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Moral Identity: From Theory to Research

by

Jean Paul Lefebvre

Bachelor of Arts, Athabasca University, 2017

DISSERTATION

Submitted to the Department of Psychology

in partial fulfilment of the requirements for

Doctor of Philosophy in Psychology

Wilfrid Laurier University

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Abstract

Moral identity, often defined as the importance or centrality of moral values to a person's sense of self, has long been understood to play an important role in moral functioning. However, critical gaps remain regarding its development, cross-context stability, and behavioural significance. This dissertation addresses these gaps in three empirical studies, providing new insights into the nature and function of moral identity across the lifespan and in daily life.

The first study (Chapter 2) explores developmental trends in moral identity, testing predictions from moral identity goal theory (Krettenauer, 2022). Using a cross-sectional sample spanning adolescence to old age, the study finds that with age moral identity becomes increasingly informed by abstractly rather than concretely construed values, and increasingly underwritten by internal rather than external motivation. The second study (Chapter 3) examines the stability and malleability of moral identity using experience sampling methods (ESM). By tracking momentary fluctuations in moral identity salience in a sample of Canadian university students over the course of a week, the study demonstrates that moral identity varies significantly within individuals across contexts while also showing stable between-person differences. Further, it shows that within- and between-person differences are related to a variety of morally relevant events experienced in everyday life. The third study (Chapter 4) also employs ESM to explore how moral and immoral action undertaken in daily life can be independently predicted by both within-person fluctuations and between-person differences in the salience and motivation of moral identity. It finds that while variation at both of these levels in moral identity is predictive of discrete actions and behavioural dispositions, this relation is more consistently found and stronger at the within-person level. Moral identity motivations are also found to be uniquely predictive of behaviour, in context-dependent ways.

Together, these studies provide a comprehensive view of moral identity as a dynamic construct that develops over the lifespan, exhibits trait-like stability while also responding to situational factors, and profoundly influences behavior. By bridging developmental, socio-cognitive, and individual difference perspectives, this research contributes to a more nuanced understanding of moral identity.

Declaration of Co-Authorship/Previous Publication

This dissertation is composed of three distinct manuscripts: *Moral Identity Goal Characteristics: Age-Related Trends From Early Adolescence to Old Age* (Chapter 2 of this dissertation), *Is Moral Identity Flexible or Firm? Evidence From Experience Sampling Data* (Chapter 3 of this dissertation), and *Moral Identity and Behaviour: Association Within- and Between-Persons* (Chapter 4 of this dissertation). Below are descriptions of the previous publication status and co-author contributions for each of these three manuscripts.

The manuscript *Moral Identity Goal Characteristics: Age-Related Trends From Early Adolescence to Old Age* was published in 2024 in the journal *Developmental Psychology* (<https://doi.org/10.1037/dev0001615>). I am the first author of the paper, and co-authored it with Hailey Goddeeris, Zachariah Hamzagic and Dr. Tobias Krettenauer. This paper is based on moral identity goal theory, which was developed by Dr. Krettenauer in previous publications (see Krettenauer, 2020, 2022a, 2022b). The application of this theoretical framework and the conceptualization of measures in this paper was a joint effort by myself and Dr. Krettenauer, as was the writing of the introduction and discussion sections. I conducted the data analyses and wrote the results section. Hailey Goddeeris and Zachariah Hamzagic assisted in data collection and contributed to writing the method section. This manuscript is copyright © 2024 by the American Psychological Association, and is reproduced here with permission.

The manuscripts *Is Moral Identity Flexible or Firm? Evidence From Experience Sampling Data* and *Moral Identity and Behaviour: Association Within- and Between-Persons* have not previously been published. Both of these manuscripts were solely authored by me under the supervision of my PhD advisor, Dr. Tobias Krettenauer.

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CHAPTER 1: INTRODUCTION

In the forty years since Augusto Blasi (1983) proposed moral identity as a mediator between moral judgment and moral action, it has proven an enduring and generative feature in the landscape of moral psychology. It is frequently defined as the centrality or importance of moral values to a person's identity (Hardy & Carlo, 2011). Although successive phases of theorizing have given rise to a variety of models of moral identity (Krettenauer, 2024), each with their own more or less overlapping formulations of the construct, this brief definition captures much of the shared essence that unites them. Moral identity has been conceptualized as a self-schema (Lapsley & Narvaez, 2004), a social identity (Aquino & Reed, 2002), a component in a cybernetic control system (Stets & Carter, 2011), a dimension of individual difference (Blasi, 1983, 2005), a constellation of personality traits (Carlo et al., 2009; L. J. Walker & Frimer, 2007), the central thread of the life narrative (Pratt et al., 2009) and a lifelong goal (Krettenauer, 2022a, 2022b), to name a few approaches. These models are arguably best viewed not as irreconcilable competitors, but rather as complimentary (Aquino & Kay, 2019; Hardy & Carlo, 2011), each with its own area of focus and domain of applicability.

A wealth of research from various disciplines (psychology, sociology, business and marketing) has established that moral identity is an important ingredient of moral functioning (Hardy & Carlo, 2011; Jennings et al., 2015; Krettenauer, 2024), linking judgment, affective processes and behaviour. Consequently, the development of a mature moral identity, in which moral values and commitments are deeply enmeshed with one's self-concept, is often portrayed as the capstone achievement of moral development (Hardy & Carlo, 2011; Krettenauer & Hertz, 2015; Lapsley & Lasky, 2001; Tomasello, 2019). Despite the conceptual and empirical progress

which has been made by moral identity researchers, substantial gaps exist in our understanding which cut across theoretical distinctions. This proposal aims to address two of those gaps, which I briefly describe below.

Before presenting an overview of those gaps and the present research, it is worth lingering a moment on what constitutes the “moral” part of moral identity. Defining the moral domain in psychological research has long been a contentious issue. Kohlberg rejected moral relativism and rooted his theory of moral development in the notion that justice is the ultimate and universal ethical principle distinguishing right from wrong, and mature from immature moral reasoning (Kohlberg, 1971). Kohlberg’s focus on abstract principles of justice and rights was critiqued by Gilligan, who argued that it overlooked moral perspectives centered on caring, relationships and empathy (Gilligan, 1993). According to Social Domain Theory moral norms are distinguished from other social rules insofar as they evoke concerns about the welfare and rights of others, which are experienced as universal, authority-independent obligations (Elliot, 1983; Smetana et al., 2014). Other scholars have advocated a more pluralistic approach to defining the moral domain. Cultural anthropologist Richard Shweder has argued that while people in diverse contexts may share a broadly common moral palette, there is substantial cross-cultural heterogeneity in what values people locate within the moral domain (Shweder, 2008, 2012; Shweder et al., 1997). Haidt’s Moral Foundation Theory (Graham et al., 2013) expands on this pluralistic notion, and proposes that morality can be defined with reference to five (or more) foundations, which are emphasized to a greater or lesser degree across and within cultures (e.g., Graham et al., 2009, 2011; Koleva et al., 2012). More recently, this collection of foundations has been critiqued as reducible, ultimately, to concerns about welfare and harm (Gray et al., 2017; Schein & Gray, 2018).

In short, there is not a universally endorsed formalism that allows researchers to unambiguously distinguish the values (or behaviours) that qualify as moral from those that do not. Moral identity researchers have generally adopted a more pluralistic approach, heeding Blasi's warning that "psychologists may risk missing a large portion of these people's moral life when they are rigidly guided by definitions constructed within specific philosophical theories" (1990, p. 45). Moral identity theories have tended to concern themselves more with the structure and dynamics of the integration of moral values into identity, rather than with the specific content of those values. Consequently, they have taken an empirical approach to the question of which values, characteristics and qualities comprise the moral core of a person's self-conception. People offer a wide variety of characteristics as particularly central to their conception of a prototypical moral agent (Hardy et al., 2011; Jia & Krettenauer, 2017; Reimer et al., 2009; Walker & Pitts, 1998), some of which fit neatly within some of the aforementioned approaches to defining the moral domain (e.g., caring, fair, just), while others do not (e.g., hard-working, friendly, self-assured). Such "common language understanding of what's morally relevant" (Blasi, 1990, p. 40) has been used to define the moral domain in many measures of moral identity (e.g., Aquino & Reed, 2002; Krettenauer & Victor, 2017; Lefebvre et al., 2024). Not all approaches to conceptualizing and measuring the construct take this pluralistic approach (e.g., Frimer & Walker, 2009), but it is arguably the most common. The present work takes a similar tack, in that its measures of moral identity give participants a great deal of latitude to define for themselves what characteristics or values being a moral person entails and what acts are considered moral or immoral. Thus, we let research participants define the scope of the moral domain for themselves. As Jia and colleagues (2019) demonstrated, this approach yields some variability in the content that defines the moral domain, but also to considerable overlap even

across cultures (Jia et al., 2019; Jia & Krettenauer, 2017). Thus, the morality of people's identity shows universal features without necessarily being uniform (see also Shweder, 2012).

Overview of the Present Research

The research presented in this dissertation was motivated by two distinct gaps in the literature: a) the absence of empirical evidence for developmental trends in moral identity after its emergence in early to middle childhood, and b) ambiguity about the relative magnitude and importance of variation in moral identity at the within- and between-person levels. This dissertation is comprised of three distinct manuscripts (Chapters 2-4), each of which addresses one of these gaps. Below I briefly review the gaps which motivated each of these manuscripts and the approach taken to address them.

One of the most prominent gaps in the moral identity literature has been the failure to detect developmental trends (Hardy & Carlo, 2011b; Lapsley & Stey, 2014; Nucci, 2004). Essentially all theories of moral identity suppose that the integration of morality and self is an achievement which occurs incrementally over a protracted period of development, with many scholars singling out adolescence and early adulthood as a uniquely critical period in its development (Blasi & Glodis, 1995; Frimer & Walker, 2009; Hardy & Carlo, 2011b). It has become increasingly clear that the precursors of a mature moral identity emerge in early to middle childhood (e.g., Engelmann & Rapp, 2018; Engelmann et al., 2013; Rapp et al., 2019; Fu et al., 2016; Tomasello, 2019), but efforts to find evidence of developmental change in adolescence and early adulthood have largely failed to detect such trends (see Krettenauer & Hertz, 2015). This pattern of non-findings suggests that a more expansive conceptual framework and more developmentally sensitive methods and measures are needed to more securely establish moral identity as a developmental construct.

This challenge is taken up in the manuscript contained in Chapter 2, titled “Moral identity goal characteristics: Age-related trends from early adolescence to old age”. This paper adopts moral identity goal theory (Krettenauer, 2022a, 2022b) as its conceptual framework. Goal theory posits that moral identity can be conceived of as the goal of being a good person, and that it changes systematically across development with respect to three central goal characteristics. Specifically, moral identity goes from being a relatively concretely construed goal to a more abstractly construed one, from being a relatively externally motivated goal to a more internally motivated one, and from being a relatively prevention-oriented goal to a more promotion-oriented goal (Krettenauer, 2022a). This paper tests those hypothesized trends by adapting a well validated measure which has dominated moral identity research taking an individual differences perspective, but which has proven insensitive to developmental trends: the Self-Importance of Moral Identity Questionnaire (Aquino & Reed, 2002). This novel measurement strategy was designed to systematically capture variability across all three dimensions of goal characteristics, construal level (concrete vs. abstract), motivation (internal vs. external) and orientation (promotion vs. prevention), and was administered to a cross-sectional sample of Canadians from early adolescence to old age.

The second gap addressed in this dissertation concerns the ambiguity about the relative magnitude and importance of variation in moral identity at the between- and within-person levels. Theories of moral identity differ with respect to whether they emphasize its stability or malleability. Trait theories conceptualize it as an enduring dimension of individual difference (e.g., Blasi, 1983; Frimer & Walker, 2009). By contrast, socio-cognitive theories conceptualize it as a moral self-schema or knowledge structure, which in any given situation may be activated to a greater or lesser degree (e.g., Aquino et al., 2009; Lapsley & Narvaez, 2004; Stets & Carter,

2011). These perspectives are not entirely incompatible, but they nonetheless differ substantively in whether they prioritize the between- or within-person levels of analysis as the primary loci of interest. In one respect the empirical record speaks quite clearly to this tension: meaningful between-person differences have been observed (Hertz & Krettenauer, 2016; Lefebvre & Krettenauer, 2019), and meaningful within-person differences have been induced in the lab (e.g., Aquino et al., 2009; Carter, 2013; Leavitt et al., 2016). Some proponents of malleable perspectives interpret this state of affairs as validating their emphasis on within-person variation (Aquino & Kay, 2019). However, very little is known about the extent to which people's moral identity actually fluctuates from situation to situation in their everyday lives (for one notable exception, see Krettenauer et al., 2022), or the association of those fluctuations with the kinds of morally relevant behaviour they engage in. The absence of that information makes it difficult to justify whether moral identity is best thought of as a trait-like facet of individual character which supports cross-context consistency, a context-sensitive, transiently activated schema or something which simultaneously exhibits substantial and meaningful variation at both the within- and between-person levels.

In this dissertation, the question of the basic nature of moral identity (i.e., is it stable, malleable or something in between?) is subdivided into two conceptually distinct research questions: a) what is the relative distribution of variance when the variation of moral identity in everyday life is partitioned into within- and between-person components, and b) to what extent does variation in moral identity at each of those levels predict the morally relevant behaviours people engage in from day to day? The question of how moral identities *vary* in everyday life is taken up in the manuscript contained in Chapter 3, titled "Is Moral Identity Flexible or Firm: Evidence from Experience Sampling Data". The question of how individual differences and

within-person fluctuations in moral identity each independently *covary* with morally relevant behaviour is addressed in the manuscript contained in Chapter 4, which is titled “Moral Identity and Moral Behaviour: Associations Within- and Between-Person”. Both of these manuscripts describe distinct analyses of a common dataset collected from a sample of participants employing experience sampling methods (Beal, 2015; Bolger et al., 2003; Bolger & Laurenceau, 2013). This dataset contained intensive repeated measurements of both the momentary salience of moral identity and the occurrence of any events in their everyday lives which participants judged had some moral significance, over the course of seven days.

In Chapter 3 multilevel modeling (Raudenbush & Bryk, 2002) was used to partition variance in the salience of moral identity into within-person (i.e., momentary fluctuations in salience) and between-person (i.e., individual differences in chronic levels of salience) components. In this way the relative magnitude of these two sources of variability were compared in order to test the assertion of some moral identity scholars that it is best conceived of as a highly malleable construct in typically functioning populations (Aquino & Kay, 2019). Furthermore, the associations between moral identity and the everyday moral and immoral events in participant’s lives were modeled, at both the between- and within-person levels. Specifically, the identity-event relation for six different types of morally relevant events were modeled: engaging in, being the target of, and witnessing either moral or immoral acts.

Chapter 4 likewise involved the application of multilevel modeling to experience sampling data. It focused on predicting within- and between-person differences in participant reported moral and immoral action from both the momentary and chronic salience of moral identity. It also employed a framework for calculating multilevel effect sizes (Rights & Sterba, 2018, 2019) to facilitate comparisons of the identity-behaviour relation at each level of analysis.

Finally, it tested hypotheses about the differential behavioural implications of the motivational character of moral identity, above and beyond its mere salience, proposed by moral identity goal theory (Krettenauer, 2022b). More specifically, it was expected that while internal identity motivation would be a robust cross-context predictor of morally relevant behaviour, the behavioural effects of external identity motivation would be contingent on the presence of potential reputational costs and benefits.

In sum, this dissertation research leveraged the recently proposed moral identity goal theory (Krettenauer, 2020, 2022a, 2022b) to create a novel, developmentally sensitive measurement strategy which was employed to a) test long hypothesized, but heretofore elusive, patterns of developmental change across the lifespan (Chapter 2), and b) probe the hypothesized behavioural implications of variation in one of the central characteristics highlighted by goal theory, namely the motivational character of moral identity (Chapter 4). It also employed experience sampling methods and intensive longitudinal analyses to provide an innovative and ecologically valid perspective on moral identity and whether it is best thought of as relatively stable or malleable (Chapter 3), and on the relative importance of moral identity's stable differences and within-person fluctuations as predictors of the kinds of morally relevant behaviours people enact in their everyday lives (Chapter 4).

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CHAPTER 2: MORAL IDENTITY GOAL CHARACTERISTICS: AGE-RELATED TRENDS FROM EARLY ADOLESCENCE TO OLD AGE

Moral identity – defined as the importance of morality to the self – has been conceptualized both as a developmental construct and as a dimension of individual differences (Hardy et al., 2020). From a developmental perspective, it has been assumed that self and morality are largely separated in childhood and become gradually integrated during adolescence, giving rise to a moral identity (see Blasi, 1984, 1988; Damon, 1996; Frimer & Walker, 2009). From an individual differences perspective, the primary focus has been on between-person variation. Some individuals more than others feel that morality personally matters to them, which has important implications for moral emotions, decision-making and behavior (Jennings et al., 2015). These two perspectives on moral identity are not mutually exclusive. If moral identity development progresses at different rates, it may yield stable individual differences. Alternatively, individual differences may persist independently of developmental transformations in moral identity. Notwithstanding their compatibility, the two perspectives on moral identity have been largely separated in the past, marking two different ways of studying moral identity with highly different rates of success.

The developmental view on moral identity has yielded a handful of studies, which have generated little support for the notion that moral identity emerges in adolescence, as systematic changes in moral identity strength have not been observed during this age period (see Krettenauer & Hertz, 2015). Krettenauer and Hertz (2015) therefore argued that research on moral identity development needs to expand into other developmental periods and needs to broaden its conceptual and empirical base. In line with this suggestion, the moral identity of children has become a promising area of research (Engelmann et al., 2012; Engelmann & Rapp,

2018; Kingsford et al., 2018, 2021; Pletti et al., 2022; Tomasello, 2019). Research in this area suggests that moral identity emerges around the age of 6-7 years, thus much earlier than previously assumed (see also Krettenauer, 2022a). Furthermore, Krettenauer and colleagues (2016; 2017) were able to document age-related changes in moral identity in adulthood. While these efforts demonstrate the viability of conceptualizing moral identity as a developmental construct, a systematic account for moral identity development from childhood to adulthood has not been established yet.

The dearth of research on moral identity development is in stark contrast to a wealth of studies on moral identity as a dimension of individual difference. Hundreds of papers have been published investigating how variation in moral identity relates to moral decision-making and behavior in a range of different contexts (e.g., workplace, businesses, marketing, academics, sports, for overviews see Hertz & Krettenauer, 2016; Lefebvre & Krettenauer, 2019; Jennings et al., 2015). From an individual difference perspective, a crucial question is to what extent moral identity represents a stable personality attribute, and how much it fluctuates across contexts and situations (see Krettenauer et al., 2021). The social-cognitive approach proposes that, for some individuals, moral identity is a chronically accessible self-schema that has trait-like characteristics, whereas for others moral identity primarily depends on the demand characteristics of a given situation (Lapsley & Narvaez, 2004; Lapsley & Stey, 2014). Aquino and colleagues are to be credited for establishing the social-cognitive framework in moral identity research and for developing a measure of moral identity that reflects both its trait- and state-like qualities (Aquino et al., 2009; Aquino & Freeman, 2009; Aquino & Kay, 2018). Over the years, the Self-importance of Moral Identity Questionnaire (SIMIQ) developed by Aquino and Reed (2002) has become the by far most widely used moral identity measure because it suits

the needs of researchers very well: it has excellent psychometric properties while being relatively short (Lutz et al., 2022); it reflects stable individual differences but is also sensitive to priming effects. Yet, it does not yield demonstrable developmental differences even in age periods that are commonly assumed to be crucial for moral identity development (adolescence and early adulthood). Using the SIMIQ, Krettenauer and Casey (2015) did not find any age-related differences between 15- and 20-year-olds. Similar findings were reported in studies with young adults (for an overview see Krettenauer & Hertz, 2015). The SIMIQ is therefore of limited value for studying moral identity development.

In the present study, we wanted to merge the two lines of research on moral identity described above. In doing so, we pursued two major goals: First, we wanted to investigate how moral identity develops after its emergence in childhood. We tested a novel framework for studying moral identity development that has been established mostly on conceptual grounds (Krettenauer, 2022a). This framework distinguishes between three conceptually independent dimensions of moral identity development (from concrete to abstract, from external to internal motivation, from prevention- to promotion-orientation) and posits general developmental trends in moral identity over the life course. Secondly, we wanted to examine whether it is possible to modify the empirical approach taken by the SIMIQ so that this measure becomes more sensitive to developmental change in moral identity. By tweaking this well-established and widely used measure, we may be able to bridge developmental and individual differences perspectives on moral identity.

In the following, we will first describe major trends in moral identity development as proposed by Krettenauer (2022a). We will then outline how the SIMIQ was modified for measuring these developmental trends (further details are presented in the method section).

Finally, we will formulate specific hypotheses regarding correlational patterns and mean-level differences for various moral identity goal characteristics.

Trends in moral identity development: Theoretical framework

In a series of experiments, Tomasello and colleagues demonstrated that already five-year-old children actively manage their social reputation by engaging in prosocial behaviors (sharing) and by avoiding antisocial actions (stealing) when watched by uninvolved observers (Engelmann et al., 2013; Engelmann & Rapp, 2018; Rapp et al., 2019). In contrast, 3-year-olds do not show these tendencies. Similarly, Fu and colleagues (2016) demonstrated that 5-year-old children cheated less when their reputation of being "a good kid" was at stake, while this does not apply to 3-year-olds. Bryan and colleagues (2014) demonstrated that the use of two different verbal instructions, either "to help" or "to be a helper" had manifest behavioral consequences. Children who were instructed "to be a helper" engaged more in helping. According to the authors, "the noun wording framed helping as an opportunity to take on a valued identity – to be or become a helper" (Bryan et al., 2014, p. 1840).

Moral identity matters, even for younger children (Tomasello, 2019). Yet, these accounts of children's moral identity leave it open to how moral identity changes after emerging in childhood. In a theoretical review paper, Krettenauer (2022a) suggested conceptualizing moral identity as a goal, similar to other identity goals individuals have (e.g., being a good parent, a good child, a good citizen). It was proposed that the moral identity goal carries specific goal characteristics that systematically change in the course of development: from concrete to abstract, from externally to internally motivated, and from prevention- to promotion-oriented.

According to Krettenauer (2022a), the moral identity of children is defined by concrete behaviors that are demonstrated in specific social settings. With development moral identity

becomes increasingly oriented towards more abstract goals and values that apply to a potentially unlimited range of situations involving an unlimited number of strangers. For instance, a child might define being a moral person by not lying to parents, not cheating in games, and keeping promises to friends. At some time in development, these single behavioral representations are combined to the more abstract notion of being honest. Later, the moral identity goal of being honest becomes coordinated with other self-representations. Honesty therefore might take priority over other identity concerns. The individual then defines themselves as someone who highly values honesty. Damon and Hart (1988) describe reference to such general standards as the hallmark of adolescent self-development. In this developmental process, moral identity becomes more abstract (for further details and supporting references, see Krettenauer 2022a).

Similarly, moral identity moves from being externally to internally motivated. Children around the age of five years want to maintain a positive view of themselves as moral agents. Yet, they do so mostly for the sake of their social reputation as they do not want to leave a bad impression on others and do not want to be evaluated negatively. Thus, children's moral identity is a social identity. With development, the moral identity goal becomes increasingly motivated by the desire for self-coherence (Krettenauer & Victor, 2017). Consequently, moral identity is increasingly internally motivated and becomes a self-identity.

Finally, moral identity is thought to develop from being primarily prevention- to being promotion-oriented. In the prevention-oriented mode, people want to stay away from an undesired state, while promotion orientation means wanting to attain a desired goal. Applied to moral identity, not wanting to lose the qualities of a moral person is prevention-oriented, whereas wanting to attain the ideal of a moral person is promotion-oriented. In general, children have an overly positive view of their abilities and competencies across all major behavioral domains (physical,

cognitive, social) including their moral capabilities (Thomaes et al., 2017). This so-called positivity bias (see Boseovski, 2010) is most pronounced in younger children and gradually decreases in the elementary school years but is still present in late childhood. The positivity bias is also evident in children's view of future personality change (Diesendruck & Lindenbaum, 2009; Lockhart et al., 2002). Younger children typically expect positive traits to remain stable in the future and negative traits to change for the better. This asymmetry demonstrates the self-protective nature of children's positivity bias (see also Thomaes et al., 2017). While children do not show any tendency to enhance positive self-descriptions, they expect negative characteristics to disappear in the future. Adults, by contrast, are less optimistic and do not think that negative traits naturally improve (Lockhart et al., 2002). Theoretically, it is assumed that children's positivity bias spills over to moral identity goal characteristics: If the self-view of one's moral capabilities is highly positive, self-improvement of moral identity is not a relevant goal characteristic. Instead, preserving the status quo is of primary importance. Thus, children's moral identity goal is assumed to be more prevention- than promotion-oriented. As the positivity bias eases in late childhood and adolescence and as self-improvement gains importance, prevention orientation is expected to make room for a more promotion-oriented moral identity.

In sum, the proposed framework for studying moral identity development posits three conceptually independent trends: from concrete to abstract, from externally to internally motivated and from prevention- to promotion-oriented. At this point, various characteristics and underlying assumptions of this model need to be highlighted. First, this model is descriptive in nature and does not posit specific cognitive, social, or emotional mechanisms that drive moral identity development. Such mechanisms need to be specified after establishing the validity of the descriptive model. Second, the model assumes general developmental trends that are not limited

to childhood and adolescence but expand well into adulthood. Developmental change might be variable in pace and is not necessarily synchronized; that is major changes may occur at different time intervals for the three dimensions. Third, the three pairs (concrete vs. abstract, internal vs. external, promotion vs. prevention) describe conceptual contrasts rather than bipolar dimensions. That is, increases in one characteristic (e.g., abstract) do not necessarily come at the expense of its counterpart (e.g., concrete). Development is not a simple substitution of goal characteristics, in which more mature characteristics replace less mature ones. Rather it is better conceptualized as shifts in relative importance. Thus, with development, higher levels of abstraction, internal motivation and promotion orientation become increasingly important relative to concrete, externally motivated and prevention-oriented identity characteristics. This increase in relative importance can manifest in mean-level changes (increasing strength of one identity aspect relative to its contrasting counterpart) along with changes in correlational patterns (increasing differentiation of contrasting identity aspects).

Please note that this framework for moral identity development was proposed mostly on conceptual grounds. While increases in internal moral identity motivation from late childhood, through adolescence and adulthood have been demonstrated in previous research based on semi-structured interview data (see Krettenauer, 2020), direct empirical support for increases in abstract and promotion-oriented moral identity has not been generated so far.

Modifications of the SIMIQ

As discussed in Krettenauer (2022b), the SIMIQ represents the various identity aspects (concrete vs. abstract, internal vs. external, promotion- vs. prevention-oriented) only selectively and unsystematically, which may explain its limited value for investigating moral identity development. In measuring moral identity with this questionnaire, research participants are

instructed to visualize a person who embodies nine moral traits (caring, compassionate, fair, friendly, generous, hardworking, helpful, honest, and kind). Thus, moral identity is represented on a rather abstract trait level. Traits are high-level construals as they capture a person's behavior abstractly across time and places (Trope & Liberman, 2010). This is implicitly recognized when researchers who adapt the SIMIQ approach for studying children's moral identity add concrete descriptions to these abstract trait labels (e.g., Pletti et al., 2022).

The SIMIQ in its original form measures moral identity by asking participants to imagine how a highly moral person with the aforementioned traits would feel and act before responding to statements such as "Having these characteristics is an important part of my sense of self" or "The types of things I do in my spare time (e.g., hobbies) clearly identify me as having these characteristics". Overall, ten items are presented that form two dimensions, dubbed *internalization* and *symbolization*. Internalization defines moral identity inwardly as a personal striving. Symbolization, by contrast, focuses on publicly demonstrating moral behavior. Internalization and symbolization allude to internal and external moral identity motivation. Yet, the two scales represent the two motivations only partially and with considerable ambiguity. For instance, the internalization scale includes statements about shame ("I would be ashamed to be a person who has these characteristics"), even though the tendency to avoid shame qualifies as an external motivation (Assor et al., 2009). Moreover, the symbolization scale leaves it open why individuals want to demonstrate their morality publicly. It might be primarily for gaining social status and recognition, but more internal motives are also possible. Finally, it is evident that the SIMIQ does not differentiate between prevention- and promotion-oriented moral identity. All questions focus on the desire to be or become a moral person as expressed, for instance, by the

statement "I strongly desire to have these characteristics". The goal of not losing these characteristics is not represented in the measure.

Given these limitations of the original SIMIQ for measuring moral identity development, we implemented three major modifications to this approach. First, we introduced concrete and abstract descriptors of a moral person and asked participants to select and independently rate the self-importance of identity aspects that varied with regard to their level of abstraction. This allows for an investigation of the relative importance of concrete and abstract moral identity attributes across ages. Second, we revised the items for assessing internalization and symbolization so that they more clearly reflect internal and external moral identity motivation. Third, we mirrored the identity measure for the dual aspects of striving to be a moral person and avoiding being an immoral person. This way prevention- and promotion-oriented moral identity can be assessed independently, and their relationship empirically investigated.

Expected findings

Theoretically, we expected that individuals' moral identity becomes more abstract, internally motivated and promotion-oriented in the course of development without necessarily losing concrete, externally motivated and prevention-oriented characteristics. Therefore, concrete and abstract identity aspects, external and internal identity motivation, as well as prevention- and promotion orientation were expected to become more independent in the course of development, while the developmentally more advanced side in each contrast would gain strength relative to the other. Empirically, this should manifest in age-related differences in correlational patterns and mean levels. Correlations between contrasting identity aspects were expected to decrease with age, while mean levels of abstract, internally motivated and promotion-oriented moral identity should become more important relative to their counterparts.

As stated above, we did not expect that these developmental trends are limited to specific age periods but potentially cut across all ages. Yet, employing a self-administered survey requires a level of reading comprehension that younger children may not always have. The SIMIQ is therefore typically not used with children. Correspondingly, in the present study we set the lower age limit at 12 years, while expanding the upper age limit into adulthood as much as possible. Thus, we contrasted young adolescents with older adults. We additionally included older adolescents/young adults in the sample, as it is the age period of adolescence and early adulthood that is commonly considered to be crucial for moral identity formation (see Krettenauer & Hertz, 2015).

Method

This project was reviewed and approved by the [institution masked for review] Research Ethics Board (REB #6249).

Transparency and openness

We report how we determined our sample size, effect size sensitivity analyses for key models, all data exclusions (if any) and all measures in the study, and we follow JARS (Appelbaum et al., 2018). All data, analysis code, and research materials are available at [stable link masked for review]. Data were analyzed using R Statistical Software (v4.1.3; R Core Team 2022). ANOVAs were conducted with the afex R package (Singmann et al., 2022). ANOVA follow-up testing and simple slope analysis were conducted with the emmeans R package (Lenth, 2022). Power and sensitivity analyses were conducted with G*Power software (Faul et al., 2007). This study's design and its analysis were not pre-registered.

Participants

We had no strong a priori expectations about effect sizes but wished to be able to detect small to medium effect sizes in mean-level age differences (and interactions involving age) in self-importance and motivation levels. Power analysis indicated a total sample of 972, and 162 would be required to detect small ($\eta_p^2 = .01$) and medium ($\eta_p^2 = .06$) mean-level age effects and interactions with a power of .80, respectively. Our maximum sample size was constrained by our aim to collect a uniformly Canadian sample across age groups and the availability of Canadian participants in our youngest and oldest age groups in the participant databases from which we recruited. We thus report a sensitivity analysis for each of our primary analyses along with the results, which provide an estimate of the smallest effect size our achieved sample was adequately powered (.80) to detect, for the effects which were of primary interest.

Participants were 248 12–14-year-olds ($M = 13.86$ years, $SD = .59$, 119 females), 251 17–20-year-olds ($M = 18.10$, $SD = .73$, 160 females), and 138 50+ year-olds ($M = 58.72$, $SD = 6.52$, 86 females, range 50-76 years). The young teen and older adult samples were recruited through online participant databases. Participants from the older adolescent/young adult sample were recruited through a university undergraduate student pool. Participants from all groups were residing in Canada at the time of data collection, with representation from all major provinces and territories.

Besides gender and age, participants from the two younger age groups were asked to provide information about their immigration history (Were you born in Canada? If not, for how many years have you been living in Canada?) as well as their parent's level of education on a 7-point scale (from 1 = *some high school studies* to 4 = *college degree*, and 7 = *postgraduate or professional degree*). Scores for parents were averaged. For parent's education, the older

adolescent/young adult sample scored slightly higher than the teenage group ($M = 4.34$, $SD = 1.51$ vs. $M = 4.00$, $SD = 1.49$, $t(497) = 2.48$, $p < .01$). At the same time, older adolescents/young adults were more often born outside Canada compared to the youngest age-group ($n = 48$ vs. $n = 12$, $\chi^2(1) = 22.09$, $p < .01$). Participants born outside Canada had been living in Canada for 9.7 years on average, $SD = 5.32$.

For the group of older adults, additional demographic information was available through their participant database. Of the 138 participants belonging to this group, 31 were born outside Canada, while 22 indicated English was not their primary language at home (primary languages with more than one count were French, Chinese, Arabic, Vietnamese, and Italian). Sixty-four participants were employed full- or part-time and two were seeking a job, while the remaining participants were either homemakers or retired.

Measures

As described in the introduction, we wanted to examine whether it is possible to modify the SIMIQ approach of assessing moral identity to become more sensitive to moral identity development. Three aspects of moral identity development as identified by Krettenauer (2022a) were focal. First, we incorporated level of moral identity abstraction by having participants choose moral characteristics that were presented as either concrete behaviours or as abstract characteristics. Second, we incorporated internal and external motivation by asking participants to rate the importance of having moral characteristics for internally or externally motivated reasons. Finally, we incorporated promotion- and prevention orientation by contrasting the importance of possessing characteristics of a moral person versus the importance of avoiding carrying the characteristics of an immoral person.

Level of abstraction

In the original SIMIQ measure, participants are presented with a list of nine standard attributes to depict a moral person. In the modified measure, participants were presented with a list of 50 descriptors in random order and were instructed to select nine to twelve descriptors that they believe best describe a moral person. The descriptors were taken from previous studies employing similar methods (Krettenauer et al., 2016; Krettenauer & Victor, 2017). The following instruction was given: “Take a moment to imagine a person who is not always lucky and sometimes does not get what he/she wants. At the same time, he/she is a very moral person. What characteristics or behaviors would best describe this person?”. This instruction slightly differs from the original SIMIQ by combining favourable ('moral') with unfavourable ('not always lucky') characteristics of a person, thus, asking participants to specifically focus on moral characteristics in contradistinction to generally positively valued personality attributes. The 50 descriptors were made up of 25 matching pairs that differed by level of abstraction. The abstract set consisted of general descriptors such as genuine, generous, fair and caring, whereas the concrete set were behavioural examples of these characteristics (e.g., says what they think even if others disapprove, shares what they have, does not play favourites, helps others; see Appendix A for a full list of the descriptors presented to participants). After attribute selection participants were asked to rate the importance of the chosen characteristics or behaviors (“how important is it for YOU to be each of these characteristics or behave this way?”). For each characteristic, participants rated the importance on a 5-point scale ranging from 1 (*unimportant to me*) to 5 (*extremely important to me*).

Two quantitative scores were derived from this part of the measure: (a) the proportion of abstract descriptors chosen for depicting a moral person, (b) the self-importance of

independently rated concrete and abstract identity characteristics (for scale and reliability analyses see below).

It should be noted at this point, that some of the abstract trait labels used in the present study (e.g., caring, honest, kind) might already be available for children when describing themselves (see Harter, 2012). However, there is a difference between using trait labels as self-descriptors versus applying them as evaluative standards to define a highly moral person. Damon and Hart (1988) argue that such standards emerge in middle to late adolescence. In the present study, it is the relative difference in the level of abstraction between concrete behaviors (e.g., does not tell lies) and general descriptors (e.g., is honest) that is crucial. A more abstract moral identity should manifest in endorsing abstract moral identity characteristics more than concrete ones, regardless of whether these general descriptors are available to younger participants or not.

Internal vs. External Motivation

In the SIMIQ, moral identity is assessed along the two dimensions of internalization and symbolization, which are each represented by five items. Similarly, in the modified measure, internal vs. external moral identity motivation was assessed by asking participants to rate the importance of different reasons for why they want to exemplify the selected characteristics. (For a full list of the items representing internal and external motivation, see Appendix B).

Participants were asked to “Please read each of the following statements and decide how well it describes why you want to have these characteristics or behave in these ways”. Using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree), participants rated their level of agreement to seven internal motivation items (e.g., being this way is part of who I am) and seven external motivation items (e.g., I want to leave a good impression on others). Scale analyses of the items representing internal and external moral identity motivation are presented below.

Promotion vs. Prevention Orientation

As outlined in the introduction, moral identity can be a self-ideal that individuals want to achieve (promotion orientation) or a self-characteristic they do not want to lose (prevention orientation). In the original SIMIQ measure, by asking individuals how much they aspire to be a certain type of person, moral identity is assessed in the promotion frame. However, the SIMIQ does not measure prevention orientation. To assess promotion- and prevention-oriented moral identity independently, all procedures for assessing moral identity were mirrored so that level of abstraction and internal vs. external moral identity motivation were assessed twice, once in the promotion frame and once in the prevention frame.

As described above, when choosing identity attributes and rating their self-importance, participants were presented a set of 50 positive descriptors (in random order) for assessing promotion-oriented moral identity. In a parallel but independent step, they were asked to select nine to twelve descriptors of an immoral person: "Take a moment to imagine a person who is very lucky and always gets what he/she wants. At the same time, he/she is a very immoral person. What characteristics or behaviours would best describe this person?" Participants were presented with the same set of descriptors they were presented with in the promotion-oriented frame, except they were turned into negatives (e.g., unfair for fair, dishonest for honest, tells lies for does not tell lies etc.). For each selected characteristic, participants were asked to rate, "How important is it for YOU to avoid being each of these characteristics or avoid behaving this way?". Participants rated the importance to avoid these characteristics on a 5-point scale ranging from 1 (*unimportant to avoid for me*) to 5 (*extremely important to avoid for me*).

Internal vs. external identity motivation in the prevention frame was assessed parallel to promotion-orientation. Participants were asked to "Please read each of the following statements

and decide how well it describes why you want to avoid having these characteristics or avoid behaving in these ways”. As for the positive identity characteristics, participants rated seven internal motivation items (e.g., being this way is NOT a part of who I am) and seven external motivations (e.g., I do not want to leave a bad impression on others) on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree).

Procedure

All participants completed the measure online via Qualtrics. Data was collected as a part of larger moral identity and moral decision-making studies in which participants made decisions about hypothetical scenarios before and after being presented the moral identity measures. Since the moral decision-making measures are beyond the scope of the present study, we do not discuss them further. Participants began by choosing nine to twelve positive or negative moral characteristics that define a moral/immoral person. Participants completed the measures for both the positive and negative characteristics. Whether participants selected the positive or negative characteristics was randomized across participants. After selecting the positive/negative moral characteristics, participants rated the importance of promoting their selected positive moral characteristics or avoiding their selected negative characteristics. Finally, participants rated their internal/external motivation to exhibit their selected positive moral characteristics or avoid their selected negative characteristics.

Reliability and scale analyses

Self-importance of abstract vs. concrete identity attributes

Evaluating the reliability of our measures of the self-importance of abstract and concrete identity aspects for the promotion and prevention frames was complicated by the fact that participants were free to choose up to 12 descriptors from a list of 50 (25 abstract and 25

concrete) for both prevention and promotion frames, which they subsequently each rated for self-importance. Thus, each participant rated the importance of a variable number of abstract attributes (0-12) and a variable number of concrete behaviors (0-12), in both the promotion and prevention frames. The median number of abstract attributes selected by participants in both the promotion and prevention frames was six, while the median number of concrete values selected in the promotion and prevention frames was four and five, respectively. We adopted the following approach to assess the extent to which self-importance ratings of participant-selected abstract and concrete values agreed with each other: intraclass correlation coefficients (ICC) were calculated for abstract and concrete identity strength in the promotion and prevention frames, using a randomly selected number of values equal to the median number of values selected for that level of abstraction and frame (e.g., 6 randomly selected abstract attribute ratings in the promotion frame). Thus, participants who selected more than the median number of values for concrete vs. abstract levels in the corresponding frame were represented in the reliability analysis by a randomly selected subset of their chosen descriptor ratings equal to the median number for that category. Participants who chose fewer than the median number were retained for the analysis, though with missing data. Specifically, we calculated ICC(1, k)s (McGraw & Wong, 1996; Shrout & Fleiss, 1979). ICCs were good for all four identity measures (abstract/promotion .85, 95% CI[.83, .86]; abstract/prevention .87, 95% CI[.86, .89]; concrete/promotion .76, 95% CI[.72, .79]; concrete/prevention .77, 95% CI[.74, .80]), demonstrating high agreement within participants for attribute ratings in each of the four categories. Identity strength scores were then generated by taking the mean of all relevant value ratings for each participant, rather than a random subset of selected values as was necessary in

the reliability analysis (see the online supplemental materials for descriptive statistics and correlations: <https://doi.org/10.1037/dev0001615.supp>).

Measurement invariance of internal vs. external moral identity motivation

To establish that moral identity motivation forms four dimensions in which the combinations of internal/external motivation across both the promotion and prevention frames are reasonably distinct and distinguishable from each other, we conducted a confirmatory factor analysis (CFA) on the 28 motivation items using the lavaan (Rosseel, 2012) and semTools (Jorgensen et al., 2022) R packages. Each item was allowed to load uniquely on its corresponding latent factor, and each of the four latent factors (internal/promotion, internal/prevention, external/promotion, external/prevention) were allowed to correlate with each other freely. Pairs of items across the promotion/prevention frame shared parallel item content (e.g., promotion/internal item 1: “Being this way is a part of who I am”; prevention/internal item 1: “Being this way is not a part of who I am”), and so were expected to share common variation that would not be captured by the latent factors. To account for this, each of the 14 pairs of matched items were allowed to have covarying errors.

Fit for the measurement model which included all 28 motivation items had mediocre to poor fit to the data, $\chi^2(330) = 1256.27, p < .001, CFI = .911, RMSEA = .066, 90\% CI [.063, .070], SRMR = .063$. Guided by modification indices, several items which were contributing to lack of fit to the model were removed. Of the seven indicators for each latent variable in the initial model, two were trimmed from each latent factor. This yielded a trimmed measurement model with excellent fit to the data, $\chi^2(156) = 354.75, p < .001, CFI = .972, RMSEA = .045, 90\% CI [.039, .051], SRMR = .036$. Readers interested in the details of the full and trimmed

models (including all the parameter estimates) can find model outputs in the online supplementary materials.

Given our particular interest in differences across the three age groups in our sample, it was important to establish that these motivation items were interpreted and functioned similarly as latent factor indicators across those groups before testing mean differences (Bornstein, 1995). We thus tested our trimmed model for measurement invariance across age groups (Putnick & Bornstein, 2016). Measurement invariance was tested in three successive steps: a) configural invariance (i.e., does the same factor structure obtain across groups?), which is tested by fitting the CFA model allowing parameters to be estimated separately for each group and evaluating model fit; b) metric invariance (i.e., are the factor loadings of each latent indicator invariant across groups?), in which the loading of each item on its latent factor is constrained to be equal across groups and comparing its fit to that of the configural invariance model; and c) scalar invariance (i.e., are mean differences in item scores across groups are all captured by mean differences in latent factor scores), in which item intercepts are constrained to be equal across groups and comparing its fit to the metric invariance model.

Model indices of fit for invariance testing can be found in the online supplementary materials. In the first step, the model testing configural invariance showed good fit by generally accepted standards (Bentler & Hu, 1999), suggesting the same simple four-factor structure described the data well across all three age groups. In the second step, we examined the effect on fit of introducing fixed factor loadings across groups, applying the commonly used criteria for metric invariance testing suggested by Chen (2007) and Cheung and Rensvold (2002) of a $\Delta CFI \geq -.01$, $\Delta RMSEA \leq .015$ and $\Delta SRMR \leq .03$. By these criteria the model comparison suggested we had evidence to assume metric invariance across age groups (see supplementary material).

Although the metric invariant model did lead to a significant decrease in absolute fit ($\Delta\chi^2(32) = 50.57, p < .05$), $\Delta\chi^2$ is known to be oversensitive to small, unimportant deviations from perfect model fit in relatively large samples. In the third step, we examined the effect of imposing equal item intercepts on the metric invariant model established in step 2 on model fit. Again, although the $\Delta\chi^2$ indicated a decrease in absolute fit ($\Delta\chi^2(32) = 97.83, p < .01$), the scalar invariance model's impact on other indices of fit met the commonly applied criteria for assessing scalar invariance suggested by methodologists: $\Delta CFI \geq -.01$, $\Delta RMSEA \leq .015$ and $\Delta SRMR \leq .01$ (Chen, 2007; Cheung & Rensvold, 2002). In sum, the proposed four factor model of identity motivation can be considered configural, metric and scalar invariant.

A separate, but also important question about our measure of motivation is the reliability of its scales. As the measurement model assessed above is not one in which the factor loadings are the same for all items (i.e., a tau-equivalent model), evaluating reliability with Cronbach's alpha is not appropriate (McNeish, 2018, Hayes & Coutts, 2020). Instead, we calculated omega total for each of our motivation scales, an index of composite reliability suitable for congeneric measurement models such as ours. Reliability was adequate for the external/promotion scale (.767), and good for external/prevention (.854), internal/promotion (.883), and internal/prevention (.883) scales.

Results

In the following, we first describe concrete vs. abstract attribute selection in the two frames (promotion and prevention). We then turn to the self-importance of concrete and abstract moral identity attributes, their correlations and mean level changes with age. Finally, we investigate internal and external moral identity motivation across the promotion and prevention frames and age-groups. When following up omnibus effects with multiple comparisons, we

apply the Holm correction (Holm, 1970) to all sets of pairwise comparisons to control family-wise type I error rate.

Selection of identity attributes across promotion- and prevention frames and age-groups

Across all age groups participants tended to select more abstract than concrete descriptors for defining a moral person, in both the promotion ($m_{abst} = 6.38$, $sd_{abst} = 2.20$; $m_{concr} = 4.33$, $sd_{concr} = 2.14$) and prevention frames ($m_{abst} = 5.82$, $sd_{abst} = 2.00$; $m_{concr} = 4.69$, $sd_{concr} = 2.01$). To investigate age-related differences in value selection, a mixed ANOVA of the proportion of abstract descriptors selected was conducted, with promotion vs. prevention as a within-subjects factor. This analysis revealed that while there was no main effect of age group on the proportion of abstract descriptors chosen, there was a significant main effect of promotion vs. prevention frames such that participants tended to select a larger proportion of abstract values in the promotion frame. However, this effect was qualified by an interaction between age group and promotion vs. prevention frames (see Table 2.1).

As our interest was primarily in age-related differences, we followed up this interaction with pairwise comparisons among age groups in both the promotion and prevention frames. In the promotion frame the mean proportion of abstract values was significantly higher in older adolescent/young adult group ($m = .616$, $SE = .12$) compared to the teenage group ($m = .60$, $SE = .12$), $t(634) = 2.57$, $p = .03$, $d = .28$, 95% CI [.07, .50]. Differences between the teenage group and the two older age groups were not significant, all $|ts| < 1.58$, $ps > .24$. In the prevention frame, none of the differences between the teenage, older adolescent/young adult or older adult group proved significant, all $|ts| < 1.53$, $ps > .38$. Thus, we did not find evidence of an increasing preference for abstract over concrete moral values across age groups.

Self-importance of concrete vs. abstract identity attributes for promotion- and prevention-orientation across age groups

Correlations

There were strong correlations between the self-importance of selected concrete versus abstract descriptors for promotion- and prevention-orientations ($r_s = .72$ and $.75$, respectively). To investigate how age group may moderate the relationship between abstract and concrete moral identity, a pair of matched regressions was conducted. We regressed the self-importance of concrete identity attributes, age group (dummy coded, with the teenager group as the reference level) and their interactions on the self-importance of abstract identity attributes, for both promotion and prevention. There was a strong linear relationship between abstract and concrete identity strength in the promotion ($b = .73$, $t(607) = 19.88$, $p < .001$) and prevention frame ($b = .81$, $t(639) = 21.96$, $p < .001$). However, these relationships were significantly moderated by age group (see Table 2.2). In both frames the relationship between abstract and concrete identity strength was attenuated in older adolescent/young adult ($b_{prom} = .54$, $SE_{prom} = .037$; $b_{prev} = .61$, $SE_{prev} = .039$) and older adult groups ($b_{prom} = .55$, $SE_{prom} = .048$; $b_{prev} = .68$, $SE_{prev} = .050$). Figure 2.1 shows the simple slopes of the relationship between abstract and concrete identity strength in each age group. Thus, with age, the self-importance of concrete and abstract identity attributes gained independence.

The correlations between the identity strength of selected promotion and prevention values were moderate for both abstract ($r = .52$) and concrete ($r = .47$) identity attributes. To explore if these relationships were also moderated by age group, a similar pair of moderation analyses was conducted for the relation between identity strength of selected promotion and prevention identity attributes, for both abstract and concrete descriptors. Participant identity

strength in the prevention frame, age group (dummy coded, with the adolescent group as the reference level) and their interactions were regressed on promotion identity strength, for both abstract and concrete moral values (see Table 2.3). The relationship between the strength of promotion- and prevention-oriented moral identity, while itself significant, was not moderated by age group. Unlike the relationship between the self-importance of abstract and concrete characteristics (where we find evidence of age-related differentiation), we did not find any evidence of age-related differentiation between promotion- and prevention-oriented moral identity.

Across these two pairs of moderation analyses, sensitivity analyses indicated that given our age group sample sizes, we had power of .80 to detect differences in slopes across age groups with a magnitude of at least .14 to .26.

Mean levels

To examine how the self-importance of selected abstract and concrete identity attributes would vary across age groups for promotion and prevention orientations, we conducted a 3 (teenager, older adolescent/young adult, older adult) by 2 (abstract, concrete) by 2 (promotion, prevention) mixed ANOVA, with self-importance of identity attributes as the outcome. Level of abstraction and promotion vs. prevention frame were both within-subjects factors, as all participants generated ratings of the self-importance of their chosen identity attributes in both the promotion and prevention frames.

The results of this analysis can be found in Table 2.4. The significant main effect of frame demonstrated that identity was slightly but significantly stronger in the prevention frame ($m = 4.24$, $SE = .03$) frame than in the promotion frame ($m = 4.17$, $SE = .03$). No interaction between frame and age group occurred. Thus, promotion orientation did not gain importance

relative to prevention orientation with age. Yet, a significant interaction between age group and level of abstraction emerged. Sensitivity analyses indicated we had power of .80 to detect age effects and interactions as small as $\eta_p^2 = .015$.

Self-importance for concrete identity attributes were flat from the teenage ($m = 4.13$, $SE = .04$) to older adolescent/young adult ($m = 4.13$, $SE = .04$) and older adult groups ($m = 4.04$, $SE = .05$), as can be seen in Figure 2.2. Pairwise comparisons showed that concrete identity did not significantly differ across the three age groups ($ts < 1.27$, $ps > .61$). By contrast, the self-importance of abstract identity attributes was lowest in the teenager group ($m = 4.19$, $SE = .04$) and higher in the older adolescent/young adults ($m = 4.43$, $SE = .04$) and older adult ($m = 4.31$, $SE = .05$) groups. Pairwise comparisons revealed abstract identity strength was significantly higher in the older adolescent/young adult group than in the teenage group, $t(602) = 4.42$, $p < .001$, $d = .33$. 95% CI [.18, .48]. Differences between teenage and older adult groups and between older adolescent and older adult groups only approached significance, $|ts|(602) < 1.89$, $ps = .11$. We additionally conducted comparisons of the relative strength of abstract identity (i.e., the difference between abstract and concrete identity strength) between the age groups. In both the older adolescent/young adults ($m = .23$, $SE = .03$, $t = 7.00$, $p < .001$, $d = .34$, 95% CI [.24, .43]) and older adults ($m = .20$, $SE = .04$, $t = 5.19$, $p < .001$, $d = .29$, 95% CI [.18, .40]) the relative importance of abstract identity was greater than in the teenage group, while the difference between the two older groups was not significant ($m = .03$, $SE = .04$, $t = -.82$, $p = .41$, $d = -.05$, 95% CI [-.15, .06]). In sum we find evidence that abstract values become more important relative to concrete standards across our age groups.

Internal vs. external motivation for promotion- and prevention orientation across age-groups

Correlations

Internal and external motivation were moderately correlated with each other across age groups in both the promotion and prevention frames ($r_s = .44$ and $.48$, respectively). To explore how age moderated that effect, we regressed external motivation, age group (dummy coded, with teenagers as the reference group) and their interactions onto internal motivation scores. Two such models were constructed, one for promotion and one for prevention orientation, parameter estimates for which can be found in Table 2.5. In both frames the analyses demonstrate that the relationship between internal and external motivation scores was strongest in early adolescence ($b_{prom} = .59$, $SE_{prom} = .053$; $b_{prev} = .71$, $SE_{prev} = .049$), but became increasingly attenuated in older adolescence/young adulthood ($b_{prom} = .38$, $SE_{prom} = .049$; $b_{prev} = .42$, $SE_{prev} = .046$) and older adulthood ($b_{prom} = .30$, $SE_{prom} = .059$; $b_{prev} = .25$, $SE_{prev} = .053$; see Figure 2.3 for simple slopes).

We also examined how identity motivation about promotion and prevention related to each other (i.e., how does internal promotion-oriented motivation relate to internal prevention-oriented motivation, and how does external promotion-oriented motivation relate to external prevention-oriented motivation?). Across age groups the association between promotion and prevention motivation was strong for both internal ($r = .58$) and external ($r = .72$) motivation scores. We investigated moderation of this effect by age group as we did above, by constructing regression models for both internal and external identity motivations. In each model, prevention motivation and age group (dummy coded with teenagers as the reference group) and their interactions were regression on promotion motivation. Parameter estimates for both models can be found in Table 2.6. In the case of internal motivation, the relationship between promotion and

prevention were weaker in both teenage ($b_{int} = .54, SE_{int} = .048$) and older adolescent/young adult groups ($b_{int} = .46, SE_{int} = .052$) and higher in older adults ($b_{int} = .84, SE_{int} = .074$). Thus, contrary to our expectation and unlike the relationship between internal and external identity motivation (which weakened across age groups), the connection between the motivation to maintain positive and avoid negative moral identity characteristics strengthened in older age groups, particularly for internal motivation.

Across these two pairs of moderation analyses, sensitivity analyses indicated that given our age group sample sizes, we had power of .80 to detect differences in slopes across age groups with a magnitude of at least .19 to .25.

Mean levels

To investigate whether internal and external motivation to maintain positive moral identity characteristics (promotion) and avoid negative characteristics (prevention) differed across age group, a 3 (teen, older adolescent/young adults, older adult) by 2 (internal, external) by 2 (promotion, prevention) mixed ANOVA was conducted, with internal vs. external motivation and promotion vs. prevention frame as within-subjects factors (see Table 2.7). This analysis revealed a small main effect of age group, and large effects of both motivation and frame. These main effects were qualified by a small interaction between motivation and frame, and a larger interaction between age group and motivation. Sensitivity analyses indicated we had power of .80 to detect age effects and interactions as small as $\eta_p^2 = .015$.

The age group by motivation interaction was followed up by examining estimated marginal means and testing pairwise comparisons of age groups for both internal and external motivation (collapsing across promotion- and prevention orientations). Internal motivation scores were lowest in the teenage group ($m = 6.08, SE = .045$), with higher scores in the older

adolescent/young adult ($m = 6.22$, $SE = .045$) and older adult ($m = 6.26$, $SE = .061$) groups.

Pairwise comparisons showed that internal motivation was marginally higher in older adolescents than in teenagers, ($m = .14$, $SE = .06$, $t = 2.18$, $p = .06$, $d = .16$, 95% CI [.02, .31]), and significantly higher in older adults than teenagers, ($m = .19$, $SE = .08$, $t = 2.43$, $p = .04$, $d = .21$, 95% CI [.04, .39]). The difference between the older two age groups was not significant ($m = .05$, $SE = .08$, $t = .60$, $p = .55$, $d = .05$, 95% CI [-.12, .23]).

By contrast, external motivation scores were highest in the teenage group ($m = 5.84$, $SE = .054$) and declined in older adolescents/young adults ($m = 5.80$, $SE = .053$) and older adults ($m = 5.12$, $SE = .072$). Pairwise comparisons showed that external motivation did not differ significantly in older adolescents and teenagers, ($m = -.05$, $SE = .08$, $t = -.54$, $p = .59$, $d = -.05$, 95% CI [-.22, .12]) but was significantly lower in older adults compared to both the teenage group ($m = -.72$, $SE = .09$, $t = -8.06$, $p < .001$, $d = -.84$, 95% CI [-1.05, -.63]), and older adolescent/young adult group ($m = -.68$, $SE = .09$, $t = -7.62$, $p < .001$, $d = -.79$, 95% CI [-1.00, -.58]).

We also calculated contrasts of the relative strength of internal motivations (i.e., the difference between motivation types) across the three age groups and found that the relative importance of internal motivation increased significantly from the teenage group to the older adolescent/younger adult group ($m = .18$, $SE = .07$, $t = 2.65$, $p < .01$, $d = .21$, 95% CI [.05, .37]) and from the older adolescent/young adult group to the older adult group ($m = .73$, $SE = .08$, $t = 8.99$, $p < .001$, $d = .84$, 95% CI [.65, 1.03]). These differences in motivation across age groups is evident in Figure 2.4, which shows the interaction between age group and internal vs. external motivation. Thus, we find evidence of an increasing importance of internal motivation with age, both in absolute terms and relative to external motivation.

The analysis also revealed that internal and external motivation depended on whether participants responded in the promotion or prevention frame, although the magnitude of the interaction was modest. Internal motivation ($m_{prom} = 6.07$, $SE_{prom} = .033$, $m_{prev} = 6.31$, $SE_{prev} = .034$) was higher than external motivation ($m_{prom} = 5.43$, $SE_{prom} = .037$, $m_{prev} = 5.74$, $SE_{prev} = .038$) in both the promotion and prevention frames. However, this difference was slightly larger in the promotion frame.

Supplemental analysis

At the beginning of this paper, it was argued that the original SIMIQ approach is not sensitive to developmental differences and therefore needs to be modified along the proposed dimensions (concrete vs. abstract, external vs. internal, prevention vs. promotion). In the previous sections, we were able to demonstrate age-related differences using a modified version of the SIMIQ. To test whether it is, in fact, the proposed modifications that makes this difference, we reproduced the original SIMIQ approach and investigated age-related differences for a measure that closely resembles the internalization subscale of the SIMIQ. Internalization, which is the most widely used subscale of the SIMIQ, focuses on internal motivations to promote abstract moral characteristics. We emulated this approach by conducting an ANOVA comparing age-related differences in internal motivation scores, in the promotion frame, of participants who primarily selected abstract values ($\geq 75\%$) as central to defining a moral person. 169 participants were included in this analysis roughly evenly distributed across age groups. Consistent with previous research, we found no evidence of age-related differences, $F(2,166) = .70$, $p = .50$. Thus, the modifications of the SIMIQ that were proposed in this study proved vital for detecting age-related differences in moral identity.

Discussion

The present study pursued two goals. First, we wanted to investigate age-related trends in moral identity goal characteristics as proposed by Krettenauer (2022a). Secondly, we wanted to examine whether modifying a well-established empirical approach for measuring moral identity yields age-related differences in moral identity consistent with developmental theory. Toward these ends, we assessed moral identity by modifying the Self-importance of Moral Identity Questionnaire (Aquino & Reed, 2002) to tap varying levels of abstractness, as well as internal versus external moral identity motivation for both promotion- and prevention orientation in three different age groups: early adolescence (13-14 years), late adolescence to early adulthood (17 to 20 years) and mid to old age (50-76 years). These age groups represent a broad age range that is potentially relevant for moral identity development. For two of the proposed developmental trends (concrete to abstract, externally to internally motivated) findings were consistent with the theoretical expectations. For promotion- and prevention orientation, however, this was not the case.

While the self-importance of concrete and abstract identity attributes, overall, was strongly correlated, these correlations decreased with age, indicating an increased differentiation of concrete and abstract moral identity. At the same time, abstract moral identity attributes gained greater self-importance with age relative to concrete attributes, indicating that moral identity becomes more strongly guided by abstract standards rather than concrete behavioral expectations as individuals grow older. These trends were found for both promotion- and prevention orientation. Differences between the two adolescent age groups were larger than between older adolescents/young adults and adults, which may indicate that moral identity grows more abstract, particularly in earlier developmental periods.

Similar trends were obtained for internal vs. external moral identity motivation. While both forms of motivation overall were positively correlated, the correlations between internal and external moral motivation decreased with age. At the same time, internal moral identity motivation gained importance relative to external moral identity motivation. Again, these trends were found both for promotion- and prevention orientation. These results confirm previously reported findings that were based on interview data (see Krettenauer, 2020). The present study goes beyond these findings as internal and external moral identity motivation were assessed independently and with a standardized measure of excellent psychometric properties. It is important to note, however, that the shift in relative importance of internal vs. external moral identity motivation was mostly driven by decreases in external motivation rather than increases in internal motivation. Moreover, age-related differences were more pronounced between the two older age-groups than between teens and older adolescents/young adults. One possible explanation for the relatively modest increase in internal identity motivation is that our procedure involves a recognition task (endorsing preformulated reasons for action rather than producing such reasons). Internal moral identity motivation is developmentally advanced and therefore might appear more attractive. Consequently, it might be endorsed even by young research participants who might not have independently produced internal reasons for maintaining one's moral identity. Such a situation would be expected to yield elevated mean levels of internal moral identity motivation in younger age groups. On the other hand, internal motivation to act morally has been demonstrated even in young children (Hepach et al., 2013; Warneken & Tomasello, 2008) and might already play a role in young children's moral identity. In line with this view, Goddeeris and Krettenauer (2023) reported internal and external moral identity

motivations, on average, to be balanced in 4- to 5-year-olds. Thus, moral identity while becoming more internally motivated with development is not exclusively external at the onset.

For the third proposed axis of moral identity development, from prevention- to promotion orientation, findings were less consistent. Prevention orientation was generally slightly stronger than promotion orientation. The expected trend of age-related increases in the importance of promotion orientation did not emerge. Secondly, promotion- and prevention orientation did not become more differentiated with age but showed the opposite trend of converging. However, this tendency was not consistently present. It was evident in internal moral identity motivation, weaker in external moral identity motivation and not found for self-importance of moral identity. These findings allow for different interpretations. Perhaps the proposed trend from prevention- to promotion orientation does not exist, and the distinction between the two orientations represents an individual difference variable rather than a developmental dimension, akin to the distinction between fixed vs. growth mindsets (Dweck, 2000). The general importance of the so-called negativity bias (e.g., Baumeister et al., 2001), that is the stronger weight of negatives in information processing, might overshadow the positivity bias that is specific for children. As a consequence, the importance of preventing moral identity losses might always eclipse moral identity promotion. It is also possible that the present study was unsuccessful in measuring the two orientations. Perhaps the differentiation between promotion and prevention orientation applies less to general moral identity goals but is more relevant on the level of strategies and tactics (see Schooler, Cornwell, & Higgins, 2019). Thus, individuals may have one identity goal but use different strategies for approaching it. Consequently, the goal of being a caring person, for instance, is approached through different strategies: either by trying to avoid being uncaring or by seeking out opportunities for being caring. Our modification of the SIMIQ assesses general

goal characteristics rather than strategies and therefore may not have captured the expected developmental trend. Future research will have to investigate this issue further.

Nevertheless, for two out of three proposed developmental trends we found that moral identity undergoes systematic age-related changes. Thus, moral identity is not only an individual differences construct but it is also a developmental dimension. The change moral identity undergoes over the course of development likely has important implications for moral action, in the short- and long-term (see also Krettenauer, 2022b; Krettenauer & Stichter, 2023). It has been documented that more abstract goals strengthen self-control when individuals are confronted with lower-level temptations (Fujita, 2011; Fujita & Carnevale, 2012). Because concrete goals generally rank lower in goal hierarchies, they are more easily reached than abstract goals. However, once a goal is satisfied, competing goals come to the forefront, as research on moral licensing demonstrates (Mullen & Monin, 2016). Thus, the moral identity goal is more easily overpowered by competing goals if it is concrete rather than abstract. Research also has demonstrated that individuals are more effective in pursuing goals that are internally motivated (Sheldon & Elliot, 1999) while achieving internally motivated goals contributes more to subjective well-being (Sheldon et al., 2005). Consequently, internal moral identity motivation can be assumed to be more self-sustaining than external moral identity motivation.

Various limitations of the present study need to be stressed. First, the study was based on cross-sectional data that do not track within-person change and that confound developmental with cohort effects. Future research needs to involve the collection of longitudinal data. Second, the data set included only three age groups and thus was rather coarse in documenting age-related differences. In future research, age categories should be more fine-grained. Third, data were sampled from different online participant pools and the three age groups were not fully

compatible regarding socio-demographic characteristics. Fourth, the youngest age group was 12-14 old while moral identity development can be assumed to start earlier. Future research should include children to capture the full age range of moral identity development using methods other than self-administered surveys (see, for instance, Goddeeris & Krettenauer, 2023). Finally, the present study did not investigate mechanisms that promote the development towards more abstract and internally motivated moral identity, as its focus was on establishing a descriptive framework for moral identity development. As a consequence, a comprehensive theoretical model for moral identity development has not been established.

These limitations notwithstanding, the present study was able to successfully bridge two approaches to moral identity that have been largely separated in the past. It shows that conceptualizing moral identity as a developmental construct and assessing it as a dimension of individual differences are not necessarily antagonistic. This merging of developmental and individual differences perspectives on moral identity opens new and promising avenues for further research that will need to be pursued in the future.

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Tables

Table 2.1

Proportion of abstract identity descriptors for promotion- and prevention-orientation by age

Effect	<i>df</i> _{Num}	<i>df</i> _{Den}	<i>MSE</i>	<i>F</i>	<i>p</i>	η_p^2
Age group (AGE)	2	634	0.04	1.49	.226	.005
Promotion vs. prevention orientation (PPO)	1	634	0.03	13.68	<.001	.023
AGE by PPF	2	634	0.03	3.73	.025	.012

Table 2. 2 Age group differences in relationships between abstract and concrete identity

Predictor	<i>b</i>	[LL, UL]	<i>sr</i> ²	[LL, UL]	Fit
Promotion orientation					
Concrete identity (CO-I)	0.73**	[0.66, 0.81]	.29	[.23, .34]	
AGEDUM1 (Older adolescents/young adult)	1.01**	[0.58, 1.45]	.02	[.00, .03]	
AGEDUM2 (Older adult)	0.92**	[0.43, 1.41]	.01	[-.00, .02]	
CO-I by AGEDUM1	-0.19**	[-0.30, -0.09]	.01	[-.00, .02]	
CO-I by AGEDUM2	-0.18**	[-0.30, -0.06]	.01	[-.00, .02]	
(Intercept)	1.15**	[0.85, 1.46]			$R^2 = .559^{**}$
Prevention orientation					
Concrete identity (CO-I)	0.81**	[0.74, 0.88]	.31	[.25, .36]	
AGEDUM1 (Older adolescent/young adult)	1.09**	[0.65, 1.54]	.02	[.00, .03]	
AGEDUM2 (Older adult)	0.72**	[0.21, 1.23]	.00	[-.00, .01]	
CO-I by AGEDUM1	-0.21**	[-0.31, -0.10]	.01	[-.00, .02]	
CO-I by AGEDUM2	-0.14*	[-0.26, -0.01]	.00	[-.00, .01]	
(Intercept)	0.85**	[0.54, 1.16]			$R^2 = .603^{**}$

Note. *b* represents unstandardized regression weights. *sr*² represents semi-partial correlation squared. LL and UL indicate lower and upper limits of 95% confidence intervals. The teenage group is the reference group in models. * *p* < .05, ** *p* < .01.

Table 2. 3 Age group differences in relationships between promotion- and prevention-oriented moral identity

Predictor	<i>b</i>	[LL, UL]	<i>sr</i> ²	[LL, UL]	Fit
Abstract					
Prevention-oriented moral identity (PRE-I)	0.48**	[0.38, 0.57]	.12	[.07, .16]	
AGEDUM1 (Older adolescent/young adult)	0.03	[-0.59, 0.66]	.00	[-.00, .00]	
AGEDUM2 (Older adult)	0.30	[-0.39, 0.99]	.00	[-.00, .00]	
PRE-I by AGEDUM1	0.02	[-0.12, 0.16]	.00	[-.00, .00]	
PRE-I by AGEDUM2	-0.06	[-0.22, 0.10]	.00	[-.00, .00]	
(Intercept)	2.15**	[1.76, 2.55]			$R^2 = .283^{**}$
Concrete					
Prevention-oriented moral identity (PRE-I)	0.46**	[0.35, 0.57]	.08	[.04, .12]	
AGEDUM1 (Older adolescent/young adult)	0.24	[-0.44, 0.92]	.00	[-.00, .00]	
AGEDUM2 (Older adult)	-0.58	[-1.36, 0.19]	.00	[-.00, .01]	
PRE-I by AGEDUM1	-0.05	[-0.21, 0.11]	.00	[-.00, .00]	
PRE-I by AGEDUM2	0.12	[-0.06, 0.31]	.00	[-.00, .01]	
(Intercept)	2.19**	[1.72, 2.66]			$R^2 = .227^{**}$

Note. *b* represents unstandardized regression weights. *sr*² represents semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. The teenage group is reference group in models. * $p < .05$, ** $p < .01$.

Table 2. 4

Mean differences in identity strength by promotion vs. prevention frame, level of abstraction, and age-group

Effect	<i>df</i> _{Num}	<i>df</i> _{Den}	<i>MSE</i>	<i>F</i>	<i>p</i>	η_p^2
Age group (AGE)	2	602	1.32	2.69	.069	.009
Promotion vs. prevention orientation (PPO)	1	602	0.38	6.77	.010	.011
Level of abstraction (LA)	1	602	0.13	186.14	<.001	.236
AGE by PPO	2	602	0.38	0.29	.750	<.001
AGE by LA	2	602	0.13	27.24	<.001	.083
PPO by LA	1	602	0.12	0.02	.901	<.001
AGE by PPO by LA	2	602	0.12	0.42	.658	.001

Table 2. 5 Age group differences in the relationships between internal and external moral identity motivation

Predictor	<i>b</i>	[LL, UL]	<i>sr</i> ²	[LL, UL]	Fit
Promotion-orientation					
External motivation (EXM)	0.59**	[0.48, 0.69]	.15	[.10, .19]	
AGEDUM1 (Older adolescents/young adult)	1.29**	[0.48, 2.10]	.01	[-.00, .03]	
AGEDUM2 (Older adult)	1.97**	[1.14, 2.81]	.03	[.00, .05]	
EXM by AGEDUM1	-0.20**	[-0.34, -0.06]	.01	[-.00, .02]	
EXM by AGEDUM2	-0.28**	[-0.44, -0.13]	.02	[-.00, .03]	
(Intercept)	2.65**	[2.06, 3.24]			$R^2 = .255^{**}$
Prevention-orientation					
External motivation (EXM)	0.71**	[0.61, 0.80]	.22	[.16, .27]	
AGEDUM1 (Older adolescents/young adult)	1.91**	[1.11, 2.71]	.02	[.00, .04]	
AGEDUM2 (Older adult)	3.14**	[2.33, 3.95]	.06	[.03, .09]	
EXM by AGEDUM1	-0.29**	[-0.42, -0.16]	.02	[.00, .04]	
EXM by AGEDUM2	-0.46**	[-0.60, -0.31]	.04	[.02, .07]	
(Intercept)	1.95**	[1.36, 2.53]			$R^2 = .338^{**}$

Note. *b* represents unstandardized regression weights. *sr*² represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of 95% confidence intervals. The teenage group is the reference group in these models * $p < .05$. ** $p < .01$.

Table 2. 6 Age group differences in the relationships between promotion- and prevention-oriented identity motivation

Predictor	<i>b</i>	[LL, UL]	<i>sr</i> ²	[LL, UL]	Fit
Internal motivation					
Prevention-orientation (PRE)	0.54**	[0.45, 0.64]	.13	[.09, .18]	
AGEDUM1 (Older adolescents/young adult)	0.54	[-0.34, 1.41]	.00	[-.00, .01]	
AGEDUM2 (Older adult)	-1.87**	[-2.98, -0.77]	.01	[-.00, .02]	
PRE by AGEDUM1	-0.08	[-0.22, 0.06]	.00	[-.00, .01]	
PRE by AGEDUM2	0.29**	[0.12, 0.47]	.01	[-.00, .02]	
(Intercept)	2.62**	[2.04, 3.21]			$R^2 = .353^{**}$
External motivation					
Prevention-orientation (PRE)	0.58**	[0.49, 0.68]	.11	[.07, .14]	
AGEDUM1 (Older adolescents/young adult)	-0.72	[-1.51, 0.06]	.00	[-.00, .01]	
AGEDUM2 (Older adult)	-1.01*	[-1.80, -0.21]	.00	[-.00, .01]	
PRE by AGEDUM1	0.12	[-0.01, 0.25]	.00	[-.00, .01]	
PRE by AGEDUM2	0.13	[-0.01, 0.27]	.00	[-.00, .01]	
(Intercept)	2.19**	[1.62, 2.77]			$R^2 = .529^{**}$

Note. *b* represents unstandardized regression weights. *sr*² represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of 95% confidence intervals. * $p < .05$, ** indicates $p < .01$

Table 2. 7

Internal and external moral identity motivation for promotion- and prevention-orientation by age

Effect	<i>df</i> _{Num}	<i>df</i> _{Den}	<i>MSE</i>	<i>F</i>	<i>p</i>	η_p^2
Age group (AGE)	2	633	1.86	10.29	<.001	.031
Promotion vs. Prevention Orientation (PPO)	1	633	0.38	116.16	<.001	.155
Internal vs. external motivation (IEM)	1	633	0.58	364.91	<.001	.366
AGE by PPO	2	633	0.38	0.51	.600	.002
AGE by IEM	2	633	0.58	65.33	<.001	.171
PPO by IEM	1	633	0.16	4.06	.044	.006
AGE by PPO by IEM	2	633	0.16	0.30	.743	<.001

Figures

Figure 2.1

Simple slopes of relationships between abstract and concrete identity across age groups in promotion and prevention frames

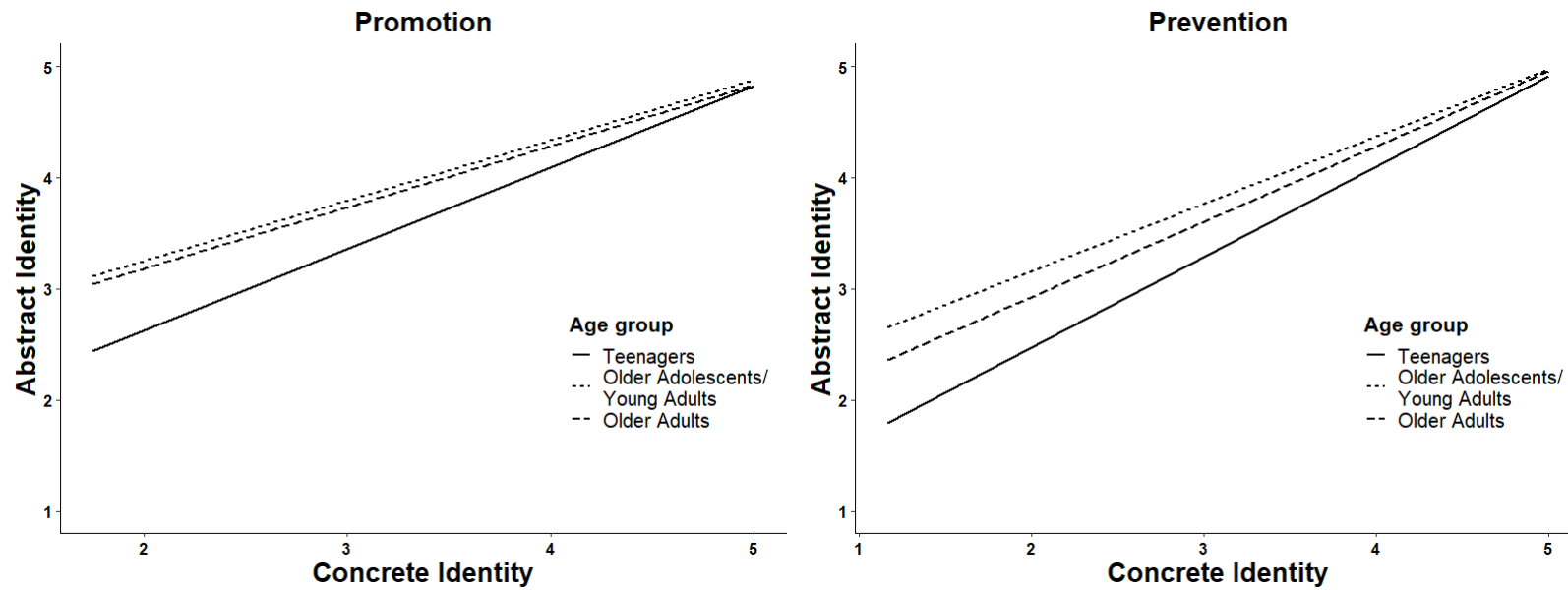
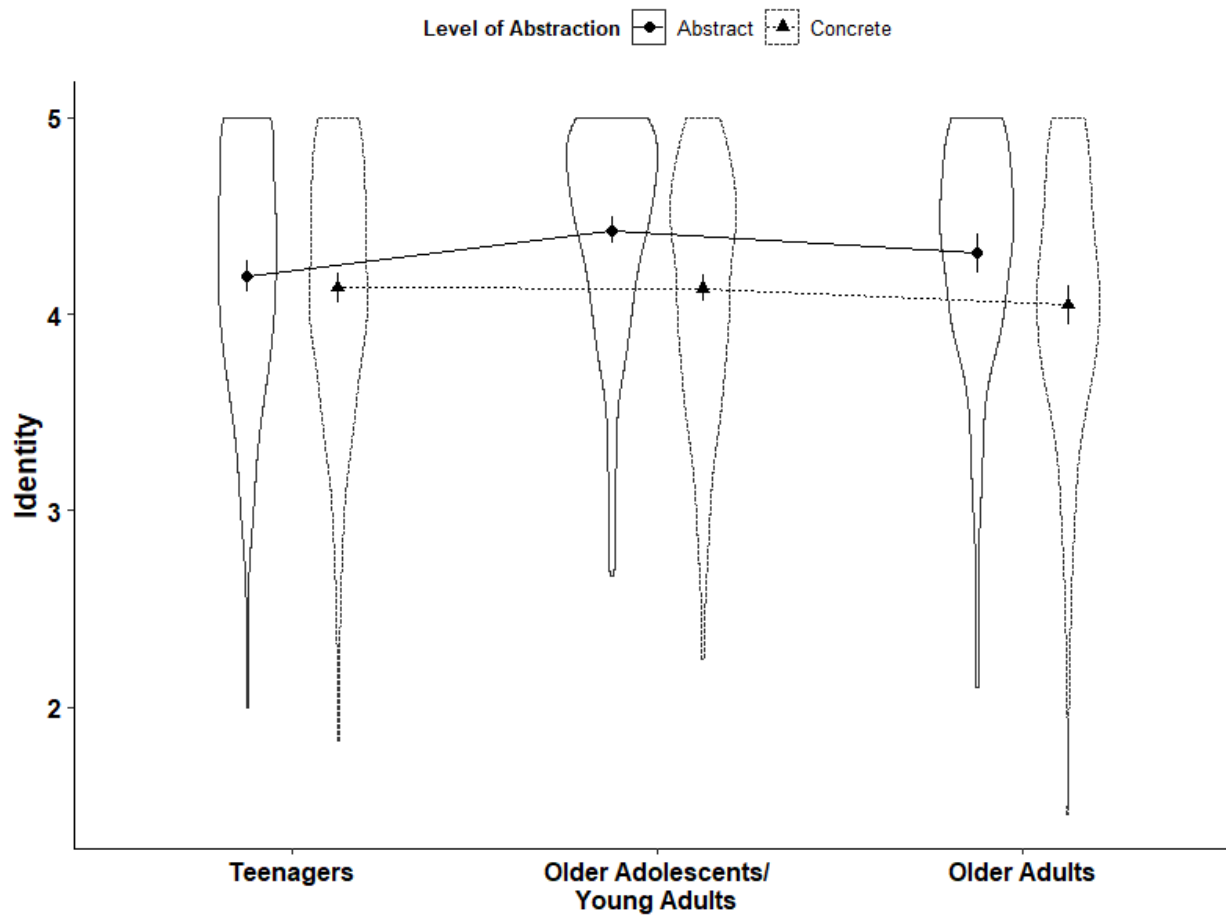


Figure 2.2 Means for abstract and concrete identity by age group



Note. Error bars are 95% between-subject CIs.

Figure 2.3

Simple slopes of the relationship between external and internal identity motivation across age groups

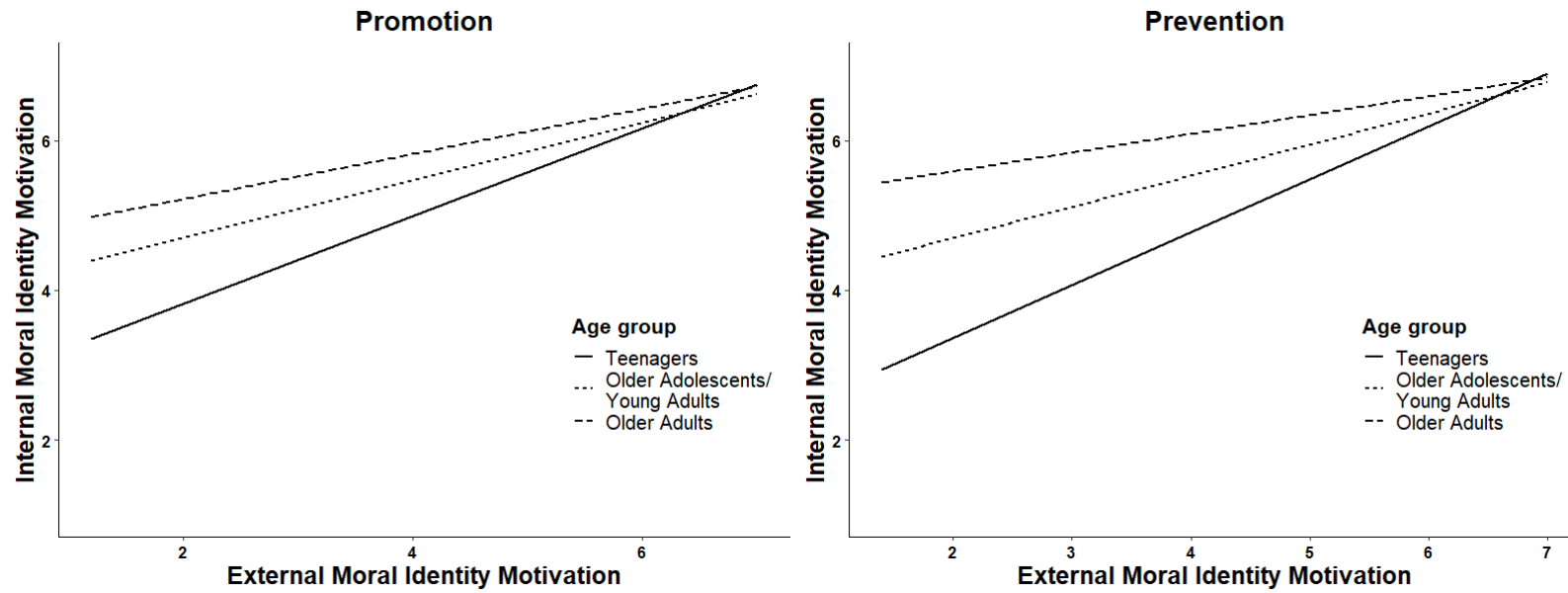
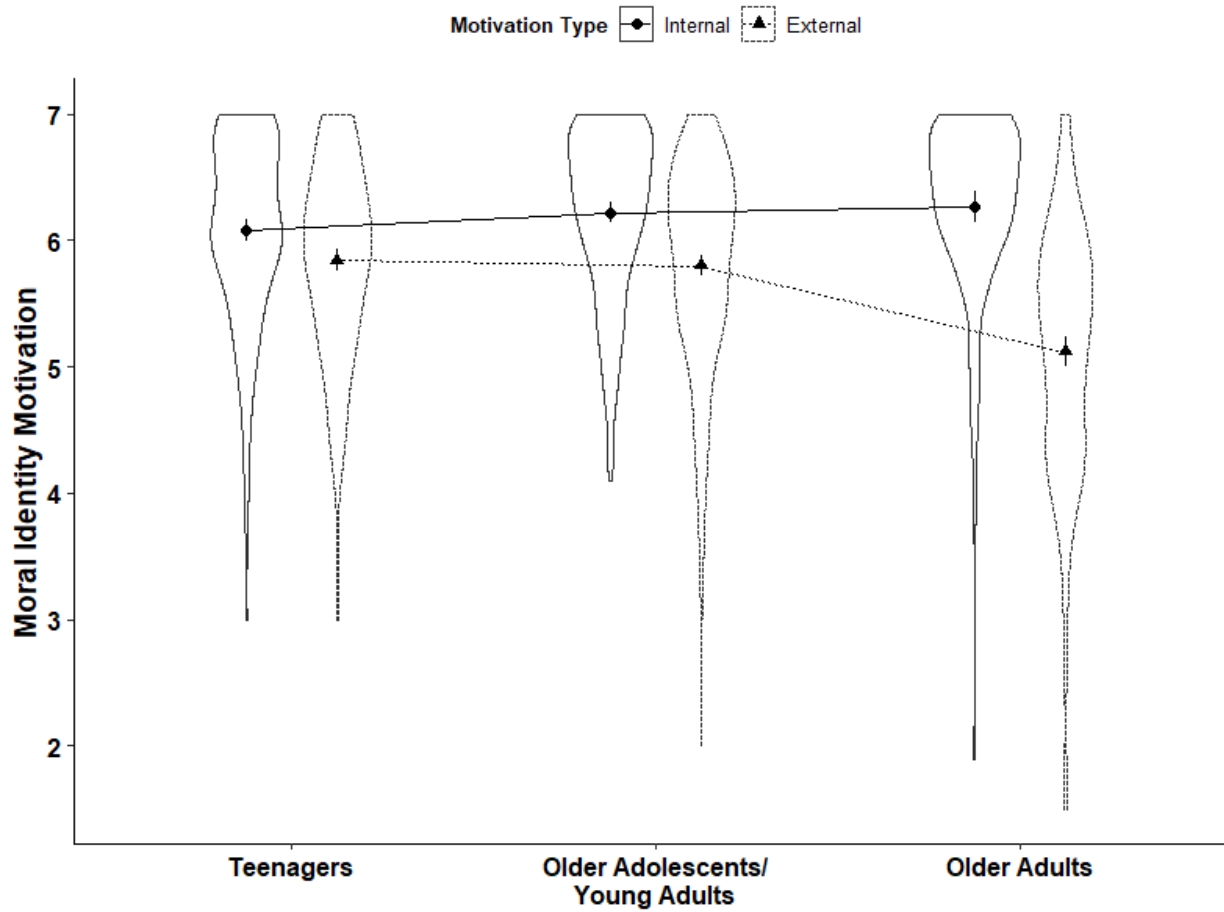


Figure 2.4 Means for internal and external moral identity motivation by age group



Note. Error bars are 95% between-subject CIs.

Appendices

Appendix 2.A. Descriptors of a highly moral/immoral person

Promotion-orientation: Positive moral identity characteristics		Prevention-orientation: Negative moral identity characteristics	
Abstract	Concrete	Abstract	Concrete
Accepting	Does not judge people for what they think or do	Unaccepting	Judge people for what they think or do
Caring	Helps others	Uncaring	Does not help others
Compassionate	Feels sorry for others when bad things happen	Uncompassionate	Does not feel sorry for others
Considerate	Thinks of others	Inconsiderate	Does not think of others
Dependable	Shows up when they say they are going to	Undependable	Rarely shows up when they say they are going to
Ethical	Follows the rules	Unethical	Breaks the rules
Fair	Does not play favourites	Unfair	Plays favourites
Forgiving	Gives others a second chance	Unforgiving	Refuses to give others a second chance
Generous	Shares what they have	Greedy	Takes more than they need
Genuine	Says what they think even if others disapprove	Fake	Says things only to please others
Hard-working	Tries as hard as they can	Lazy	Never tries very hard
Has integrity	Does not cheat	Has no integrity	Cheats when they have the opportunity
Honest	Does not tell lies	Dishonest	Tells lies
Humble	Does not show off	Arrogant	Shows off
Kind	Behaves in a friendly way towards people	Mean	Behaves in an unfriendly way towards people
Loyal	Stands by others in their group	Disloyal	Does not stand by others in their group
Patient	Waits their turn	Impatient	Does not wait their turn
Rational	Thinks things through	Irrational	Does not think things through
Respectful	Does not put others down	Disrespectful	Puts others down
Responsible	Faces the consequences of their actions	Irresponsible	Avoids facing the consequences of their actions
Self-disciplined	Overcomes temptations	Undisciplined	Gives into temptations
Selfless	Puts others first	Selfish	Puts themselves first
Trustworthy	Keeps promises	Untrustworthy	Breaks promises
Understanding	Takes others' perspectives	Unsympathetic	Does not take others' perspectives
Virtuous	Makes the right choices	Wicked	Makes the wrong choices

Appendix 2.B.

Items for assessing internal and external moral identity motivations for promotion- and prevention orientation

Promotion orientation	Prevention orientation
Internal motivation	Internal motivation
Being this way is a part of who I am.	Being this way is NOT a part of who I am.
This is the way I like to be.	This is NOT the way I like to be.
It feels good inside to be this way.	It feels bad inside to be this way.
Being this way is a goal that is personally important to me.	If I was this way I would be betraying my ideals.
I want to be the kind of person who behaves this way.	I do NOT want to be the kind of person who behaves this way.
External motivation	External motivation
I want to stand out in a good way.	I want to stand out in a good way.
I want to leave a good impression on others.	I want to leave a good impression on others.
I want others to think of me as a good person.	I want others to think of me as a good person.
People would be disappointed in me if I did NOT behave this way.	People would be disappointed in me if I behaved this way.
I do not want to be judged.	I do not want to be judged.

CHAPTER 3: IS MORAL IDENTITY FLEXIBLE OR FIRM? EVIDENCE FROM EXPERIENCE SAMPLING DATA

In the forty years since Augusto Blasi (1983) proposed that the integration of moral values and commitments into the self-concept plays a critical role in mediating between moral judgment and moral action, the moral identity construct has proven an enduring and generative feature in the landscape of moral psychology. Successive phases of theorizing have given rise to a variety of models of moral identity (Krettenauer, 2024). It has been conceptualized as a self-schema (Lapsley & Narvaez, 2004), a social identity (Aquino & Reed, 2002), a component in a cybernetic control system (Stets & Carter, 2011), a dimension of individual difference (Blasi, 1983, 2005), a constellation of personality traits (Carlo et al., 2009; Walker & Frimer, 2007), the central thread of the life narrative (Pratt et al., 2009) and a lifelong goal (Krettenauer, 2022a, 2022b), to name a few approaches. Although these models are arguably more compatible than competitive (Hardy & Carlo, 2011b), they do differ substantively in their foci and domains of applicability.

In an effort to classify and reconcile the various theories of moral identity a number of taxonomies have been proposed (e.g., Aquino & Kay, 2019; Hardy & Carlo, 2011b; Narvaez & Lapsley, 2009). Virtually all of these taxonomies distinguish character or trait models, in which moral identity is conceived of primarily as a relatively stable dimension of individual difference, from socio-cognitive models, in which it is proposed to be an admixture of individual differences in the chronic accessibility of moral self-schemas and situational variation in the activation of those schemas (i.e., a between-person component and a within-person component).

The evidence for the variability of moral identity at both within- and between-person levels is unequivocal. Substantial individual differences in moral identity exist and are robustly associated across contexts with a variety of morally relevant behaviours (Hertz & Krettenauer, 2016) and other dimensions of moral functioning (e.g., Lefebvre & Krettenauer, 2019). Simultaneously, moral identity (or competing identities/schemas) can be more or less activated by the characteristics of a situation, with concomitant implications for moral action in that situation (e.g., Aquino et al., 2007, 2009, 2011; Carter, 2013). An important empirical question about the nature of moral identity remains largely unaddressed, however: what is the relative magnitude of these two sources of variability in moral identity in people's everyday lives? Is variation dominated by between-person differences or within-person fluctuations or are those two sources of variability relatively balanced?

Aquino and Kay (2019) anticipated this question in their proposal that theories of moral identity can be distinguished according to the extent to which they emphasize the stability or malleability of the construct. They suggested that theories can be organized into two categories: flexible and firm¹. *Flexible* theories acknowledge the influence of dispositional differences in moral identity but place primary emphasis on its situational variability and its influence on moral behaviour. Socio-cognitive perspectives (e.g., Aquino et al., 2009; Aquino & Reed, 2002; Narvaez & Lapsley, 2009; Stets & Carter, 2012) are prime examples of flexible theories. They

¹ Aquino and Kay actually distinguish between three perspectives on moral identity: flexible, firm and strong. Both firm and strong theories conceptualize moral identity primarily as an individual difference, but strong theories emphasize the "conscious, deliberative processes that lead people to have a moral identity in the first place" (2019, p. 136). This distinction between firm and strong is not relevant to the present context, and so we consider both those perspectives together under the "firm" label.

hold that the fundamental mechanism underpinning moral identity are moral self-schemas which need to be accessible and activated if they are to have any impact on moral functioning in a particular situation. Socio-cognitive perspectives recover between-person differences in the form of differences in the chronic accessibility or activation of these schemas, but their focus is on variability at the within-person level. *Firm* theories of moral identity, by contrast, place the primary emphasis on individual differences. The paradigm example of a firm theory is Blasi's *self theory* (1983). Blasi proposed that individuals vary in the extent to which moral values are included in and central to their sense of self. These differences in self-definition, coupled with the fundamental need for self-consistency and coherence, have implications for the extent to which people hold themselves responsible for embodying their moral values across contexts and time.

Aquino and Kay (2019) further argue that the extant empirical literature clearly supports a flexible view of moral identity. A flexible perspective “captures moral identity’s fluidity, malleability and computational efficiency” and “is the default operative mechanism for how moral identity influences behaviour for the *typical* person in *most* situations” (pp. 136-137). In their view, firm approaches to moral identity are not incompatible with flexible socio-cognitive approaches but should be reserved to describe morally gifted or exemplary individuals for whom moral values and commitments are especially consistent and central to their sense of selves. We contend that this assumption must be considered highly speculative since there is very little empirical evidence available that would allow this claim to be substantiated. This is the empirical gap which the present study aimed to fill.

Experience sampling methods (ESM) are ideally suited to address this question of the basic nature of moral identity. ESM involves “a representative sampling of immediate

experiences in one's natural environment" (Beal, 2015, p. 384), usually through intensive repeated measurement of the phenomena of interest at relatively short intervals. It permits the assessment of constructs of interest across a variety of contexts which more accurately reflect people's lived experiences than would be possible with retrospective survey instruments or experimental procedures in the lab. Further, ESM does not impose a priori assumptions about the predominance of variability at the within- or between-person levels. In combination with analytic methods like multilevel modeling, it permits the disposition of variability at these two levels to emerge freely as empirical findings.

In the present study we pursued two primary goals employing ESM to measure moral identity repeatedly over time in people's everyday lives. First, we assessed the extent to which variation in the salience of moral identity in people's everyday lives could be attributed to relatively stable between-person differences and how much variability reflected situation to situation fluctuation within-persons². Partitioning variation in this way permitted us to assess whether moral identity is highly malleable, with between-person differences in its chronic activation dwarfed by fluctuations driven by changing circumstances (i.e., flexible); or whether it is highly stable, with individual differences in chronic activation far larger than situation to situation fluctuations in its activation (i.e., firm).

In addition to capturing variation in moral identity, we also wanted to investigate its covariation with the kinds of experiences people have in their everyday lives. An ESM study

² Note that the kinds of within-person fluctuations over relatively short timescales we were interested in are distinct from another type of within-person variability, namely developmental change. We do not attempt to capture or address developmental change in the present context, but restrict our interest to more transient, momentary changes in the salience of moral identity.

conducted by Hofmann and colleagues (2014) showed that everyday events which people judge to have some moral significance are commonplace, occurring on average slightly more than once per day. These events consisted not just of moral and immoral actions undertaken by people themselves, but also of actions they were the target of, witnessed or learned about secondhand. These types of events are those which are most plausibly associated with variation in moral identity. A wealth of research already attests to the association between moral identity and the kinds of behaviour people engage in (see Hertz & Krettenauer, 2016; Jennings et al., 2015), but our interest was in a more expansive exploration of how morally salient events of all kinds were associated with moral identity. Not merely the behaviours which people engage in, but also events in which people were the target or third-party witness to the (im)moral behaviour of others. We thus explored how both discrete (im)moral events (at the within-person level) and the propensity for those kinds of events (at the between-person level) were associated with moral identity.

In the following, we will first review in more detail the evidence for how moral identity varies. We describe how robust and meaningful individual differences have been measured, how within-person fluctuations have been induced in the lab and the limitations of what this literature can tell us about how moral identity actually varies in people's everyday lives. We then review the small number of extant studies that involve repeated measurements of moral identity and what they suggest about whether moral identity should be thought of as flexible or firm. Finally, we describe our expected findings.

Variation at Two Levels: Between-person differences and within-person fluctuations in moral identity

The overwhelming majority of empirical research on moral identity has conceptualized it as a dimension of individual difference. People generically intuit that moral characteristics form the essential core of identity (Strohming et al., 2017; Strohming & Nichols, 2014), but hundreds of studies attest to the fact that people meaningfully vary in the *extent* to which moral values are central to their personal sense of self (see Hertz & Krettenauer, 2016; Jennings et al., 2015; Lefebvre & Krettenauer, 2019). Moral identity as an individual difference has been operationalized in a variety of ways (e.g., Arnold, 1993; Black & Reynolds, 2016; Frimer & Walker, 2009; Lefebvre et al., 2024), but Aquino and Reed's self-importance of moral identity questionnaire (SIMIQ; 2002) is by far the most commonly employed measure. The SIMIQ prompts participants to envisage a prototypically moral person (who embodies 9 core moral characteristics) and consider how such a person would think, feel and act. Having evoked a mental representation of a highly moral person, participants then indicate their agreement to ten statements representing the self-importance of moral characteristics and the extent to which these characteristics are reflected in their identity (e.g., "being someone who has these characteristics is an important part of who I am").

Individual differences in moral identity as assessed by the SIMIQ and other measures have been linked to both moral behaviour and affect. A stronger moral identity has been associated with an increased propensity to engage in a variety of prosocial behaviours (e.g., helping, charitable donation, fair sharing of resources, organizational citizenship, volunteering and whistleblowing) and a decreased propensity to engage in antisocial behaviours (e.g., cheating, lying, verbal and physical aggression, and criminal recidivism). People with stronger

moral identities also tend to more frequently and intensely experience a variety of self-evaluative (e.g. guilt, pride), other-evaluative (e.g. outrage, disgust) and other-regarding (e.g., sympathy, compassion) moral emotions. Meta-analyses have demonstrated that these associations are robust, and hold regardless of how moral identity is operationalized (see Hertz & Krettenauer, 2016; Lefebvre & Krettenauer, 2019).

Evidence for the malleability of moral identity (i.e., its within-person variability) comes from a relatively small number of experimental studies in which moral self-schemas are activated or deactivated (Aquino et al., 2007, 2007, 2009, 2011; Carter, 2013; Kavussanu et al., 2015; Leavitt et al., 2016; Reed et al., 2007; Wang & Tong, 2015). These studies typically involve priming procedures in which the relevance of moral values to a person's identity are explicitly highlighted. The most common procedure involves prompting participants to write a story about themselves which includes a set of positive moral characteristic words (e.g., kind, caring, just, honest, etc.). Such priming has been shown to enhance the salience of the moral dimension of identity when compared to control conditions in which participants write stories about themselves using a set of non-moral positive traits (Aquino et al., 2007; Carter, 2013), or everyday objects (Aquino et al., 2009; Kavussanu et al., 2015; Reed et al., 2007; Wang & Tong, 2015). Other procedures which do not so explicitly reference self-identity have also been successfully employed to activate moral identity: trying to spontaneously recall and then reviewing the Ten Commandments (Aquino et al., 2009), and word search (Aquino et al., 2011) and sentence correction (Leavitt et al., 2016) tasks whose target words are moral values.

Induced variation in the momentary salience of moral identity also has significant effects on behaviour and other dimensions of moral functioning. Priming moral identity results in increases in a variety of prosocial behaviours (e.g., cooperation, generosity, honesty; Aquino et

al., 2009, 2011; Carter, 2013; Reed et al., 2007). A less salient moral identity, by contrast, is associated with increased propensity to engage in anti-social behaviours (e.g., lying, instrumental aggression; Aquino et al., 2009; Kavussanu et al., 2015). Beyond behaviour, priming moral identity results in more expansive conceptions of concern and judgments of ethical responsibility in a hypothetical business context (Leavitt et al., 2016). It is also has been shown to reduce the buffering effect of moral disengagement on the experience of negative emotions in response to descriptions of abuses perpetrated against prisoners of war (Aquino et al., 2007).

One additional complication is worth briefly noting. Engaging in a moral action implies the satisfaction (to some extent) of the fundamental moral identity goal of being a good person, and so may plausibly result in a momentary decrease in the salience of that achieved goal as other goals come to the fore. Engaging in an immoral action, by contrast, implies movement away from that goal, and so may be associated with an increase in its salience. Empirical support for this possibility can be found in a pair of experimental studies conducted by Jordan et al. (2011, 2015). These studies found that recollection of past moral actions (study 1 Jordan et al., 2011) and receiving positive feedback about achieving an identity ideal (study 3 Jordan et al., 2015) were associated with decreases in moral identity, compared with conditions in which a past immoral act was recollected, and negative feedback was received about achieving an identity ideal, respectively. These effects are in the opposite direction of those found in priming studies. Thus, the nature of the identity-behaviour association may well depend on whether moral identity is causally upstream (or downstream) of morally relevant behaviour.

In sum, there is a large amount of evidence for meaningful and consequential individual differences in moral identity. There is less, but still compelling, evidence from experimental studies that moral identity can be manipulated or primed, and that such within-person variation is

associated with differences in moral functioning. However, these priming studies do not provide any quantitative assessment of the extent to which moral identity fluctuates in everyday lived experience, beyond the context of a priming procedure in the laboratory. It is entirely reasonable to expect that the salience of people's moral identity in their everyday lives may wax or wane given the kinds of primes that have been demonstrated to induce within-person variation in the lab. It is even plausible that such fluctuations may be substantial and frequent enough to account for more variability than between-person differences. The priming literature thus suggests a flexible perspective may be plausible but falls short of providing empirical support for the proposition. For that, repeated measurement over time would seem to be required.

Moral Identity in Everyday Life

Empirical studies that can speak to the relative magnitude of within- and between-person variability of moral identity are very few in number. A handful of studies have investigated the test-retest reliability of various individual difference measures of moral identity with intervals between evaluations ranging from a few hours to a few weeks (Aquino & Reed, 2002; Black & Reynolds, 2016; Xu et al., 2017). These reliability coefficient estimates vary between $r_{tt} = .49$ and $.87$, indicating that the stability of moral identity across repeated measurements is somewhere between quite modest (24% shared variance) and very substantial (76% shared variance). These reliabilities can only be taken to be very crude estimates of the extent to which variation is attributable to stable differences between persons, based as they are on merely two occasions of measurement (each likely occurring under very similar circumstances). Such studies are very far from a comprehensive assay of variability as it occurs in lived experience. It is no surprise then that the range of these coefficients is wide enough to include values implied by a flexible (i.e., relatively little stability) and firm perspective (i.e., relatively high stability).

To our knowledge, only a single empirical study conducted by Krettenauer and colleagues (2022) has involved intensive repeated measurement of moral identity. It employed a daily diary design, in which participants indicated the extent to which each of three moral characteristics (being honest, fair, and caring) was central to their sense of self during the past day, over the course of fifty days. Daily ratings of these three values were aggregated into a single daily measure of moral identity. Krettenauer et al. (2022) reported that nearly two thirds (64%) of the variability in daily moral identity could be attributed to between-person differences, with the remaining third accounted for by within-person fluctuations. This result is not what one would expect if moral identity in most cases were indeed flexible, as Aquino and Kay (2019) argue. This finding is more congruent with a firm perspective, in which variability is dominated by between-person differences. It is also consistent with assessments of the malleability of other dimensions of individual's morality reported in ESM studies. Studies involving intensive repeated measurements of moral behaviour, thought and need satisfaction have consistently reported that less than half of variability (26% to 45%) in those constructs is attributable to within-person fluctuations (Meindl et al., 2015; Prentice et al., 2020). Nonetheless, there are reasons to be cautious about drawing strong conclusions from this lone study.

The study involved a secondary analysis of a portion of a larger pre-existing data set whose primary focus was not moral identity. Consequently, it has some limitations which temper its evidentiary value in the present context. First, its measure of moral identity is arguably deficient in content validity, focusing as it does only on three moral characteristics. While honesty, fairness and caring are often selected as moral characteristics that are especially important to people's sense of selves (Jia et al., 2019; Jia & Krettenauer, 2017), it is very a limited sample of the spectrum of moral values. The SIMIQ makes reference to 9 distinct values,

while other operationalizations are even more expansive (e.g., Krettenauer et al., 2016; Lefebvre et al., 2024). Second, the study assessed moral identity at the temporal resolution of a whole day. This required participants to retrospectively aggregate across the variety of situations they found themselves in each day. This aggregation might plausibly result in an underestimate of the amount of within-person variation. There is some evidence from the larger ESM literature suggesting that more coarse timescales or longer intervals between measurement may be systematically associated with such underestimation of within-person variance (Beal, 2015; Beal et al., 2005), although this is not always the case (e.g., Mroczek et al., 2003). Third, it did not include any measure of the situations participants found themselves in from day to day. Thus, it does not offer any insight into how moral identity varied as a function of morally relevant experiences. Finally, the sample was modest in size ($n = 138$) and somewhat idiosyncratic in its composition (82% female, 83% White, 25% Mormon), which may limit its generalizability to more diverse populations.

While this study represents an interesting first step towards exploring moral identity in people's everyday lives, our aim was to build on this preliminary work. An ESM study of moral identity which included a more adequate measure of the construct, at a finer temporal timescale, and which simultaneously measured participant's morally relevant experiences would permit substantial refinement of credence in flexible and firm perspectives of moral identity.

Expected Findings

Proponents of socio-cognitive perspectives favour a flexible view of moral identity and propose that in the population of typically functioning individuals within-person fluctuations dominate between-person differences (in contrast with the morally exceptional, who are proposed to have more stable, less malleable moral identities). However, empirical support for

this proposition is limited. In the present study we employ experience sampling methods to assess moral identity and the occurrence of morally relevant events multiple times each day over the course of a week. Using multilevel models, we partitioned variability in moral identity into between-person differences (i.e., a trait-like component) and within-person fluctuations (i.e., a state-like component) and investigated the relative magnitude of these two sources of variation. Furthermore, we model the associations between moral identity and the everyday moral and immoral events in participant's lives, at both the between- and within-person levels. Specifically, we model the identity-event relation for six different types of morally relevant events: engaging in, being the target of, and witnessing either moral or immoral acts.

We expected the following findings:

1. A substantial amount of empirical evidence supports the existence of meaningful individual differences and within-person fluctuations. We thus expect that participants will exhibit *both* mean differences in the salience of their moral identities over the course of the study and significant fluctuations in salience from one occasion of measurement to the next. In their daily diary study of moral identity Krettenauer et al. (2022) reported that two-thirds of variability in moral identity was attributable to between-person differences. Given that we assess moral identity at a much finer temporal resolution in the present study (up to five times per day), and thus may be better positioned to capture within-person variation, we expect that within-person variation will account for a relatively larger proportion of total variation than Krettenauer and colleagues reported in their daily diary study. While we did not have more precise expectations about the disposition of variance at these two levels, a finding that a clear majority of variation in moral identity can be attributed to within-person

fluctuations would seem to be necessary to increase credence in a flexible perspective on the construct.

2. Our expectations with respect to the association between morally significant events and moral identity need to be divided into the between- and within-person levels:
 - a. At the between-person level there is substantial evidence supporting the association between moral identity and a wide swath of morally relevant behaviours (see Hertz & Krettenauer, 2016; Jennings et al., 2015). Consistent with previous research we thus expected that people who tend to engage in moral behaviour more frequently will have more chronically salient moral identities and those who tend to engage in immoral behaviour more frequently will have less chronically salient moral identities. We did not have a priori hypotheses about the association of being the target of or witness to moral and immoral acts. A meta-analysis has linked moral identity to the experience of both positive and negative other-evaluative moral emotions as well as feelings of empathy, sympathy and compassion at the level of individual differences (Lefebvre & Krettenauer, 2019). This suggests that a chronically salient moral identity may be associated with an increased sensitivity to the moral dimensions of the behaviour of others, whether they target the self or some third party. However, we flag these potential associations as more speculative.
 - b. We did not have a priori hypotheses about the association between moral identity and events at the within-person level. A variety of priming procedures have been demonstrated to enhance the momentary salience of moral identity (e.g., Aquino et al., 2007, 2009, 2011; Kavussanu et al., 2015; Leavitt et al., 2016; Reed et al., 2007; Wang & Tong, 2015). While some of these procedures make explicit reference to

self-identity (e.g., writing a story about oneself using a set of positive moral descriptors), many of them involve the mere presence of moral content (e.g., moral descriptors like “kind” as the target in a word search task). It is thus reasonable to suppose that the occurrence of discrete events in everyday life which people judge as having some moral valence may be associated with an increase in the momentarily salience of their moral identity. This general expectation is somewhat complicated in the specific case of *engaging in* (rather than being the target of or observing) moral and immoral acts, however. Priming studies have typically found that when the salience of moral identity is induced people tend to engage in more prosocial and less anti-social behaviour (see Hertz & Krettenauer, 2016). The magnitude of this effect is generally quite modest, but it suggests that engaging in moral action may be associated with a more salient moral identity, while engaging in an immoral action may be associated with less salience. That being said, the effects described in priming studies are not entirely analogous to the momentary associations captured in the present study. In priming studies, the causal direction of the identity-behaviour association is established by means of experimental control and temporal precedence (i.e., identity is primed in a randomly assigned experimental group then subsequently some behaviour is measured). This is not the case in the current context, in which the salience of moral identity and participant behaviour are assessed simultaneously. It is thus ambiguous whether participant reports of the salience of their moral identity are causally upstream or downstream of behaviour they engaged in at any particular occasion of measurement (or a mixture of both of these possibilities). This complication is relevant to our expectations about the identity-behaviour association

at the within-person level because that association may well depend on whether identity salience precedes (as in priming studies) or follows from some behaviour (as in Jordan et al., 2011, 2015). As a consequence of these opposing potential effects, we considered our analyses of the moral identity-behaviour relation at the within-person level to be exploratory.

3. Aquino and Kay (2019) propose that moral identity operates in a *flexible* mode in typical populations, but that in morally gifted populations it may operate in a *firm* mode. Although we did not purposefully recruit morally exemplary participants, we did expect meaningful between-person differences in the importance of the moral identity goal in our sample. In accord with Aquino and Kay's proposal then, we expected that in participants with more chronically salient moral identities (i.e., higher mean levels) will experience smaller fluctuations in moral identity salience attributable to the morally relevant events that occur in their lives, while the opposite will be true for those with less chronically salient moral identities (i.e., lower mean levels). In other words, we expected that, in participants for whom the moral identity goal is consistently important, the impact of discrete moral and immoral events of all kinds on the momentary salience of their moral identity will tend to be smaller, and for the opposite to be true in participants for whom the moral identity goal is consistently less important.

Method

Participants

Participants were two hundred and twenty-four students recruited from a public university in Southern Ontario, Canada. The sample was roughly gender balanced (125 women, 92 men, and 6 who preferred to self-identity or not reveal their gender identity), with a mean age

of 19.74 years ($SD = 3.41$). Participants were predominantly born in Canada (77%) and identified as White ($n = 114$), South Asian ($n = 35$), East/Southeast Asian ($n = 25$), Black ($n = 11$), Latino/a ($n = 6$), self-identified as another ethnicity ($n = 11$) or declined to provide information about ethnicity ($n = 22$). With respect to socioeconomic status, participants predominantly self-identified (Morin & Motel, 2012) as middle ($n = 97$), upper-middle ($n = 70$) and lower-middle class ($n = 36$), with a small number identifying as lower ($n = 8$) and upper class ($n = 6$). One participant failed to respond to any of the study ESM prompts, and so was excluded from analysis.

Procedures

Participants were recruited primarily from a psychology undergraduate pool (80%), but participation was open to any currently enrolled graduate or undergraduate student. Interested potential participants attended a virtual intake meeting in groups of one to six. During the intake meeting the purpose and nature of the study were explained by the first author and participants were given the opportunity to ask questions. Participants were then individually moved into a private breakout room and given a chance to ask any remaining questions before being asked to provide consent to participate in the study. Consenting participants then provided contact information (email address and mobile number) and were enrolled in the study. Recording of consent and contact information during the intake sessions and all other phases of data collection for the study were administered using the FormR automated survey framework (Arslan et al., 2020).

Data collection for the study was conducted in two phases: a baseline survey phase and an experience sampling phase. Following their intake meeting participants were emailed a link to an online *baseline survey*. The baseline survey included a variety of individual difference and

demographic measures. On the day following completion of the baseline survey participants automatically began the *experience sampling* phase of the study, which lasted for seven consecutive days. Each day during the experience sampling phase participants were prompted, via links embedded in text messages sent to their personal mobile devices, to report on the salience of their moral identity and the occurrence and nature of any morally relevant events. These prompts were sent out to participants five times each day on a randomized schedule, during an eleven-hour period following the time they reported typically starting their day (e.g., a participant who indicated their day typically started at 8am would receive these short surveys between 8am and 7pm). These short surveys occurred with a minimum interval of 100 minutes between them and expired if not completed within 40 minutes. Daily surveys were necessarily brief and designed to take a typical participant no more than 2-3 minutes to complete. On days when participants reported the occurrence of one or more moral events, they were additionally prompted in the evening to complete a more detailed end-of-day survey about those events.

Compensation was provided for each component of the study. Participants were paid \$4.8 for attending the intake session and \$3.2 for completing the baseline survey (alternatively, participants enrolled in psychology courses could opt to receive course credit instead of financial compensation for these two components). They were also compensated based on the number of short surveys completed: \$1 for the first 15, \$2 for the next 10, and \$3 for the final ten. Participants were also compensated \$25 for completing all of the end-of-day surveys for which they qualified. Thus a participant who completed all the components of the study without missing any surveys was compensated a maximum of \$108. This project was reviewed and approved by the Wilfrid Laurier University Research Ethics Board (#7211).

Measures

All measures for the present study were self-reported and completed up to five times per day for seven days, for a total of 35 possible repeated measurements, depending on individual completion rates. Each of these measures asked participants to report on the importance of their moral identity or the events occurring in their lives during the “past hour”. For a comprehensive description of all ESM measures (not all of which are relevant to this present work) see Appendix A for this dissertation.

Moral Identity Salience

We conceptualized moral identity as the goal of being a morally good person (Krettenauer, 2022a, 2022b). Although the goal of being a moral person could be framed equally validly as a negative goal (i.e., avoiding being a morally bad person), it is typically operationalized as a self-important positive goal state or set of characteristics (e.g., the SIMIQ, Aquino & Reed, 2002). We adopted this general convention in the present study. Two distinct strategies were employed to measure the salience of the moral identity. First, the salience of the moral identity goal was measured in a single item which references the superordinate, generic goal (“In the past hour, how important was it for you to be a moral person?”). Participant responses to this item were registered on a slider anchored with the labels “Not at all” (0) and “Very much” (100). The second strategy involved capturing the importance of embodying specific self-relevant moral traits (Hardy et al., 2015; Krettenauer et al., 2022). As a part of the baseline survey participants were asked to identify three positively valenced moral trait/behavioural descriptors which were “most important for you personally to have in your day-to-day life”. This list consisted of 50 descriptors was drawn from previous studies employing similar approaches to tapping moral identity (Krettenauer et al., 2016; Krettenauer & Victor,

2017; Lefebvre et al., 2024) and were presented in random order. On each occasion of measurement during the ESM phase of the study participants were then presented with the three self-relevant descriptors (e.g., caring, fair, sharing what you have) they selected at baseline and asked “In the past hour, how important was each of these to you?”, with responses on a scale from 1 (Not at all important) to 5 (Extremely important). Scores were then generated for each occasion of measurement by taking the mean importance of the three descriptors.

In sum, two moral identity salience variables were generated for each participant at each of 35 possible occasions of measurement: a score calculated from a single item referencing the generic moral identity goal, and a score generated as the mean importance of three participant selected self-relevant moral descriptors.

Moral and Immoral Events

On each occasion of measurement participants were also asked to report on the occurrence of any morally relevant events in their lives. We adopted a measure of moral and immoral events previously employed by Hofmann et al. (2014) in an ESM study of everyday moral experiences. Survey questions did not include a definition of what would constitute a moral or immoral event. Instructions during the intake session made clear that participants should use their own judgment about events in their lives that were morally right/good or wrong/bad. Participants indicated whether any event had occurred in the past hour for each the following six categories: performed a moral act, performed an immoral act, were the target of a moral act, were the target of an immoral act, witnessed or heard about a moral act, and witnessed or heard about an immoral act. Events were thus represented at the occasion-level by six binary variables indicating the occurrence (1) or non-occurrence (0) of those six types of events. Participants were also prompted to provide a brief written description of any events that occurred

(if more than one event of a particular type occurred in the past hour, participants were asked to describe the one which was most significant, in their judgment).

A total of 1428 distinct events were reported across all participants, meaning that a typical participant reported slightly less than one event per day ($M = 6.37$) over the course of the weeklong ESM phase. Moral events ($M_{\text{Moral act}} = 3.05$, $M_{\text{Moral target}} = 1.26$, $M_{\text{Moral witness}} = .46$) were generally more common than immoral events ($M_{\text{Immoral act}} = .71$, $M_{\text{Immoral target}} = .35$, $M_{\text{Immoral witness}} = .55$). Participant descriptions indicated they construed a wide variety of behaviours as having moral significance, from modest acts of kindness toward loved ones, to acts of generosity directed towards strangers, or upholding personal commitments to themselves or others. Descriptions of immoral acts revealed similarly varied types of behaviours, from uttering insults, to rudeness, theft and dishonesty. Events were generally quotidian in nature, with virtually no instances of moral heroism performed at a substantial personal cost or moral transgressions resulting in dramatic harm to another.

In addition to the six binary occasion-level variables, we also calculated six participant-level variables indicating propensities to report each type of event over the course of the study. These variables consisted of person-mean event scores and indicated the proportion of occasions (excluding occasions where they did not respond) at which each participant reported an event of each type. These scores could range from 0 (participant never reported an event of this type) to 1 (participant reported an event of this type on every occasion for which they provided data).

Analysis Plan

Our research questions were tested with multilevel models (MLMs; Raudenbush & Bryk, 2002) in which occasions of measurement (level 1) were nested within participants (level 2). Moral identity was modeled as a function of discrete events at level 1 and event propensities at

level 2. Level 1 fixed effects were allowed to vary for each participant (i.e., random slopes). In order to accommodate any temporal dependence between proximal occasions of measurement within-participant, fitted models included an AR1 residual structure (Grimm et al., 2017). This structure models participant residuals at occasion t as a function of a constant autoregressive coefficient ϕ (φ) and residuals at occasion $t - 1$. If such dependencies are present in the data, but remain unmodeled, model estimates of fixed effects may have inappropriately small standard errors and thus an increased risk of type I error (Bolger & Laurenceau, 2013).

Model construction began with the estimation of a null (or unconditional) model for each measure of moral identity. The null model partitions variance in an outcome into within- (level 1) and between-person (level 2) variance and permits the calculation of an intraclass correlation coefficient (ICC). The ICC reflects the proportion of total variance in an outcome which is due to level 2 variance (i.e., attributable to mean between-participant differences, as opposed to within-participant fluctuations across occasions). Full models including all fixed level 1 and 2 effects, random slopes and AR1 residual structure were then fit. Next, robust SEs based on a sandwich estimator (“CR2”) were calculated (Pustejovsky & Tipton, 2018) and significance testing (Satterthwaite corrected t-tests) was conducted for all fixed effects. Below are the multilevel equations for these final models (one model is presented below, but identical models were fit for both moral identity outcomes):

Level 1:

$$\begin{aligned} Moral_Id_{ti} = & \beta_{0i} + \beta_{1i}(Moral_Act)_{ti} + \beta_{2i}(Moral_Target)_{ti} + \beta_{3i}(Moral_Witness)_{ti} \\ & + \beta_{4i}(Immoral_Act)_{ti} + \beta_{5i}(Immoral_Target)_{ti} \\ & + \beta_{6i}(Immoral_Witness)_{ti} + e_{ti} \end{aligned}$$

Level 2:

$$\begin{aligned}\beta_{0i} = & \gamma_{00} + \gamma_{01}(\text{Mean_Moral_Act})_i + \gamma_{02}(\text{Mean_Moral_Target})_i \\ & + \gamma_{03}(\text{Mean_Moral_Witness})_i + \gamma_{04}(\text{Mean_Immoral_Act})_i \\ & + \gamma_{05}(\text{Mean_Immoral_Target})_i + \gamma_{06}(\text{Mean_Immoral_Witness})_i + r_{0i}\end{aligned}$$

$$\beta_{1i} = \gamma_{10} + r_{1i}$$

$$\beta_{2i} = \gamma_{20} + r_{2i}$$

$$\beta_{3i} = \gamma_{30} + r_{3i}$$

$$\beta_{4i} = \gamma_{40} + r_{4i}$$

$$\beta_{5i} = \gamma_{50} + r_{5i}$$

$$\beta_{6i} = \gamma_{60} + r_{6i}$$

Level 1 predictors in our models were all centered within-participant, while level 2 predictors were grand mean centered. Level 1 regression coefficients ($\gamma_{10}, \gamma_{20}, \dots, \gamma_{60}$) can be interpreted as the effect of the occurrence of each type of event (e.g., engaging in a moral act, being the target of a moral act, etc.) on the salience of moral identity, controlling for between-participant differences in the propensity to report the corresponding type of event. Level 2 regression coefficients ($\gamma_{01}, \gamma_{02}, \dots, \gamma_{06}$), by contrast, can be interpreted as the effect of deviation in event propensities from their respective grand means (for a comprehensive discussion of centering and disaggregating within- and between-person effects in MLM see Enders & Tofighi, 2007; Kreft et al., 1995; Wang & Maxwell, 2015). It is worth keeping in mind that these level 2 regression coefficients represent the expected mean difference in moral identity for a deviation in propensity of 1 from the typical propensity, which is not a possible deviation. For instance, the mean propensity for moral acts is .12, thus a deviation from that mean of + 1 or – 1 are both out of bounds for a propensity (which ranges from 0 to 1). A more sensible way to think of these regression coefficients would be to divide them by some meaningful value (e.g., the coefficient

divided by 10 would indicate the expected mean moral identity salience of a participant who is .1 above the grand mean). Finally, the intercept term for these models can be interpreted as the mean moral identity for a participant on an occasion during which no events of any kind have been reported, and who has typical propensities to report each type of event.

Effect sizes for MLMs were generated using the Rights and Sterba (2018, 2019) framework. This approach permits the calculation of proportions of total/within-person/between-person variance which are accounted for by fixed effects at each level, by random intercept variation (i.e., participant mean differences) and random slope (co)variation (i.e., variation in participant within-person fixed effects and their intercorrelations and correlation with the random intercept).

Analyses were conducted with the R statistical computing language (R Core Team, 2023). Models were fit with the NLME R package (Pinheiro & Bates, 2023) and robust SEs were calculated with the clubSandwich R package (Pustejovsky, 2023). Effect sizes for MLMs were calculated with the r2MLM R package (Shaw et al., 2022).

Results

Completion rates of the short surveys were in the typical range ($M = 70.5\%$) for ESM studies (Eisele et al., 2020; Vachon et al., 2019), with participants completing an average of 24.68 out of a possible 35 surveys over the course of the 7 days ($SD = 7.61$, $min = 1$, $max = 35$). Means, standard deviations, and bivariate correlations between moral identity and the six event variables at the occasion level (level 1) and between mean moral identity and the six event propensities at the level of the participant (level 2) can be found in tables 3.1 and 3.2, respectively (see table S3.1 in the supplemental materials for uncentered bivariate correlations at level 1). The salience of moral identity, whether it was measured as the importance of a

superordinate goal or of specific moral values, was typically slightly above the midpoint, with substantial variation both within- and between-participants. The within-person correlation between our two different measures of moral identity was large ($r = .66$), indicating that across measurement strategy, close to half of the variance in these different measures of moral identity was shared. The between-person correlation of those variables aggregated at level 2 was even higher ($r = .85$), indicating a very high proportion of shared variance. This pattern of correlations suggests our two different measurement strategies (moral identity as a generic goal vs. as three self-relevant specific values) largely converged.

Multilevel Analyses

Across our two measures of moral identity ICCs ranged from .55 (generic) to .57 (self-relevant values). These ICCs indicate that regardless of measurement strategy slightly more than half of the variability in moral identity in our participants could be attributed to relatively stable differences between participants, with the remaining variance (45% to 43%) attributable to within-participant fluctuations. As expected, the relative magnitude of within-participant variability was higher in the current study (which had a temporal resolution of an hour) than the roughly one third reported by Krettenauer et al. (2022), in which moral identity was measured at the resolution of an entire day. We also calculated ICCs for each of the six event types by fitting binary logistic multilevel null models to further contextualize the variability of our moral identity measures. Engaging in moral (ICC = .22) or immoral (ICC = .34) acts, being the target of a moral (ICC = .28) or immoral (ICC = .27) act and witnessing a moral (ICC = .30) or immoral act (ICC = .25) all proved to be relatively malleable by comparison, with only a fifth to a third of variability attributable to between-participant differences.

Final MLM models for our two different identity measures included the effects of the six event types on moral identity (i.e., fixed effects at level 1), individual variability in the magnitude of those effects (i.e., random slopes for those level 1 predictors), six event propensities as predictors of mean between-person difference in moral identity (i.e., level 2 predictors of the intercept) and an autoregressive residual structure to account for correlations between temporally proximal measurements of moral identity within each participant (i.e., AR1 autocorrelation). Parameter estimates across the two models were highly consistent with each other. Consequently, we focus below on describing the final model for moral identity measured as a generic goal (i.e., “In the past hour, how important was it for you to be a moral person?”). Parameter estimates for that model can be found in table 3.3. Interested readers can find parameter estimates and effect sizes for the other final model, in which moral identity is measured as the importance of three self-relevant values, in the supplementary materials (see tables S3.2 and S3.3).

Fixed effects at the level of the occasion in our final generic goal model indicated that typically the occurrence of moral and immoral events of all kinds were significantly associated with a more salient moral identity. This effect was largest when participants themselves engaged in some moral act ($\gamma_{10} = 20.28, t = 13.51, p = <.001$) and smallest when they engaged in an immoral act ($\gamma_{40} = 8.98, t = 3.57, p = <.001$). These effects were characterized by a substantial degree of variability across participants, however, as can be seen by the SDs of the random slopes (see r_{1i} through r_{6i} in the random effects of table 3.3). Comparison of the spread of random slopes to the fixed effects suggests that for many participants moral and immoral events had a much larger positive association with moral identity than indicated by the fixed effects, but for others they had a smaller, or even negative associations. Nevertheless, the fixed effects of the

six different event types together accounted for a substantial proportion of the variance in moral identity. As can be seen in table 3.4, they accounted for approximately 11% of the within-participant variability, and 5% of the total variability.

A somewhat different picture emerged at the level of the participant, where the intercept (i.e., participant mean moral identity) was modelled as a function of between-participant differences in the propensity to report the six event types. The fixed intercept term itself ($\gamma_{00} = 50.74, t = 32.75, p = <.001$) indicates that the model predicted mean salience of moral identity, conditional on typical propensities to report the six types of events (recall these level 2 predictors were all centered around the grand mean), was 50.74 on the 100-point response scale. Predicted mean moral identity varied significantly as a function of the propensity to report engaging in moral and immoral acts. The effect of moral act propensity ($\gamma_{01} = 48.83, t = 4.52, p = <.001$) was consistent with the effect of engaging in a moral act at level 1, with participants with a propensity to engage in more moral acts tending to have a more salient moral identity across occasions. By contrast, the effect of immoral act propensity ($\gamma_{04} = -77.44, t = -3.33, p = <.01$) was in the opposite direction of the effect of engaging in an immoral act. While a discrete immoral act was associated with a more salient moral identity, participants who had a higher propensity to report engaging in immoral action tended to have a *less* chronically salient moral identity. In other words, on occasions when participants reported engaging in an act they deemed immoral they tended to report the goal of being a good person was *more* important than usual for them, but participants who engaged in immoral acts at an above average rate tended to report that goal as being *less* important than a typical participant. None of the other propensity variables proved significant predictors of mean moral identity salience, although the effect of propensity to report being the target of a moral action trended towards significance ($\gamma_{02} = 30.44, t = 1.80, p =$

.079) suggesting that being the target of higher than typical levels of benevolence may be associated with a more salient moral identity. Like their level 1 counterparts, these level two predictors accounted for a non-trivial amount of the variation in moral identity (see table 3.4). Collectively, they accounted for approximately 10% of the between-participant, and 6% of the total variance.

The MLM model also includes estimates of the correlations between all the random effects in the model (see table 3.3). Of particular interest were the correlations between the random intercept (r_{0i}) and the random slopes of all our level 1 event predictors (r_{1i} through r_{6i}). Although they varied in magnitude, these correlations were all negative and moderate to strong (r s between $-.41$ and $-.71$). This pattern of correlations suggests that participants with higher mean levels of identity salience tended to experience less positive event effects at level 1. As hypothesized, participants with a chronically strong moral identity tended to experience smaller fluctuations in the salience of their moral identity due to the occurrence of discrete events. Correlations between random slopes were all positive, by contrast, and ranged in magnitude from small to very large (r s between $.21$ and $.95$). Although we had no hypotheses about how these random slopes would covary, the model suggests that participants whose moral identity responded strongly to any particular type of event also tended to respond strongly to all other event types.

Finally, the phi coefficient ($\varphi = .19$) for our final generic model indicated that there was a small positive temporal dependency in moral identity (residualized on the other effects in the model). In other words, residual moral identity exhibited some stability over time, with instances of high residual moral identity predicting high residual moral identity at the next occasion of measurement, albeit very modestly. Inclusion of AR1 autocorrelative structure led to significant

improvement in model fit ($\chi^2(1) = 96.95, p = < 0.001$). A similar estimate of phi ($\varphi = .20$) and improvement in fit obtained for the other final model.

The negative correlations between the random intercept and slopes indicated participants with stronger moral identities tended to experience smaller event effects, but we were also interested in the association between variability in general (as opposed to variability attributable to the occurrence of events) and moral identity strength. We followed this up with a supplementary exploration of the association between participant's individual variability (in the form of individual SDs) and mean levels of moral identity. Visual inspection suggested an inverted-U shaped relation, so we modelled the association by regressing linear and quadratic individual SDs on mean moral identity. Both linear ($b = -.89, t = -5.43, p, .001$) and quadratic ($b = .04, t = 3.46, p, .001$) terms were significant predictors of mean moral identity. This pattern indicates that participants with very high and very low mean levels of moral identity salience tended to fluctuate less (possible ceiling and floor effects), but that independently of this quadratic effect, participants with higher mean levels of moral identity tended to have less fluctuating moral identities.

Discussion

Some researchers have argued for a flexible perspective on moral identity, in which most variation occurs at the within-person level. Although a wealth of evidence has established that variability in moral identity occurs at *both* the within- and between-person levels, the existing literature tells us very little about the relative magnitude of these two sources of variation in people's everyday lives. Consequently, the situation is profoundly ambiguous: are fluctuations in moral identity in response to the changing circumstances relatively large or small compared to the stable individual differences in chronic salience? In the present study, we addressed this

question employing experience sampling methodology. Participants reported on the salience of their moral identity five times a day over the course of a week. Moral identity was measured both as a generic goal (“In the past hour, how important was it for you to be a moral person?”) and as the importance of participant selected self-relevant moral descriptors. Multilevel modeling was used to decompose these moral identity scores into within- and between-person components, and to explore the association of variability at both these levels with the morally valenced events occurring in participant’s lives. We report four major findings: First, moral identity exhibited both substantial between-person differences and within-person fluctuations. Variation was relatively evenly split between these two levels, with just over half of variability explained by between-person differences in chronic salience. Second, the occurrence of discrete moral and immoral events of all kinds (acts, being target by an act, and witnessing an act) were all associated with increases in the momentary salience of moral identity. Third, between-person differences in the propensity to engage in both moral and immoral acts (but not the propensity to report being the target or witness of acts) were also associated with differences in the chronic salience of moral identity. Participants with stronger moral identities tended to engage in more moral acts, whereas the opposite was true for immoral acts. Fourth, the within-person positive associations between the occurrence of events and the momentary salience of moral identity were consistently *smaller* in participants with a stronger moral identity. Further, stronger moral identities tended to be less variable in general. We discuss each of these findings in further detail below.

In the present study we found that slightly more than half of the variability (55-57%) in moral identity occurred at the level of the participant. This was lower than the proportion reported by Krettenauer et al. (2022) in their daily diary study, as expected from the finer

temporal resolution. Our basic finding that variation is roughly equally split between the two levels is consistent with both character (Blasi, 1983; Carlo et al., 2009; Frimer & Walker, 2009) and socio-cognitive models (Aquino & Reed, 2002; Lapsley, 2016; Stets & Carter, 2011). Intensive repeated measurement revealed that participants exhibited trait-like differentiation in the extent to which their moral identity was chronically salient. They also tended to diverge substantially from their typical levels at any given occasion of measurement, evidencing state-like malleability in response to changing individual contexts. This finding is not consistent with Aquino and Kay's proposal that moral identity typically operates in a flexible mode in the majority of people. If moral identity were flexible our expectation would be to see variability driven primarily by situational fluctuations. We found no evidence that moral identity's state-like fluidity dominated its trait-like stability, or vice versa. Rather moral identity operated in a relatively *balanced* mode in our sample. By contrast, variability in the morally relevant events participants reported were all characterized by substantially smaller proportions of between-person variance (22-34% across the six event types). Evidently our participants were more malleable and less individually differentiated in their moral experiences than in their moral identities.

Moral identity was substantially related to the everyday moral and immoral experiences participants reported having, at both the within- and between-person levels. The occurrence of discrete events were associated with a momentary increase in salience, regardless of the moral valence and the nature of the event. This is largely consistent with the priming literature, which has demonstrated that moral identity can be activated in a variety of ways, including by the mere presentation of moral content (e.g., Aquino et al., 2009, 2011; Leavitt et al., 2016). Although we did not have strong prior expectations, we also highlighted the possibility that

satisfying/frustrating the moral identity goal by personally engaging in moral/immoral action might be associated with a compensatory reduction/increase of the salience of moral identity (Jordan et al., 2011, 2015). We found no evidence that engaging in moral action was associated with decreases in salience, although the positive effect of immoral actions was consistent with this possibility (i.e., moral transgressions made the goal of being a moral person more salient). In fact, engaging in moral action had the largest positive effect on the salience of moral identity, more than twice as large as the effect of engaging in an immoral act. It's also worth noting that all these within-person effects varied quite substantially from participant to participant, as indicated by the relatively large standard deviations of the random effects. Taken together the fixed and random effects of all events accounted for 22% of within-person variability in moral identity (with fully half of this attributable to random effects).

At the level of the participant, the association between events and identity were quite different than at the within-person level. Between-person differences in the chronic salience of moral identity were only significantly predicted by participant's propensity to engage in moral and immoral acts, but not by the propensity to be the target of or witness to acts. Participants with a higher propensity for moral acts tended to have stronger moral identities, consistent with the effect of engaging in a discrete moral act. By contrast, participants with a higher propensity for immoral acts tended to have a less chronically salient moral identity. Thus, although the occurrence of a discrete moral failure (an immoral act) was associated with a *more* salient moral identity, participants who engaged in more immoral acts than their peers tended to prioritize the personal importance of being a good person *less*. These between-person effects are entirely consistent with a host of studies finding that individuals with stronger moral identities tend to engage in more prosocial and less anti-social behaviors, across a variety of behavioural domains

(see Hardy & Carlo, 2011b; Hertz & Krettenauer, 2016; Jennings et al., 2015). We found little evidence that individuals with strong moral identities were more sensitive to the moral features of events in their lives, and thus have a higher propensity to report being the target of or witnessing moral and immoral events. Base rates for these types of events were quite low, however, and our estimates of fixed effects for event propensities were relatively inaccurate (i.e., large SEs), so this null result is not particularly informative. That being said, individual differences in participant's propensity to experience events were substantial predictors of the chronic strength of moral identity. Together they accounted for 10% of individual differences in moral identity, with the bulk of that attributable to the propensity to engage in moral and immoral acts. The strength of this association is roughly twice the size of meta-analytic assessments of the behaviour-identity association for prosocial and anti-social behaviour, which independently each share just under 5% of their variance with individual differences in moral identity (Hertz & Krettenauer, 2016).

The fixed and random effects in our final model accounted for a substantial amount (16%) of the total variability of moral identity, but a great deal of variability remained unexplained by the everyday events our participants judged had some moral significance. Although we expected these events to be related to moral identity, it is hardly surprising that their explanatory power is limited. Identity is a multifaceted construct, and moral identity is only one facet (albeit a central one). For instance, priming facets of identity presumed to be incompatible with the self-transcendent values that comprise the core of moral identity has been demonstrated to reduce the salience of moral identity (Aquino et al., 2009). It may thus be that as competing goals and facets of identity come to the forefront the importance of moral identity becomes momentarily less salient. Likewise, individual differences in moral identity are

plausibly accounted for by the chronic salience of identities which conflict with the moral values people define themselves by.

Although our results generally support a *balanced* rather than flexible perspective, we did find some tentative support for Aquino and Kay's (2019) proposal that moral identity may operate in a more firm mode in the morally gifted. The consistently negative and substantial correlations between the random intercept and random slopes in our multilevel model indicated that the more chronically salient a participant's moral identity was, the less the salience of their moral identity fluctuated in response to events occurring in their lives. We also followed up this finding with a supplementary analysis which showed that stronger moral identities tended to fluctuate less and weaker ones fluctuated more. This finding was independent of the constraints in variability apparent in those with very high (i.e., a ceiling effect) and very low (i.e., a floor effect) mean salience, respectively. It is particularly noteworthy that this association between within-person variability and mean levels was detectable in our sample of typical young adult students. Aquino and Kay's proposal suggested that moral identity may be more situationally stable for moral exemplars, who are characterized by a high degree of overlap between their sense of self and their moral goals and ideals (Colby & Damon, 1992; Frimer & Walker, 2009; Hart & Fegley, 1995; Reimer & Wade-Stein, 2004). Our findings suggest that variability in moral identity might be fruitfully conceptualized as a dimension of individual difference, rather than something which distinguishes the exceptional from the morally typical. The role that individual variability in moral identity plays in moral functioning, independently and in concert with the strength of moral identity, is a potentially interesting line of further research.

Finally, our findings were essentially unaffected by the two strategies we adopted to measure moral identity. Whether participants were asked about the importance of the general

goal of being a good person or the importance of a self-selected set of specific moral characteristics, our results converged. Meta-analytic syntheses of the literature have generally found that the relations between moral identity and behaviour or emotion are not contingent on measurement instruments. We can tentatively expand that general finding to the ESM context and measures of the momentary salience of moral identity.

Limitations

Several limitations of the study need to be acknowledged. First, our data was correlational and we relied entirely on participant self-reports. Although our models imply that moral identity is an outcome predicted by the events participants experience, a great deal of caution is warranted in drawing conclusions about the direction of causation. This is especially the case for the effects of events involving volitional acts performed by participants. Moral and immoral actions could plausibly be construed as the consequences (rather than causes) of variation in moral identity. Second, our sample consisted of university students, most of whom were young adults. This age restriction is potentially consequential because individual variability in moral identity is potentially not only a meaningful individual difference, but also a dimension of developmental change. Rank-order stabilities of personality traits tend to increase between early childhood and middle age (Borghuis et al., 2017; Roberts et al., 2006; Roberts & DelVecchio, 2000; Specht et al., 2011) and moral identity may likewise become more stable and less fluctuating with age. It is thus possible that while moral identity is relatively balanced in how it varies in our young adult sample, it may operate in a more flexible mode in adolescents, and a more firm one later in adulthood. Third, the temporal resolution of the present study may have limited our ability to capture within-person variability. Asking participants to report on moral identity over “the past hour” almost certainly constrained them to aggregate across

situations in which the salience of their moral identity may have been quite different. The difference in variability at the within-person level when moral identity is measured at the timescale of the day (Krettenauer et al., 2022) was lower (36%) than the in the present study (41% to 45%). A finer grained examination then *may* reveal relatively more within-person variation than the current findings. However, a shift from a resolution of an hour to minutes is unlikely to tilt the disposition of variability so dramatically as to support a truly flexible perspective, in which within-person variability dominates between-person differences. Finally, we may have underestimated the between-person variability in moral and immoral events. Past ESM studies involving moral behaviour have found substantially larger between-person differences in moral behaviour than we did (Meindl et al., 2015; Prentice et al., 2020). This is likely the result of differences in behavioural measures; they employed continuous measures of the degree to which participant behaviour enacted moral values, rather than the presence or absence of discrete events. Consequently, the association between events and moral identity may have been underestimated at the between-person level. This possible underestimation does not threaten the basic finding that the association is substantial at *both* the within- and between-person level.

Conclusion

The present study found that variation in moral identity in the everyday life of typical people is relatively balanced between individual differences in chronic salience and situational fluctuation. Further, variability at both these levels is substantially associated with the moral and immoral events occurring in people's lives. While different theoretical perspectives and research questions may lend themselves to focusing on its state-like fluidity over its trait-like stability (or vice versa), we find no empirical support for the notion that variability on either of these levels

merits special emphasis. That being said, exploration of within-person variation of moral identity is underrepresented in the literature. The overwhelming majority of empirical studies restrict themselves entirely to variation at the between-person level, while exploration of within-person variation has until recently been limited to a handful of priming studies in the lab. We feel the application of methodologies like experience sampling hold a great deal of promise as a novel, ecologically valid way to explore variation at both levels.

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Tables

Table 3.1

Means, SDs and Correlations for L1 Variables (centered within-person)

	<i>m</i>	<i>sd</i>	<i>n</i>	1	2	3	4	5	6	7
1. MID Generic	51.34	20.64	5606							
2. MID Specific Values	3.11	0.88	5606	0.656***						
3. Moral act	0.12	0.30	5535	0.277***	0.280***					
4. Moral Target	0.05	0.21	5524	0.102***	0.126***	-0.043**				
5. Moral Witness	0.02	0.13	5527	0.042**	0.046***	-0.037**	-0.016			
6. Immoral Act	0.03	0.16	5526	0.018	0.027*	-0.089***	-0.024	-0.006		
7. Immoral Target	0.01	0.11	5523	0.064***	0.028*	-0.024	-0.024	-0.010	-0.012	
8. Immoral Witness	0.02	0.14	5524	0.043***	0.069***	-0.063***	-0.023	0.037**	-0.011	-0.023

Note: Means are for the uncentered L1 variables, while *sds* and correlations are for L1 variables centered within-person. MID = moral identity. * $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table 3.2

Means, SDs and Correlations for L2 Variables

	<i>m</i>	<i>sd</i>	1	2	3	4	5	6	7
1. MID Generic	50.70	23.99							
2. MID Specific Values	3.10	1.05	0.853***						
3. Moral Act	0.13	0.13	0.160*	0.156*					
4. Moral Target	0.06	0.10	0.236***	0.232***	0.397***				
5. Moral Witness	0.02	0.05	-0.027	0.059	0.238***	0.371***			
6. Immoral Act	0.03	0.06	-0.082	-0.066	0.274***	0.068	0.159*		
7. Immoral Target	0.02	0.03	-0.013	0.080	0.055	0.185**	0.221***	0.063	
8. Immoral Witness	0.02	0.05	0.056	0.135	0.254***	0.383***	0.420***	0.072	0.202**

Note: $N = 223$. * $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table 3.3

Multilevel Regression Parameters for Moral Identity as a Generic Goal Model

	Coef	Robust SE	df	t-value	p	Sig.	
Fixed Effects							
Level 1: Occasion							
Moral Act (γ_{10})	20.28	1.50	5284	13.51	< 0.001	***	
Moral Target (γ_{20})	13.83	1.37	5284	10.13	< 0.001	***	
Moral Witness (γ_{30})	11.99	2.81	5284	4.27	< 0.001	***	
Immoral Act (γ_{40})	8.98	2.51	5284	3.57	< 0.001	***	
Immoral Target (γ_{50})	15.69	2.59	5284	6.06	< 0.001	***	
Immoral Witness (γ_{60})	11.33	2.41	5284	4.71	< 0.001	***	
Level 2: Participant							
Intercept (γ_{00})	50.74	1.55	5284	32.75	< 0.001	***	
Moral Act Propensity (γ_{01})	48.83	10.81	216	4.52	< 0.001	***	
Moral Target Propensity (γ_{02})	30.44	16.88	216	1.80	0.079	†	
Moral Witness Propensity (γ_{03})	-32.22	27.77	216	-1.16	0.259		
Immoral Act Propensity (γ_{04})	-77.44	23.27	216	-3.33	0.004	**	
Immoral Target Propensity (γ_{05})	6.51	31.81	216	0.21	0.840		
Immoral Witness Propensity (γ_{06})	-29.28	31.52	216	-0.93	0.371		
Random Effects							
	SD	1	2	Correlations			
1. Intercept (r_{0i})	22.47			3	4	5	6
2. Moral Act (r_{1i})	17.89	-0.694					
3. Moral Target (r_{2i})	11.23	-0.523	0.953				
4. Moral Witness (r_{3i})	16.47	-0.408	0.417	0.544			
5. Immoral Act (r_{4i})	19.65	-0.711	0.715	0.552	0.232		
6. Immoral Target (r_{5i})	15.45	-0.422	0.819	0.872	0.460	0.213	
7. Immoral Witness (r_{6i})	16.54	-0.435	0.703	0.835	0.669	0.234	0.720
Residual (e_{ti})	18.82						

Note: Significance of model fixed effects are calculated from robust SEs and Satterthwaite corrected t-tests. * $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed. † $p < .10$, two-tailed.

Table 3.4

*Multilevel Effect Sizes (Proportions of Variance Explained) for the Generic Moral Identity**Model*

Source	Outcome Variance of Interest		
	Total	Within	Between
L1 predictors via fixed slopes (f_1)	0.048	0.108	-
L2 predictors via fixed slopes (f_2)	0.057	-	0.102
L1 predictors via random slope (co)variation (v)	0.050	0.112	-
Person-specific outcome means via random intercepts (m)	0.497	-	0.898
All predictors via fixed slopes (f)	0.105	-	-
Predictors via fixed slopes and random slope (co)variation (fv)	0.155	0.220	-
All sources (fvm)	0.652	-	-

Note: See Rights and Sterba (2019) for a comprehensive discussion of their integrative

framework of MLM effect sizes.

Supplemental Materials

Table S3.1

Means, SDs and Correlations for L1 Variables (uncentered)

	<i>m</i>	<i>sd</i>	<i>n</i>	1	2	3	4	5	6	7
1. MID Generic	51.34	20.64	5606							
2. MID Specific Values	3.11	0.88	5606	0.772***						
3. Moral act	0.12	0.30	5535	0.214***	0.213***					
4. Moral Target	0.05	0.21	5524	0.114***	0.13***	0.015				
5. Moral Witness	0.02	0.13	5527	0.024	0.033*	<.001	0.006			
6. Immoral Act	0.03	0.16	5526	-0.012	0.002	-0.039**	-0.014	0.011		
7. Immoral Target	0.01	0.11	5523	0.042**	0.029*	-0.016	-0.013	-0.004	-0.001	
8. Immoral Witness	0.02	0.14	5524	0.040**	0.066***	-0.026	-0.001	0.055***	-0.003	-0.007

Note: MID = moral identity. * $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table S3.2

Multilevel Regression Parameters for Moral Identity as Three Self-Relevant Values Model

	Robust		<i>df</i>	<i>t</i> -value	<i>p</i>	Sig.	
	Coef	SE					
Fixed Effects							
Level 1: Occasion							
Moral Act (γ_{10})	0.84	0.06	5284	13.03	<0.001	***	
Moral Target (γ_{20})	0.69	0.06	5284	11.21	<0.001	***	
Moral Witness (γ_{30})	0.54	0.10	5284	5.22	<0.001	***	
Immoral Act (γ_{40})	0.36	0.09	5284	3.95	<0.001	***	
Immoral Target (γ_{50})	0.33	0.11	5284	3.03	0.004	**	
Immoral Witness (γ_{60})	0.54	0.09	5284	6.24	<0.001	***	
Level 2: Participant							
Intercept (γ_{00})	3.10	0.07	5284	45.34	<0.001	***	
Moral Act Propensity (γ_{01})	1.99	0.51	216	3.89	<0.001	***	
Moral Target Propensity (γ_{02})	1.20	0.75	216	1.61	0.116		
Moral Witness Propensity (γ_{03})	-1.65	1.55	216	-1.07	0.298		
Immoral Act Propensity (γ_{04})	-2.91	1.12	216	-2.59	0.019	*	
Immoral Target Propensity (γ_{05})	2.94	1.81	216	1.63	0.122		
Immoral Witness Propensity (γ_{06})	-0.10	1.49	216	-0.07	0.947		
Random Effects							
	<i>SD</i>	1	2	Correlations			
1. Intercept (r_{0i})	0.99			3	4	5	6
2. Moral Act (r_{1i})	0.78	-0.705					
3. Moral Target (r_{2i})	0.54	-0.704	0.971				
4. Moral Witness (r_{3i})	0.54	-0.680	0.408	0.474			
5. Immoral Act (r_{4i})	0.74	-0.593	0.922	0.804	0.242		
6. Immoral Target (r_{5i})	0.59	-0.480	0.829	0.831	0.641	0.737	
7. Immoral Witness (r_{6i})	0.56	-0.620	0.672	0.802	0.800	0.380	0.795
Residual (e_{ti})	0.80						

Note: Significance of model fixed effects are calculated from robust SEs and Satterthwaite corrected *t*-tests. **p* < .05, two-tailed. ***p* < .01, two-tailed. ****p* < .001, two-tailed. †*p* < .10, two-tailed.

Table S3.3

Multilevel Effect Sizes (Proportions of Variance Explained) for the Three Self-Relevant Values

Model

Source	Outcome Variance of Interest		
	Total	Within	Between
L1 predictors via fixed slopes (f_1)	0.047	0.109	-
L2 predictors via fixed slopes (f_2)	0.055	-	0.096
L1 predictors via random slope (co)variation (v)	0.045	0.106	-
Person-specific outcome means via random intercepts (m)	0.517	-	0.904
All predictors via fixed slopes (f)	0.102	-	-
Predictors via fixed slopes and random slope (co)variation (fv)	0.147	0.214	-
All sources (fv_m)	0.664	-	-

Note: See Rights and Sterba (2019) for a comprehensive discussion of their integrative

framework of MLM effect sizes.

CHAPTER 4: MORAL IDENTITY AND MORAL BEHAVIOUR: ASSOCIATIONS WITHIN- AND BETWEEN-PERSON

Since its inception, the promise of moral identity has been to help explain why people engage in moral behaviour. Having surveyed the linkage between moral cognition and behaviour, Blasi concluded that a conceptual and empirical gap existed between people's judgments about right and wrong and their subsequent acts (Blasi, 1980). Moral identity, a core component of Blasi's *Self Model* (1983, 2005), was proposed as a bridge across this gap. In a nutshell, he argued that an essential need for self-consistency would lead one to behave in ways that cohere with one's self-conception. People for whom moral values and commitments are central to their self-image are then more likely to translate their ethical judgments into action. Alternative approaches to conceptualizing moral identity have proliferated in the more than four decades since Blasi's seminal proposal, but the explanation of moral action continues to be a central purpose of essentially all those theories.

As a predictor of moral action, moral identity has largely fulfilled its promise. A robust consensus exists in the literature that stronger moral identity is associated with engagement in moral behaviour and the avoidance of immoral behaviour (Lapsley, In Press). Systematic review and meta-analysis have demonstrated that moral identity consistently and significantly predicts behaviour, across a wide variety of moral (e.g., cooperation, volunteerism, honesty) and immoral (e.g., aggression, bullying, cheating) behavioural domains (Hertz & Krettenauer, 2016; Jennings et al., 2015). This is not to say that moral identity, in and of itself, can completely explain people's moral actions. Meta-analytic estimates of its effect size ($r = .22$, 95% CI [.19, .25]) are modest, and not dramatically higher than other predictors such as moral judgment (Stams et al., 2006; Villegas De Posada & Vargas-Trujillo, 2015) or moral emotions (Eisenberg & Miller,

1987; Malti & Krettenauer, 2013; Miller & Eisenberg, 1988). Nonetheless, there is little doubt that moral identity is an important determinant of moral functioning more generally (e.g., Jennings et al., 2015; Lefebvre & Krettenauer, 2019), and behaviour specifically. The means by which moral identity exerts its influence, however, is less certain.

An exhaustive review of the various models of moral identity is beyond the scope of our purposes (for reviews see Hardy & Carlo, 2011; Jennings et al., 2015; Krettenauer, 2024), but a distinction is often drawn between two approaches: trait models and socio-cognitive models. Trait models propose that the centrality or importance of moral values to identity is a dimension of individual difference which is relatively stable over time³ and drives cross-context consistency in moral behaviour (e.g., Blasi, 1983). Socio-cognitive models, by contrast, propose that moral identity is a dynamic and malleable self-schema or facet of identity. These moral self-schemas influence attention, information processing, and behaviour, but only in moments and situations in which they are accessible and salient (e.g., Aquino et al., 2009; Lapsley, 2016). While trait and socio-cognitive perspectives may seem incompatible at first glance, emphasizing as they do variability at the between- and within-person levels, respectively, they are arguably more compatible than not.

Socio-cognitive perspectives propose that the momentary salience of schemas are the ultimate explanatory mechanism of moral identity, but these perspectives recover individual differences in the form of the chronic salience of those schemas (Aquino et al., 2009; Narvaez et

³ Note both trait and socio-cognitive models generally offer accounts of developmental change in moral identity, but we do not touch on that important source of variability in the present context (for reviews of development in moral identity see Hardy & Carlo, 2011; Krettenauer & Hertz, 2015; Narvaez & Lapsley, 2009).

al., 2006). Thus, not only does an individual's moral identity fluctuate in response to the changing features of the situations in which they find themselves, but people also differ from each other in the extent to which these moral self-conceptions are persistently salient. Moral identity can then be conceived of as varying at two conceptually distinct and analytically independent levels of analysis: within- and between-persons. Although trait models are largely silent on the within-person level of analysis, they converge with socio-cognitive perspectives at the between-person level. A close analogue to this reconciliation is Whole Trait theory, in which socio-cognitive mechanisms are argued to give rise to both trait-like differences and situational fluctuations in the manifestation of personality traits (Fleeson & Jayawickreme, 2015).

There is ample evidence that moral identity itself varies at both these levels of analysis. Between-person differences in moral identity have been reliably measured (e.g., Aquino & Reed, 2002), within-person changes in salience have been experimentally induced (e.g., Aquino et al., 2009), and intensive longitudinal measurement has revealed substantial variance at both these levels in everyday experience (Krettenauer et al., 2022; Lefebvre & Krettenauer, 2024). What is far less clear is whether the identity-behaviour link is driven primarily by covariation at the within- or between-person levels (or whether it operates similarly at both levels). In other words, is the linkage between moral identity and morally relevant behaviour primarily between situational, transient fluctuations in the salience of moral identity and discrete behaviours or between durable individual differences in moral identity and behavioural dispositions (or both)? This is the gap the present study aims to address.

The current empirical record provides evidence for this association at both within- and between-person levels. Evidence is particularly compelling at the between-person level, where individual differences in moral identity have been robustly linked to a wide array of morally

relevant behaviours in hundreds of empirical studies (Hertz & Krettenauer, 2016; Jennings et al., 2015). A stronger moral identity has been associated with an increased tendency to engage in prosocial behaviours such as helping (Pratt et al., 2009), charitable donation (Hardy et al., 2015), fairness (Stets, 2011), organizational citizenship (McFerran et al., 2010), volunteering (Aquino & Reed, 2002) and whistleblowing (Wen & Chen, 2016), to name a few. Likewise, people with stronger moral identities display a decreased propensity for a variety of antisocial behaviours, including aggression (Hardy et al., 2015), bullying (Wang et al., 2019), cheating and doping in sport (Hurst, Kavussanu, et al., 2022; Hurst, Ring, et al., 2022) and violence (Na & Paternoster, 2019). Evidence for the identity-behaviour association also exists at the within-person level, although it comes from a small number of experimental studies in which the salience of moral identity is primed (or attenuated by the priming of competing facets of identity) in the laboratory. Such priming is associated with increases in a handful of prosocial behaviours: willingness to donate time to charities with overtly moral causes (Reed et al., 2007), making personally costly prosocial business decisions in a hypothetical task (study 1, Aquino et al., 2009), honesty about unearned advantages (Carter, 2013), generosity in the dictator game (Aquino et al., 2011), and cooperative behaviour in a public goods investment task (study 4, Aquino et al., 2009). A less salient moral identity has also been associated with increased intention to lie and actual lying in salary negotiation tasks (studies 2 and 3, Aquino et al., 2009), and increased willingness of university athletes to injure an opponent in a high stakes sporting context (Kavussanu et al., 2015).

Krettenauer and Hertz (2016) conducted a meta-analysis of the identity-behaviour relation which distinguished studies in which moral identity was operationalized as an individual difference from those in which within-person variation was experimentally induced. Moral

identity proved a significant predictor of behaviour in both these types of studies. Further, they found that effect sizes were not significantly moderated by this distinction. On its face, this finding suggests that moral identity operates with relatively similar importance as a predictor of behaviour on the within- and between-person levels. However, there are good reasons to be cautious about drawing such a conclusion.

First, the overwhelming majority of studies which have investigated the identity-behaviour association have conceptualized and measured moral identity as an individual difference, with only a handful examining the association at the within-person level. This is reflected in the relatively small confidence intervals around the effect size estimate for between-person studies ($r = .23$, 95% CI [.20, .25]) compared to those around the within-person estimate ($r = .12$, 95% CI [.02, .21]) reported by Krettenauer and Hertz. The finding that these two effect sizes did not significantly differ is not particularly informative, because the small number of extant within-person studies simply did not permit a precise estimate of how fluctuations in the salience of moral identity are predictive of morally relevant behaviour. A related limitation of the priming literature that also stems from its modest number of studies is its relatively limited coverage of morally relevant behaviours. Unlike research which takes an individual difference perspective, which as we've already highlighted is comprised of a large number of studies examining the identity-behaviour linkage across a broad range of behaviours, priming studies have explored moral identity's influence only on a handful of behaviours. It is not clear that this limited coverage permits any general conclusions about how fluctuations in moral identity relate to moral behaviour, broadly construed.

Second, a number of methodological limitations threaten the validity of existing findings, particularly of priming studies (which explore the within-person level). The most commonly

employed procedure for priming moral identity involves prompting participants to write a story about themselves which includes a set of positive moral characteristic words (e.g., kind, caring, just, honest, etc.). Such priming has been shown to enhance the salience of the moral dimension of identity when compared to control conditions in which participants write stories about themselves using a set of non-moral positive traits (Aquino et al., 2007; Carter, 2013), or everyday objects (Aquino et al., 2009; Kavussanu et al., 2015; Reed et al., 2007; Wang & Tong, 2015). While such procedures facilitate causal inference about how experimentally controlled changes in the salience of moral identity impacts subsequent behaviour, they come at some cost to ecological validity. These priming procedures are not representative of (and may not be good analogues for) the features of contexts and situations which might drive fluctuations in the salience of moral identity in people's everyday lives. These same concerns apply to the assessment of moral behaviour in artificial and potentially unrepresentative experimental settings. It is thus questionable whether the priming literature alone can serve as a source of ecologically valid estimates of the relative importance of within-person fluctuations of moral identity in predicting everyday moral behaviours.

While ecological validity is arguably less of a concern at the between-person level, findings about the association between individual differences in moral identity and moral behaviour do confront their own threats to validity. Measures of moral identity and behaviour in these studies most commonly involve self- or other-reports that require retrospection, aggregation and/or global generalization about the self-importance of moral values or engagement in moral behaviours. Such reports rely on the recall and summary of past states and experiences which may not be readily available in autobiographical memory. Participants asked to engage in such retrospective summary tend to employ a variety of heuristic strategies to

generate plausible responses, and consequently introduce not only random error, but significant memory biases (Henry et al., 1994; Stone & Shiffman, 2010). This is particularly the case when people are asked to retrospect about events which occur relatively frequently, but on an irregular schedule (Schwarz, 2007), as morally relevant behaviour does (Hofmann et al., 2014). For example, when memories of events do not come readily to mind, they may be reconstructed in ways that conform with a person's generalized knowledge or beliefs about themselves (Robinson & Clore, 2002; Ross, 1989). Such a bias could plausibly inflate the association between individual differences in moral identity and moral behaviour, because participants reconstruct summaries of past behaviours in ways that are consistent with their personal theories about themselves as moral beings.

The question then is how to address the relative importance of moral identity as a predictor of behaviour at both the within- and between-person levels, while mitigating some of the limitations of cross-sectional survey and priming studies? One approach is to employ experience sampling methods (ESM; Beal, 2015; Bolger et al., 2003; Bolger & Laurenceau, 2013). ESM involves the intensive repeated measurement of phenomena of interest, as they occur in everyday life. Applying ESM to moral identity and moral behaviour would allow for variation in both those phenomena to be partitioned into within-person and between-person components and for their association at each of these levels to be simultaneously and independently estimated. Further, ESM allows for the capture of situation to situation experiences across natural settings, thereby enhancing ecological validity. In contrast to laboratory studies, which often isolate participants from everyday contexts, ESM enables observation and analysis of these phenomena as they occur naturally, allowing for conclusions that more accurately reflect functioning in natural environments. ESM also reduces the need for

participant retrospection and aggregation and can thus generate estimates of individual differences less prone to memory bias (Beal, 2015; Schwarz, 2007). While these techniques have been applied to moral identity (Krettenauer et al., 2022) and behaviour (Hofmann et al., 2014; Meindl et al., 2015; Prentice et al., 2020), to our knowledge no extant study has simultaneously examined both moral identity and moral behaviour using ESM. While employing ESM to study the identity-behaviour association promises substantial benefits, it also urges us to reconsider the most appropriate conceptualization of moral identity.

Conceptualizing Moral Identity in the Everyday Context

Employing ESM to study the identity-behaviour association entails a practical and conceptual complication: moral action in everyday life is necessarily more variable than behaviour studied in the lab or with a survey instrument. Our interest was not in how moral identity relates to action in a particular behavioural domain or under a tightly controlled experimental context, but rather in its relation to a representative sample of the richly varied day to day acts which people judge have some moral significance (both positively and negatively valenced). As Hofmann and colleagues (2014) remarked in their ESM study of morality in everyday life, “moral experiences were surprisingly frequent and manifold” (p. 1340). Their study found that participant acts self-identified as moral or immoral implicated a wide array of specific values (e.g., care/harm, authority/subversion, self-discipline) and behavioural enactments, in a variety of contexts. Of particular note was their finding that people reported engaging in morally relevant behaviour frequently in both public and private contexts. This greater variability in behaviour and especially context suggest a need to expand our conceptualization of moral identity to consider not only its salience, but also the different types of motivation which may support it.

Various theories address the distinction between motivations that are internal to the self and those which reference external standards (Fujita & MacGregor, 2012; Ryan & Deci, 2017) and their behavioural consequences in an array of domains such as health behaviour, academic and job achievement, and pro-environmental behaviour (e.g., Aarts & Elliot, 2012; Mann et al., 2013; Nielsen, 2017). Likewise, moral identity may vary in the extent to which it is underwritten by internal and external motivations. The desire to maintain a moral identity may be driven by an intrinsic desire to embody deeply held values and act in self-coherent ways (i.e., internal motivation). At the same time, that desire may also be rooted in criteria external to the self, specifically seeking the recognition or avoiding the opprobrium of one's community (i.e., external motivation). Although the distinction between internal and external motivation to maintain one's moral identity is not a central feature in most theories, it is potentially an important one given our goal of probing action that occurs in everyday contexts, both private and public. Public contexts may amplify the influence of external motivations, providing an additional impetus for individuals to act in ways that align with moral expectations (Andreoni & Bernheim, 2009; Haley & Fessler, 2005; Wedekind & Milinski, 2000). The relative absence of social scrutiny in private contexts, however, may render external identity motivation less effective at engendering moral behaviour. By contrast, internal identity motivations would be expected to predict moral behaviour regardless of the reputational contingencies afforded by a particular context. This motivational distinction could thus have significant implications for understanding the consistency of moral behavior across different settings, beyond the mere salience of moral identity.

Socio-cognitive models of moral identity hold that it consists of moral self-schemas which vary in both momentary and chronic salience (Aquino et al., 2009; Lapsley, 2016;

Narvaez & Lapsley, 2009). These theories generally take a fairly expansive view of what precisely constitutes such a moral self-schema, describing them as “complex knowledge structures” (Aquino et al., 2009, p. 124) consisting of moral values, goals, behavioural scripts and prototypes. Such a broad conceptualization is compatible with the notion that moral identity may be underwritten by more or less internal and external motivations, but socio-cognitive models and measures do not directly or systematically address this possibility. One frequently employed measure of moral identity, the Self-Importance of Moral Identity Questionnaire (SIMIQ; Aquino & Reed, 2002) does obliquely touch on the motivational character of moral identity. The SIMIQ prompts participants to envisage a prototypically moral person (who embodies 9 core moral characteristics) and consider how such a person would think, feel and act. Having evoked a mental representation of a highly moral person, participants then indicate their agreement to a series of ten statements representing two facets of moral identity, dubbed internalization and symbolization. The *internalization* subscale captures the inwardly defined aspect of moral identity (e.g., "Having these characteristics is an important part of my sense of self"), whereas the *symbolization* subscale captures its outward, publicly defined aspect (e.g., "The types of things I do in my spare time (e.g., hobbies) clearly identify me as having these characteristics"). Internalization and symbolization can thus be said to share some conceptual overlap with internal and external motivation, respectively. They do so imperfectly, however. Internalization, for instance, includes items referencing shame, which is often employed as a marker of more external motivations for acting (e.g., Assor et al., 2009; Ryan & Connell, 1989). Symbolization items, while referencing public manifestations of moral characteristics, makes no reference to motivation whatsoever. Given our interest in probing both the salience and the

motivational character of moral identity as predictors of moral behaviour, adopting this approach which only very imperfectly captures motivation was not an attractive option.

Instead, we adopted a recently proposed model which reconceptualizes moral identity: moral identity goal theory (Krettenauer, 2020, 2022b, 2022a). It argues that moral identity can be fruitfully thought of as an identity goal, specifically, the goal of being a moral person. Drawing on the self-regulation and goal-directed behaviour literature, Krettenauer suggested that the moral identity goal (like other goals) can be understood as varying not just in its salience (momentary or chronic) but also along several characteristic dimensions. According to this perspective, variation in goal characteristics is systematically related to the strategies people adopt and the behaviours they engage in (or avoid) to attain that goal (Krettenauer, 2022b). Moral identity goal theory proposes motivation as one of the focal goal characteristics in which variation is particularly consequential in influencing moral behaviour. Specifically, it proposes that internal and external motivations represent two conceptually distinct (if not orthogonal) dimensions of moral identity, each with their own behavioural implications. Whereas moral identity which is internally motivated is expected to be a robust predictor of behaviour across contexts, external identity motivation is expected to predict behaviour only in contexts and situations that entail reputational costs and benefits.

Motivation is not often explicitly captured in moral identity research, but a handful of studies have demonstrated that people differ substantially in the extent to which the integration of moral values is underwritten by more or less internal and external motives (Hardy et al., 2008; Krettenauer & Mosleh, 2013; Lefebvre et al., 2024). There is also some indirect evidence suggestive of the predicted associations with behaviour. Across many studies of the relation of individual differences in the two subscales of the SIMIQ to a wide variety of morally relevant

behaviour, the internalization subscale has proven a stronger and more consistent predictor than the symbolization subscale (Hertz & Krettenauer, 2016; Jennings et al., 2015). This suggests, to the extent that the internalization subscale taps internal motivation, that internal identity motivation is the better predictor of cross-context consistency in moral behaviour. Likewise, studies showing that symbolization can motivate moral behaviour are suggestive of the expected contingent effect of external motivation. Winterich and colleagues found that symbolization predicted engaging in moral behaviour, but only in the presence of reputational costs and benefits (Winterich, Aquino, et al., 2013; Winterich, Mittal, et al., 2013). Whether the differential effects of motivation on behaviour occur primarily at the within- or between-person remains an open question.

The Present Study

In the present study we employed experience sampling methods to assess moral identity and the occurrence of morally relevant behaviour, and whether those behaviours occurred in public or private contexts, multiple times each day over the course of a week. We operationalized moral identity as a goal which can vary not only in its momentary and chronic salience, but also in the motivations which underpin it (internal/external). Using multilevel binary logistic models (Bolger & Laurenceau, 2013; Raudenbush & Bryk, 2002), we partitioned variability in the occurrence of everyday moral and immoral acts into between-person differences (i.e., individual differences in behavioural propensity) and within-person fluctuations (i.e., the occurrence of discrete behaviours). We then modeled how the salience of moral identity was associated with moral and immoral behaviour, at both the between- and within-person levels. We likewise explored how internal and external motivation were associated with

behaviour at the between- and within-person levels, above and beyond mere salience, and how those associations varied across the contexts (public/private) in which they occurred.

We expected the following findings:

1. Given the existing evidence for the association between individual differences in moral identity and engagement in a variety of morally relevant behaviours, we expected to replicate that finding employing ESM. More specifically, we expect that the chronic salience of promotion-oriented moral identity will be a significant and positive predictor of the propensity to engage in everyday moral acts. We likewise expect the chronic salience of prevention-oriented moral identity will be a significant negative predictor of the propensity for everyday immoral acts.

2. We also expected that within-person fluctuations in the salience of moral identity (as opposed to its chronic levels) would be associated with engaging in discrete moral and immoral acts. The moral identity priming literature has demonstrated in a handful of studies that the induced activation of moral identity is associated with more moral and less immoral behaviour, but those experimental conditions (in which activation of moral identity precedes a behavioural response, establishing causal precedence) are not analogous to the sampling of everyday experience (in which the salience of moral identity and the occurrence of behaviour are measured simultaneously). Consequently, while we expected to find associations between the occurrence of discrete moral and immoral behaviours and the salience of moral identity, we did not have a priori hypotheses about the nature of those associations.

3. As proposed by Krettenauer (2022b) we hypothesized that the motivational character of the moral identity goal would be predictive of both moral and

immoral behaviour, above and beyond its mere salience. We expected that internal motivation would be predictive of engaging in more moral and less immoral behaviour. Internal motivation, driven by intrinsic concerns with self-coherence and consistency, was expected to be a robust predictor of behaviour across contexts. By contrast, we expected the effects of external motivation to be contingent on the perceived presence of reputational benefits and costs of acting in given situation. External motivation was thus expected to be a weaker predictor of behaviour than internal motivation (or even a non-significant predictor) across contexts, but to play a larger role in predicting behaviour occurring in contexts which participants perceived as public rather than private. We did not have a priori hypotheses about whether these motivational effects would manifest primarily at the within- or between-person levels (or at both levels).

Method

Participants

Participants were two hundred and twenty-four students recruited from a public university in Southern Ontario, Canada. The sample was roughly gender balanced (125 women, 92 men, and 6 who preferred to self-identity or not reveal their gender identity), with a mean age of 19.74 years ($SD = 3.41$). Participants were predominantly born in Canada (77%) and identified as White ($n = 114$), South Asian ($n = 35$), East/Southeast Asian ($n = 25$), Black ($n = 11$), Latino/a ($n = 6$), self-identified as another ethnicity ($n = 11$) or declined to provide information about ethnicity ($n = 22$). With respect to socioeconomic status, participants predominantly self-identified as middle ($n = 97$), upper-middle ($n = 70$) and lower-middle class ($n = 36$), with a small number identifying as lower ($n = 8$) and upper class ($n = 6$). One

participant failed to respond to any of the study ESM prompts, and so was excluded from analysis.

Procedures

Participants were recruited primarily from a university psychology undergraduate pool (80%), but participation was open to any currently enrolled graduate or undergraduate student. Interested potential participants attended a virtual intake meeting in groups of one to six. During the intake meeting the purpose and nature of the study were explained by the first author and participants were given the opportunity to ask questions. Participants were then individually moved into a private breakout room and given a chance to ask any remaining questions before providing consent to participate in the study. Consenting participants provided contact information (email address and mobile number) and were enrolled in the study. Recording of consent and contact information during the intake sessions and all other phases of data collection for the study were administered using the FormR automated survey framework (Arslan et al., 2020).

Data collection for the study was conducted in two phases: a baseline survey phase and an experience sampling phase. Following their intake meeting participants were emailed a link to an online *baseline survey*. The baseline survey included a variety of individual difference and demographic measures. On the day following completion of the baseline survey participants automatically began the *experience sampling* phase of the study, which lasted for seven days. Each day during the experience sampling phase participants were prompted, via links embedded in text messages sent to their personal mobile devices, to report on the salience of their moral identity and the occurrence and nature of any morally relevant behaviour. These prompts were sent out to participants five times each day on a randomized schedule, during an eleven-hour

period following the time they reported typically starting their day (e.g., a participant who indicated their day typically started at 8am would receive these short surveys between 8am and 7pm). These short surveys occurred with a minimum interval of 100 minutes between them and expired if not completed within 40 minutes. Daily surveys were necessarily brief and designed to take a typical participant no more than 2-3 minutes to complete. On days when participants reported the occurrence of one or more moral or immoral behaviours, they were additionally prompted in the evening to complete a more detailed end-of-day survey about those events.

Compensation was provided for each component of the study. Participants were paid \$4.8 for attending the intake session and \$3.2 for completing the baseline survey (alternatively, participants enrolled in psychology course could opt to receive course credit instead of financial compensation for these two components). They were also compensated based on the number of short surveys completed: \$1 for the first 15, \$2 for the next 10, and \$3 for the final ten. Participants were also compensated \$25 for completing all of the end-of-day surveys for which they qualified. Thus a participant who completed all the components of the study without missing any surveys was compensated a maximum of \$108. This project was reviewed and approved by the Wilfrid Laurier University Research Ethics Board (#7211).

Measures

All measures for the present study were self-reported and completed up to five times per day for seven days, for a total of 35 possible repeated measurements, depending on individual completion rates. At each occasion of measurement participants were asked to report on the importance of their moral identity, their internal and external motivations, and any moral or immoral acts they engaged in, all during the “past hour”. For a comprehensive description of all

ESM measures (not all of which are relevant to this present work) see Appendix A for this dissertation.

Moral Identity Salience

Moral identity was assessed from both the promotion (striving to be a good person) and prevention (avoiding being a bad person) orientation on each short survey. On each occasion of measurement, the salience of the moral identity goal was measured with two items, which referenced the promotion goal (“In the past hour, how important was it for you to be a moral person?”) and the prevention goal (“In the past hour, how important was it for you to avoid being an immoral person?”). Participant responses to these two items were registered on a slider anchored with the labels “Not at all” (0) and “Very much” (100). In addition to these occasion-level measures of moral identity, we also computed mean promotion and prevention scores at the level of the participant. These participant mean scores represented individual differences in the chronic salience of moral identity.

Moral Identity Motivation

Moral identity motivation was captured at each occasion of measurement with an abbreviated and modified version of the moral identity motivation questionnaire (Lefebvre et al., 2024). Participants were asked to consider their experience in the past hour and indicate their agreement with eight statements capturing both internal (e.g., “it was important for me to be the type of person I really want to be”, “it was important for me not to betray my values and ideals”) and external motivations (e.g., “it was important for me to show others that I am a good person”, “it was important for me to show others that I am not a bad person”). Participants indicated their agreement with these items on a five-point scale (1-Strongly disagree, 2-Somewhat disagree, 3-Neither agree nor disagree, 4-Somewhat agree, 5-Strongly agree). In order to reduce potential

fatigue, participants could also opt out of responding to the eight motivation items by checking a box labelled “None of these statements were relevant in the past hour”.

A multilevel confirmatory factor analysis (CFA) was conducted to evaluate whether our motivation measure conformed to the expected two-factor structure (with internal items loading on a single latent factor and external items loading on a second latent factor) at both the level of occasions of measurement and at the level of the participant. A two-factor tau equivalent model had very good fit to the data ($\chi^2(44) = 432.93, p \leq .001, RMSEA = .055$ 90% CI[.051, .061], CFI = .969, SRMR_{within} = .032, SRMR_{between} = .036). Composite reliabilities were good for internal and external motivation at the occasion level (internal $\omega^w = .83$, external $\omega^w = .86$) and excellent at the participant level (internal $\omega^{2l} = .88$, external $\omega^{2l} = .93$)(for additional information about multilevel reliabilities, see Lai, 2021).

Moral and Immoral Acts

Participants were also asked to report whether they had engaged in any behaviour which they judged moral or immoral (adapted from Hofmann et al., 2014). On each occasion of measurement participants were asked to report whether they had engaged in any moral acts (“I did something moral”) or immoral acts (“I did something immoral”) in the past hour. Survey questions did not include a definition of what would constitute a moral or immoral act. Instructions during the intake session made clear that participants should use their own judgment about which actions in their lives they considered morally right/good or wrong/bad. Moral and immoral acts were represented at the occasion-level by two binary variables indicating the occurrence (1) or non-occurrence (0) of each those behaviours. Participants were also prompted to provide a brief written description of any behaviour that occurred. Finally, participants also reported the context in which each reported act occurred (“Where did this (im)moral act happen?

Select the option that best describes where it took place”). Response options included in-person public acts (“In a public space, where other people could have been around”) and private acts (“In a private space, where only the target of my action was around”), online/virtual public acts (“In a public online space (e.g., chat group, message board, Facebook wall, etc.)”) and private acts (“In a private online space / via text or direct message”), and acts which occurred in contexts that fit none of those four categories (“Other”).

A total of 684 distinct moral (participant $M = 3.05$) and 158 immoral (participant $M = .71$) acts were reported across all participants, meaning that a typical participant reported engaging in just under four morally significant acts over the course of the weeklong ESM phase. Participant descriptions indicated they construed a wide variety of behaviours as having moral significance, from modest acts of kindness toward loved ones, to acts of generosity directed towards strangers, or upholding personal commitments to themselves or others. Descriptions of immoral acts revealed similarly varied types of behaviours, from uttering insults, to rudeness, theft and dishonesty. Both moral (public = 293, private = 253) and immoral (public = 55, private = 69) acts tended to be fairly evenly distributed between public and private contexts. Reported behaviours occurred predominantly in-person for both moral (in person = 485, online = 61) and immoral (in person = 101, online = 23) acts.

Analysis Plan

Our hypotheses were tested with multilevel models (MLMs; Raudenbush & Bryk, 2002) in which occasions of measurement (level 1) were nested within participants (level 2). Specifically, we employed binary logistic multilevel regression to model the occurrence of moral (0 = no moral act, 1 = moral act) and immoral acts (0 = no immoral act, 1 = immoral act). We separately modeled the probability of moral and immoral acts as a function of the momentary

salience of moral identity and both internal and external motivation at level 1 and participant mean moral identity salience and both mean internal and mean external motivation at level 2. We employed promotion-oriented moral identity as a predictor (at both levels) in modeling moral acts, but used prevention-oriented moral identity as a predictor in modeling immoral acts⁴. Random slopes for level 1 predictors (i.e., across participant variability in level 1 fixed effects) and correlations between random effects were included in all models, except in cases where difficulty with model convergence required excluding them from a model.

Model construction proceeded in three distinct stages. First, we began with the estimation of a null (or unconditional) model for each measure of moral identity. The null model partitions variance in an outcome into within- (level 1) and between-person (level 2) variance and permits the calculation of an intraclass correlation coefficient (ICC(1)). The ICC(1) in the present context reflects the proportion of total variance in an outcome which is attributable to between-participant differences (as opposed to within-participant fluctuations). Second, we fit intermediate models which included moral identity salience as predictors, but *not* internal or external motivation. The rationale for this intermediate step was to provide a model against which a full model that included the effects of internal and external motivation could be compared. Next, we fit final models which included both moral identity salience and motivation scores as predictors. Comparisons between intermediate and final models were made by testing

⁴ We did not have any substantive interest in the effect of time on moral and immoral acts, but we explored the effects of duration of participation (within and across the seven days of participation) by fitting alternative models which included daily survey number (0-4) and day of participation (0-6) as control variables for all the models presented below. Participants tended to report fewer moral acts across days of participation, but no similar trend emerged for immoral acts. Inclusion of these control variables did not substantively alter any of the findings presented below.

the incremental improvement in model fit and an examination of change in effect sizes. Below are the multilevel equations for these final models. Note that the equations below are for the moral acts model. The equations for the immoral acts model are identical to those below, except that they substitute prevention-oriented moral identity for promotion.

Level 1:

$$\begin{aligned} \text{Moral_Act}_{ti} = & \beta_{0i} + \beta_{1i}(\text{Promotion_Moral_Id})_{ti} + \beta_{2i}(\text{Internal_Motiv})_{ti} \\ & + \beta_{3i}(\text{External_Motiv})_{ti} + e_{ti} \end{aligned}$$

Level 2:

$$\begin{aligned} \beta_{0i} = & \gamma_{00} + \gamma_{01}(\text{Mean_Promotion_Moral_Id})_i + \gamma_{02}(\text{Mean_Internal_Motiv})_i \\ & + \gamma_{03}(\text{Mean_External_Motiv})_i + r_{0i} \end{aligned}$$

$$\beta_{1i} = \gamma_{10} + r_{1i}$$

$$\beta_{2i} = \gamma_{20} + r_{2i}$$

$$\beta_{3i} = \gamma_{30} + r_{3i}$$

Finally, we used multinomial logistic multilevel regression to explore the differential effects of external motivation on moral and immoral acts in the public and private context. This involved fitting a series of binary logistic multilevel models in which we tested the association of moral identity salience and internal/external motivation (at both levels) with the probability of engaging in: a) private moral acts (coded as 1) vs. no moral act (coded as 0), b) public moral acts (1) vs. no moral act (0), and c) public moral acts (1) vs private moral acts (0). Equations for these models were identical to the ones described above, but were each applied to a subset of the data corresponding to the comparisons described above. An identical procedure was used to explore

immoral acts. We aggregated across the distinction between acts committed in person vs. online in these analyses as the number of online acts was small.

Level 1 predictors in all our models were all centered within-participant, while level 2 predictors were grand mean centered. We report regression coefficients as standardized odds ratios (OR) for ease of interpretation (rather than in an unstandardized, unexponentiated log odds form). Standardized odds ratios (in the context of continuous predictors) represent the change in the odds of a binary outcome occurring associated with a 1SD increase in some predictor. Level 1 regression coefficients ($\gamma_{10}, \gamma_{20}, \gamma_{30}$) can be interpreted as the effect of deviation from participant mean level of a predictor on the odds of an act occurring (e.g., the effect of a higher than typical level of identity salience on the odds of an act occurring). Level 2 regression coefficients ($\gamma_{01}, \gamma_{02}, \gamma_{03}$), by contrast, can be interpreted as the effect of deviation of participant mean levels of a predictor from their respective grand means on the propensity to engage in an act (e.g., the effect of having a higher level of mean identity salience on the propensity of an act to occur). Finally, the intercept term for these models can be interpreted as the conditional odds of an act occurring for a participant who is average (i.e., at the grand mean) with respect to their mean levels of identity salience and internal/external motivation, and currently is not deviating from those means (for a comprehensive discussion of centering and disaggregating within- and between-person effects in MLM see Enders & Tofighi, 2007; Kreft et al., 1995; Wang & Maxwell, 2015).

Effect sizes for MLMs were generated using the Rights and Sterba (2018, 2019) framework. This approach permits the calculation of proportions of total/within-person/between-person variance which are accounted for by fixed effects at each level. We modified this basic framework for multilevel effect sizes for use in logistic binary multilevel context by substituting

a suitable residual variance term ($\pi^2/3$) in place of the typical MLM residual term, per Rights and Sterba's suggestion (2019).

Analyses were conducted with the R statistical computing language version 4.3.2 (R Core Team, 2023). Confirmatory factor analysis was conducted with the lavaan package (Rosseel, 2012). MLMs were fit with the lme4 R package (Bates et al., 2015) and effect sizes for MLMs were calculated with the r2MLM R package (Shaw et al., 2022). Multivariate imputation of missing values was conducted with the mice R package (Buuren & Groothuis-Oudshoorn, 2011).

Results

Completion rates of the short surveys were in the typical range ($M = 70.5\%$) for ESM studies (Eisele et al., 2020; Vachon et al., 2019), with participants completing an average of 24.68 out of a possible 35 surveys over the course of the 7 days ($SD = 7.61$, $min = 1$, $max = 35$). ICCs (1 and 2), means, standard deviations, and bivariate correlations between study variables at the occasion level (level 1) and at the level of the participant (level 2) can be found in tables 4.1 and 4.2, respectively (see table S4.1 in the supplemental materials for uncentered bivariate correlations at level 1).

The salience of moral identity, whether it was assessed from a promotion or prevention orientation, was typically slightly above the midpoint, with substantial variation both within- and between-participants. The within-person correlation between the two orientations was large ($r = .69$), indicating that approximately half of the variance in these different measures of moral identity was shared. Between-person correlations of those variables aggregated at level 2 were even higher ($r = .96$), indicating nearly total overlap in variance. This pattern of correlations suggests that participants may not have discriminated between the promotion goal of being a

good person and the prevention goal of avoiding being a bad person, particularly at the level of between-person differences.

Internal and external motivations were typically well above the midpoint of the scale, with significant variability both within- and between-persons. The two types of motivation correlated strongly with each other at both the within- ($r = .60$) and between-person ($r = .62$) levels, indicating just over a third of the variance in internal and external motivation was shared. There was a substantial amount of missingness in motivation scores. Participants opted out of responding to the motivation measure on 51% of the completed short surveys. Examination of missingness on motivation scores showed that it was systematically related to other study variables. Participants were less likely to respond to these items when their identity salience was low, and on occasions when they hadn't engaged in any moral or immoral action. Participants also became less likely to complete the motivation measure over the duration of the study. These mechanisms collectively accounted for a substantial amount of the variability in the missingness of motivation scores. Although some degree of missingness remained unexplained, we judged it plausible to assume that motivation scores were missing at random (MAR) (Rubin, 1987). This assumption implies that any residual missingness is completely at random, and not attributable to unmeasured variables.

In order to account for missingness in motivation scores in light of the aforementioned mechanisms, we employed multiple imputation (Little & Rubin, 2020). Multiple imputation (MI) is a procedure in which several plausible sets of values for missing datapoints are generated from observed values of variables and a random error component. The resulting sets of imputed values are then analyzed using standard statistical techniques and those multiple analyses are then *pooled* into an overall statistical analysis which accounts for uncertainty due to the missing data.

MI is generally preferred to listwise deletion in cases where missingness can be accounted for by observed variables, as it is in our data. MI incorporates uncertainty induced by missing data into pooled SEs and *p*-values, allows retention of more data points (thus increasing power) and avoids the potential selection bias associated with listwise deletion when data is MAR (Van Ginkel et al., 2020). Our imputation models for motivation scores included the salience of moral identity (both promotion and prevention-oriented), the occurrence of moral and immoral acts (and their context), duration of participation, participant socioeconomic status and gender. Given the nested nature of our data, we employed a multilevel imputation method (Buuren & Groothuis-Oudshoorn, 2011) and generated 10 plausible alternative sets of motivation scores.

Means, SDs and correlations (pooled across the 10 sets) can be found in tables 4.1 (L1) and 4.2 (L2). Consistent with the mechanisms of missingness discussed above and the moderate positive bivariate correlations between observed motivation scores and moral identity salience and the occurrence of moral acts, imputed means for both internal and external motivation were somewhat lower in the imputed data than in the observed data. Presentation of MLM analyses involving motivation scores below is restricted to pooled results of models fit to the imputed data. The general pattern of results obtained from unimputed motivation data (i.e., employing listwise deletion of occasions where motivation scores were missing) was largely the same.

Multilevel Analyses

Null models resulted in ICC(1)s of .22 for moral acts and .34 for immoral acts, indicating that 22% and 34% of the variation in these acts were attributable to between-participant differences. We also calculated ICC(1)s for our measures of moral identity salience and motivation, which ranged from .41 to .58 (see table 4.2). Identity salience and motivation thus exhibited more trait-like stability than did then did the behaviour participants engaged in over the

weeklong course of the study. We also calculated ICC(2)s for all study variables (see table 4.2), which in the present context indicate the reliability of mean level aggregates (i.e., how reliable are level 2 aggregates of level 1 variables). Reliabilities were good for moral and immoral acts, and excellent for measures of identity salience and motivation (LeBreton & Senter, 2008). We next present results from our intermediate and final models for moral and immoral acts.

Moral Acts

After fitting the null model for moral acts, we proceeded to fit an intermediate model in which the probability of moral acts was predicted as a function of the salience of promotion-oriented moral identity on a given occasion (level 1) and mean differences in chronic salience (level 2). Parameters for our intermediate (model 1) and final (model 2) models can be found in table 4.3. Both the salience (*std. OR* = 2.70, *SE* = .08, *z* = 11.92, *p* < .001) and mean salience of promotion moral identity (*std. OR* = 1.42, *SE* = .09, *z* = 3.73, *p* < .001) were highly significant predictors of acting morally. At level 1, the odds of a moral act occurring were 170% higher on occasions when the salience of a person's promotion moral identity was 1SD above their typical level, compared to when salience was at a typical level. Similarly, at level 2, individuals who were 1SD above the grand mean of *chronic* salience had a 42% higher propensity to report engaging in moral acts. Effect sizes for the intermediate model (see table 4.4) indicated that the fixed effect of promotion salience accounted for 21% of the within-person variability in moral acts, while the fixed effect of chronic promotion salience accounted for 10% of between-person variability.

We next fit a final model in which internal and external motivation were added as predictors at both levels. This model was fit to the 10 datasets in which missing motivation scores were imputed and those results were pooled. Those results revealed that at level 1 internal

(*std. OR* = 2.30, *SE* = .13, $t(322.81) = 6.43, p < .001$), but not external motivation (*std. OR* = 1.11, *SE* = .09, $t(1823.42) = 1.16, p = .247$), was a significant predictor of moral behaviour above and beyond the effect of mere salience. Although the salience of promotion identity remained a significant positive predictor in the final model, occasions on which internal motivation was 1SD higher than a person's typical level were independently associated with a 130% increase in the odds of a moral act. However, similar effects were not found at level 2. Between-person differences in chronic internal and external motivation were not associated with differences in the propensity to act morally. In order to further characterize the effects of motivation in our final model we also calculated effect sizes across imputed datasets. Mean effect sizes for within/between/total variance explained by level 1 and level 2 fixed effects across all the imputed datasets are presented in table 4.4. Taken all together, the salience of promotion identity and internal and external motivation accounted for 30% of the within-person variance in moral acts, an increase of 9% over the intermediate model (which excluded motivation). Although these predictors were not independently significant predictors of between-person variance at L2 in the final model, they collectively accounted for 15% of the variance in moral acts at that level (an increase of 5% over the intermediate model). It was not possible to directly compare the fit of the intermediate model (which was fit to observed data) and the final model (which was fit to multiple sets of data where plausible values of missing motivation scores were imputed and then pooled). We could, however, inferentially test whether the addition of internal

and external motivation scores as predictors improved fit across imputed datasets⁵. Including motivation predictors at both levels significantly improved fit to the imputed datasets ($F(4, 654.04) = 10.89, p < .001$).

In order to explore the expected context sensitivity of external motivation, we fit the final model to three different outcome variables representing the occurrence of private moral acts (0 = no moral act, 1 = private moral act), public moral acts (0 = no moral act, 1 = public moral act) and public rather than private moral acts (0 = private moral act, 1 = public moral act). Below we present estimates of model parameters that are most germane to our hypotheses, but interested readers can find complete model outputs in the supplemental materials (tables S4.2-S4.4). As expected, internal motivation proved a significant predictor of increased odds of engaging in moral acts across the private (*std. OR* = 1.67, *SE* = .17, $t(1086.32) = 3.08, p = .002$) and public context (*std. OR* = 2.00, *SE* = .17, $t(383.11) = 4.09, p < .001$) at the level of the occasion. By contrast, external motivation at the occasion level did not predict the odds of engaging in private moral acts (*std. OR* = .91, *SE* = .15, $t(931.47) = -.61, p = .509$), but did significantly predict the odds of engaging in public acts (*std. OR* = 1.46, *SE* = .15, $t(1042.42) = 2.55, p = .011$). Thus, on occasions when external motivation was 1SD higher than typical for an individual, the odds of them engaging in a public moral act was 46% higher. Analogous effects of motivation at level 2 for these two outcomes were all non-significant. Finally, external motivation predicted higher odds of engaging in public rather than private moral acts at the level of the occasion (*std. OR* =

⁵ We employed the D_1 procedure for generating multivariate estimands in multiply imputed datasets. See Grund et al. (2016) for additional information about this procedure.

1.34, $SE = .12$, $t(366.30) = 2.42$, $p = .016$) and approached significance at the level of the person ($std. OR = 1.50$, $SE = .21$, $t(201.50) = 1.93$, $p = .055$).

Immoral Acts

We followed a parallel procedure to explore the relation between immoral acts and prevention-oriented moral identity and internal and external motivations. After fitting null models, an intermediate model was fit in which the probability of immoral acts was predicted as a function of the salience of prevention-oriented moral identity on a given occasion (level 1) and mean differences in chronic salience (level 2). Parameters for our intermediate (model 1) and final (model 2) immoral act models can be found in table 4.5. In contrast to our moral acts model (and our expectations), neither the momentary ($std. OR = 1.23$, $SE = .15$, $z = 1.38$, $p = .167$) or chronic salience of moral identity ($std. OR = .82$, $SE = .15$, $z = -1.36$, $p = .175$) proved significant predictors of the odds of engaging in immoral acts. Effect sizes for the intermediate model (see table 4.5) showed that prevention identity predicts only trivial amounts of within- (1%) and between-person (1%) variance in immoral acts.

We next fit a final immoral acts model in which internal and external motivation were added as predictors at both levels. As with the final moral act model, this model was fit to the multiple imputed datasets and pooled. In this final model internal motivation ($std. OR = .52$, $SE = .20$, $t(190.05) = -3.36$, $p = .001$), but not external motivation, proved a significant predictor of the odds of engaging in immoral acts at the occasion level. Thus, on occasions at which internal motivation was 1SD higher than typical for a person, their odds of having engaged in an immoral act were 48% lower than typical. With the addition of motivation, prevention identity salience, which was not a significant predictor at either level in the intermediate model, emerged as a significant predictor of immoral acts in the final model ($std. OR = 1.64$, $SE = .12$, $t(300.59) =$

4.20, $p < .001$). Thus after accounting for the effects of motivation, higher salience of prevention identity was associated with a *greater* odds of engaging in an immoral act. Neither prevention identity or internal or external motivation proved significant predictors of between-person differences in the propensity to engage in immoral acts. Mean effect sizes for within/between/total variance explained by level 1 and level 2 fixed effects across all the imputed datasets are presented in table 4.4. Taken all together, the salience of prevention identity and internal and external motivation accounted for 9% of the within-person variance in moral acts, an increase of 8% over the intermediate model (which excluded motivation). Although these predictors were not independently significant predictors of between-person variance at L2 in the final model, they collectively accounted for 5% of the variance in moral acts at that level (an increase of 4% over the intermediate model). Including motivation predictors at both levels significantly improved model fit to the imputed datasets ($F(4, 523.94) = 4.03, p = .003$).

Finally, we explored the expected context sensitivity of external motivation by fitting the final model to three different outcome variables representing the occurrence of private immoral acts, public immoral acts and public rather than private immoral acts, as we did for moral acts. Contrary to our expectations we found no evidence that higher external motivation was associated with decreased odds of engaging in immoral acts in a public context, at either the level of the occasion or the person (see tables S4.5-S4.7 in the supplemental materials for the complete details of these models).

Discussion

Moral identity research has thus far been dominated by trait and socio-cognitive models (although these two perspectives do not exhaust the richness of the theoretical landscape, see Krettenauer, 2024). Though these two approaches are not completely irreconcilable, they differ

substantially in whether they emphasize moral identity's dynamic, fluctuating and state-like nature or its stable and trait-like nature. Evidence for the association of moral identity and morally relevant behaviour has emerged from both these perspectives, but the relative importance of this link at the between- and within-person level remains ambiguous. This is largely due to the limited quantity, behavioural breadth and ecological validity of empirical studies exploring how the momentary activation of moral identity predicts behaviour. In the present study, we addressed this gap in the moral identity literature employing ESM. Participants reported on the importance of their moral identity goal, the motivations underpinning that goal, and the acts that they engaged in which they judged had a moral valence five times each day over the course of a week. Variation in participant engagement in moral and immoral behaviour were then decomposed into within- and between-person and then predicted from moral identity salience and motivation independently at each of these levels using multilevel logistic regression models. Our findings can be summarized as follows: First, promotion-oriented moral identity salience was a significant predictor of engaging in moral acts. This was true at both the within- and between-person levels, although the association was larger at the within-person level. Second, prevention-oriented moral identity salience was not a significant predictor of engaging in immoral acts at either level. Third, the motivational character of the moral identity goal was predictive of both moral and immoral behaviour, above and beyond its mere salience. While internal motivation was a robust cross-context predictor of engaging in moral behaviour and abstaining from immoral behaviour, external motivation's predictive power was contingent on the nature of the behaviour and the context in which it took place. These findings are discussed in further detail in turn.

In the present study we found associations between the goal of being a good person and engaging in moral acts which were largely concordant with the larger moral identity literature. As expected, people for whom the goal of being a good person was consistently important tended to engage in more behaviour they construed as moral. Likewise, the momentary salience of that goal (independent of individual differences in its chronic salience) predicted an increased likelihood of engaging in a discrete moral act. Interestingly, multilevel effect sizes revealed that identity was a stronger predictor of behaviour at the within-person level than at the between-person level, a reversal of the typical pattern found in cross-sectional and priming studies (Hertz & Krettenauer, 2016). This difference was largely driven by the much stronger association we found at the within-person level (21% of shared variance) than is typically reported in priming studies, where the proportion of shared variance is typically around 1.5%. The association between identity and moral behaviour at the between-person level we found using ESM was more modest (10% shared variance), although also larger than is generally found in cross-sectional studies of between-person differences in moral identity and moral behaviour (5-6% shared variance).

By contrast, we did not find any significant association between the goal of avoiding being an immoral person and avoidance of immoral behaviour. Contrary to our expectations, people for whom that goal was chronically salient did not show a reduction in their propensity for immoral actions, nor did the momentary salience of that goal predict a decreased probability of engaging in a discrete moral act. Proscriptions against moral wrong-doing are generally perceived as more obligatory and strictly enforced than prescriptions to behave prosocially (Janoff-Bulman et al., 2009). One possibility is that our participants felt their ability to indulge in immoral acts was constrained by external affordances, which attenuated the identity-behaviour

relation. Still, this null finding is surprising given the substantial empirical record connecting moral identity and the avoidance of a variety of anti-social behaviours. In fact, meta-analytic assessment has found that moral identity is generally no weaker a predictor of immoral behaviour than it is of moral behaviour (Hertz & Krettenauer, 2016). It is worth keeping in mind that in the present study our measure of moral identity salience is distinct from measures of the motivations that support it, unlike measures such as the SIMIQ, which confound the self-importance of moral identity and its motivational character. It may simply be the case that while the mere salience (momentary or chronic) of the moral identity goal alone is enough to engender moral acts, it is not sufficient to forestall immoral ones.

Consistent with the idea that the presence of moral identity alone may not always be predictive of morally relevant behaviour (Krettenauer, 2022b), we found clear evidence that identity motivations were associated with behaviour, above and beyond the effects of moral identity salience itself. As expected, internal motivation was a robust cross-context predictor of engaging in moral acts and abstaining from immoral acts. However, this effect was largely limited to the within-person level. Thus, on occasions when participants reported feeling particularly motivated by intrinsic desires for self-coherence with their moral values, they were more likely to act in accord with those values. We also found that external motivations were associated with morally relevant behaviour, but in highly contingent ways. Neither individual differences nor momentary fluctuations in the strength of concerns about meeting external standards were generally predictive of behaviour. However, higher external motivation was predictive of moral action in the public (but not private) context, where presumably the reputational costs and benefits of engaging in moral acts were larger and more salient. It was also associated with a general tendency to engage in more public than private moral action. As with

internal motivation, these effects were only unambiguously present at the within-person level. Although we expected a similar pattern of moral hypocrisy (Batson et al., 1999, 2002) associated with external motivation to be present for immoral acts as well, no evidence for it emerged. It is possible that because prosocial behaviour is often considered more a matter of personal discretion than of obligation (at least in Western cultures; Miller et al., 2011) it may have been perceived by participants to be less constrained than anti-social behaviour, and thus more susceptible to the influence of external motivation.

The picture our findings paint about the differential association of internal and external motivation to morally relevant behaviour align with the limited prior evidence linking these motivations to behaviour (see introduction). Although our results cannot speak directly to the psychological processes by which internal motivations more consistently serve to regulate behaviour, several explanations suggest themselves. For example, these effects may be underwritten by the affective and emotional implications of motivation. Internally motivated prosocial acts are experienced as more satisfying and rewarding than externally motivated acts (Weinstein & Ryan, 2010). They are also more strongly associated with authentic pride, which is itself positively associated with prosocial behaviour and the avoidance of antisocial behaviour (Krettenauer & Casey, 2015). Cognitive mechanisms are also plausibly implicated in internal motivation's self-regulatory impact. Individuals with more internally motivated moral identities are less prone to disengage from personal responsibility for their immoral behaviour (Aquino et al., 2007; Hardy et al., 2015) or dissociate themselves from their past wrongdoing (Krettenauer & Mosleh, 2013). They are also less likely to exhibit moral licensing effects (Conway & Peetz, 2012), in which past moral deeds serve as credits for the relaxation of personal moral standards in the future.

Finally, our general pattern of findings offer some support for the emphasis socio-cognitive models place on moral identity's malleability, as opposed to its stability. Conceptually, socio-cognitive models are entirely compatible with robust individual differences (in the form of chronic salience), but proponents of these theories frequently emphasize moral identity's fluid and fluctuating nature. Some have even gone so far as to explicitly argue that moral identity operates in a "flexible" mode in typically functioning individuals, in which within-person variability dominates between-person variability (Aquino & Kay, 2019). While the *variability* of moral identity in our sample (and others; Krettenauer et al., 2022) was relatively evenly split between these two levels, covariation with behaviour was more consistently found and tended to be larger at the within-person level than the between-person level. This suggests that while moral identity itself may not be as "flexible" as some theorists have supposed, its linkage with behaviour may be more strongly driven by transient fluctuations in salience (and motivations) than the priming literature would lead one to believe.

Limitations

Several limitations of the study need to be acknowledged. First, the effects reported in the present study are correlational in nature. Participants self-reported on their moral identities and morally relevant behaviours simultaneously at each occasion of measurement and we probed their associations. Consequently, caution is warranted in drawing firm conclusions about the causal direction of these effects. Second, our sample consisted entirely of Canadian undergraduate and graduate university students. While our objective was to explore the identity-behaviour relation in everyday life, it must be acknowledged that the experiences, goals and social conditions of university students are far more homogeneous than those of the population at large in Canada (let alone in other social and cultural contexts). Further, the moral identity goal

and its characteristics are not ontogenetically static, but develop systematically across the lifespan (Lefebvre et al., 2024). Although age has not generally been found to moderate the moral identity-behaviour association, most measures of moral identity (e.g., Aquino & Reed, 2002), have generally proven insensitive to developmental change (Krettenauer & Hertz, 2015). The moral identity and motivation measures we employ were adapted from a measure which has demonstrated sensitivity to age-related differences (Lefebvre et al., 2024). Consequently, the present study may not yield results which are generalizable across the lifespan. Third, variability in moral and immoral acts reported by our participants was rather modest at the between-person level: only a fifth (moral acts) to a third (immoral acts) of variability in behaviour was attributable to between-person differences. The relative paucity of individual differences in behaviour was unexpected and may explain why the effects of moral identity and motivation were more consistently found at the within- than the between-person level in the present study. Other ESM studies of moral behaviour have tended to find proportionally more behavioural variance at the between person level, ranging from 54.5% to 63% (Meindl et al., 2015; Prentice et al., 2020). This difference may be a consequence of our decision to focus on participant-identified discrete acts which they judged to have a positive or negative moral valence, rather than the multi-item continuous measures of behavioural evaluation employed in these other studies (e.g., “My behavior was in line with my own moral principles” from 1 - strongly disagree to 7 - strongly agree). While such measures may have desirable psychometric properties, their relation to the kind of discrete moral and immoral acts we were interested in is ambiguous.

Conclusion

The existing empirical literature has generally found that the association between moral identity and morally relevant behaviour is stronger at the level of individual difference than it is

at the level of within-person fluctuations. Using experience sampling to probe the linkage of these two constructs in everyday lived experience, at the within- and between-person level simultaneously, the present study reveals a different picture: that situational fluctuations in moral identity tend to be more predictive of behaviour than are individual differences in moral identity. Our findings are consistent with what Aquino and Kay (2019) call a “flexible” perspective on moral identity, which emphasize the dynamic, context-sensitive nature of moral identity and the impact of that dynamism on attention, information processing and decision making. This is not to say that individual differences in moral identity do not exist (they do) or that they are unimportant to moral functioning (they are), but rather that researchers who take trait perspectives should be aware that moral identity fluctuates and that those fluctuations may have substantial behavioural implications.

Our study also demonstrates the value of conceptualizing moral identity as a goal with distinct goal characteristics (Krettenauer, 2022b). By disambiguating the salience of the moral identity goal from its characteristics, we show that the motivations which support the moral identity goal have unique power to predict when and in what contexts people tend to behave in moral and immoral ways, above and beyond the strength of that goal.

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Tables

Table 4.1

Means, SDs and Correlations for Level 1 Variables (centered within-person)

	<i>m</i>	<i>sd</i>	<i>n</i>	1	2	3	4	5	6	7
1. Moral Act	0.12	0.30	5535							
2. Immoral Act	0.03	0.16	5526	-.09***						
3. Promotion Moral Id	51.34	20.64	5606	.28***	.02					
4. Prevention Moral Id	52.49	20.23	5577	.25***	.01	.69***				
5. Internal Motivation	4.10	0.56	2879	.23***	-.23***	.34***	.36***			
6. External Motivation	3.86	0.61	2879	.16***	-.16***	.30***	.30***	.60***		
7. Internal Motivation (Imp)	3.92	0.58	5513	.24***	-.13***	.42***	.43***	--	--	
8. External Motivation (Imp)	3.68	0.63	5513	.16***	-.08***	.35***	.35***	--	--	.41***

Note: Means are for the uncentered L1 variables, while *sds* and correlations are for L1 variables centered within-person. “Imp” refers to multiply imputed motivation scores, and values represent the mean of the means, standard deviations and correlations across imputed datasets. *** $p < .001$, two-tailed.

Table 4.2

ICCs, Means, SDs and Correlations for Level 2 (Participant Mean) Variables

	<i>m</i>	<i>sd</i>	ICC(1)	ICC(2)	1	2	3	4	5	6	7
1. Moral Act	0.13	0.13	.22	.82							
2. Immoral Act	0.03	0.06	.34	.74	.27 ***						
3. Promotion Moral Id	50.70	23.99	.55	.98	.16 *	-.08					
4. Prevention Moral Id	51.86	24.86	.58	.98	.17 *	-.09	.96 ***				
5. Internal Motivation	4.03	0.57	.41	.96	.16 *	-.27 ***	.55 ***	.55 ***			
6. External Motivation	3.77	0.71	.51	.97	.11	-.16 *	.44 ***	.44 ***	.65 ***		
7. Internal Motivation (Imp)	3.91	0.57	.47	.97	.15 *	-.16 *	.67 ***	.68 ***	--	--	
8. External Motivation (Imp)	3.66	0.69	.52	.97	.12	-.10	.57 ***	.56 ***	--	--	.62 ***

Note: $N = 223$. ICC = intraclass correlation coefficient. ICC(1) refers to the proportion of total variance occurring at the level of the cluster (i.e., individual in the present context). ICC(2) refers to the reliability of the L2 aggregated variables. “Imp” refers to multiply imputed motivation scores, and values represent the mean of the means, standard deviations, ICCs and correlations across imputed datasets. * $p < .05$, two-tailed. *** $p < .001$, two-tailed.

Table 4.3

*Multilevel Binary Logistic Regression Parameters for Moral Acts***Outcome:** Moral Act (0 = no act, 1 = act)

	Model 1				Model 2					
	Std OR	SE	Z	p	Std OR	SE	t	df	p	
Fixed Effects										
Level 1: Occasion										
Promotion Moral Id (γ_{10})	2.70	0.08	11.92	< .001 ***	2.07	0.10	7.51	1643.51	<.001 ***	
Internal Motivation (γ_{20})					2.30	0.13	6.43	322.81	<.001 ***	
External Motivation (γ_{30})					1.11	0.09	1.16	1823.42	0.247	
Level 2: Participant										
Intercept (γ_{00})	0.07	0.11	-25.29	< .001 ***	0.05	0.13	-22.91	1308.34	<.001 *	
Mean Promotion Moral Id (γ_{01})	1.42	0.09	3.73	< .001 ***	1.32	0.16	1.79	527.64	0.074 †	
Mean Internal Motivation (γ_{02})					1.23	0.21	0.99	51.33	0.326	
Mean External Motivation (γ_{03})					1.03	0.16	0.20	152.99	0.845	
Random Effects										
	<i>SD</i>	Correlations			<i>SD</i>	Correlations				
		1	2	3		1	2	3		
1. Intercept (r_{0i})	0.95				1.13					
2. Promotion Moral Id (r_{1i})	0.56	-.04			0.25	-.04				
3. Internal Motivation (r_{2i})					1.38	-.02	-.49			
4. External Motivation (r_{3i})					0.77	< .01	.26	.17		

Note: Std OR = standardized odds ratio. † $p < .10$, two-tailed. * $p < .05$, two-tailed. *** $p < .001$, two-tailed.

Table 4.4

Multilevel Binary Logistic Regression Parameters for Immoral Acts

Outcome: Immoral Act (0 = no act, 1 = act)

Fixed Effects	Model 1				Model 2						
	Std OR	SE	Z	p	Std OR	SE	t	df	p		
Level 1: Occasion											
Prevention Moral Id (γ_{10})	1.23	0.15	1.38	0.167	1.64	0.12	4.20	300.59	<.001	***	
Internal Motivation (γ_{20})					0.52	0.20	-3.36	190.05	0.001	**	
External Motivation (γ_{30})					0.83	0.22	-0.84	124.16	0.401		
Level 2: Participant											
Intercept (γ_{00})	0.01	0.21	-21.41	<.001	***	0.01	0.31	-17.28	252.86	<.001	***
Mean Prevention Moral Id (γ_{01})	0.82	0.15	-1.36	0.175		1.05	0.24	0.21	484.77	0.834	
Mean Internal Motivation (γ_{02})						0.76	0.29	-0.95	82.34	0.347	
Mean External Motivation (γ_{03})						0.89	0.24	-0.47	180.46	0.642	
Random Effects											
	SD	Correlations			SD	1	2	3			
1. Intercept (r_{0i})	1.41				1.50						
2. Prevention Moral Id (r_{1i})	0.70	-.43									
3. Internal Motivation (r_{2i})					1.10	<.01					
4. External Motivation (r_{3i})					1.62	-.07		.17			

Note: Std OR = standardized odds ratio. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table 4.5

Proportions of Within- and Between-Person Variance Explained by Fixed Effects

Outcome: Moral Act

	Model 1			Model 2			Model 2 - Model 1		
	Total	Within	Between	Total	Within	Between	Δ Total	Δ Within	Δ Between
L1 Predictors via fixed slopes (f_1)	.17	.21		.24	.30		.07	.09	
L2 Predictors via fixed slopes (f_2)	.02		.10	.03		.15	.01		.05
All Predictors via fixed slopes (f)	.19			.27			.08		

Outcome: Immoral Act

	Model 1			Model 2			Model 2 - Model 1		
	Total	Within	Between	Total	Within	Between	Δ Total	Δ Within	Δ Between
L1 Predictors via fixed slopes (f_1)	.01	.01		.06	.09		.05	.08	
L2 Predictors via fixed slopes (f_2)	.01		.02	.02		.05	.01		.04
All Predictors via fixed slopes (f)	.01			.08			.07		

Supplemental Materials

Table S4.1

Means, SDs and Correlations for Level 1 Variables (uncentered)

	<i>m</i>	<i>sd</i>	<i>n</i>	1	2	3	4	5	6	7
1. Moral Act	0.12	0.30	5535							
2. Immoral Act	0.03	0.16	5526	-.04 **						
3. Promotion Moral Id	51.34	20.64	5606	.21 ***	-.01					
4. Prevention Moral Id	52.49	20.23	5577	.20 ***	-.02	.85 ***				
5. Internal Motivation	4.10	0.56	2879	.19 ***	-.26 ***	.53 ***	.55 ***			
6. External Motivation	3.86	0.61	2879	.10 ***	-.18 ***	.46 ***	.47 ***	.63 ***		
7. Internal Motivation (Imp)	3.92	0.58	5513	.20 ***	-.14 ***	.56 ***	.57 ***	--	--	
8. External Motivation (Imp)	3.68	0.63	5513	.13 ***	-.10 ***	.49 ***	.49 ***	--	--	.54 ***

Note: “Imp” refers to multiply imputed motivation scores, and values represent the mean of the means, standard deviations and correlations across imputed datasets. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table S4.2

Context Model for Moral Acts: No Moral Act (0) vs. Public Moral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>	
Level 1: Occasion						
Promotion Moral Id (γ_{10})	2.17	0.10	7.71	1144.93	< .001	***
Internal Motivation (γ_{20})	2.00	0.17	4.09	383.11	< .001	***
External Motivation (γ_{30})	1.46	0.15	2.55	1042.42	0.011	*
Level 2: Participant						
Intercept (γ_{00})	0.02	0.19	-21.97	5168.29	< .001	***
Mean Promotion Moral Id (γ_{01})	1.39	0.18	1.79	821.45	0.074	†
Mean Internal Motivation (γ_{02})	1.17	0.24	0.65	70.93	0.518	
Mean External Motivation (γ_{03})	1.22	0.20	1.01	175.17	0.312	

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	1.10			
2. Promotion Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})	1.30	.12		
4. External Motivation (r_{3i})	1.02	-.13	-.11	

Note: Std OR = standardized odds ratio. † $p < .10$, two-tailed. * $p < .05$, two-tailed. *** $p < .001$, two-tailed.

Table S4.3

Context Model for Moral Acts: No Moral Act (0) vs. Private Moral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>	
Level 1: Occasion						
Promotion Moral Id (γ_{10})	1.84	0.09	6.70	81101.15	< .001	***
Internal Motivation (γ_{20})	1.67	0.17	3.08	1086.32	0.002	**
External Motivation (γ_{30})	0.91	0.15	-0.66	931.47	0.509	
Level 2: Participant						
Intercept (γ_{00})	0.02	0.20	-21.07	3116.16	< .001	***
Mean Promotion Moral Id (γ_{01})	1.43	0.20	1.78	1384.88	0.075	†
Mean Internal Motivation (γ_{02})	1.07	0.26	0.27	55.71	0.792	
Mean External Motivation (γ_{03})	0.90	0.22	-0.48	78.74	0.631	

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	1.28			
2. Promotion Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})	1.23	.11		
4. External Motivation (r_{3i})	1.00	.20	.51	

Note: Std OR = standardized odds ratio. † $p < .10$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table S4.4

Context Model for Moral Acts: Private Moral Act (0) vs. Public Moral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>
Level 1: Occasion					
Promotion Moral Id (γ_{10})	1.17	0.10	1.51	129100.00	0.132
Internal Motivation (γ_{20})	1.15	0.13	1.04	217.70	0.301
External Motivation (γ_{30})	1.34	0.12	2.42	366.30	0.016 *
Level 2: Participant					
Intercept (γ_{00})	0.82	0.15	-1.29	80300.00	0.198
Mean Promotion Moral Id (γ_{01})	1.07	0.19	0.33	1257.00	0.743
Mean Internal Motivation (γ_{02})	1.03	0.24	0.14	128.70	0.893
Mean External Motivation (γ_{03})	1.50	0.21	1.93	201.50	0.055 †

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	0.73			
2. Promotion Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})				
4. External Motivation (r_{3i})				

Note: Std OR = standardized odds ratio. † $p < .10$, two-tailed. * $p < .05$, two-tailed.

Table S4.5

Context Model for Immoral Acts: No Immoral Act (0) vs. Public Immoral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>
Level 1: Occasion					
Prevention Moral Id (γ_{10})	1.71	0.19	2.79	263.41	0.006 **
Internal Motivation (γ_{20})	0.60	0.41	-1.23	271.02	0.219
External Motivation (γ_{30})	0.92	0.44	-0.18	531.16	0.855
Level 2: Participant					
Intercept (γ_{00})	<.01	0.81	-10.66	2147.13	< .001 ***
Mean Prevention Moral Id (γ_{01})	0.87	0.46	-0.30	5347.71	0.767
Mean Internal Motivation (γ_{02})	1.01	0.49	0.01	435.47	0.990
Mean External Motivation (γ_{03})	0.75	0.48	-0.59	522.29	0.556

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	3.69			
2. Prevention Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})	1.82	-.30		
4. External Motivation (r_{3i})	2.74	-.10	-.52	

Note: Std OR = standardized odds ratio. † $p < .10$, two-tailed. * $p < .05$, two-tailed. *** $p < .001$, two-tailed.

Table S4.6

Context Model for Immoral Acts: No Immoral Act (0) vs. Private Immoral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>
Level 1: Occasion					
Prevention Moral Id (γ_{10})	1.72	0.18	2.99	708.54	0.003 **
Internal Motivation (γ_{20})	0.76	0.28	-0.99	2544.27	0.321
External Motivation (γ_{30})	0.98	0.28	-0.08	7443.79	0.937
Level 2: Participant					
Intercept (γ_{00})	<.01	0.69	-11.01	93.17	<.001 ***
Mean Prevention Moral Id (γ_{01})	1.05	0.38	0.12	1525.84	0.907
Mean Internal Motivation (γ_{02})	0.78	0.43	-0.58	200.48	0.560
Mean External Motivation (γ_{03})	1.04	0.39	0.10	262.57	0.924

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	2.34			
2. Prevention Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})	2.50	-.22		
4. External Motivation (r_{3i})	3.12	-.21	.11	

Note: Std OR = standardized odds ratio. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table S4.7

Context Model for Immoral Acts: Private Immoral Act (0) vs. Public Immoral Act (1)

Fixed Effects

	Std OR	SE	<i>t</i>	<i>df</i>	<i>p</i>
Level 1: Occasion					
Prevention Moral Id (γ_{10})	0.96	0.22	-0.20	6883.24	0.844
Internal Motivation (γ_{20})	0.87	0.23	-0.61	106.41	0.544
External Motivation (γ_{30})	1.13	0.22	0.55	208.54	0.581
Level 2: Participant					
Intercept (γ_{00})	0.57	0.40	-1.37	1933.02	0.169
Mean Prevention Moral Id (γ_{01})	0.86	0.48	-0.32	3056.21	0.746
Mean Internal Motivation (γ_{02})	1.41	0.57	0.60	194.22	0.548
Mean External Motivation (γ_{03})	0.52	0.55	-1.18	122.90	0.241

Random Effects

	<i>SD</i>	Correlations		
		1	2	3
1. Intercept (r_{0i})	1.25			
2. Prevention Moral Id (r_{1i})				
3. Internal Motivation (r_{2i})				
4. External Motivation (r_{3i})				

Note: Std OR = standardized odds ratio.

CHAPTER 5: GENERAL DISCUSSION

The work presented in this dissertation aimed at addressing two distinct gaps in the moral identity literature: a) the lack of evidence for developmental trends in moral identity, particularly in adolescence and early adulthood, and b) ambiguity about the extent to which moral identity in everyday life is characterized by variation at the between-person (i.e., stable, trait-like) as opposed to variation at within-person level (i.e., malleable, state-like) and the behavioural implications of variation at each of those levels.

Chapter 2 focused on investigating age-related trends predicted by moral identity goal theory (Krettenauer, 2022a). It employed a novel measurement strategy which modified a well-established, but developmentally insensitive (Hertz & Krettenauer, 2016; Krettenauer & Hertz, 2015), measurement instrument, the Self-Importance of Moral Identity Questionnaire (SIMIQ; Aquino & Reed, 2002). The SIMIQ was modified to capture how the moral identity goal was construed (concrete/abstract), motivated (internal/external) and oriented (promotion/prevention). Across three different age categories (early adolescence, late adolescence to early adulthood, and mid to old age), the hypothesized trends emerged for construal and motivation. With age moral identity tended to be more strongly informed by superordinate, abstract moral values, rather than concrete behavioural standards. Concrete and abstract moral identity also showed increasing differentiation with age. Likewise, the importance of internal moral identity motivation relative to external motivation increased with age. These two sources of motivation also grew more differentiated with age. By contrast, the expected trend from a relatively prevention-oriented to promotion-oriented moral identity was not present, nor was evidence of the expected differentiation of these two orientations with age. In fact, the opposite trend emerged with

respect to motivation; internal (and to a less degree, external) motives for pursuing a positive and avoiding a negative moral identity were increasingly integrated with age.

In Chapters 3 and 4 experience sampling and multilevel modeling were employed to address the ambiguity about the relative magnitude and behavioural implications of variation in moral identity at the within- and between-person levels. These chapters involved distinct analyses applied to a common dataset, in which participants reported on their moral identities and the events occurring in their everyday lives which they judged had some moral relevance, five times each day over the course of a week.

Chapter 3 focused on assessing the relative stability/malleability of moral identity. Partitioning variability in intensive repeated measurements of moral identity's salience revealed that slightly more than half of this variability was attributable to stable, between-person differences in chronic salience, with the remainder accounted for by within-person fluctuations in momentary salience. Evidently, when moral identity is assessed in naturalistic contexts, it exhibits relatively balanced levels of both stability and malleability. Situational changes in the salience of participant's moral identity were significantly predicted by the morally relevant events they experienced. The occurrence of discrete moral and immoral events of all kinds (i.e., acts, being the target of an act, or witnessing an act) were associated with a significant increase in momentary salience. However, these event effects varied substantially across participants, and tended to be weaker in participants with chronically salient moral identities. Participants who tended to engage in more moral and fewer immoral acts tended to have more chronically salient moral identities', but participant differences in the propensity for other event types were not predictive of differences in chronic salience.

Finally, Chapter 4 centered on two related questions: a) what is the importance of both the momentary and chronic salience of moral identity in predicting moral and immoral behaviours enacted in the everyday context, and b) what are the behavioural implications of internal and external identity motivation, above and beyond its salience. As expected, greater momentary and chronic salience of moral identity was associated with greater odds of engaging in a discrete moral behaviour at any particular occasion, and with a greater propensity to engage in moral behaviours, respectively. Surprisingly, moral identity salience was not a significant predictor of immoral behaviour, at either the within- or between-person levels. Consistent with the predictions of moral identity goal theory, the motivational character of moral identity was uniquely predictive of both moral and immoral behaviour. Higher internal motivation consistently predicted engagement in moral action and abstention from immoral action, whereas the effects of external motivation were contingent on behaviours occurring in public (and were significant only for moral behaviours). Across models, the effects of identity salience and motivation were more consistently present and explained proportionately more variation in behaviour at the within-person level than at the between-person level.

Together, the three studies in this dissertation represent an effort to bring new concepts, methods and measures to bear on empirical gaps and theoretical tensions in the moral identity literature. They leverage moral identity goal theory to a) develop a new, psychometrically sound measure of moral identity which merges an individual difference approach to assessment with a more explicitly developmental conceptualization, b) provide evidence (albeit, cross-sectional) that across adolescence and adulthood, moral identity may increasingly be construed in relatively abstract (rather than concrete) terms and supported by relatively internal (rather than external) motivation, and c) demonstrate the unique and differential relation of both internal and external

motivations to morally relevant behaviour. They employ experience sampling and multilevel modeling to a) provide a distinct and ecologically valid perspective on moral identity which complements existing survey and experimental methodologies, b) demonstrate that moral identity in typically functioning people in typical situations does not operate in either a highly stable or wildly fluctuating mode, but rather is possessed of both trait-like and state-like qualities, and c) reveal that while trait-like differences and state-like fluctuations in moral identity are both associated with moral and immoral behaviour, that association may be stronger at the state (i.e., within-person) level than previous research would suggest. The implications and limitations of each these three studies are discussed in their respective chapters, but in the following section several of the challenges and opportunities which emerge from this package of studies are discussed in more detail.

From Theory to Research

In their review of the moral self literature (in which moral identity occupies a central role), Jennings and colleagues observe that the trend in theorizing about moral identity has been toward “more integrative theoretical approaches that offer more dynamic and holistic understanding” (2015, p. 159). Despite that promising trajectory, they highlight that there is still “a lack of clarity as to the essential nature and functioning” (p. 160) of moral identity. Jennings et al. attribute this to empirical research paradigms which fail to fully pay off the integrative promise of theory and instead lead to a fragmented understanding of moral identity’s essential nature and role in moral functioning more broadly. A prime example of this phenomenon is the dominance of the empirical literature by individual difference perspectives. Despite the general richness in the theoretical landscape and the ascendancy of socio-cognitive models (e.g., Aquino et al., 2009; Lapsley & Narvaez, 2004; Stets & Carter, 2012) over the past two decades in

particular, there is surprisingly little empirical research supporting a process account of moral identity. A handful of studies employing priming and other techniques (e.g., Aquino et al., 2009; Carter, 2013; Narvaez et al., 2006) have established the credibility of conceptualizing moral identity as a set of self-schemas which, when activated, guide moral self-regulation, and from which individual differences in the form of chronic activation emerge. Even Blasi's Self Theory (1983, 2005), which is often held up as a prototypical example of a trait perspective, articulates clear interest in a process account of moral identity and a recognition of the "powerful influence of external and situational factors" (2005, p. 75). However, this has not translated into a broader effort to characterize and measure these fundamental within-person processes.

The overwhelming majority of research still opts to focus exclusively on individual differences, typically measured with Aquino and Reed's Self-Importance of Moral Identity Questionnaire (SIMIQ; 2002). Estimates from systematic review (Jennings et al., 2015) and meta-analyses (Hertz & Krettenauer, 2016; Lefebvre & Krettenauer, 2019) indicate that the SIMIQ is employed in approximately 70% of empirical studies investigating moral identity. That is not to say that the SIMIQ (or others like it) is a flawed instrument, far from it. It is brief, easy to administer, and has excellent psychometric properties (Lutz et al., 2022). It is well suited to explore how individual differences in the self-importance of moral values predict, mediate and moderate other dimensions of moral functioning (Hertz & Krettenauer, 2016; Lefebvre & Krettenauer, 2019). However, the probative value of any cross-sectional individual difference measure is limited with respect to the fundamental questions which cut across the within-person, between-person and ontogenic levels of analysis. Integrating across those levels requires methodologies and measures that move beyond simple paradigms in which the mechanisms from which moral identity as a dimension of character emerge (e.g., the momentary salience of moral

self-schemas) go unmeasured, and in which individual and developmental differences are represented by a single value. That is the unifying theme connecting the studies presented in this dissertation. They bring novel concepts and methods to bear in an effort to clarify moral identity's complex nature.

Measuring the Moral Identity Goal

One lesson to draw from this dissertation is that progress on longstanding challenges confronting moral identity researchers may require more complex assessment strategies than a reliance on the SIMIQ. While the measures developed in this dissertation to tap the three focal axes of goal theory were necessarily more cumbersome to administer and analyze than the SIMIQ, they largely paid off this effort. They demonstrated developmental trends in goal abstractness and motivation (Chapter 2), as well as illuminated the differential behavioural implications of internal and external motivation in context (Chapter 4). That being said, the effort to strengthen the empirical warrant of moral identity goal theory was not an unmitigated success. In Chapter 2 the expected age-graded shift toward a relatively promotion-oriented, rather than prevention-oriented, moral identity was not in evidence. Several possible explanations for this non-finding are raised there, including a failure to successfully measure the two orientations at the right level, and the simple non-existence of a developmental trend in orientation. I expand on both of these possibilities below.

One potential explanation for the lack of a promotion shift is that it occurs not in people's orientation to the general moral identity goal (e.g., being a good person, avoiding being a bad person), but rather in the strategies and tactics that are employed to achieve that goal. Strategies refer to "how" a goal is generally pursued, while tactics are the more contextualized instantiations of those general strategies (Higgins, 1997; Scholer et al., 2019; Scholer & Higgins,

2013). The modification of the SIMIQ aimed at tapping the promotion/prevention distinction at the level of a general goal and so may have been insensitive to development in strategic or tactical orientations people adopt. A finding from Chapter 4 offers some indirect support for this possibility. Recall that in that study the salience of moral identity was repeatedly measured from both a promotion and prevention framing (“In the past hour, how important was it for you to be [avoid being] a moral [immoral] person?”). Correlations between the salience of the two orientations were very strong, particularly at the level of between-person differences in mean salience. This suggests that participants did not meaningfully differentiate between the two orientations at the level of general identity goals (although this could also plausibly be attributed to a lack of discriminant validity in the measures, rather than the absence of differentiation *per se*).

Of course, another possibility is that the expected trend simply does not exist in the sample. Krettenauer (2022a) builds the case for considering orientation a dimension of moral identity goal development on the basis that children exhibit a substantial positivity bias in their general (Boseovski, 2010; Trzesniewski et al., 2011) and moral (Thomaes et al., 2017) self-conceptions, and are thus oriented toward protecting an already positive moral identity. This positivity bias declines across mid and late childhood however (Stipek & Iver, 1989), and may not have been present in the early adolescents who formed the youngest age group in Chapter 2. The relative shift from prevention to promotion orientation might thus be largely restricted to childhood. Alternatively, it may simply be the case that moral identity undergoes no such developmental shift. A mature moral identity might be characterized more by expertise at flexibly deploying promotion or prevention to suit the characteristics of the context or the

requirements of a particular situation (Narvaez & Lapsley, 2009), rather than a general emphasis on promotion.

Notwithstanding those possibilities, an argument can still be made that movement towards a mature moral identity later in ontogeny suggests a promotion shift. Blasi's perspective on identity development draws a distinction between moral character which is "wholehearted" and that which is not (2005, p. 82). By his account, the existence of a moral character implies that moral values have been integrated into self-concept and serve as organizing aspects of a person's life. Moral character without wholeheartedness entails a self-concept defined by a variety of values (moral and otherwise) and is characterized by a focus on willing resistance of desires whose enactment would contravene those moral values (i.e., prevention). In some people, a commitment to moral desires and values becomes the fundamental organizing feature of their self-concepts and lives. People with such wholehearted moral character are committed so completely to their conception of moral good that acting in ways that contravene that commitment becomes unthinkable; rather, they are oriented toward enacting their moral values (i.e., promotion).

This distinction is consistent with a prevention to promotion shift, but it is important to flag that Blasi did not propose a general age-related trend from moral character without wholeheartedness towards wholeheartedness. Rather he proposed it as a relatively rare developmental trajectory, largely on the basis of work with individuals who demonstrate an exceptional commitment to their moral values and projects, so-called "moral exemplars". Moral exemplars more comprehensively integrate their ideals into the self (Hart & Fegley, 1995), evince greater intertwining of agentic and communal themes in their life narratives (Frimer & Walker, 2009), and most relevantly to the present point, tend to experience their moral

commitments and actions as necessities (Colby & Damon, 1992; Oliner & Oliner, 1988), rather than as the avoidance of morally repugnant impulses. It may thus be that the predominance of the promotion orientation implied by Blasi's account is found only in those exceptional individuals whose identity comes to be wholly centered on morality. Still, it seems reasonable to think of the distinction in terms of degrees of wholehearted commitment (rather than in binary terms), and for the general developmental trend to be towards increasing wholeheartedness (even if most people never achieve a fully wholehearted moral character as Blasi described it) and the increasingly promotion orientation that this implies.

Beyond the uncertainty surrounding the orientation axis, several other issues remain to be addressed. First, while the findings in Chapter 2 demonstrate age-graded trends in moral identity goal characteristics between adolescence and adulthood, those trends are proposed to begin in middle childhood (Krettenauer, 2022a), after the emergence of the precursors of a mature moral identity (Engelmann & Rapp, 2018; Tomasello, 2019). Evidence exists supporting the trend from external to internal motivation between childhood and adolescence (Krettenauer, 2020; Sengsavang, 2018), but future research is particularly needed to establish the predicted trends in goal abstraction and orientation for that developmental period. Second, longitudinal studies are needed to corroborate cross-sectional age-graded trends. And third, while the predicted behavioural implications of the motivational axis are demonstrated in Chapter 4, moral identity goal theory also predicts that goal abstractness and orientation will covary with moral behaviour (Krettenauer, 2022b). Those hypothesized associations remain to be tested.

In summary, this dissertation is an important first step in validating many of the core assumptions of moral identity goal theory (Krettenauer, 2022a, 2022b). It presents empirical evidence of age-graded shifts towards a more abstractly construed, and internally motivated

moral identity (Chapter 2), as well as how differences in the motivations supporting the moral identity goal may influence moral action (Chapter 4). By contrast, no evidence emerged for the predicted trend of a shift towards promotion orientation. Nonetheless, there remain good reasons not to foreclose too quickly on the potential developmental significance of the orientation axis. Additional investigation is required to clarify this issue and more fully validate the moral identity goal theory's rich set of predictions.

Exploring and Integrating Variation in Moral Identity

Another of the primary motives of this dissertation was to provide evidence of the extent to which moral identity exhibits trait-like stability and state-like fluctuation. This contrast between stability and malleability is invariably foregrounded in review papers and chapters attempting to describe the lay of the theoretical landscape (Aquino & Kay, 2019; Hardy & Carlo, 2011; Jennings et al., 2015; Narvaez & Lapsley, 2009). Trait theories are described as accounts of moral identity as a feature of moral *character*, and consequently emphasize persons and the relatively enduring differences between them as the focal unit of analysis (e.g., Blasi, 1983). By contrast, in socio-cognitive theories mental constructs (e.g., schemas, scripts, goals, prototypes, etc.) and their activation in context are the units through which moral identity is conceptualized (e.g., Aquino et al., 2009; Lapsley & Narvaez, 2004). Individual differences in moral identity emerge, according to these accounts, as patterns of activation of these socio-cognitive mechanisms (e.g., differences in the chronic activation of moral self-schemas). While these two perspectives imply a substantial difference in their respective focus on within- and between-person variation, neither class of theory conceptually entail that moral identity and its impact on moral functioning is dominated by variability at either of these levels. Trait theories of moral identity, such as Blasi's Self Theory, make no claims about the unimportance of context and the

situation in modifying the functioning of “trait” differences in moral identity (quite the opposite, in fact; see Blasi, 1983, 2005). Nor does a socio-cognitive perspective imply that individual differences in emergent patterns of activation are small in magnitude compared to situational differences in activation (Cervone & Shoda, 1999). However, the distinction between the emphasis different theories place on these two levels of analysis and what these theories necessarily imply about moral identity’s essential trait-like or state-like nature are not always recognized by moral identity scholars.

Aquino and Kay (2019), for instance, extrapolate the compelling evidence supporting socio-cognitive models of moral identity into a claim that moral identity operates in a rather flexible mode (i.e., high within-person variability relative to between-person difference). They point out that individual differences in chronic salience have been measured, changes in momentary salience can be induced by situational cues in the lab, and that both these kinds of variation are associated with a host of morally relevant behaviours. From this basic validation of the socio-cognitive perspective they conclude that moral identity most likely operates in a fluid, malleable way “for the *typical* person in *most* situations” (p. 137). They further suggest that moral identity may operate in a more stable, firm mode (i.e., high between-person variability relative to within-person variability), but only among the morally gifted. As argued in Chapter 3 of this dissertation, that proposal was not well supported by the empirical literature. The existing evidence (i.e., cross-sectional measurements and experimental priming of moral identity) is simply not of the kind which permit conclusions about the stability/malleability of moral

identity⁶. Nor do such conclusions follow on conceptual grounds from the validation of the idea that socio-cognitive mechanisms may be the fundamental explanatory units underwriting individual differences in moral identity (Cervone, 1991; Cervone & Shoda, 1999). Addressing this question seemed to call for a type of data which has been almost entirely absent in moral identity research: intensive repeated measurement (Bolger & Laurenceau, 2013).

By using experience sampling and intensive longitudinal analysis, the work in this dissertation provides the clearest picture to date on moral identity's malleability/stability. It finds that typically functioning individuals are consistently and substantially influenced by the demands of the situation, but that variation in the momentary salience of moral identity occurs around equally substantial differences in its chronic salience (see also Krettenauer et al., 2022). In other words, moral identity is typically composed of both stability and malleability in roughly equal measure. While this finding contradicted Aquino and Kay's (2019) proposal in one respect (i.e., moral identity does not generally operate in a flexible mode, for typical people), some evidence of a connection between differences in moral functioning and variability in moral identity emerged. While it was not possible to test for differences in variability between typically functioning individuals and moral exemplars (the sample included no such exemplar group), within a group of typically functioning young adults, more chronically salient moral identities tended to be more stable.

⁶ Beyond the trivial conclusion that moral identity at least to some minimal degree varies at both the within- and between-person levels.

This analysis suggests an interesting possible extension of the moral identity concept enabled by experience sampling and the intensive longitudinal data it produces: that an individual's moral identity can be characterized not just by mean levels of its salience, but also by its variability around that mean. This proposal is akin to how individual differences are conceptualized in Whole Trait Theory (WTT; Fleeson & Jayawickreme, 2015; Jayawickreme et al., 2019). WTT conceptualizes momentary states as the fundamental building blocks out of which traits are composed. Trait differences correspond to the various parameters describing the density distribution of a person's states. For instance, a person's enactment of extroverted behaviour will vary in frequency and intensity over time and across contexts. A trait extroversion description of that person then would correspond not just to the central tendency (e.g., mean levels) of that distribution of states, but also to its spread (i.e., variability) and shape. Such distributional parameters have proven to be highly consistent over time (for Big Five personality traits), demonstrating that they capture enduring individual differences (Baird et al., 2006; Fleeson, 2001). If similar consistency in the distributional properties of moral identity's momentary salience (and/or the momentary state of its goal characteristics) could be established, it would open up a variety of interesting avenues of further inquiry.

For example, moral identity is typically conceptualized as a magnitude (e.g., the chronic salience of moral self-schemas; Narvaez et al., 2006; Narvaez & Lapsley, 2009). Development of moral identity is then explored in terms of differences in magnitude (e.g., how does the chronic salience of moral self-schemas change with age?). Taking the distributional properties approach suggests that development in moral identity may occur in ways not captured by differences in mean levels, namely, changes in variability (e.g., how does the consistency in the salience of moral self-schemas change with age?). The Big Five personality traits have been shown to

increase rapidly in stability between middle childhood and early adulthood (Bleidorn et al., 2022; Borghuis et al., 2017), while affective stability increases across adulthood (e.g., Carstensen et al., 2011; Röcke & Brose, 2013). Maturation in moral identity may likewise consist not just in mean level increases, but also in increasing cross-context stability (although, see Sengsavang, 2018).

In addition to characterizing traits as consisting of the distributional patterns of states, WTT offers other integrative possibilities with moral identity theory. It proposes that traits should be understood as being composed of two distinct levels: the descriptive level and the explanatory level. The descriptive level refers to the stable tendencies of a person's state distributions—how often, intensely, or consistently they exhibit extroverted behaviour, for example. The explanatory level refers to the underlying socio-cognitive processes that generate these patterns. It includes mechanisms like motives, beliefs, goals, and contextual interpretations that shape those patterns of state expression (Fleeson & Jolly, 2006). For instance, an extravert may engage in social interactions due to a strong need for affiliation. Although the evidence for WTT as a conceptual framework has stemmed mostly from work on the Big Five personality traits, its proponents have suggested that it may prove a useful lens through which to view other types of traits (Jayawickreme et al., 2019). They have in particular highlighted the potential utility of applying WTT to the empirical study of moral virtue (Jayawickreme et al., 2014; Jayawickreme & Fleeson, 2017). Some early work in this vein (Prentice et al., 2020) has explored how patterns of moral behaviour can be explained by state and trait instantiations of the basic psychological needs proposed by Self-Determination Theory (Prentice et al., 2019; Ryan & Deci, 2017). An analogous integration of WTT and moral identity goal theory, in which patterns of moral behaviour (i.e., a descriptive level of moral character) are understood as tools through

which the goal of being a good person (i.e., the explanatory level of moral character) is pursued is an interesting possibility.

Conclusion

The studies presented in this dissertation underscore the promise of advancing moral identity research through innovative measures and methodologies. By developing nuanced and developmentally sensitive tools to assess the dimensions of moral identity and employing ecologically valid approaches such as experience sampling, this work moves closer to resolving longstanding questions about the interplay between stability, malleability, and change in moral identity. Moreover, these methodological advancements allow for a richer empirical engagement with theories that have emphasized the dynamic and integrative nature of moral identity, such as moral identity goal theory and socio-cognitive accounts.

Looking ahead, the continued refinement of these tools and approaches not only holds the potential to clarify the essential nature of moral identity but also opens new avenues for integrating diverse theoretical perspectives. By bridging gaps between developmental, individual difference and process accounts, and between within- and between-person variability, such work can help realize the full potential of existing theories. Ultimately, these efforts bring us closer to a comprehensive understanding of how moral identity develops and functions across contexts and life stages, enriching the empirical foundation for theories that aspire to explain its central role in moral life.

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APPENDIX A

Moral Identity Experience Sampling Measures

This appendix contains the specific measures which were included in the (a) short multiple-daily assessments, and (b) the end-of-day follow-up survey. The end-of-day survey was sent to participants on days when they reported one or more morally salient events occurring on any of their short multiple-daily assessments that day. The purpose of that end-of-day survey was to follow up in more detail about any events which occurred that day.

Multiple-daily assessment (5/day)

1. Moral Identity Salience

(Generic/Promotion):

In the past hour, how important was it for you to be a moral person?

Responses are made on a slider anchored on 0 – Not at all and 100 – Very much

(Self-relevant values/Promotion):

Below are the moral characteristics or behaviours you said were most important to you. In the past hour, how important was each of these to you?

Participants are presented with the three promotion values they selected during intake as most personally important to them (see Appendix 2A for the complete list of promotion values participants selected from). Responses for each value were made on the following scale: 0 – Not important at all, 1 – Slightly important, 2 – Moderately important, 3 – Very important, 4 – Extremely important.

(Generic/Prevention):

In the past hour, how important was it for you to avoid being an immoral person?

Responses are made on a slider anchored on 0 – Not at all and 100 – Very much

(Self-relevant values/Prevention):

Below are the moral characteristics or behaviours you said were most important for you to avoid. In the past hour, how important was avoiding each of these to you?

Participants are presented with the three prevention values they selected during intake as most personally important for them avoid being (see Appendix 2A for the complete list of promotion values participants selected from). Responses for each value were made on the following scale: 0 – Not important at all, 1 – Slightly important, 2 – Moderately important, 3 – Very important, 4 – Extremely important.

2. General Affect

In the past hour, how did you feel?

Participants responded on a slider anchored with 0 – Very bad, 50 – Neutral, 100 – Very good.

3. Moral Event survey

What happened in the past hour? Check all that apply:

I did something moral.

I did something immoral.

Someone did something moral to me.

Someone did something immoral to me.

I saw or heard about someone doing something moral.

I saw or heard about someone doing something immoral.

For each event that applies:

Please briefly describe this event in a few words. If more than one event of this type occurred in the past hour, describe the one event that was most significant to you.

Free response in text box.

When this event happened, how did you feel? Below are some groups of feeling and emotion words. Please indicate to what extent you felt this way at the time of the event.

Five items presented with emotion words for each of five emotion categories: self-evaluative positive/negative, other-evaluative positive/negative and other-regarding. Participants rate on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items:

Guilty, Ashamed, Dissatisfied with self
 Angry, Disgusted, Outraged
 Proud, Satisfied with self, self-confident
 Admiring, Respectful, Inspired
 Sympathy, Compassion, Considerate

4. Moral Identity Goal Motivation

Here are a few statements about your experiences in the past hour. Please indicate how much you agree or disagree with each.

Participants rate 8 statements on a 5-point Likert scale (*Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, and Strongly agree*).

Items (Stem: In the past hour, it was important for me ...)
...to be the type of person I really want to be. (Internal motivation)

...to do what I think is good. (Internal motivation)
...not to betray my values and morals. (Internal motivation)
...not to do what I think is bad. (Internal motivation)
...to show others that I am a good person. (External motivation)
...to behave in ways others see as good. (External motivation)
...to show others that I am not a bad person. (External motivation)
...not to do what others may see as bad behavior. (External motivation)

If none of these statements were relevant in the past hour check here to remove these questions.

Daily End-of-Day survey (on days when a moral event of any kind is reported)

Note: There are six sections in the end-of-day survey. Participants will be presented with the appropriate section for each of the moral events they reported for that day:

1. I did something moral.
2. I did something immoral.
3. Someone did something moral to me.
4. Someone did something immoral to me.
5. I saw or heard about someone doing something moral.
6. I saw or heard about someone doing something immoral.

1) I did something moral. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that you did something moral. You described the event in the following words:

[piped text from multiple-daily short survey + momentary report time]

1.a) Where did this moral action happen?

Select the option that best describes where it took place:

- In a public space, where other people were around to potentially witness my action.
- In a private space, where only the target of my action was around.
- In a public online space (e.g., chat group, message board, Facebook wall, etc.)
- In a private online space / via text or direct message.
- Other: _____

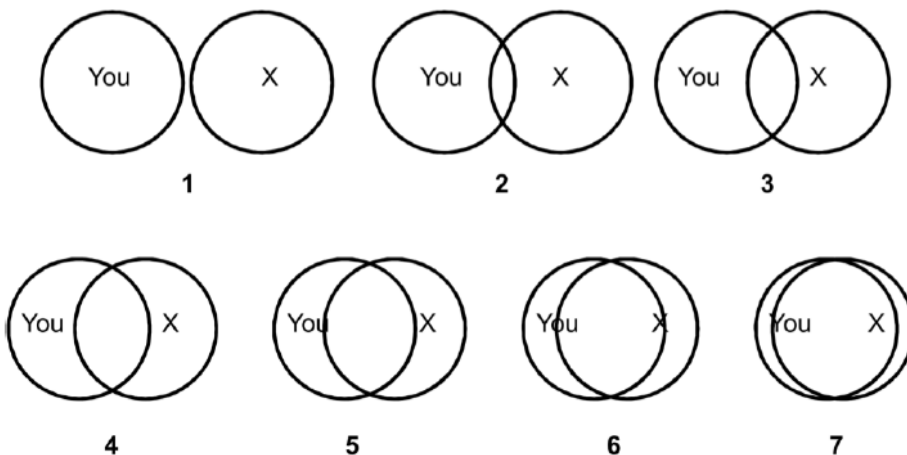
1.b) Who or what was the target of your moral action?

Select the option(s) which best describe the target of your action:

- Family member
- Romantic partner
- Friend
- Acquaintance
- Co-worker
- Supervisor/teacher/boss
- Stranger
- Other: _____

1.c) Inclusion of other in the self measure (IOS; Aron et al., 1992)

In the following figure we ask you to consider which of these pairs of circles best describes your relationship with the person(s) you acted morally towards. In the figure "X" serves as a placeholder for this person, that is, you should think of "X" being the person who you acted morally towards. By selecting the appropriate number please indicate to what extent you and this person are connected.



1.d) Positional power measure (adapted with changes from Smith & Hofmann, 2016)

Which of the following best describes your position relative to the person(s) you acted morally towards, at the time of the event:

- I was in a position of power over them.
- They were in a position of power over me.
- None of the above.

1.e) Subjective feelings of power (adapted with changes from Smith & Hofmann, 2016)

At the time of this event how powerful did you feel? Answer on a slider (0 = very powerless, 100 = very powerful)

1.f) Please take a few minutes to tell us in more detail who was involved, how the event started, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond freely in a large open text box.

1.g) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

2) I did something immoral. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that you did something immoral. You described the event in the following words:

[piped text from multiple-daily short survey + momentary report time]

2.a) Where did this immoral action happen?

Select the option that best describes where it took place:

- In a public space, where other people were around to potentially witness my action.
- In a private space, where only the target of my action was around.
- In a public online space (e.g., chat group, message board, Facebook wall, etc.)
- In a private online space / via text or direct message.
- Other: _____

2.b) Who was the target of your immoral action?

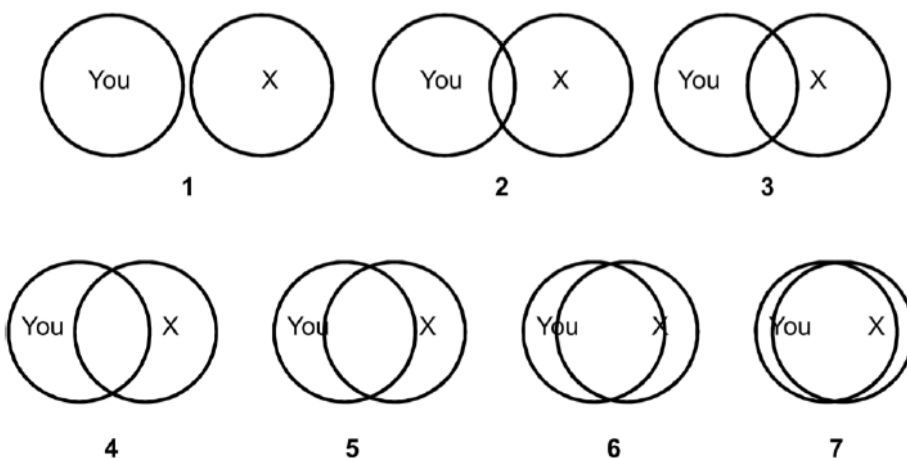
Select the option(s) which best describe the target of your action:

- Family member
- Romantic partner
- Friend
- Acquaintance

- Co-worker
- Supervisor/teacher/boss
- Stranger
- Other: _____

2.c) Inclusion of other in the self measure (IOS; Aron et al., 1992)

In the following figure we ask you to consider which of these pairs of circles best describes your relationship with the person(s) you acted immorally towards. In the figure "X" serves as a placeholder for this person, that is, you should think of "X" being the person who you acted immorally towards. By selecting the appropriate number please indicate to what extent you and this person are connected.



2.d) Positional power measure (adapted with changes from Smith & Hofmann, 2016)

Which of the following best describes your position relative to the person(s) you acted immorally towards, at the time of the event:

- I was in a position of power over them.
- They were in a position of power over me.
- None of the above.

2.e) Subjective feelings of power (adapted with changes from Smith & Hofmann, 2016)

At the time of this event how powerful did you feel? Answer on a slider (0 = very powerless, 100= very powerful)

2.f) Please take a few minutes to tell us in more detail who was involved, how the event started, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond freely in a large open text box.

2.g) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

3) Someone did something moral to me. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that someone did something moral to you. You described the event in the following words:

[piped text from multiple-daily short survey + momentary report time]

3.a) Where did this moral action happen?

Select the option that best describes where it took place:

- In a public space, where other people were around to potentially witness my action.
- In a private space, where only the target of my action was around.
- In a public online space (e.g., chat group, message board, Facebook wall, etc.)
- In a private online space / via text or direct message.
- Other: _____

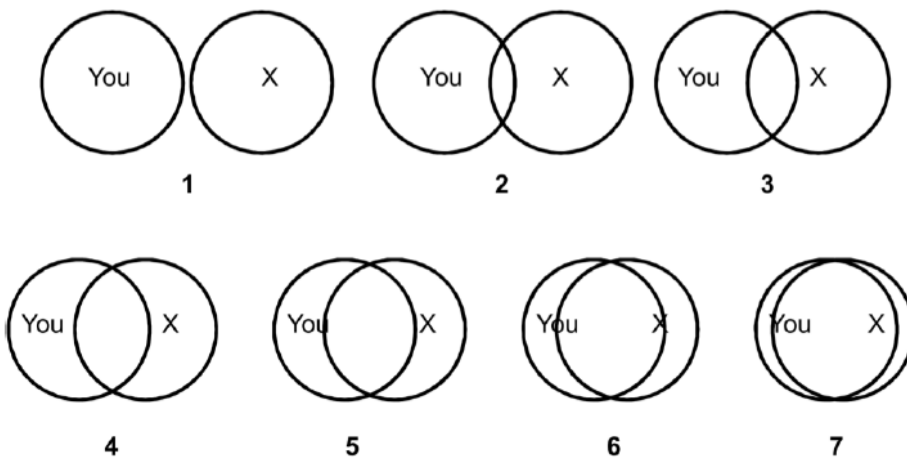
3.b) Who behaved morally towards you?

Select the option(s) which best describes this person:

- Family member
- Romantic partner
- Friend
- Acquaintance
- Co-worker
- Supervisor/teacher/boss
- Stranger
- Other: _____

3.c) Inclusion of other in the self measure (IOS; Aron et al., 1992)

In the following figure we ask you to consider which of these pairs of circles best describes your relationship with the person(s) who acted morally towards you. In the figure "X" serves as a placeholder for this person, that is, you should think of "X" being the person who acted morally towards you. By selecting the appropriate number please indicate to what extent you and this person are connected.



3.d) Positional power measure (adapted with changes from Smith & Hofmann, 2016)

Which of the following best describes your position relative to the person(s) who acted morally toward you, at the time of the event:

- I was in a position of power over them.
- They were in a position of power over me.
- None of the above.

3.e) Subjective feelings of power (adapted with changes from Smith & Hofmann, 2016)

At the time of this event how powerful did you feel? Answer on a slider (0 = very powerless, 100= very powerful)

3.f) Please take a few minutes to tell us in more detail who was involved, how the event started, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond freely in a large open text box.

3.g) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

4) Someone did something immoral to me. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that someone did something immoral to you. You described the event in the following words:

[piped text from multiple-daily short survey + momentary report time]

4.a) Where did this immoral action happen?

Select the option that best describes where it took place:

- In a public space, where other people were around to potentially witness my action.
- In a private space, where only the target of my action was around.
- In a public online space (e.g., chat group, message board, Facebook wall, etc.)
- In a private online space / via text or direct message.
- Other: _____

4.b) Who behaved immorally towards you?

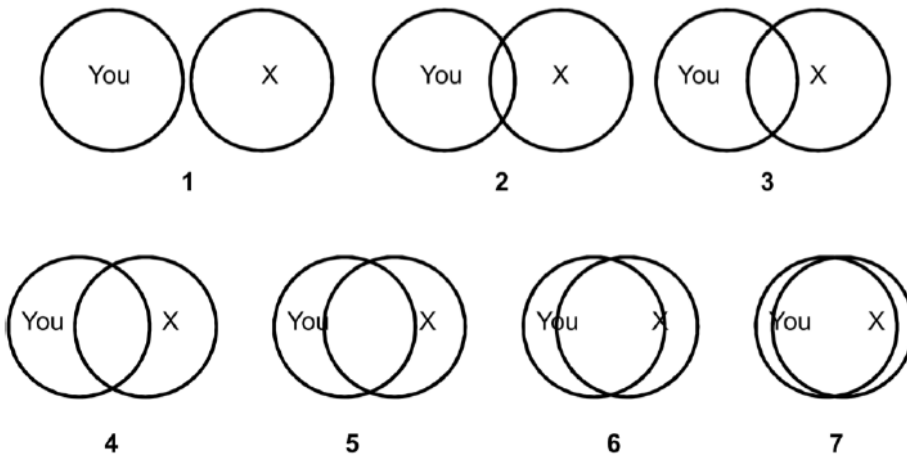
Select the option(s) which best describes this person:

- Family member
- Romantic partner
- Friend
- Acquaintance
- Co-worker
- Supervisor/teacher/boss
- Stranger
- Other: _____

4.c) Inclusion of other in the self measure (IOS; Aron et al., 1992)

In the following figure we ask you to consider which of these pairs of circles best describes your relationship with the person(s) who acted immorally towards you. In the figure "X" serves as a

placeholder for this person, that is, you should think of "X" being the person who acted immorally towards you. By selecting the appropriate number please indicate to what extent you and this person are connected.



4.d) Positional power measure (adapted with changes from Smith & Hofmann, 2016)

Which of the following best describes your position relative to the person(s) who acted immorally toward you, at the time of the event:

- I was in a position of power over them.
- They were in a position of power over me.
- None of the above.

4.e) Subjective feelings of power (adapted with changes from Smith & Hofmann, 2016)

At the time of this event how powerful did you feel? Answer on a slider (0 = very powerless, 100= very powerful)

4.f) Please take a few minutes to tell us in more detail who was involved, how the event started, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond in a large open text box.

4.g) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

5) I saw or heard about someone doing something moral. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that you saw or heard about a moral event. You described the event in the following words

[piped text from multiple-daily short survey + momentary report time]

5.a) Did this event involve people you know personally?

Yes; No.

5.b) Were you present when the moral event happened?

I was present and witnessed the action; I was not present for the action.

5.c) [If not present] How did you hear about the event?

Someone I know told me about it; I heard about it in the news media (online, tv, radio, print); I heard about it on social media; I read about it in a book; Other + text box.

5.d) Please take a few minutes to tell us in more detail who was involved, how you came to see or hear about the event, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond freely in a large open text box.

5.e) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed (Compassion is sometimes included in measures of elevation).

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

6) I saw or heard about someone doing something immoral. Participant is presented with the following items, once for each report of this event type reported this day.

Earlier today you indicated that you saw or heard about an immoral event. You described the event in the following words

[piped text from multiple-daily short survey + momentary report time]

6.a) Did this event involve people you know personally?

Yes; No.

6.b) Were you present when the immoral event happened?

I was present and witnessed the action; I was not present for the action.

6.c) [If not present] How did you hear about the event?

Someone I know told me about it; I heard about it in the news media (online, tv, radio, print); I heard about it on social media; I read about it in a book; Other + text box.

6.d) Please take a few minutes to tell us in more detail who was involved, how you came to see or hear about the event, what exactly happened and how it came to an end. Please provide as much detail as you can.

Participants respond freely in a large open text box.

6.e) Looking back, how did you feel about this event at the time? Below are a number of words describing feelings and emotions. Indicate to what extent you felt this way when the event happened.

List of single emotion items, to be rated on a 5-point Likert scale (*Very slightly or not at all, A little, Moderately, Quite a bit, and Extremely*). Items (grouped by category here for convenience, but not in the survey) include:

Self-evaluative negative (5) – Guilty, Ashamed, Dissatisfied with self, Blameworthy, Embarrassed.

Other-evaluative negative (5) – Angry, Disgusted, Outraged, Hostile, Loathing.

Self-evaluative positive (5) – Proud, Satisfied with self, having integrity, strong, confident

Other-evaluative positive (4)– Admiring, Respectful, Inspired, Awed (Compassion is sometimes included in measures of elevation).

Other-regarding (6)– Sympathy, Compassion, Considerate, Kind, Soft-hearted, Understanding.

References

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