-focused orientations should have a negative association with antisocial behaviours, independent of the effect of self-focused orientations

H 4. Other-focused orientations should have a positive association with prosocial behaviours, independent of the effect of self-focused orientations

Hypotheses H1–H4 are represented in Figure 1.

In addition to the primary hypotheses above, we also conduct exploratory analyses to examine how H1–H4 vary according to

1. the populations from which we draw our samples (Studies 2 and 3 will examine our hypotheses cross-nationally);
2. the ways in which the variables are operationalized (Study 4 will sample several operationalizations of each construct).

Finally, we also posit secondary hypotheses. First, because prosocial/antisocial behaviours are usually ends for achieving other-focused concerns, but not self-focused concerns:

H 5. Other-focused orientations should have a stronger association with antisocial behaviours than should self-focused orientations

H 6. Other-focused orientations should have a stronger association with prosocial behaviours than should self-focused orientations

Consistent with past empirical findings, we also make the following predictions about the correlations between our variables:

H 7. Self-focused and other-focused orientations should have a moderate positive association (e.g., r around .3)

H 8. Antisocial and prosocial behaviours should have a small-to-moderate negative association. (e.g., r below 0, but above $-.5$)

We examine these hypotheses and questions in four studies. Analyses were conducted using *R* (R Core team, 2017). Analysis scripts

and full survey materials, including all measures we used, are available online (see the Supporting Information and project page at osf.io/fwpyt). All data are also available (details are provided in each study description).

Finally, we note that our research predominantly concerns how self- and other-focused orientations are each associated with prosocial and antisocial behaviours when controlling for the other orientation (except H7 and H8). This approach was chosen as the frequently observed association between self- and other-focused orientations can create a confounding effect when evaluating how each orientation predicts behaviours. However, because bivariate associations still provide important information, we present them in our Supporting Information (see Tables S3, S8, S27 and S28). Bivariate findings are largely in line with the multivariate analyses presented in the text and are not discussed further.

2 | STUDY 1

The goal of Study 1 was to provide an initial examination of how self- and other-focused orientations relate to prosocial and antisocial behaviours. To do this, we conducted secondary analyses using the National Longitudinal Study of Adolescent to Adult Health (Add Health; Harris et al., 2009). Add Health is a longitudinal study that began following a nationally representative sample of American grade 7–12 adolescents in 1994–95 (Wave I of Add Health) to understand health and achievement outcomes. Extensive information on the Add Health procedures are available online (Harris et al., 2009).

2.1 | Our sample

Our analyses use the *Wave III Public In-Home Questionnaire* portion of the Add Health data (conducted in 2001–2002), which was the only wave that contained necessary items to formulate composite measures of each of our constructs of interest. The data were obtained from the www.icpsr.umich.edu website on 29 October 2015 (Harris & Udry, 2014). We included all participants who completed at least one of 14 items identified as indicators of self- and other-focused orientations. This criterion was chosen because only a subset of participants was assigned items to measure self-focused and other-focused

orientations. In total, we analysed responses from 1319 participants. The sample is predominantly female (61.3%) and White (70.8%), with a mean age of 22 years ($SD = 1.8$). Additional Study 1 demographics are available in the Supporting Information (Table S1).

2.2 | Measures

All items used to operationalize Study 1 variables are presented in Table S2 of the Supporting Information and descriptive statistics for each measure are in Table S3.

2.2.1 | Self-focused and other-focused orientations

We assessed self- and other-focused orientations using a subset of items from the 30-item short-form Bem Sex-Role Inventory (BSRI; Bem, 1981). The BSRI consists of statements describing a person and asks participants to indicate on a seven-point scale the degree to which each statement describes them (1 = 'never or almost never true'; 7 = 'always or almost always true'). The BSRI was originally developed to measure normative masculine, feminine and neutral personality traits. However, in conceiving these dimensions, Bem drew heavily from ideas that are central to the interpersonal circumplex tradition, reflecting gendered values people are socialized to pursue (Bakan, 1966; Bem et al., 1976). Thus, the masculine dimension bears close correspondence to the self-focused orientation of agency (e.g., describing a pursuit of personal benefits; increasing one's control over personal outcomes), whereas the feminine dimension bears close correspondence to the other-focused orientation of communion (e.g., creating/maintaining relationships, caring for and nurturing others). The correspondence is substantial enough that a consensus exists in the literature that the masculine scale and feminine scale are reliable and valid measures of the motivational dimensions of agency and communion, respectively (Helgeson, 1994; Hiller & Philliber, 1985; Lippa, 2001; Locke, 2000; Saragovi et al., 1997; Ward et al., 2006; Wiggins & Holzmueller, 1981; Wood & Eagly, 2015). Additionally, though personality trait measures like the BSRI focus on summarizing what a person is like descriptively (without referencing the reasons underlying the actions), regularities in people's behaviours on such measures are thought to largely arise from motivational forces (Corr et al., 2013).

Given the above, we measured participants' *self-focused orientation* using six items from the masculine subscale that reflect ideas of personal agency (e.g., 'I defend my own beliefs'; 'I am independent') and participants' *other-focused orientation* using eight items from the feminine subscale that express a general orientation towards others (e.g., 'I am affectionate'; 'I am understanding'). In selecting items, we omitted those that referred explicitly to prosocial/antisocial behavioural tendencies (e.g., 'I am aggressive'). However, inferences remain unchanged if we used the full BSRI (i.e., significant pathways remain significant in the same direction; see Figure S1 and Section 4 of the Supporting Information).

A confirmatory factor analysis (CFA) was conducted to examine the factor structure of the scales using the *lavaan* package (Rosseel, 2012). Each item loaded significantly ($p < .01$) onto its respective factor at a value of or greater than .40 (see Figure S2 of the Supporting Information for full CFA results). Further, the standardized reliability alphas (α_s) were acceptable for both other-focused ($\alpha_s = .91$) and self-focused ($\alpha_s = .77$) orientation scales.

2.2.2 | Prosocial and antisocial behaviours

We used three 'yes' or 'no' items to assess *prosocial behaviours*. Two items asked participants whether, in the past 12 months, they had (1) performed volunteer/community service work and (2) donated blood, plasma or platelets. The third item asked participants whether they were registered organ donors. These items have previously been used in studies of prosocial behaviour (e.g., Konrath & Handy, 2020).

Ten items asked about *antisocial behaviours* participants had enacted in the 12 months preceding the survey. Seven items inquired about the frequencies of various behaviours (e.g., theft, property damage) on four-point scales (1 = 'Never'; 2 = '1 or 2 times'; 3 = '3 or 4 times'; 4 = '5 or more times'). Two items asked whether participants had ('yes'/'no') pulled a knife/gun on someone or stabbed someone, and a final item asked how many times participants had seriously physically injured someone (coded from 1 = Never; 6 = 5 or more times). These items have previously been used in studies of antisocial behaviour (e.g., Barnes & Boutwell, 2013; Beaver et al., 2012; Grotevant et al., 2006; G. Guo et al., 2007). Despite the seriousness of these behaviours, 217 participants had engaged in at least one.

A CFA indicated that each item loaded significantly onto its respective factor ($p < .01$), although not always at a level of .40 (see Figure S3 of the Supporting Information). Reliability was relatively low for prosocial behaviours ($\alpha_s = .37$) but decent for antisocial behaviours ($\alpha_s = .75$).

2.3 | Analyses and results

To examine our hypotheses, we fit a structural equation model (SEM) in *lavaan* (Rosseel, 2012) using full information maximum likelihood (FIML) to handle missing data. The structure of the model was specified according to Figure 1, and latent variables were modelled according to Figures S2 and S3 of the Supporting Information. A correlation matrix between all Study 1 items is available in the Supporting Information (Table S4). Table 3 presents the standardized path coefficients, standard errors, confidence intervals (CIs) and p -values for the SEM model. We found that a higher self-focused orientation was significantly positively associated with antisocial behaviours (H1) and prosocial behaviours (H2). A higher other-focused orientation was significantly and negatively associated with antisocial behaviours (H3) and had a non-significant but positive association with prosocial behaviours (H4). These four pathways overlapped in their CIs (H5, H6). Lastly, self-focused and other-focused orientations were correlated

TABLE 3 Standardized results from Study 1's structural equation model.

Pathway				Est.	SE	p	95% CIs
Regressions							
(H ₁)	Antisocial behaviours	~	Self-focused orientation	0.119	0.057	.036	[0.007, 0.230]
(H ₃)		~	Other-focused orientation	-0.189	0.054	.000	[-.0295, -0.083]
(H ₂)	Prosocial behaviours	~	Self-focused orientation	0.174	0.085	.041	[0.008, 0.341]
(H ₄)		~	Other-focused orientation	0.112	0.082	.173	[-0.049, 0.274]
Covariances							
(H ₇)	Self-focused orientation	~~	Other-focused orientation	0.727	0.018	.000	[0.691, 0.762]
(H ₈)	Prosocial behaviours	~~	Antisocial behaviours	0.168	0.051	.001	[0.068, 0.268]

Note: Fit indices: CFI = 0.851; RMSEA = 0.064 [0.061, 0.067]; SRMR = 0.053. Coefficients in bold are significant at $p < .05$.

Abbreviations: CIs, 95% confidence intervals; Est., standardized parameter estimates; p , p value; SE, standard error.

at .59 (H7), and prosocial and antisocial behaviours were correlated at .08 (H8).

2.4 | Discussion

Study 1 offers initial evidence for our primary hypotheses. Specifically, self-focused orientations were positively associated with both antisocial and prosocial behaviours (supporting H1 and H2), and other-focused orientations were negatively associated with antisocial behaviours (supporting H3). However, although the association between other-focused orientation and prosocial behaviours was positive, it was non-significant (not supporting H4). Each of the four pathways had standardized coefficients between .10 and .20.

In terms of our secondary hypotheses, we found less support. Although the association between self-focused orientation and antisocial behaviour was smaller in magnitude than the association between other-focused orientation and antisocial behaviour, this difference was not significant (not supporting H5). Similarly, the associations between each motivational orientation and prosocial behaviours also showed overlap in size (not supporting H6). Although these findings contrast with our hypotheses, we note that Study 1 was likely underpowered to evaluate H5 and H6, as is evidenced by the large CIs produced. Consequently, the following studies used a combination of larger samples (Studies 2 and 3) and better measurements (Study 4) to obtain more precise estimates.

Lastly, we found that our measures of self- and other-focused orientations were more highly correlated than anticipated by H7 and that the correlation between the prosocial and antisocial behaviour measures was significant and positive, albeit small, rather than negative (contrasting with H8). Although this last finding deviates from H8, the small positive effect is not incompatible with our framework and could have emerged for several reasons. For instance, it is possible that the association arose due to sampling error or that another factor is leading these behaviours to be positively correlated. For instance, young adults' opportunities to behave prosocially or antisocially are each constrained by the degree to which they are socially

active. However, given that the findings of Study 1 represent only a single test of our hypotheses, we urge caution in evaluating them in isolation.

3 | STUDIES 2 AND 3

Although Study 1 provides support for several of our primary hypotheses, the study had several limitations. The sampling frame was quite focused – consisting entirely of young, predominantly white and female, Americans. We also used indicators of prosocial behaviours with a relatively low reliability and measures of self- and other-focused orientations that were highly correlated with one another. This could have led to attenuation effects. Finally, we were only able to use a single operationalization of each of our variables of interest, limiting the generalizability of our findings. In our next two studies, we used larger and more diverse samples and considered alternative measures for each construct. In operationalizing self- and other-focused orientations, we move away from a trait-based measure of agency and communion to a measure of basic human values, tapping into explicitly held motivations.

3.1 | The world values survey

To substantially increase the diversity of our sample, we made use of data from the World Values Survey (WVS). The WVS is a large-scale cross-national collaboration, which collects nationally representative surveys around the globe to assess how values and beliefs impact behaviours. For our purposes, we used Wave 5 and Wave 6 of the WVS (Inglehart et al., 2014a, 2014b). Although each wave surveys a different sample of participants, they share similar methodologies. Consequently, we discuss them together. The data were downloaded on 30 May 2017 from www.worldvaluessurvey.org (where additional information on the WVS methodology can be found).

Wave 5 contains data from 83,975 participants (52% female; mean age = 41.46, $SD = 16.49$) across 58 countries and was collected

over the years 2005–2009. Wave 6 was collected between 2010 and 2014 and contains responses from 90,350 participants (52% female; mean age = 42.05, $SD = 16.48$) across 60 countries. The samples are diverse across many characteristics, including education and socioeconomic status. (See Table S6 of the Supporting Information for detailed demographic analyses for Studies 2 and 3.)

3.2 | Measures

All items used to operationalize Studies 2 and 3 variables are presented in Table S7 of the Supporting Information. Descriptive statistics for each measure are presented in Table S8.

3.2.1 | Self- and other-focused orientations

To assess motivational orientations, we used the set of items included in each wave of the WVS to assess constructs from Schwartz's (1994a) theory of human values. Each item described the values of an individual, and participants indicated on a six-point scale the degree to which they felt the statement described someone like them (1 = 'Very much like me'; 6 = 'Not at all like me'). To ease interpretability, we recoded items such that higher scores would indicate higher endorsements of similarity.

Schwartz and colleagues (2012b) classify values into two higher level categories: personal focus values and social focus values. Personal focus values tie closely to our conception of *self-focused orientations* and touch on values to pursue one's self-interest (e.g., achieving power, status, enjoyable experiences), while also gaining new experiences and skills (which allow one to express greater personal mastery over the world around them). We therefore operationalized self-focused orientations using an average score of personal focus values assessed in the WVS (Schwartz et al., 2012b). In both waves, we used four items that measure values of *self-direction*, *power*, *hedonism* and *achievement*. Sample items include 'It is important to this person... to have a lot of money and expensive things' and '... to do things one's own way'.

Social focus values tie closely to our conceptualization of *other-focused orientations* and include values that concern others' well-being (e.g., doing good) and interpersonal relationships and social order (e.g., conforming to social norms). We therefore operationalized *other-focused orientations* using an average score of values with a social focus (Schwartz et al., 2012b). We used three items in Wave 5, along with an additional fourth item included only in Wave 6 of the WVS, that measure values of *benevolence*, *conformity*, and *universalism*. Sample items include 'It is important to this person... to always behave properly' and '... to do something for the good of society'.

CFAs indicated all items significantly and positively ($p < .001$) loaded onto their respective factors above .40 at both waves (see Figures S4 and S5 of the Supporting Information for full CFA results). Both scales had decent reliabilities (α_s ranged from .61 to .76).

3.2.2 | Prosocial behaviours and antisocial attitudes

In Wave 5, *prosocial behaviours* were assessed using two items asking individuals whether they were active members, inactive members or non-members of (1) environmental or (2) humanitarian or charitable organizations. We only considered *active memberships* in these organizations, as inactive memberships may not be as indicative of being engaged in prosocial behaviours promoted by these organizations (Parboteeah et al., 2004). Given relatively low membership rates, the two items were aggregated into a dichotomous measure assessing whether people were active members of *either or both* types of organizations (10.1% of respondents) or not. The two items were correlated at .32. For Wave 6, we used two additional items assessing whether, in the prior two years, participants had (1) given money to an ecological organization or (2) participated in a demonstration for an environmental cause. The four items in Wave 6 were aggregated into a dichotomous index to indicate whether individuals had engaged in *any* of the behaviours (21.4% had done so). The four items in Wave 6 had $\alpha_s = .50$.

Although Waves 5 and 6 did not collect data on antisocial behaviours directly, they contain several items assessing antisocial attitudes, which conceptually act as mediators between motivational orientations and behaviours, and can be used as a proxy measure indicating a proclivity towards antisocial behaviours. For Wave 5, we averaged five items asking participants the degree to which they thought certain antisocial behaviours were justifiable on a 10-point scale (1 = 'Never justifiable'; 10 = 'Always justifiable'). These behaviours included financial fraud (e.g., cheating on taxes) and violence (e.g., a man beating his wife), and the items had good reliability ($\alpha_s = .80$). The same items were used in Wave 6, along with three additional items about (1) stealing property, (2) parents beating children and (3) the use of violence against others. Items in Wave 6 also had good reliability ($\alpha_s = .87$). Raw scores on our measures of antisocial attitudes were skewed in both Waves, so we applied a log-transformation to normalize their distributions.

We conducted CFAs on the antisocial attitude items (Waves 5 and 6) and the prosocial behaviour items (Wave 6 only). All items significantly and positively ($p < .001$) loaded onto their respective factor above .40 (except one prosocial behaviour item with a loading of .38; see Figures S6 and S7 of the Supporting Information for full CFA results).

3.3 | Analyses and results

We standardized all variables prior to analyses. We then conducted two separate multi-level models in each wave of the WVS, using the *lme4* (Bates et al., 2015, 2018) and *lmerTest* packages (Kuznetsova et al., 2017).

First, we fitted a linear mixed effects model predicting antisocial attitudes from self- and other-focused orientations. Second, we fitted a mixed-effects logistic regression to predict engagement in prosocial behaviours, again using self- and other-focused orientations as predictors. In each model, data were nested within country, and random intercepts were estimated along with random effects for each

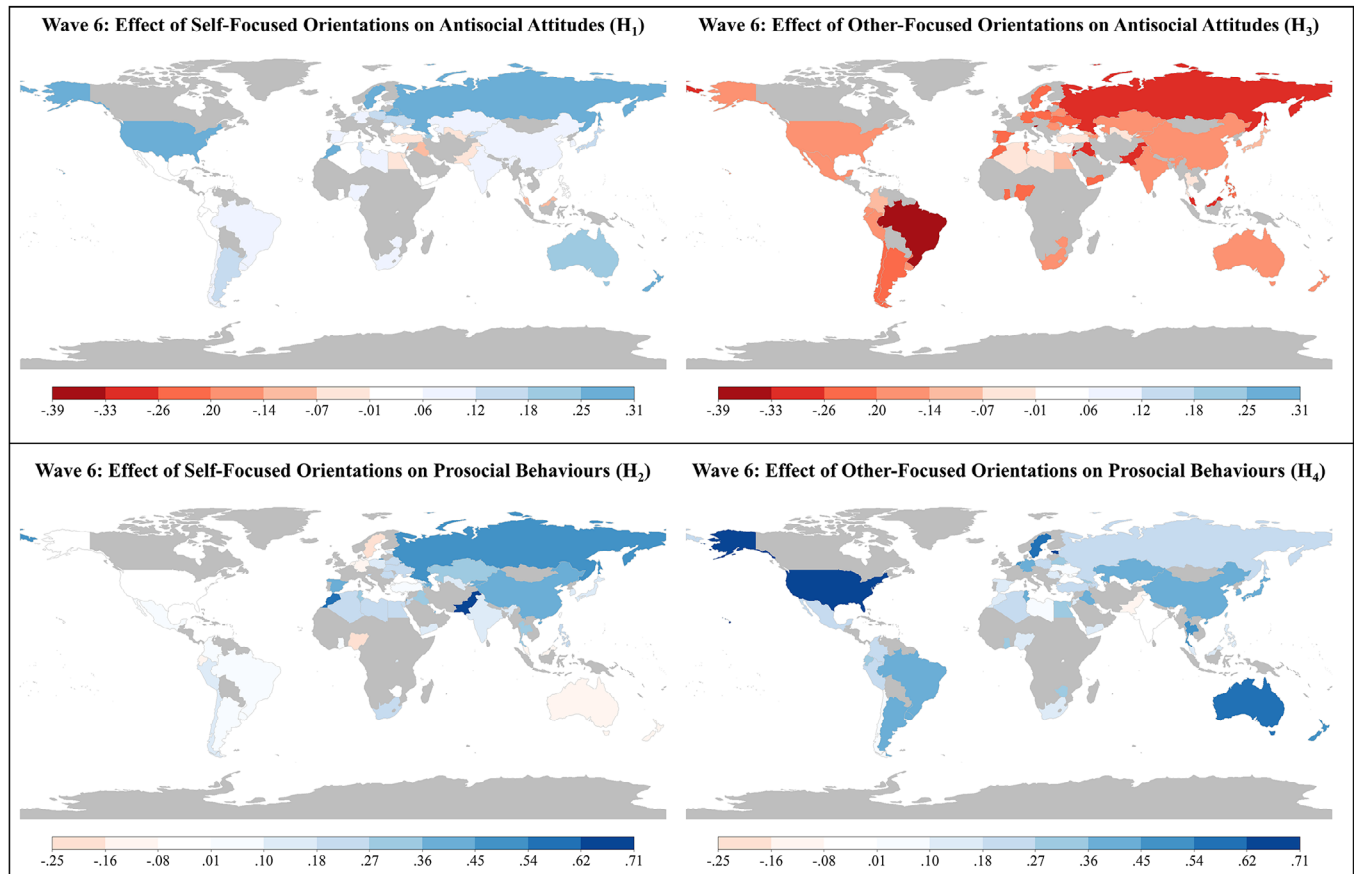


FIGURE 2 Graphical representation of Study 3 results (Wave 6 of the WVS). Darker blue colours indicate a stronger positive association within a given country, whereas darker red colours represent stronger negative associations. Countries in grey colour have no data available. The effects consist of the fixed effects, adjusted by the random effect estimate for each country. Maps were created using the *rworldmap* (South, 2011, 2016), *classInt* (Bivand, et al., 2018) and *RColorBrewer* (Neuwirth, 2011) packages.

predictor. Our results are presented in Table 4. Figure 2 displays the estimated within-country effects (i.e., the magnitude of slopes for each country) in Wave 6. The distribution of within-country effects was similar in Wave 5 and is presented in Figure S8 of the Supporting Information. Taken together, our analyses made use of data from 78 unique countries.

When modelling *antisocial attitudes*, self-focused orientations had a significant positive association with antisocial attitudes in both WVS waves (H1). Estimated slopes were positive in 96% of countries in Wave 5 and in 85% of countries in Wave 6. Conversely, other-focused orientations had significant negative associations with antisocial attitudes in both waves (H3). Estimated slopes were negative in 98% of countries in Wave 5 and 100% of countries in Wave 6.

When modelling *prosocial behaviours*, self-focused orientations had a non-significant association with prosocial behaviours in Wave 5, but a significant positive association with prosocial behaviours in Wave 6 (H2). Estimated slopes were positive in 67% of countries in Wave 5 and 78% of countries in Wave 6. Other-focused orientations had a significant positive association with prosocial behaviours in both Waves (H4). Estimated slopes were positive in 100% of countries in Wave 5 and 88% of countries in Wave 6.

Across models, effects associated with other-focused orientation were always significantly larger than corresponding effects associated with self-focused orientation, except when predicting prosocial behaviour in Wave 6 (H5, H6). Lastly, the correlation between the two motivational measures was .29 in Wave 5 and .36 in Wave 6 (H7) and the correlations between antisocial and prosocial behaviours were $-.00$ and $.08$ (H8).

3.4 | Discussion

Studies 2 and 3 build on Study 1 in several ways. They extend our analyses to different indicators of self-/other-focused orientations and prosocial/antisocial behaviours. In addition, they use substantially larger samples to provide increased reliability in our estimates and extend our findings to an international context, allowing us to examine the degree to which our observed effects vary cross-nationally. Here, we summarize our findings.

How do self-focused orientations relate to our outcomes? We found significant positive associations between self-focused orientations and antisocial attitudes in both samples (averaging around estimates

TABLE 4 Results of multi-level models using Waves 5 and 6 of the World Values Survey.

(1) Linear mixed-effects model predicting endorsement of antisocial attitudes								
Parameter	Wave 5 (N = 70,956; k = 51)			Wave 6 (N = 88,127, k = 60)				
	Est.	SE/SD	p	99% CI	Est.	SE/SD	p	99% CI
Fixed effects								
Intercept	0.071	0.049	.152	[-0.055, 0.196]	-0.004	0.049	.930	[-0.130, 0.121]
Self-focused orientations (H ₁)	0.127	0.011	<.001	[0.099, 0.156]	0.083	0.138	<.001	[0.047, 0.118]
Other-focused orientations (H ₃)	-0.205	0.012	<.001	[-0.234, -0.175]	-0.188	0.012	<.001	[-0.218, -0.158]
Random effects								
Intercept	0.120	0.346			0.142	0.377		
Self-focused orientations	0.005	0.074			0.011	0.103		
Other-focused orientations	0.006	0.077			0.007	0.086		
(2) Mixed-effects logistic regression predicting engagement in prosocial behaviours								
Parameter	Wave 5 (N = 72,175, k = 52)			Wave 6 (N = 88,720, k = 60)				
	Est.	SE/SD	p	99% CI	Est.	SE/SD	p	99% CI
Fixed Effects								
Intercept	-2.594	0.151	<.001	[-2.983, -2.205]	-1.525	0.109	<.001	[-1.806, -1.244]
Self-focused orientations (H ₂)	0.047	0.028	.098	[-0.026, 0.120]	0.148	0.030	<.001	[0.071, 0.224]
Other-focused orientations (H ₄)	0.326	0.030	<.001	[0.250, 0.403]	0.244	0.030	<.001	[0.165, 0.322]
Random effects								
Intercept	1.160	1.077			0.706	0.840		
Self-focused orientations	0.020	0.142			0.044	0.209		
Other-focused orientations	0.021	0.144			0.046	0.214		

Note: 99% CIs were used instead of 95% CIs given the large sample sizes of the WVS. Sample sizes varied across models depending on missing data, and whether a given country completed measures of a particular outcome variable. Results across the four models rely on data from 78 unique countries. Coefficients in bold are significant at $p < .001$. Abbreviations: CIs, confidence intervals; Est., standardized parameter estimates; k, number of participants; N, number of countries; p, p value; SE, standard Error (for fixed effects); SD, standard deviation (for random effects); WVS, World Values Survey.

of .10), and these associations were highly consistent across countries. This provides good support for H1. We also observed a significant positive effect between self-focused orientations and prosocial behaviours in Wave 6, but not in Wave 5, and the average effect across waves was again near .10. Notably, there was substantial variation in the association between self-focused orientations and prosocial behaviours across countries, providing more mixed support for H2, suggesting that the association between self-focused orientations and prosocial behaviours may be variable across geographical contexts (e.g., see Figure 2).

What about the effects of other-focused orientations? We found that other-focused orientations had negative associations with antisocial attitudes and positive associations with prosocial behaviours in both waves. These effects were moderate in magnitude (i.e., standardized regression effects between .2 and .3), and notably homogeneous across countries (88–100% of countries showed these associations). This provides clear support for H3 and H4.

When examining relative effect sizes (i.e., comparing CIs in Table 4), the effects of other-focused orientations were always larger than the effects of self-focused orientations. This difference was significant in three of four comparisons, providing good support for H5 and H6.

Finally, we found that self- and other-focused orientations had a moderate positive relationship with one another, supporting H7. However, we did not find support for a negative association between antisocial attitudes and prosocial behaviours (H8).

4 | STUDY 4

Studies 2 and 3 benefitted from large samples drawn across many different countries. However, these studies relied on pre-existing datasets, thereby limiting our choice of measures. We only had access to an attitudinal measure of antisocial behaviours and a small sample of prosocial behaviours – the latter of which predominantly focused on environment-related prosocial behaviours (which may be more strongly associated with values like universalism than other types of prosocial behaviours; Skimina et al., 2019). Although the self- and other-focused orientation measures in the WVS are composite measures of various value constructs, they still represent only one additional operationalization of our constructs relative to Study 1 and had relatively low reliabilities. These factors leave open the possibility that we could obtain different results if we used alternative measures of our variables. Particularly, because we conceive self- and other-focused orientations as higher order classes of variables, we anticipate that differences can and should arise when using different lower order constructs to operationalize them. For instance, both independence and power motivation are self-focused orientations; however, independence and power motivation are not themselves interchangeable and are therefore free to diverge in their relations to other variables. Further, using more abstract and wide-ranging indices of self-focused and other focused orientations (e.g., broad differences in agency or in high-level values that are self-focused) should lead to more consistent patterns than using more specific indicators (e.g., independence and

power motivations). Achieving an accurate understanding of self- and other-focused orientations as superordinate categories of constructs thus requires an adequate sampling of the constructs that make up these categories.

Consequently, in Study 4, we collected data with a more optimized set of measurements. Specifically, we examine effects associated with 19 distinct measures of self- and other-focused orientations, prosocial behaviours and antisocial behaviours.

4.1 | Sample and procedure

Because our first three studies found several small effect sizes, we powered Study 4 to detect such effects. A power analysis using *G*Power* (Faul et al., 2009) suggested a sample of $N = 567$ would be enough to achieve a power of .95 for effects of $r = .15$. Using Amazon's Mechanical Turk (MTurk), we recruited 601 participants in February 2018. The study was approved by the institutional review board of the University of Minnesota, and all participants provided informed consent prior to participation.

To participate, individuals were required to be at least 18 years of age and residing within the United States. Participants completed a 30-min survey online containing all our measures of interest. To promote data quality, the survey included eight attention and honesty check items (see Table S9 of Supporting Information). Twenty-nine participants failed three or more items and were excluded, leaving 572 participants. The resulting sample was predominantly female (61%), White/Caucasian (79%) and had a mean age of 41.7 years ($SD = 13.0$). (See Table S10 of Supporting Information for detailed Study 4 demographics.)

4.2 | Constructs and measures

We used six measures of self- and other-focused orientations, respectively, four measures of prosocial behaviours and three measures of antisocial behaviours. Each measure was scored using a two-parameter item-response theory (IRT) model, using the *mirt* package (Chalmers, 2012), and a generalized partial credit model. Using IRT over classical test theory (e.g., taking the mean of items) allows us to reduce measurement error while aiding in normalizing our variables. Our data, survey materials and R script files can be found on our project page (osf.io/fwypt). Further, information on IRT analyses for each measure in Study 4 (item factor loadings, item discrimination and item difficulty parameters) can be found in Tables S14–S25 of the Supporting Information. Descriptive statistics and correlation matrices covering all our measures can also be found in Tables S26–S28 of the Supporting Information.

4.2.1 | Self-focused and other-focused orientations

Table 5 summarizes the measures we used to assess motivational orientations, showing example items and reliability information for each

TABLE 5 Summary of Study 4 measures to assess self-focused orientations and other-focused orientations.

Measure	Scales	α_s	Example items, in reference to self (and reverse-coded items if present)	Response range and anchors	r between scales
BFAS	Assertiveness	.88	Have a strong personality Wait for others to lead the way ^a	1 = strongly disagree; 5 = strongly agree	.18
	Compassion	.91	Take an interest in other people's lives Am indifferent to the feelings of others ^a		
PVQ5X	Personal focus values	.90	It is important to me to make my own decisions about my life	1 = strongly agree; 7 = strongly agree	.63
	Social Focus Values	.92	I strongly value the traditional practices of my culture		
SCS	Independent Self-Construal	.81	I enjoy being unique and different from others in many respects	1 = strongly agree; 7 = strongly agree	.28
	Interdependent Self-Construal	.85	My happiness depends on the happiness of those around me		
SOI	Self-Interest	.88	I keep an eye out for my interests	1 = strongly agree; 7 = strongly agree	.61
	Other-Interest	.90	I keep an eye out for other's interests		
UMS	Power Motivation	.92	To be able to exert influence	1 = strongly disagree/not at all important; 7 = strongly agree/extremely important	.25 to .56 ^b
	Achievement Motivation	.90	My goal is to do at least a little bit more than anyone else has done before		
	Affiliation Motivation	.92	I like to make as many friends as I can		
	Intimacy Motivation	.88	To have a close, intimate relationship with someone		

Abbreviations: α_s , standardized reliability alpha; BFAS, Big Five Aspects Scale (DeYoung et al., 2007); PVQ5X, Portrait Values Questionnaire 5X Value Survey (Schwartz et al., 2012a, 2012b); r , Pearson bivariate correlation; SCS, Self-Construal Scale (Singelis, 1994); SOI, Self- and Other-Interest Inventory (Gerbas & Prentice, 2013); UMN, Unified Motives Scales (Schönbrodt & Gerstenberg, 2012).

^aReverse-coded item.

^bRange corresponds to the correlations between any given self-focused measure (power and achievement) and any given other-focused measure (affiliation and intimacy).

scale. Table S11 of the Supporting Information provides a list of all the items that were used. In choosing operationalizations, we explicitly varied measures to tap into different aspects of how people's motivations manifest, tapping into behavioural (e.g., trait personality measures), cognitive (e.g., self-conception measures) and affective (e.g., what they desire) components.

Assertiveness versus compassion. The first scales completed by participants were the agreeableness and extroversion scales of the Big Five Aspects Scale (BFAS; DeYoung et al., 2007). In the BFAS, extroversion is broken down into the two aspects of assertiveness and enthusiasm, whereas agreeableness is broken down into compassion and politeness. We focused our analyses on the aspects of *assertiveness* and *compassion*. Respectively, these correspond closely to the agency and communion dimensions of the interpersonal circumplex and can interchangeably be used as measures of these dimensions (DeYoung et al., 2007, 2013). As previously noted, agency and communion differ in the extent to which they are concerned with seeking benefits for the self and for others (Abele & Wojciszke, 2007) and the BFAS offers an index of how well people's behaviours typically match pursuit of these motives.

Personal focus values versus social focus values. Value orientations were assessed using an adapted version of the Portrait Values Questionnaire 5X Value Survey (PVQ5X; Schwartz et al., 2012a, 2012b) asking participants to rate the importance of 19 values using 48 items. Items can be used to represent two higher order factors of how much people endorse personal and social focus values (Schwartz et al., 2012b). *Personal focus values* include self-direction, stimulation, hedonism, achievement, power, face and personal security. *Social focus values* include universalism, benevolence, humility, conformity, tradition and societal security.

Independent self-construal versus interdependent self-construal. Self-construal was assessed using Singelis' (1994) Self-Construal Scale (SCS). The SCS consists of two 12-item scales. The first scale assesses *independent self-construal*, defined as the degree to which a person conceives their sense of self in terms of its autonomy and independence (Markus & Kitayama, 1991; Singelis, 1994). Independent self-construal is a self-focused orientation and reflects motivations to express/strengthen one's autonomy and independence. The second scale measures *interdependent self-construal*, the degree to which a person conceives their sense of self as fundamentally embedded in and

dependent on those around them (Markus & Kitayama, 1991; Singelis, 1994). Interdependent self-construal is an other-focused orientation and reflects motivations to maintain/promote social connections, largely by adhering to social norms. Though the scales are designed to tap into a person's self-conceptualization, items refer to people's explicit preferences, values and motives (e.g., 'I enjoy being unique and different from others in many respects').

Self-interest versus other-interest. The Self- and Other-Interest Inventory (Gerbası & Prentice, 2013) consists of two nine-item scales, which directly assess the extent to which individuals are interested and motivated to act in their own *self-interest* (e.g., by achieving social success, happiness) or in other people's interest (i.e., *other-interest*; e.g., by helping others achieve social success and happiness).

Power and achievement motives versus affiliation and intimacy motives. The final measure was an adaptation of the Unified Motives Scales by Schönbrodt and Gerstenberg (2012). This measure consists of four 10-item scales, containing a mixture of statements describing the self or various goals a person may have. The first two scales assess self-focused orientations: *power motivation* (the desire to impact/control others and achieve personal success) and *achievement motivation* (the desire to learn and master tasks to demonstrate personal excellence). Two other scales assess other-focused orientations: *affiliation motivation* (the desire to build/maintain friendly relationships with others in general) and *intimacy motivation* (the desire to form profound mutual relationships with specific close others).

4.2.2 | Measures of prosocial and antisocial behaviours

Table 6 summarizes the measures we used to assess prosocial and antisocial behaviours and provides sample items and reliability information. Tables S12 and S13 of the Supporting Information list all items used.

Prosocial behaviours. Participants first completed 12 items from the *Self-Report Altruism* scale (Rushton et al., 1981). Each item described a prosocial behaviour, and participants indicated the frequency with which they enacted the behaviour in the past. Second, participants completed a *helping attitudes* scale (Fetzer Institute, n.d.; Nickell, 1998), consisting of 20 items assessing attitudes toward helping, helping intentions and helping behaviour. Given that this scale is not entirely composed of behavioural measures, we interpret it as a proxy measure of one's likelihood to engage in prosocial behaviours. Third, participants completed 14 items assessing *organizational citizenship behaviours* (OCB; adapted from C. Hui et al., 1999, and P. M. Podsakoff et al., 1990). OCBs are a form of prosocial behaviour directed towards improving the functioning of a workplace. The items we used each describe behaviours that bring direct benefits to organizations and co-workers. Individuals were instructed to report their behaviour from either their current or last place of employment. Fourth, we included all seven prosocial behaviour items used across Studies 1–3 to measure *volunteerism and donations*.

Antisocial behaviours. First, participants completed 21 items to indicate the degree to which they displayed explicit behavioural *aggression* towards others (selected from Buss & Perry, 1992). Second, participants responded to 39 items measuring *counterproductive work behaviours* (CWBs; using items from the Counterproductive Work Behavior Checklist, Spector et al., 2006). CWBs are defined as workplace behaviours that harm organizations or their members (Dalal, 2005), and we only used items that referred explicitly to enacting antisocial behaviours in the workplace. As with OCB, participants either reported on their current or last employment. Third, we used ten items identical to those in Study 1 to measure *illicit antisocial behaviours*.

4.2.3 | Creating aggregate measures

Finally, we created *aggregate measures* composed of all the items for self-focused orientations (73 items; $\alpha_s = .96$), other-focused orientations (77 items; $\alpha_s = .96$), prosocial behaviours (52 items; $\alpha_s = .94$) and antisocial behaviours (70 items; $\alpha_s = .98$). To obtain scores, we applied our IRT scoring procedure to the items within each class of variables. Although these aggregate measures do not allow us to examine heterogeneity between scales, they offer two advantages. First, they are closer representations of our hypotheses regarding self- and other-focused variables as higher order individual difference variables. Second, aggregating across instantiations of the predictor and outcome variables may lead to a more powerful test of their association (Epstein, 1979, 1980).

4.3 | Analyses and results

4.3.1 | Examining effects on each individual measure

Table 7 presents the results of five SEM models using FIML, conducted with *lavaan* (Rosseel, 2012). Each model was computed according to the structural relations in Figure 1. Models 1–5 break the analyses down according to each measure of self- and other-focused orientations and simultaneously predict each index of antisocial and prosocial behaviours. For example, Model 1 examines how assertiveness and compassion simultaneously predict the three indices of antisocial behaviours and the four indices of prosocial behaviours while accounting for correlations between predictor variables and outcome variables.

Table 7 reports 18 tests of the link between *self-focused orientations* and *antisocial behaviours* (H1); of these, nine were significant and positive, and the average standardized coefficient was .08. There were 24 tests of the link between *self-focused orientations* and *prosocial behaviours* (H2); of these, 10 were significant and positive, and the average standardized coefficient was again .08. There were 18 tests of the link between *other-focused orientations* and *antisocial behaviours* (H3); of these, 13 were significant and negative, and the average standardized coefficient was $-.19$. Finally, there were 24 tests of the link between *other-focused orientations* and *prosocial behaviours* (H4); of

TABLE 6 Summary of Study 4 measures to assess prosocial and antisocial behaviours.

	Measure	α_s	Example Items	Response Range and Anchors
Prosocial behaviours	Self-Report Altruism Scale (Rushton et al., 1981)	.88	I have given money to a charity; I have delayed an elevator and held the door open for a stranger	1 = never; 5 = very frequently
	Helping Attitudes Scale (Nickell, 1998)	.91	It feels wonderful to assist others in need; I donate time or money to charities every month	1 = disagree strongly; 5 = agree strongly
	OCB Scale (C. Hui et al., 1999; P. M. Podsakoff et al., 1990)	.91	I spend time helping others catch up when they have been absent I volunteer time to help others who have work-related problems	1 = disagree strongly; 5 = agree strongly
	Volunteerism and donations Measure	.67	During the last 12 months, have you donated blood, plasma or platelets? Are you an active member of either of the following types of organizations? (Humanitarian or charitable organization)	'Yes' or 'No'
Antisocial behaviours	Aggression Questionnaire (Buss & Perry, 1992)	.93	If somebody hits me, I hit back I have threatened people I know	1 = disagree strongly; 5 = agree strongly
	CWB-C (Spector et al., 2006)	.98	Purposely wasted your employer's materials/supplies Stole something belonging to someone at work	1 = never; 5 = every day
	Illicit Antisocial Behaviours Measure	.92	In the past 12 months, how often did you ... steal something worth less than \$50? ... hurt someone badly enough in a physical fight that he or she needed care from a doctor or nurse?	Varied by item

Abbreviations: α_s , standardized reliability alpha; CWB-C, counterproductive work behaviour checklist; OCB, organizational citizenship behaviour.

these, 22 were significant and positive and the average standardized coefficient was .31.

We can compare the relative effect sizes associated with self- and other-focused orientations in each model in Table 7. For instance, in Model 1, we can compare the effect sizes of assertiveness versus compassion in predicting (1) aggression, (2) counter-productive work behaviours and (3) illicit antisocial behaviours – in all three cases, the effect associated with compassion was significantly more negative than that associated with assertiveness. Models 2–4 each provide three similar comparisons (one per indicator of antisocial behaviours), and Model 5 provides 12 comparisons (i.e., for each indicator, we can compare the effects of power versus affiliation, power vs. intimacy, achievement vs. power and achievement vs. intimacy). Doing this across all five models, 24 pathway pairs can be used to evaluate the relative strength of self- versus other-focused orientations in accounting for antisocial behaviours (H5). When predicting antisocial behaviours, other-focused orientations had a significantly more negative associations than self-focused orientations 15 times and significantly less negative associations only once (i.e., in Model 3, independent self-construal has a significantly more negative effect than interdependent self-construal in predicting CWBs). When predicting prosocial behaviours, we can compare 32 pathway pairs (H6). Other-focused orientations were significantly more positively associated with prosocial behaviours in 12 comparisons and significantly less positively associated with only two comparisons.

To evaluate H7, we compared 36 correlations between self- and other-focused orientation measures. The average correlation was .34 (range of $-.16$ to $.63$; with 22 correlations being between $.2$ and $.5$).

To evaluate H8, we compared 12 correlations between prosocial and antisocial behaviour indices. The average correlation was $-.08$ (range of $-.46$ to $.15$; with seven correlations between 0 and $-.5$).

4.3.2 | Examining effects using the four aggregate measures

A sixth SEM model (again using FIML) examined the association between our four aggregate measures and was specified exactly according to Figure 1. The results are presented in Figure 3. Self-focused orientations had a significant positive association with antisocial behaviours (H1) but not with prosocial behaviours (H2). In contrast, other-focused orientations had a significant negative association with antisocial behaviours (H3) and a significant positive association with prosocial behaviours (H4). The effects associated with other-focused orientations were significantly larger in magnitude than the effects associated with self-focused orientations (H5 and H6). Finally, examining bivariate correlations reveals that self- and other-focused orientations were significantly positively associated ($r = .54$; H7), and antisocial/prosocial behaviours were significantly negatively associated ($r = -.39$; H8).

4.3.3 | Alternate analyses to evaluate robustness of findings

When conducting Study 4, we generally opted to retain items from existing measures (e.g., we used the full interdependence SCS as

TABLE 7 Standardized parameter estimates and confidence intervals from SEM models predicting antisocial/prosocial behaviours from motivational orientations.

Predictors	Predicting antisocial behaviours (H ₁ and H ₃)			Predicting prosocial behaviours (H ₂ and H ₄)			
	A	CWB	IAB	SRA	HA	OCB	VD
Model 1							
1. Assertiveness	0.073 [†] [0.000, 0.147]	-0.031 [-0.111, 0.048]	0.129** [0.049, 0.210]	0.231** [0.156, 0.307]	0.026 [-0.035, 0.087]	0.158** [0.088, 0.229]	0.170** [0.402, 0.529]
2. Compassion	-0.478** [-0.543, -0.413]	-0.300** [-0.377, -0.224]	-0.212** [-0.291, -0.132]	0.255** [0.180, 0.330]	0.676** [0.630, 0.721]	0.465** [0.402, 0.529]	0.127** [0.046, 0.207]
Model 2							
1. Personal focus values	0.284** [0.191, 0.377]	0.074 [-0.028, 0.176]	0.160** [0.056, 0.263]	0.089 [†] [-0.011, 0.188]	-0.085* [-0.163, -0.008]	0.114** [0.030, 0.198]	0.051 [-0.054, 0.156]
2. Social focus values	-0.570** [-0.656, -0.485]	-0.339** [-0.438, -0.241]	-0.203** [-0.306, -0.100]	0.271** [0.174, 0.369]	0.732** [0.668, 0.796]	0.528** [0.451, 0.605]	0.079 [-0.026, 0.184]
Model 3							
1. Independent self-construal	-0.188** [-0.270, -0.107]	-0.235** [-0.316, -0.154]	0.014 [-0.071, 0.100]	0.227** [0.150, 0.304]	0.272** [0.199, 0.346]	0.341** [0.275, 0.408]	0.057 [-0.028, 0.141]
2. Interdependent self-construal	-0.101* [-0.183, -0.018]	-0.062 [-0.145, 0.021]	0.028 [-0.058, 0.113]	0.247** [0.170, 0.324]	0.314** [0.242, 0.386]	0.383** [0.318, 0.449]	0.095* [0.011, 0.180]
Model 4							
1. Self-interest	0.366** [0.272, 0.460]	0.166** [0.065, 0.267]	0.170** [0.068, 0.271]	-0.031 [-0.124, 0.062]	-0.237** [-0.327, -0.147]	-0.092* [-0.177, -0.007]	0.004 [-0.097, 0.104]
2. Other-interest	-0.340** [-0.434, -0.245]	-0.227** [-0.327, -0.126]	-0.074 [-0.176, 0.028]	0.451** [0.364, 0.538]	0.574** [0.493, 0.656]	0.614** [0.540, 0.689]	0.223** [0.125, 0.322]
Model 5							
1. Power motivation	0.488** [0.390, 0.585]	0.245** [0.136, 0.354]	0.263** [0.154, 0.371]	0.012 [-0.091, 0.114]	-0.381** [-0.469, -0.294]	-0.207** [-0.295, -0.119]	0.026 [-0.083, 0.135]
2. Achievement motivation	-0.205** [-0.302, -0.107]	-0.168** [-0.273, -0.063]	-0.104 [†] [-0.209, 0.001]	0.207** [0.110, 0.304]	0.378** [0.296, 0.461]	0.446** [0.365, 0.527]	0.122* [0.018, 0.226]
3. Affiliation motivation	-0.162** [-0.268, -0.056]	-0.007 [-0.120, 0.107]	0.025 [-0.089, 0.139]	0.165** [0.060, 0.270]	-0.002 [-0.094, 0.089]	0.089 [†] [-0.002, 0.181]	0.202** [0.091, 0.313]
4. Intimacy motivation	-0.159** [-0.254, -0.064]	-0.136** [-0.238, -0.034]	-0.067 [-0.169, 0.035]	0.143** [0.049, 0.238]	0.461** [0.383, 0.539]	0.325** [0.245, 0.406]	-0.025 [-0.126, 0.076]

Note:

Significant estimates in the hypothesized direction are given in **bold**; significant estimates counter to the hypothesized direction are underlined. Values in *italics* indicate non-significant effects. Models are just identified, so fit indices are not reported. Covariance estimates between predictors in each model (H7) average around 0.426, whereas average covariance between indicators of prosocial/antisocial behaviours (H8) is -0.017. Each predictor and outcome measure was scored using a two-parameter IRT model.

Abbreviations: A, aggression; CWB, counterproductive work behaviours; HA, helping attitudes; IAB, helping attitudes; SRA, self-report altruism; OCB, organization citizenship behaviours; VD, volunteerism and donations.

[†] $p < .10$;

* $p < .05$;

** $p < .01$.

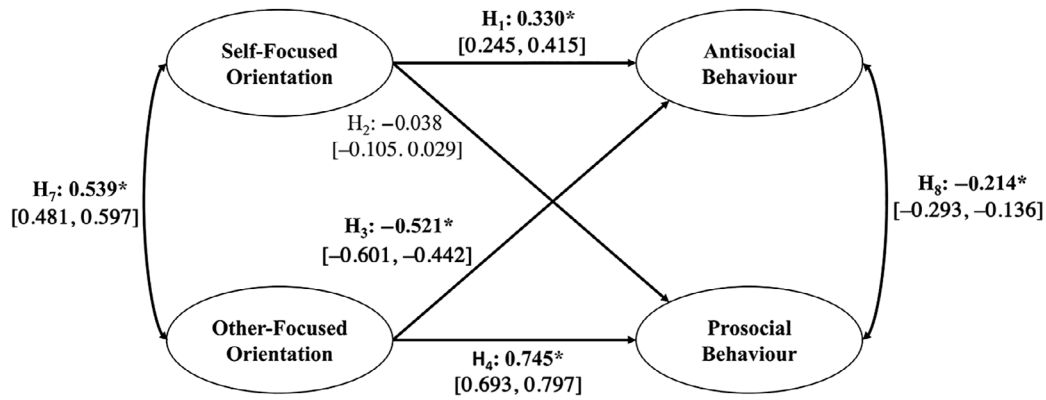


FIGURE 3 Structural equation model aggregating indices of each variable type. Confidence intervals for the structural portion of the model are presented in the square brackets. For the structural paths, an asterisk (*) indicates a *p* value below .001. The model was just identified, so model fit indices are not reported. Each predictor and outcome measure was scored by applying a two-parameter IRT model to all items of a given construct type.

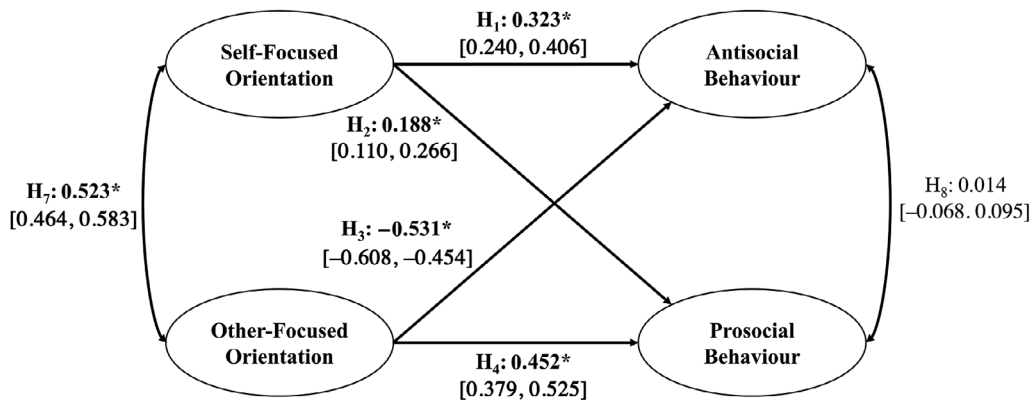


FIGURE 4 Structural equation model aggregating indices of each variable type, using an alternate selection of items to reflect each construct (i.e., removing 45 items to ensure predictors and outcomes were maximally differentiated). Confidence intervals for the structural portion of the model are presented in the square brackets. For the structural paths, an asterisk (*) indicates a *p* value below .001. The model was just identified, so model fit indices are not reported. Each predictor and outcome measure was scored by applying a two-parameter IRT model to all items of a given construct type.

developed by Singelis, 1994) to allow for our findings to be comparable to other studies using the same measures. However, a limitation of this approach is that several items used to assess people’s motivational orientations were indicators of antisocial or prosocial behaviours/intentions (e.g., ‘I would offer my seat in a bus to an authority figure’ in the interdependent self-construal measure), and certain items used to assess prosocial/antisocial outcomes may be more reflective of motivational orientations (e.g., ‘It feels wonderful to assist others in need’ in the helping attitudes measure).

To address these issues, we ran additional analyses removing all such items (45 items in total). Figure 4 gives a sample of the results by presenting the SEM model that examined the link between the aggregate measures constructed from the revised scales. Other results are presented in full in our Supporting Information (Section 4, including Tables S29–S32 and Figure S9). Generally, our inferences remain unchanged across these analyses. Differences in our findings included: (1) the association between various self-focused orientations and prosocial

behaviours became more positive, in line with H2; (2) the association between various other-focused orientations and prosocial behaviours declined in magnitude but was still typically significant and positive, in line with H4; and (3) the association between prosocial and antisocial behaviours was reduced, compared to H8.

4.4 | Discussion

The goals of Study 4 were to examine (1) the overall pattern of associations that emerge across different indicators of each of our variables and (2) the degree to which these associations vary depending on the specific measures/operationalizations we use. In this study, we also aimed to use more reliable measures of each of our constructs by relying heavily on well-established measures. The resulting high reliability of the scales (average $\alpha_s = .89$) helps us gain confidence in our findings. How did our hypotheses fare in Study 4?

Our findings provide support for H1 such that *self-focused orientations* tended to be positively associated with *antisocial behaviours*, and our aggregate measures also showed a moderate positive association with antisocial behaviours. However, when examining specific types of self-focused orientations, heterogeneity was observed such that certain indicators showed no effects (e.g., assertiveness was not associated with aggression or CWB), and some even showed negative associations (e.g., independent self-construal was negatively associated with aggression and CWB).

Our results provide mixed support for H2: *Self-focused orientations* were indeed more frequently positively (rather than negatively) associated with *prosocial behaviours*, but there was a fair amount of heterogeneity in this association. Also, the aggregate measures showed a non-significant association.

Exploring the heterogeneity in the above findings, we note that more abstract constructs such as agency and personal focus values, along with our aggregate index of self-focused orientation, each showed patterns largely in line with our hypotheses. As expected, most deviations from our hypotheses were observed when looking at specific lower order constructs (e.g., self-construal). Examining these deviations could provide insights into subclasses of self-focused orientations. For example, independent self-construal and achievement motivation both had negative associations with antisocial behaviours and positive associations with prosocial behaviours. This pattern may suggest that self-focused orientations directed towards goals such as achieving competence, autonomy and growth may be more adaptive than other forms of self-focused orientations. In contrast, indicators of self-interest and power motivation had clear positive associations with antisocial behaviours and negative associations with prosocial behaviours, suggesting that orientations tied to competitive and power-driven themes may be associated with greater engagement in detrimental social behaviours.

In comparison to the effects associated with self-focused orientations, the effects associated with other-focused orientations were considerably less heterogeneous. *Other-focused orientations* had mostly negative associations with *antisocial behaviour* indices and almost entirely positive associations with *prosocial behaviours*. This pattern of results provides clear support for H3 and H4.

We also found support for H5 and H6. The associations between *other-focused orientations* and *prosocial/antisocial behaviours* were indeed typically significantly larger (in the expected direction) than the associations between indices of *self-focused orientations* and *prosocial/antisocial behaviours*. On average, without aggregating, the effect sizes associated with other-focused orientations were moderate in magnitude (standardized coefficients around .2 to .3), whereas the average effect sizes associated with self-focused orientations were small (around .1). Hypotheses H5 and H6 were also supported when using aggregate measures.

Finally, in line with H7, we found *self- and other-focused orientations* to be generally moderately positively associated (average $r = .34$). The association between *antisocial and prosocial behaviours* was, on average, small and negative, but varied highly across operationalizations

(ranging between $r = -.46$ and $.39$). Given this heterogeneity, Study 4 provides mixed support for H8.

5 | GENERAL DISCUSSION

In this project, we examined the extent to which self- and other-focused orientations predict prosocial and antisocial outcomes similarly or differently across four samples that collectively represent a wide range of demographics (e.g., age, nationality). In addition, we used multiple operationalizations of our key constructs to test the independent and combined effects of various measures. We synthesize the results of Studies 1–4 and discuss implications of our findings. Table 8 provides an overview of the findings and our overall conclusions.

5.1 | How do self-focused orientations relate to prosocial and antisocial behaviours (H1 and H2)?

Across our studies, we find consistent support for a general positive association between self-focused orientations and antisocial behaviours (H1). On average, this occurred both cross-nationally and across construct operationalizations, but there was a decent amount of heterogeneity in effect sizes across operationalizations of self-focused orientations. We also found that self-focused orientations were, in general, positively associated with prosocial behaviours (H2), but this association was more variable cross-nationally (Studies 2 and 3; see Figures 2 and S8) and across different types of indicators (Study 4) than the association between self-focused orientations and antisocial behaviours.

Overall, the implication is that self-focused orientations may generally positively predict both antisocial and prosocial behaviours or at least positively predict antisocial (but not consistently prosocial) behaviours. Either pattern makes them risky targets for interventions, especially if one seeks to increase prosocial behaviours by increasing self-focused orientations. In such a case, our results suggest mixed evidence this would successfully increase prosocial behaviours and suggest a threat of unintentionally increasing antisocial behaviours. This is important given the current prevalence of wide-scale movements focused on promoting self-focused orientations such as self-care, self-empowerment and self-esteem (e.g., Baumeister et al., 2003; Silva, 2017; Warren, 1996). Consistent with the cautions of others (Baumeister et al., 2003), our findings reassert a risk for the blanket promotion of self-focused orientations to inadvertently increase antisocial behaviours.

In contrast, we can also consider creating interventions that seek to decrease antisocial behaviours by reducing self-focused orientations, but there remain risks this could unintentionally reduce prosocial behaviours. Consequently, general caution should be used when intervening on self-focused orientations, and interventionists should carefully evaluate impacts on both prosocial and antisocial behaviours.

Lastly, the degree of heterogeneity in our findings is notable, as it suggests the associations of self-focused orientations may not

TABLE 8 Synthesis of findings from the four studies.

	Hypotheses								Conclusions
	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	
Outcome(s)	AB	PB	AB	PB	AB	PB			
Predictor(s)	SFO	SFO	OFO	OFO	SFO/OFO	SFO/OFO	OFO/SFO	AB/PB	
Hypothesized effect	Positive	Positive	Negative	Positive	H ₃ > H ₁	H ₄ > H ₂	.2 > r < .5 ^a	0 > r > -.5	
Evidence type	Est.	Est.	Est.	Est.	H ₃ : H ₁	H ₄ : H ₂	r	r	
Study 1	.12*	.17*	-.019*	.11	1.6 ^b	0.64 ^b	.59*	.08*	
Study 2	.13*	.05	-.21*	.33*	1.6* ^b	6.9* ^{a,b}	.29*	-.00	
% Countries with predicted effect ^c	96	67	98	100					
Study 3	0.08*	0.15*	-.19*	.24*	2.3* ^b	1.6* ^b	.36*	.08*	
% Countries with effect ^c	85	78	100	88					
Study 4	0.08 ^d	0.08 ^d	-.19 ^d	.31 ^d	2.4 ^d	3.9 ^d	.34 ^d	-.08 ^d	
% supporting tests ^e	50	42	72	92	63	38	61 ^f	58 ^g	
Aggregate measures ^h	0.33*	-0.04	-.52*	.75*	1.6* ^b	19.6* ^{a,b}	.54*	-.39*	
	Strong support (H ₁)	Moderate support (H ₂)	Strong support (H ₃)	Strong support (H ₄)	Strong support (H ₅)	Strong support (H ₆)	Moderate support (H ₇)	Mixed support (H ₈)	

Note: Values in bold supports the hypothesis. Underlined values conflicts with the hypothesis. Values in italics are neither in clear support nor contradiction with the hypothesis. Abbreviations: AB, antisocial behaviour; Est., standardized regression coefficient; H, hypothesis; OFO, other-focused orientations; PB, prosocial behaviour; r, Pearson's bivariate correlation; SFO, self-focused orientations.

^aThis range of correlations was selected to exclude correlations that were either small (i.e., $r < .2$) or large (i.e., $> .5$).
^bRatio of the effect size of H1 to H3 (or H2 to H4). The significance level is determined by looking for overlapping confidence intervals.
^cUnder the null hypothesis, the percentages are expected to be 50%.
^dBecause these are average effects of parameters across several statistical models, the statistical significance varies across models.
^eRepresents the number of tests for which a significant finding was found in the hypothesized direction.
^fPercentage of 36 correlations between .2 and .5. Range = -.16 to .63; 22% were below .2 and 17% above .5.
^gPercentage of 12 correlations between .0 and -.5. Range = -.46 to .15. 42% were positive in value but tended to be very small. Consequently, the distribution is likely centred around the high end of our hypothesized range in Study 4 (i.e., between $r = 0$ and -1).
^hAnalyses involve latent variables derived from all items used to measure the four construct types. (See Section 4.3.2 and Figure 3.)
 *Significant effect.

always follow the same trend. Future works should examine when and why the associations between self-focused orientations and prosocial/antisocial outcomes are positive versus negative – perhaps examining whether certain socio-political or cultural factors can account for cross-national differences in the association between the two types of behaviours.

In examining heterogeneity, it may be particularly useful to divide self-focused orientations into more specific subclasses. For example, one class may incorporate orientations focused on skill-building, personal mastery, self-improvement and autonomy seeking. Each of these reflects a theme of ‘self-growth’, contributes to well-adjusted psychological development (Dweck, 2008; Reis et al., 2000; Ryan & Deci, 2000) and may be closely linked to certain altruistically focused tendencies. Indeed, in Schwartz’s theory of values, self-direction values most directly capture these themes and are considered adjacent to self-transcendent values (e.g., universalism; Schwartz et al., 2012b). Further, personality maturation usually involves a shift towards becoming more other-focused over time (Bleidorn, 2015; Gouveia et al., 2015; Milfont et al., 2016; L. J. Walker & Frimer, 2015), so it may be a natural extension of desires for personal growth to become a better, more altruistic individual. In our own studies, the self-focused orientations of achievement motivation and independent self-construal both reflect this category of self-focused orientations, and both showed adaptive patterns of associations whereby they predicted decreased antisocial behaviours and increased prosocial behaviours.

In direct contrast to this category, some self-focused orientations are more directly tied to acquiring resources, status and dominance over others; that is, enhancing one’s position within society, without seeking personal growth. This category may be generally associated with worse interpersonal outcomes. For example, self-interest and power motivation as assessed in Study 4, each reflect these themes heavily and show clear positive associations with antisocial behaviour, along with clear negative associations with prosocial behaviour. These findings make sense when we consider that this category of self-focused orientations may be furthest from seeking the welfare of others. For example, in Schwartz’s theory of values (Schwartz et al., 2012b), this category is best reflected in the values of power and achievement – the latter of which should not be likened to our measure of achievement motivation (akin to self-direction) and is conceptually closer to our measure of self-interest (both focus on achieving social markers of success). Importantly, such values are understood to be conceptually furthest from values such as self-transcendence (Schwartz et al., 2012b).

5.2 | How do other-focused orientations relate to prosocial and antisocial behaviours (H3 and H4)?

Across all our studies, other-focused orientations had clear and consistent positive associations with prosocial behaviours and clear and consistent negative associations with antisocial behaviours (supporting H3 and H4). These patterns were highly homogeneous across

countries (Studies 2 and 3) and when considering different indices of other-focused orientations and behaviours (Study 4). The small amount of heterogeneity we found in these patterns may suggest that other-focused orientations are a more homogeneous class of variables relative to self-focused orientations, at least in their associations with prosocial/antisocial behaviours.

Conceptually, however, just as self-focused motivations can be broken down into distinct categories, a similar dynamic could be present for other-focused orientations. Notably, we can draw a distinction between orientations that are inherently concerned with the well-being of others (e.g., compassion, self-transcendence values, other-interest; DeYoung et al., 2007; Gerbasi & Prentice, 2013; Schwartz et al., 2012b) and those that are more concerned with interpersonal relationships and maintaining social cohesion (e.g., collectivism, conformity/tradition values, affiliation motivations; C. H. Hui & Triandis, 1986; Schönbrodt & Gerstenberg, 2012; Schwartz et al., 2012b). Although prosocial/antisocial behaviours can reflect ends for both categories (e.g., prosocial acts are essential to maintain orderly society and build deep interpersonal connections), this reasoning may be particularly true for the former, as acting prosocially/antisocially is often tantamount to impacting the welfare of others. Thus, we could expect that prosocial and antisocial behaviours would be most consistently and powerfully linked to this first category, and this is borne out in the pattern of results from Study 4. For instance, compassion and other-interest show consistent and substantial positive and negative associations with prosocial and antisocial behaviours; in contrast, factors like interdependent self-construal and affiliation motivation show effects in the same direction, but these are smaller and less frequently significant.

Overall, interventions focused on increasing other-focused orientations may generally be promising in promoting prosocial behaviours while inhibiting antisocial behaviours. This may be particularly true of orientations that are inherently focused on the well-being of others. Currently, however, fewer social movements and programmes focus on promoting other-focused than self-focused orientations. Given the possible risks of targeting self-focused orientations, there are likely to be benefits from devoting additional resources to develop and promote interventions to promote other-focused orientations (e.g., compassion-based training; Weng et al., 2013).

5.3 | Which orientation has a stronger association with prosocial and antisocial behaviours (H5 and H6)?

Hypotheses H5 and H6 state that prosocial and antisocial behaviours should be more strongly associated with other-focused than self-focused orientations. Unfortunately, Study 1 was largely uninformative due to very large CIs. However, in Studies 2–4, the effects associated with other-focused orientations were consistently greater in magnitude on both prosocial and antisocial outcomes than the effects associated with self-focused orientations (supporting both H5 and H6).

These findings reinforce the suggestion that other-focused orientations might be more efficient targets for interventions than

self-focused orientations. They also reinforce the notion that prosocial/antisocial behaviours are often more central to other-focused goals (i.e., are ends of themselves) than they are to self-focused orientations (to which they may only be means to achieving self-focused goals). That said, it is important to note that the ends-means distinction may reflect a dynamic continuum between these variables rather than a fixed dichotomy and that the status of a behaviour can shift across contexts and time, depending on people's perceptions.

For example, prosocial behaviours in the workplace (i.e., OCB) have been consistently linked to improved workplace performance by employees and their teams (N. P. Podsakoff et al., 2009), an outcome that aligns with self-focused goals like career and achievement motivations. Although engaging in OCBs does not guarantee performance, the repeated observation of improved performance arising from OCBs could lead individuals to form strong mental associations between OCBs and fulfilling their career/achievement goals. Over time, this association may lead them to begin perceiving OCBs as tantamount to (i.e., perceiving them as ends for) the pursuit of career/achievement through a process of means-goal fusion (Kruglanski et al., 2018). This may explain why, in Study 4, achievement motivation showed its strongest association with the outcome of OCB. A similar dynamic may also be at play to account for the strong association (in Study 4) between power motivation and aggression. Indeed, aggression is often understood as a method through which individuals express or seek power, and longitudinal studies have found power motivations and aggression to be mutually reinforcing (Benish-Weisman, 2015).

As implied previously, similar variations may also be at play for other-focused orientations. For example, we argued that most other-focused orientations are concerned with the welfare of others and that this would lead prosocial behaviours to be pursued as ends. However, some constructs, like affiliation motives, are instead centrally concerned with building/maintaining (often surface-level) interpersonal relationships. For fulfilling these orientations, prosocial acts may serve more as means than ends and this could account for how affiliation generally showed smaller associations with prosocial behaviour than other constructs.

Theoretically, the degree to which behaviours are used and perceived as means versus ends to achieve motivational goals may be a useful lens to understanding and predicting how different variables (even outside our studies) relate to social behaviour. For instance, we can apply this lens to the distinction between empathy and compassion, two states which predict prosocial behaviour, but through distinct motivational dynamics. On the one hand, empathy allows individuals to experience the emotions of others (Gilbert, 2015); from this, individuals often engage in prosocial behaviours as means to alleviate their own negative affect (Cialdini et al., 1987) or to increase their own positive affect (Telle & Pfister, 2016), both of which are self-focused goals. On the other hand, compassion is an other-focused motivation, fundamentally concerned with caring for others (Gilbert, 2015); as such, prosocial acts may usually be ends to fulfil compassion. Consequently, we may predict that compassion is a stronger, more consistent, predictor of prosocial behaviour than empathy – an assertion that does have empirical backing (Chierchia & Singer, 2017).

5.4 | What is the average association between self-focused and other-focused orientations (H7) and between prosocial and antisocial behaviours (H8)?

It is well-established that self- and other-focused orientations are two distinct dimensions (De Dreu & Nauta, 2009; Markus & Kitayama, 1991); however, the average association between them remains to be fully ascertained, with researchers commonly reporting associations anywhere between $r = 0$ and $r = .5$ (e.g., DeYoung et al., 2007; Gerbasi & Prentice, 2013; Singelis, 1994). In our findings, the correlations between measures of self- and other-focused orientations were generally in the range of .2–.5 (H7), with the overall average across tests being around $r = .35$. There was a decent amount of spread, but correlations spread relatively evenly above and below our expected range. These associations are in line with ideas that self-focused and other-focused orientations can be mutually supportive as well as with the idea that a general motivational factor – reflecting a general disposition to act in a goal-directed way – may contribute positively to both orientations (supporting views by authors such as Batey et al., 2011; Borg & Bardi, 2016; Gunnell & Gaudreau, 2015).

However, it is also possible that the positive correlation between the two orientations could be accounted for by response biases (e.g., acquiescence bias, social desirability) or some other common-method bias (i.e., all measures being self-reports). To examine this possibility, we used data from Studies 1 and 4 to compute alternate SEM analyses (bi-factor models: Biderman et al., 2011; Gu et al., 2015; Motl & DiStefano, 2002) in which a general factor was added between all item-level indicators of self-focused and other-focused orientations. These models are reported in Section 5 of the Supporting Information. Our inferences remained largely unchanged. The two motivational orientations remained correlated at a similar magnitude (H7) not only supporting our hypotheses but also the possible operation of a general motivational factor. Further, the associations between the two motivational orientations and prosocial/antisocial behaviours (H1–H4) also remained similar across analyses, providing evidence that our findings are not reducible to response/methods-based biases. That said, given that our analyses still rely on self-reports, future research should evaluate these findings using alternate methods such as informant reports.

The idea that a general factor of motivation may exist is of particular interest to explore further as it relates to many discussions and debates that have spanned years in the personality domain surrounding the presence/absence of higher order factors (Bäckström et al., 2009; Chang et al., 2012; DeYoung, 2015; Digman, 1997; Mueke, 2007; Rush-ton et al., 2008; Van der Linden et al., 2010). Given that most broad personality traits like the Big 5 have motivational substrates (e.g., openness reflects dispositions towards gaining knowledge/experiences and the Big 2 [agency/communion] are explicitly self- and other-focused orientations), it may be fruitful to examine whether correlations between broad traits arise due to a combination of a general motivational factor (e.g., accounting for covariance between motivationally-framed items) and methods factors (e.g., response biases accounting

for more general covariance). In line with this idea, frameworks that posit two higher order factors within the Big 5 often attribute explicitly motivational elements to such factors (e.g., pursuing *stability* [status quo] vs. *plasticity* [i.e., change]; DeYoung, 2015; DeYoung et al., 2002).

Finally, in our studies, the correlations between prosocial and antisocial behaviours ranged between $-.46$ and $.15$, with an overall average across tests just above $r = -.10$. Most correlations were negative, but several were positive (although small). Given this spread of effect sizes, the typical association between these two types of behaviours may either be nil or at the low end of our anticipated range (i.e., r between 0 and $-.10$). These results support the view that prosocial and antisocial behaviours should generally be treated as distinct rather than opposing factors – a conclusion in line with the works of many authors that precede us (Card et al., 2008; Dalal, 2005; Duncan et al., 2002; Eron & Huesmann, 1984; Harris et al., 1996; Krueger et al., 2001).

5.5 | How might self-focused and other-focused orientations affect other types of behaviours?

Our studies used measures that categorize behaviours as either prosocial or antisocial. However, our operational definitions of the two types of behaviours are not mutually exclusive; a behaviour could feasibly be *both* prosocial and antisocial. Behaviours at the intersection of prosociality and antisociality may be especially interesting domains for future research. For instance, consider people doing an action that harms members of an outgroup to help members of an ingroup. Here, we might expect a positive association with self-focused orientations (as ingroups are likely to reward their successful members), but the association with other-focused orientations may be more nuanced and varied according to the specific type of other-focused orientation considered. For example, orientations towards benefitting close others and ingroup members (e.g., collectivistic inclinations, intimacy motivations) could lead people to engage in such behaviours more frequently. Indeed, collectivistic values can accentuate ingroup–outgroup divides (Triandis, 1995), and biological processes tied to building/maintaining close relationships, such as the operation of oxytocin (Aguilar-Raab et al., 2019), similarly lead to both ingroup favouritism and outgroup competition/aggression (De Dreu, 2012; De Dreu et al., 2011). In contrast, other-focused orientations like self-transcendent values are associated with lower prejudice/discrimination towards outgroups (Feather & McKee, 2008; Zibenberg & Kupermintz, 2016) and may lead people to withhold from such actions. For other behaviours at the intersection of prosociality/antisociality the reverse pattern may emerge. For example, we could expect extreme social activism to be promoted by a strong motivation for fairness, but inhibited by motives tied to maintaining social norms.

When behaviours have both prosocial and antisocial consequences, the time frame of the consequences could be another productive area to explore. For example, parents engaging in strict discipline, or having their children vaccinated, accept to commit short-term harms (e.g., a harsh punishment, a painful shot) to achieve long-term benefits (e.g., good socialization, immunity to disease). Such behaviours

are typically motivated by altruistic concerns for one's child. However, altruistic motives can also inhibit such behaviours. For example, wanting to protect children from the pain associated with getting shot-based vaccines is a common barrier to vaccination, even among parents who are aware of the long-term benefits (E. Mills et al., 2005). Future research should therefore clarify the pattern of associations between motivational orientations and behaviours that have both prosocial and antisocial elements.

In addition, it is worth considering how behaviours impact the self. That is, in addition to being defined in terms of benefits towards others (prosocial) and harms towards others (antisocial), behaviours can also be defined according to the degree to which they benefit ('pro-self' behaviours) and harm the self ('anti-self' behaviours). Generally, our hypotheses rested upon the idea that prosocial and antisocial behaviours are *end goals* for other-focused orientations but usually *means* towards self-focused goals. If a similar logic holds generally, we could expect complementary associations for behaviours that obtain/avoid outcomes for the self. Specifically, people with high self-focused orientations should seek to engage in more frequent behaviours that benefit them personally, but fewer behaviours that are personally costly (both are ends to self-focused goals). People with high other-focused orientations, however, may engage in both types of behaviours to the extent that they can use these behaviours to increase benefits (or decrease harms) for others around them (i.e., use the behaviours as means). These ideas could be examined in future research and would have important implications for interventions and clinical work.

5.6 | What might interventions to target self-focused and other-focused orientations look like?

Interventionists can employ different strategies to target self-focused and other-focused orientations to alter rates of prosocial and antisocial behaviours. They may seek to alter people's motivations, leverage pre-existing individual differences or engage in a combination of these strategies. When choosing a strategy, interventionists should be mindful of the degree to which many motivational orientations are chronic individual differences.

For instance, differences in basic personality traits (e.g., communion and agency) and values (e.g., social-focus and personal-focus values) are each chronic and relatively stable individual differences (Vecchione et al., 2016; Wright et al., 2012). This may make them challenging targets for change, especially as people age. Consequently, interventions targeting trait-level individual differences could focus their efforts on earlier life stages (e.g., childhood) when personality and values are more malleable (Caspi et al., 2005; Roberts & DelVecchio, 2000). That said, there is still substantial amounts of personality change that occurs throughout the lifespan (Caspi et al., 2005) and there is a growing literature on the development of clinical and digital interventions that can exert long-lasting change on personality among adults (Magidson et al., 2014; Roberts et al., 2017; Stieger et al., 2021). Interventionists with the means to deploy such interventions should consider them. In

doing so, it may be worth exploring whether increasing chronic levels of other-focused orientations may be easier to accomplish than altering levels of self-focused orientations, as the former aligns with normal processes of maturation whereby people become more other-focused as they age (Bleidorn, 2015; Gouveia et al., 2015; Milfont et al., 2016; L. J. Walker & Frimer, 2015).

Yet, there are also alternate strategies for directly targeting chronic, trait-level dispositions. Most chronic individual differences (e.g., personality traits) reflect long-standing averages with substantial levels of within-person variation (i.e., state-level change) across time and situations (Fleeson, 2001, 2007; Fleeson & Jayawickreme, 2015; Jayawickreme et al., 2019). This variation has been largely attributed to fluctuations in daily goals and lower order motivations (Church et al., 2013; Heller et al., 2007; McCabe & Fleeson, 2012); consequently, using interventions to alter state-level motivations could be a feasible strategy over targeting trait-level constructs. Indeed, altering situations (e.g., via goal priming) to elicit state-level changes in personality, values and goals is a well-documented strategy (Moskowitz & Gesundheit, 2009; McNiel & Fleeson, 2006) and has been previously applied to understand and change both prosocial and antisocial behaviours (de Medeiros et al., 2021; Joyal-Desmarais et al., 2022; Todorov & Bargh, 2002). Situational interventions are thus promising and could be deployed to target larger numbers of individuals at a time (e.g., targeting all who interact with a given space). It has also been theorized that the repeated activation of states (e.g., other-focused goals) should contribute to long-lasting change in associated traits over time (e.g., overall communion or social focus values; Bardi & Goodwin, 2011). This proposition has important implications and should be explored in future empirical works.

Finally, another type of strategy interventionists can consider is to appeal to individuals' pre-existing motivations (rather than changing people's motivations) to influence rates of prosocial and antisocial behaviours. For instance, motivational message-matching research holds that people are more likely to be persuaded to change their beliefs and behaviours when persuasive messages are constructed in ways that match (vs. mismatch) their personal values and motivations (Joyal-Desmarais, 2020; Joyal-Desmarais et al., 2022). This technique has been applied in many domains, such as encouraging volunteerism (e.g., Clary & Snyder, 1999), pro-environmental behaviours (e.g., Graham & Abrahamse, 2017) and political decisions (e.g., Feinberg & Willer, 2015). A recent systematic review and meta-analysis found that most types of behaviours can be changed using motivational message matching, with effects sometimes persisting for months after an intervention (Joyal-Desmarais et al., 2022). Behavioural maintenance has also been argued to follow a similar principle, with people being more likely to continue engaging in a behaviour (e.g., volunteerism) to the extent that the behaviour reinforces their specific motivational preferences (Clary et al., 1992, 1998). For example, an other-focused person may be more likely to maintain their volunteerism to the degree that they see benefits for others arising from their actions. Although the goal of motivational matching interventions is not generally to alter motivational orientations, there are growing theoretical and empirical works to suggest that the repeated satisfaction of motivations leads

to a reinforcement of those motivations over time (e.g., Baumeister, 2016; Burkley et al., 2013; Prentice et al., 2019; Vohs & Baumeister, 2008). For example, the more wealth and status people have, the more wealth and status they seek (Wang et al., 2020). Consequently, interventionists using motivational matching principles should still be weary of the unintended consequences the repeated enactment of such interventions could have over time.

5.7 | Should indices of self-focused and other-focused orientations be used interchangeably?

In this project, we argued that self-focused and other-focused orientations represent two higher order categories of motivation. We discussed literature (encapsulated in Table A1) which documents associations between self-focused and other-focused constructs from different frameworks (e.g., the interpersonal circumplex, basic values, self-construal) and noted that authors have frequently used measures from these frameworks as interchangeable indicators of these two broader motivational categories (e.g., Abele & Wojciszke, 2014; Miyamoto et al., 2018; Trapnell & Paulhus, 2012). Our findings, particularly from Study 4, provide important insights into this perspective.

For example, if measures of self-focused orientations assess a common construct (a general self-focused orientation), then these measures should be more highly correlated with one another than to measures of other-focused orientations. Similarly, if measures of other-focused orientations assess a common construct (a general other-focused orientation), then these measures should be more highly correlated with one another than to measures of self-focused orientations. This follows the logic of multitrait-multimethod matrices (Campbell & Fiske, 1959). Correlations between measures of the same category are presented in the lower diagonal of Table A1; from these, we see that the average correlations among self-focused measures and among other-focused measures are both large ($r = .53$ and $.50$, respectively). In contrast, the average correlation across self-focused and other-focused measures is moderate ($r = .34$; see Table S28) – this latter correlation may actually be overestimated as many pairs of self-focused and other-focused constructs were assessed using the same instrument and may share additional methods variance (e.g., interdependent and independent self-construal were both assessed using the measure by Singelis, 1994). These findings support the notion that each construct can effectively be used to tap into higher order differences in self-focused and other-focused orientations. Further, despite heterogeneous findings for how specific operationalizations of self-focused orientations relate to antisocial and prosocial behaviours, there is a greater tendency for the patterns to converge (than diverge) with each other and with the aggregate measures. For example, each operationalization in Study 4 shows more findings in line with our predictions than counter to them. An implied benefit of this observation is that patterns at the level of higher order self- and other-focused orientations should theoretically offer value in predicting lower order constructs, extending beyond the set included in a given project. For instance, theories

of motivation (e.g., self-determination theory, Maslow's hierarchy of needs, the fundamental social motives framework; Maslow, 1954; Neel et al., 2016; Ryan & Deci, 2000) offer a plethora of ways to operationalize self-focused (e.g., needs for autonomy, competence or self-esteem; motives for self-protection or status) and other-focused orientations (e.g., needs for relatedness or love; motives for kin care) that extend beyond the current studies. The patterns we observe could reasonably be expected to inform our understanding of such unmeasured variables – that is, on average, and future work will benefit from establishing the robustness of this generalizability.

Lastly, as we anticipated from work on the bandwidth-fidelity trade-off (Ones & Viswesvaran, 1996; Soto & John, 2017), our aggregate measures of self- and other-focused orientations generally show the clearest and most robust associations in predicting prosocial and antisocial behaviours (e.g., Table 8; Supplemental Table S27). Taken together, this empirical evidence supports the use and benefits of operationalizing self- and other-focused motivations at a high-level manner – supplementing theoretical reasons to regroup motivations based on shared concerns focused on the self versus others (Abele & Wojciszke, 2007).

On the whole, our findings suggest that using a wide breath of lower order measures can reliably indicate high-level self-focused and other-focused tendencies. Yet, does this also mean that each measure, or 'lower order' construct, within a category (e.g., self-focused) can be used interchangeably to assess one another (e.g., using independent self-construal as an index of assertiveness)? Probably not. Despite this being common in past research, our findings are critical of this practice and suggest that authors should generally avoid using these constructs as proxies for *each other*. Although correlations within each category are relatively strong, averaging close to $r = .50$, this also means that there is only an average 25% overlap in variance. Given the variability we found in the degree and direction of associations with external variables within self-focused and other-focused categories – for example, independent self-construal and self-interest predicting prosocial and antisocial behaviours in opposite directions – using different lower order constructs as proxies for one another could lead to misleading conclusions. Such warnings are similar to those in research on other hierarchically organized individual differences. For example, Big 5 traits like extraversion are commonly broken down into lower order factors like enthusiasm and assertiveness (DeYoung, 2015). Each aspect is a valid indicator of extraversion, findings about the aspects can inform us about extraversion and findings about extraversion can inform us about the aspects. Yet, the two aspects cannot be conflated as equivalent (using enthusiasm as an index of assertiveness) as they can still show divergent relations to external criteria (e.g., when predicting agreeableness; DeYoung et al., 2007).

Thus, we suggest that future research on self-focused and other-focused orientations attend more carefully to the hierarchical nature of these constructs and to the unique value of studying how these motivations manifest at different levels. We have argued that high-level versions of these constructs may generally offer the best predictions for broad classes of behaviours (e.g., prosocial behaviours). Yet, lower order motivations (e.g., pro-environmental values) may be highly useful

in predicting behaviours in matched domains (e.g., recycling, water conservation). Mid-level motivations (e.g., motives for personal growth) may also offer promise in elucidating patterns missed at the other two levels.

5.8 | Strengths, limitations and generalizability

We acknowledge that our studies do not allow us to draw strong causal inferences as they were cross-sectional and observational. We did not complement our studies with laboratory-based experiments because, although these would allow for stronger causal inferences, experimental paradigms tend to be limited in their ability to examine a representative and ecologically valid sample of behaviours – especially antisocial behaviours (Ritter & Eslea, 2005). Given the limitation of experimental work, we suggest that the use of longitudinal assessments in future research would be particularly useful to strengthen our inferences. This would establish the temporal ordering of the effects.

The current studies also have several strengths. *First*, our analyses examining the effects of self-focused orientations always controlled for the effects of other-focused orientations and vice-versa. Given the frequent and non-trivial association between these two orientations, this allowed us to better isolate the relevant effects. *Second*, we built on past research by consistently examining the effects of these two orientations on prosocial and antisocial behaviours simultaneously. Such analyses afford a richer perspective on the breadth of effects associated with the predictors, allowing us to better capture possible side effects that may be associated with changing the motivational orientations. *Third*, we used strong measurement models, especially in Study 4, to assess each predictor and outcome variable, allowing us to estimate patterns with higher reliability and validity. *Fourth*, we replicated our findings across four distinct samples, varying from American samples (Studies 1 and 4) to large samples drawn across 78 countries (Studies 2 and 3). These allowed us to examine the generalizability of our findings across diverse national contexts. *Fifth*, we examined many ways of operationalizing both our predictor and outcome variables. This provided us with greater confidence that our inferences could be drawn at a general and abstract level (i.e., about self-focused and other-focused orientations in general), while also allowing us to observe variations across different operationalizations.

With relation to this last point, however, we advise caution when considering single associations between two specific indicators (e.g., interdependent self-construal and OCB). Such associations depend on single or small sets of tests and should be replicated. In contrast, we have more confidence in inferences that involve repeated tests of an association between any specific indicator and a general *type* of variable (e.g., interdependent self-construal and prosocial behaviours) as multiple tests of this association converge. Finally, we have the greatest confidence in the associations among the broad types of variables (e.g., other-focused orientations and prosocial behaviours). These broad inferences are, after all, the main questions the current project was designed to address.

6 | CONCLUSION

This project advocates taking a more holistic view of the associations between broad psychological predictors of behaviours (i.e., self-focused and other-focused orientations) and multiple behavioural outcomes. Since past research on the psychological correlates of prosocial and antisocial behaviours have been relatively isolated from each other, we sought to bring these literatures together by considering both behaviour types simultaneously.

In four studies, we examined how individual differences in self- and other-focused orientations were associated with prosocial and antisocial behaviours/attitudes. We found consistent evidence that other-focused orientations were positively associated with prosocial outcomes and negatively associated with antisocial outcomes; effects were highly consistent cross-nationally and across different assessment methods. Additionally, we found self-focused orientations to generally be positively related to both prosocial and antisocial outcomes, but the association with prosocial behaviours varied substantially across nations and different operationalizations of self-focused orientations.

Our findings advise caution that targeting self-focused orientations to change behaviours (e.g., increasing prosocial behaviours) could have negative unintended consequences (e.g., increasing antisocial behaviours). Other-focused orientations may be more effective intervention targets and may even benefit from *positive* unintended effects (e.g., decreasing antisocial behaviours).

AUTHOR CONTRIBUTIONS

Research ideas for Studies 1, 2 and 3 were developed by KJD and HE, with contributions from MS. All authors contributed to the analysis plan and design for Study 4. Data preparation and analyses were conducted by KJD, with assistance from HE and AS. KJD wrote the initial version of the manuscript with support from HE, AS and MS. All authors read and approved the final manuscript. For the purpose of open access, the authors have applied a Creative Commons Attribution (CC BY) licence to any Author Accepted Manuscript version arising from this submission.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

ETHICS STATEMENT

This research adheres to ethical guidelines as specified in the APA Code of Conduct. Data for Studies 1, 2 and 3 were not collected by the researchers themselves but represent publicly available datasets. Study 4 was approved by the institutional review board of the University of Minnesota. All participants provided informed consent prior to participation.

TRANSPARENCY STATEMENT

A project page for this work can be accessed at osf.io/fwypf. This page contains our Supporting Information and the analysis script files we used for the four studies. The project page also includes the dataset used for Study 4. Additionally, data for Study 1 can be accessed at www.icpsr.umich.edu, and data for Studies 2 and 3 can be accessed at www.worldvaluessurvey.org.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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APPENDIX

Considerations that informed our definitions of prosocial/antisocial behaviours

In defining prosocial and antisocial behaviours, we sought definitions that would (1) capture the diversity of behaviours typically considered as prosocial/antisocial, (2) reflect common operationalizations in research, and (3) allow prosocial and antisocial definitions to mirror and complement each other (e.g., ensuring both or neither required an intent component). Relating to this final point, we note that alternative definitions require motivational/intentional states to underly the behaviours (e.g., selfless motives for prosocial behaviours or desires to harm for antisocial behaviours; DeWall et al., 2012; Eisenberg & Miller, 1987), but, following others (e.g., Buss, 1961; Loeber & Hay, 1997), we omit such elements for three reasons.

First, many researchers and interventionists are interested in changing rates of behaviours regardless of the cognitions that prompt them. Correspondingly, most measures assess frequencies of prosocial/antisocial behaviours *without* assessing underlying cognitions (e.g., Rushton et al., 1981). When cognitions are assessed, they are usually used as predictors of behaviours (e.g., Greenslade & White, 2005). Consequently, our definitions better align with current empirical research than definitions that incorporate such cognitions. *Second*, many prosocial and antisocial behaviours occur *without* deliberate intentions (e.g., habits and reflexive actions). Definitions requiring intentions would exclude these commonly studied behaviours. *Third*, our definitions allow us to avoid confounding behaviours with specific motivations, allowing us to study the full breadth of motivations that underlie behaviour. For example, defining prosocial (antisocial) behaviours as requiring altruistic (hostile) motives would limit us to only studying cases when this is true. However, it is well documented that people can engage in prosocial behaviours for selfish reasons (Snyder & Dwyer, 2012) and not just altruistic reasons. Similarly, people sometimes enact violence for altruistic reasons (e.g., in the defence of others; Böhm et al., 2016) rather than because of inherent hostility.

Finally, we note that our definitions make no claim about the inherent morality of each behaviour type, as each can vary in morality depending on contextual, sociocultural and philosophical considerations.

Links between frameworks delineating self- and other-focused orientations

TABLE A1 Works documenting and discussing associations between each framework, along with Study 4 correlations.

Framework	1.	2.	3.	4.	5.	6.
1. Interpersonal circumplex	-	A	B	C	D	E
2. Schwartz's theory of human values	.41 .57	-	F	G	H	I
3. Masculinity Femininity	-	-	-	J	K	L
4. Independence Interdependence	.51 .29	.63 .63	-	-	M	N
5. Self- and other-interest	.37 .37	.71 .54	-	.41 .54	-	O
6. Power, achievement Affiliation, intimacy	.48, .54 .25, .48	.47, .67 .39, .69	-	.29, .56 .49, .55	.65, .70 .58, .59	-

Note: Letters in the upper diagonal indicate which references relate to each theoretical pairing. Numbers in the lower diagonal show correlations from Study 4. The first number in each cell (*italics*; before the |) indicates the correlation between self-focused orientations (e.g., assertiveness and personal focus values = .41). The second number (non-*italics*, after the |) indicates the correlation between other-focused orientations (e.g., compassion and social focus values = .57). Supplemental Table S28 provides a more detailed breakdown of correlations.

References:

A: Buchanan and Bardi (2015), Frimer et al. (2011), Milfont et al. (2016), Parks-Leduc et al. (2015), Ponikiewska et al. (2020), Schwartz and Bilsky (1987) and Trapnell and Paulhus (2012).
 B: Bakan (1966), Bem et al. (1976), Helgeson (1994), Hiller and Philliber (1985), Locke (2000), Saragovi et al. (1997), Trapnell and Paulhus (2012), Ward et al. (2006), Wiggins and Holzmueller (1981) and Wood and Eagly (2015).
 C: Abele and Wojciszke (2007, 2014), Abele et al. (2016) and Miyamoto et al. (2018).
 D: Abele and Wojciszke (2007, 2014) and Frimer et al. (2011).
 E: Brunstein et al. (1998), Mansfield and McAdams (1996), Pöhlmann (2001) and Schönbrodt and Gerstenberg (2012).
 F: Di Dio et al. (1996), Schwartz and Rubel (2005) and Schwartz and Rubel-Lifschitz (2009).
 G: Cukur et al. (2004), Oishi et al. (1998), Schwartz (1994b), Triandis et al. (1990) and Verplanken et al. (2009).
 H: Gerbasi (2011), Gerbasi and Prentice (2013) and Schwartz et al. (2012b).
 I: Bilsky and Schwartz (2008), Hofer et al. (2006), Schwartz (2012) and Schwartz et al. (2012b).
 J: Cross and Madson (1997), Josephs et al. (1992) and Kimmelmeier and Oyserman (2001).
 K: Gerbasi (2011) and Gerbasi and Prentice (2013).
 L: Diekmann and Eagly (2008), James et al. (1995) and Pöhlmann (2001).
 M: Gerbasi (2011), Gerbasi and Prentice (2013) and Miyamoto et al. (2018).
 N: Abele et al. (2016) and Triandis et al. (1985).
 O: Abele and Wojciszke (2014), Gerbasi (2011) and Gerbasi and Prentice (2013).