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**Links Between Adolescents' Moral Mindsets and Narratives of their Inconsistent
and Consistent Moral Value Experiences**

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Authors' Contributions

AS conceived of the study, recruited participants, collected, coded and analyzed data, and drafted the manuscript; HR provided guidance at all stages of this research. Both authors read and approved the final manuscript.

Data Sharing Declaration

The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors report no conflicts of interest.

Compliance with Ethical Standards

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Parental consent and adolescent written assent were obtained for each participant.

Abstract

Past work on moral mindsets has largely overlooked the adolescent developmental period, a time when adolescents are navigating the complexities of moral life and experiencing tensions between important moral principles and their own actions. This study investigated how moral incrementalism and essentialism are linked to how adolescents construct meanings about their moral experiences. The sample included 96 Canadian adolescents (12- to 15-years of age; $M = 13.5$ years). Adolescents generated written narratives of times when they acted inconsistently and consistently with a moral value, and completed a vignette-based measure of moral mindsets. Moral incrementalism was associated with references to the psychological and emotional facets of experiences and engaging in meaning-making processes in narratives. Adolescents who endorsed incrementalism disengaged less only when narrating a self-discrepant experience, indicating some context-specificity across moral event types. Overall, results contribute to scholarship on moral mindset and narrative identity construction. Findings illuminate how individual differences in youth's views of moral traits and behavior may be associated with important aspects of moral identity development such as delving into the psychological and emotional facets of their experiences and engaging in meaning-making processes.

Keywords: Moral mindsets; Moral essentialism; Moral incrementalism; Narrative; Adolescence; Identity development; Meaning-making

Introduction

Early to middle adolescence is a crucial period for the emergence of moral identity (Krettenauer & Hertz, 2015) and yet, moral mindsets (i.e., whether adolescents perceive moral attributes as stable or unstable, due to internal or external factors, and innate or malleable; Dweck, 2006) have been largely overlooked during this developmental period. Examining mindsets in the moral domain is especially crucial during the adolescent years as youth's self-understandings become increasingly differentiated as they strive to account for inconsistencies between past moral and immoral actions (e.g., acting selfishly in one context and selflessly in another) and draw connections between their experiences and sense of self (McLean & Pasupathi, 2012). To date, however, links between adolescents' construction of meaning about their own moral experiences and moral mindsets have yet to be investigated. Addressing this question will shed light on how moral mindsets are linked with narrative practices that have a bearing on youth's well-being and their construction of moral agency (e.g., their understanding that they may sometimes act in ways that are imperfect and yet, are not defined by their bad actions; Pasupathi & Wainryb, 2010). As such, this study examined how youth's endorsement of moral mindsets is linked to the ways in which they narrate past experiences in which they acted consistently and inconsistently with an important value.

Mindset

There are two overarching types of moral mindsets widely replicated in North American samples, that inform how adolescents understand and evaluate themselves and their experiences (Dweck & Yeager, 2019). The first is a moral incremental mindset whereby moral attributes are perceived as unstable, changing with effort, and shaped by external or situational factors. In this mindset, individuals understand that qualities, traits, and aptitudes are malleable, in that they are shaped by the environment and personal experiences (Dweck, 2006). The second is an essentialist mindset whereby moral attributes are perceived as due to stable, internal factors that are innate and unchanging with effort or time (Gelman, 2003). Holding an incremental or essentialist mindset shows small-to-moderate associations with a variety of outcomes, including well-being, coping, attributions of blame, and consequence judgements (Yeager et al., 2011). Particularly relevant to the current study, mindsets have been linked to how North American adolescents evaluate and respond to their own and others' positive and negative moral actions (e.g., sharing, harming), particularly when encountering setbacks (Foster-Hanson et al., 2020). For instance, youth with an essentialist mindset are less likely to believe a peer can change their aggressive behavior and are more likely to endorse vengeful responses (Yeager et al., 2013).

In relation to self-understanding, an essentialist mindset has been linked to feelings of shame and sadness, and generalization of failures via negative global ability judgments in North American samples (e.g., “I am selfish and mean”; Foster-Hanson et al., 2020). Conversely, an incremental mindset is associated with viewing one’s own poor performance or failures as less diagnostic and due to specific contextualized factors (e.g., “During the heat of the moment I was too frustrated to care about anything”; Hendersson & Dweck, 1990). As such, it is relevant to consider how mindset is linked to processes of identity development among adolescents who are navigating the complexities of moral life and experiencing tensions between important moral principles and their own actions (Pasupathi & Wainryb, 2010a). In other words, adolescents’ incremental and essentialist mindsets may be linked to the ways in which youth make sense of their experiences and come to understand themselves: for example, as a good person who sometimes does bad things in “the heat of the moment” (Pasupathi & Wainryb, 2010a).

While connections between mindsets and narrative processes are understudied in adolescence, work with North American adults suggests that implicit theories of personality are associated with narrative meaning-making; in one study, incremental views of personality were linked to more elaborated self-growth connections in trauma narratives and fewer characterizations of oneself as a bad person in transgression narratives (Lilgendahl et al., 2013). Further, greater explorations of meaning have been found in narratives for individuals who described themselves as open and flexible (Pals, 2006). Nevertheless, these associations have been less frequently examined in the moral realm and in the adolescent years. It is important to investigate how moral mindset may be associated with adolescents’ identity construction in situations bearing on their value commitments. Reflecting on their past transgressions may give youth opportunities to reconcile their negative actions with a positive self-view; that they are not defined by their immoral actions, but rather that such actions stem from complex beliefs and competing desires in specific interpersonal contexts. Nevertheless, incremental and essentialist mindsets may be linked to distinct ways of making sense of morally-laden experiences, posing both risks and opportunities for identity development. For instance, an incremental mindset may be associated with youth’s understandings that it takes hard work via effort or time to cultivate a positive moral self. Conversely, moral essentialism may be associated with drawing stable self-connections which can ultimately be beneficial or destructive, given the circumstances; for example, it may sometimes be protective to think of oneself as possessing stable, virtuous traits, but it can also be destructive to think of oneself as incapable of improvement.

Moral Incrementalism, Essentialism and Narrative Construction

One important process whereby identity develops is via the construction of narratives about experiences that bear on youth's understandings of themselves. In North American samples, reflecting on past events has been shown to support meaning-making (i.e., the degree to which one learns something about themselves due to reflection) and identity development (e.g., McLean, 2005). Narratives are first-person renderings of life experiences that include reports of episodic details (i.e., what happened) and interpretations that serve to make sense of events (i.e., why it happened, what the narrator and others wanted, thought, and felt; e.g., Grysman & Mansfield, 2017). Scholarship in this area emphasizes the importance of narratives as they provide the ability to reflect on and construct an understanding of the self by drawing on elements from the past, present and future via storytelling (McLean et al., 2007). In this respect, narratives can be approached in two ways. Narratives can be conceptualized as *windows* into development, as well as *processes* whereby development occurs. Narratives as windows involves uncovering aspects of youth's memories and personality. In this approach, narrated content is used to draw conclusions about the event or aspects of the narrator's personality. Narratives as processes involve interpretations of experiences that inform the construction of knowledge. In this approach, the focus is on the dynamic process of how experiences are interpreted, how knowledge is constructed and how it shapes the self or one's understanding of events (see Grysman & Mansfield, 2017). Examining aspects of both narrative process ("how") and content ("what") can thus provide a more comprehensive view of links between narrative and identity development (McLean et al., 2014).

To date, interrelations between the narrative construction of meaning and moral mindsets have not been investigated. Instead, emphasis has been placed on investigating moral mindsets and their connections with responses to hypothetical vignettes (e.g., Yeager et al., 2011) or behavioral changes such as voluntary service engagement (e.g., Han et al., 2018) and generosity (e.g., Heiphetz, 2019). It is crucial to investigate associations with narrative contents and processes, given the significance of narration to identity development, as well as mental health, well-being and maturity (McAdams & McLean, 2013). Arguably, the ways in which adolescents understand, interpret and narrate experiences that are relevant to their moral value commitments may be linked to the type of moral mindset they hold, and whether they believe that they can improve and work on themselves to become a better person.

Since moral incrementalism is associated with viewing moral attributes as linked to situational circumstances (Dweck, 2006), it may be linked to more explanations for behavior that are external to the actor's psychology. Conversely, given that essentialism emphasizes innate characteristics that are unchanging over time (Gelman, 2003),

endorsing moral essentialism might be associated with explaining actions as due to internal or personal factors. For similar reasons, endorsing moral incrementalism might be associated with considering ways in which experiences have changed the self, whereas essentialism may be linked to construals that the self has remained consistent over time (Pasupathi et al., 2007).

Moreover, youth who endorse moral incrementalism might also show evidence of greater reflection on psychological aspects of their past experiences (Pasupathi & Wainryb, 2010b). This may include overall levels of psychological elaboration in making sense of past events, as well as reflection on moral emotions. There is some research to suggest that holding a growth mindset regarding personality and intelligence is associated with more pride for accomplishments and less shame when experiencing setbacks in a British sample (Cook et al., 2017). Therefore, moral incrementalism may be linked to more positive moral emotions (e.g., pride) and fewer negative moral emotions such as shame and guilt. Psychological elaborations and rich descriptions of emotions in narrative accounts are associated with numerous benefits including higher self-esteem (McLean & Breen, 2009), happiness and well-being (e.g., Bird & Reese, 2006), inasmuch as they serve as an antithesis of suppression by allowing the narrator to express their emotions and thoughts associated with difficult experiences (e.g., Gross, 2001). Contrarily, grappling with one's own thoughts, intentions, and feelings in relation to an act that is inconsistent with their moral self-view might be particularly difficult for adolescents who perceive moral character as unchanging across time and situations. As such, moral essentialism might be linked with less elaboration on psychological aspects of challenging experiences, and rather emphasis on aspects of these events are objective and verifiable. That is, youth who endorse essentialist beliefs may recount their experiences in a way where they avoid grappling with the discomfort of their own psychology (i.e., why they acted the way they did, what it means) and instead focus on tangible details related to their experience (i.e., who, what, where, and when).

Furthermore, since past research has documented greater explorations of meaning in narratives for individuals who described themselves as open and flexible (Pals, 2006), there may be an association between moral incrementalism and descriptions of insights gained or lessons learned since this mindset is associated with more flexible perspectives and self-growth connections (e.g., Dweck & Yeager, 2019). Contrarily, a moral essentialist mindset may be associated with minimizing responsibility by reluctantly discussing one's actions or glossing over important details (de Silveira & Habermas, 2011). This association may be particularly evident when adolescents describe experiences that pose a challenge to their moral self-views.

As adolescents mature, they develop an increasingly complex understanding of the self, become more adept at finding coherence in that complexity (Harter, 2012), and grapple more with the notion that their different characteristics can manifest in context-specific ways (Proulx & Chandler, 2006). With increasing age, adolescents' narratives have been shown to involve increases in psychological elaborations as well as meaning-making (McLean & Breen, 2009). Further, there is evidence to suggest that age-related shifts in moral thinking follow a U-shaped-age related pattern whereby pre-adolescents (i.e., 8-year-old) and older adolescents (i.e., 16-year-olds) made more similar moral judgments compared to early-to mid-adolescents (i.e., 10-14 -year-olds). This is interpreted to suggest that the pre- to mid-adolescent age range is an important period of developmental transition, rather than regression (Nucci et al., 2018) and highlights the importance of investigating this age range. Regarding gender, girls have been found to provide more psychologically elaborated narratives, including more elaborations of self, references to moral emotions and discussion of internal states (Bohanek & Fivush, 2010).

Current Study

Interrelations between the narrative construction of meaning and moral mindsets have yet to been investigated. In a sample of Canadian adolescents, this study examined how youth's endorsement of moral mindsets are linked to their narrative accounts of experiences in which they described acting consistently and inconsistently with an important value. This study sought to document how narrative contents and processes are linked to individual differences in moral essentialism and incrementalism, as well as age and gender. Based on the literature reviewed above, it was expected that the endorsement of moral essentialism would be linked to more internal attributions, references to the self as stable, and factual (rather than psychological or emotional) information in narratives. Moral essentialism was also expected to be linked to more narrative disengagement, and that this association would be particularly evident when adolescents narrated a time they acted inconsistently with a moral value. Contrarily, moral incrementalism was expected to be associated with external attributions, references to the self as changing, and meaning-making. It was also hypothesized that adolescents who endorsed moral incrementalism would make more interpretive references (both emotionally and psychologically), particularly when narrating a time when they acted inconsistently with a moral value. Regarding age and gender differences, age-related increases in psychological elaborations of self and meaning-making were expected. Moreover, girls were hypothesized to provide more psychologically elaborated narratives including more elaborations of self and

references to moral emotions. Other aspects of narrative content and process and their associations to age and gender were examined in exploratory ways.

Method

Participants

The sample consisted of 98 adolescents (51 girls, 47 boys) ranging in age from 12- to 15-years ($M = 13.5$ years; ns for 12-, 13-, 14-, and 15-year-olds were 25, 26, 26, and 21, respectively). Two participants were omitted from analyses due to missing narrative data, and therefore the final analytic sample consisted of 96 adolescents with complete data for all study variables (50 girls, 46 boys). Power analyses in G*Power indicated that the study had adequate power ($> 80\%$ at $p < .05$) to detect medium-sized associations with measures of mindset ($r =$ approximately .3, based on estimates from Lilgendahl et al., 2013). The study was also adequately powered to detect moderate differences in associations with mindset across narrative types (e.g., approximately 80% power to detect a difference between $r = 0$ in one narrative and $r = .3$ in the other at $p < .05$). Participants were recruited from the (redacted for review) area via advertisements posted on social media and in public spaces (e.g., public libraries, a yoga studio), via word of mouth, through flyers distributed in schools, and by contacting past participants in unrelated studies.

Participating families were mostly White (78%) with the remaining families reporting a variety of racial/ethnic backgrounds (6 % Eastern European, 4% Black, 4% South Asian, 3% Middle Eastern, 2% West Asian, 2% Latin American, 1% Chinese); most parents reported being born in Canada (74%). Mothers of adolescents in the sample primarily had postsecondary education (52% reported completing a University degree or higher, 21% completed high school, 12% completed a professional program, 10% completed some high school/college and 5% did not report their education) with a mean age of 43.7 years ($SD = 5.4$). The adolescents' other parent (85% described as fathers) were also well-educated (47% had a University degree or higher, 21% completed high school, 22% completed a professional program, 1% completed some high school/college and 9% chose not to report their education) with a mean age of 46.7 years ($SD = 5.3$). English was the predominant language spoken at home (84%) and all adolescents reported that they were fluent in English prior to participation.

Procedure

Ethics approval was received from (details redacted for review). Following parental consent and participants' written assent, adolescents completed a survey on a tablet computer provided by the researcher. The survey was

completed either in their family home or at a university lab, depending on the participant's preference. First, participants were prompted to provide two personally meaningful narrative accounts: a time they acted (a) inconsistently and (b) consistently with a moral value that they ranked as important to them. Next, they completed the implicit theories of personality measure (Dweck et al., 1995) followed by the test of self-conscious affect (Tangney et al., 1991). These two latter measures provided evidence of convergent validity for the moral essentialism and incrementalism measure used in the current study (see [redacted for review]) but did not form the focus of the current study. They were then presented with a vignette-based measure to assess moral essentialism and incrementalism. Participants received either \$20 or two movie tickets in appreciation of their participation.

Measures

Value-consistent and inconsistent narrative accounts. Participants were first asked to select the most important value to them from among four commonly-referenced moral traits (Aquino & Reed, 2002): being a caring person, being an honest person, being a dependable person, being a fair person. The sole aim of this question was to ensure that participants wrote about a moral value that they described as personally significant. Participants were then presented with a blank box where they were instructed to think about and write, in detail, about a time they acted (a) inconsistently and (b) consistently with that moral value. For example, if the participant ranked honesty as their most important value, they were asked to write about times that they were (a) not honest and (b) honest. After providing each narrative account, participants were presented with a prompt asking to write about how that experience makes them think and feel about themselves (see Supplementary Materials for the full narrative elicitation script). Coding of adolescents' responses to the open-ended narratives and prompts was collapsed for the purpose of this study. Events were presented in a fixed order whereby self-consistent narratives were elicited last so as to end the procedure on a positive note (e.g., McLean, 2005). After each narrative account, participants also completed follow-up questions to document descriptive information regarding each event (i.e., recency, who it involved; see Table S2 in Supplementary Materials).

Moral essentialism and incrementalism. Participants were presented with four hypothetical vignettes designed with ecological validity in mind, depicting morally-relevant situations between peers that adolescents of this age might encounter in their daily lives. The vignettes were presented in a randomly generated order and included depictions of varied prosocial (e.g., comforting a peer, keeping a promise) and transgressive actions (e.g., plagiarising a classmate's schoolwork, tripping a peer during a race; see Supplementary Materials and [redacted] for

details). Following each of the four hypothetical vignettes, adolescents were asked a series of Likert-type questions to assess moral essentialism and incrementalism (see Appendix A). Past research suggests that individuals hold distinct essentialist and incrementalist beliefs both across and within domains (Hughes, 2015), and that moral incrementalism and essentialism are applied in context specific ways (Heiphetz et al., 2018). Indeed, in this study, there was a moderate positive correlation between the two mindset measures ($r = 0.42, p = 0.001$). Thus, moral incrementalist and essentialist beliefs were assessed as separate but related constructs and to examine their unique associations with features of youth's narrative accounts. Scores for each measure were averaged across the four vignettes; the moral essentialism measure included 20 items (i.e., five items per vignette; $\alpha = 0.82$) whereas the moral incrementalism measure included eight items (i.e., two items per vignette; $\alpha = 0.71$). Values for each construct could range from 1 to 6, with higher scores indicating greater endorsement of essentialist and incrementalist beliefs, respectively.

Narrative Coding

Coding categories were developed to capture both the content and process of the narratives. Narrative contents included internal and external attributions, moral emotions, and connections to the self as stable or changing. Narrative processes included adolescents' elaborations on psychological and factual aspects of events, as well as processes of disengagement and meaning-making. These categories were selected based on theory and research concerning narrative and identity development (e.g., McLean & Breen, 2009) with emphasis on features of narratives that were expected to be linked to implicit theories, as well as variations across consistent and inconsistent moral value narratives. Two coders were trained in order to establish interrater reliability. Interrater reliability was then established on 20% of the narrative transcripts, coded independently. Disagreements were resolved via discussion and consensus. Intraclass correlations (ICCs; single measures, absolute agreement) are reported below as a measure of interrater reliability. The narrative coding scheme is provided in the Supplementary Materials.

Narrative Content

Internal and external attributions. Based on attribution theories (e.g., Manusov & Spitzburg, 2008), attributions reflecting *locus (internal versus external)* were coded. Internal attributions ($ICC = .74$) included explanations of actions reflecting factors intrinsic to the self, such as emotions, goals, cognitions, and personality (e.g., "I did it because I was so angry"). External attributions ($ICC = .91$) included explanations of actions centered on factors extrinsic to the self and external to the actor's psychology, such as provocation, external influence, or extenuating

circumstances (e.g., “She started it”). Internal and external attributions were coded as the frequency of statements reflecting each attribution type.

Self-event connections. The frequency with which adolescents made connections to the self as stable or changing (Pasupathi & Mansour, 2006) was also coded. Stable event connections ($ICC = .90$) were statements indicating that the event did not change how they think of themselves or see themselves (e.g., “I am still the person I always was and still aspire to be”) and/or the event revealed something that was pre-existing about themselves (e.g., “it shows I am an honest person and have always been”). Change event connections ($ICC = .87$) were statements revealing a change since the event or mention of how they have grown/changed because of the event (e.g., “I am different now”).

Moral emotions. Consistent narratives were coded for the frequency of references to pride ($ICC = .95$), including statements related to feeling proud or happy about themselves or their actions (e.g., “I felt proud of myself”). Inconsistent narratives were coded for the frequency of references to guilt, shame, or regret (e.g., “I feel so bad that I did that”; $ICC = .83$). Positive moral emotions were only mentioned in 3% of inconsistent narratives and negative moral emotions were only mentioned in 3% of consistent narratives, and thus these nonprototypical references were not included in analyses.

Narrative Process

Psychological elaboration of self. Narratives were coded for the degree to which the narrator provided psychological elaborations of self (i.e., the narrator’s subjective perspective), consistent with approaches in recent research (e.g., Pasupathi et al., 2019). Narrative elaborations on one’s own emotions, evaluations, intentions, goals and desires were considered in this category (e.g., “I didn’t realize I would hurt his feelings”). These psychological elaborations were coded globally on a scale from 0 (absence of references to the narrator’s psychological states) to 3 (a high level of psychological elaboration). The ICC was .87.

Factual information. Similar to the psychological elaboration of self, adolescent narratives were coded for elaboration on factual information. Factual aspects refer to information that would be commonly accessible to all people experiencing an event, including observable actions and concrete details such as time or location (e.g., “It was at school”; Pasupathi & Wainryb, 2010b). This category was coded on a scale from 0 (absence of factual information) to 3 (a high level of factual information). The ICC was 0.92.

Disengagement. Narratives were coded for the degree to which adolescents implicitly or explicitly disconnected the self from their experience ($ICC = .75$). This included dilutions of agency and minimizing responsibility (de Silveira & Habermas, 2011). For instance, youth minimized their responsibility in varied ways, such as failing to elaborate on their own role in the event (e.g., mentioning their own actions once, at the end of their narrative: “My sister in secondary 3 was getting told and got mean comments from people because she started liking this boy [...] This girl decided to want to start a physical fight with my sister [...] and I went to the police station [and] made a report and lied to the cops to help my sister that she didn't start the fight but instead she did”) or by providing only sparse details regarding what their actions entailed (e.g., “I wasn’t honest in a video game” without mentioning what the dishonesty involved). This category was coded on a scale from 0 (absence of disengagement) to 3 (a high level of disengagement).

Meaning-making. Narratives were coded for the frequency of statements in which adolescents drew lessons and insights from their experiences ($ICC = .80$). This category captured lessons or revelations connected to the event (e.g., “It is important to always be honest”; “Now thinking back of what I did, I realize how wrong that was”; Mclean, 2005).

Plan of Analysis

First, descriptive analyses were performed to assess the mean length of narratives (expressed as number of words) and contextual information regarding the recency and relationship context of events based on the follow-up questions after each narrative (see Tables S1 and S2 in Supplementary Materials). Overall differences in narrative content and processes across the two events were also examined using paired-samples t-tests (see Table 1).

Next, to test the primary hypotheses, mixed models were created in Jamovi version 2.0.0.0 (The jamovi project, 2020) using the GAMLj module (version 2.9.3). Random intercept models were constructed (to account for within-person clustering across the two narratives) for each of the narrative coding categories. In each case, model building began with an unconditional model to assess the distribution of variance in the dependent variables (i.e., ICCs; see Table S3 in Supplementary Materials) as seen in (1). Next, main effects of age and gender were tested (boys coded as 1, girls coded as 0) in each model as seen in (2). Subsequently, to examine overall associations between mindset variables and narrative features, the main effects of essentialism (ESS) and incrementalism (INC) were entered into the models (Tables 2 and 3) as seen in (3). Finally, to examine whether associations with mindset variables differed across consistent and inconsistent narratives, two-way interactions between narrative type

(consistent narrative coded as 1, inconsistent narrative type coded as 0) and measures of essentialism and incrementalism were tested, as seen in (4); significant findings for interactions are described in the text below. All continuous predictor variables were grand mean centered for analysis. Reported model coefficients are unstandardized (i.e., representing the raw change in the narrative variables based on a one-unit change in the predictors), but for the interested reader, standardized coefficients are reported in Tables S4 and S5 of Supplementary Materials. Moreover, marginal R^2 was calculated (i.e., the difference in R^2 with and without the inclusion of a given predictor) and reported for all significant associations.

$$(1) Outcome = B00 + r0 + e$$

$$(2) Outcome = B00 + B01 * AGE + B02 * BOY + r0 + e$$

$$(3) Outcome = B00 + B01 * AGE + B02 * BOY + B03 * ESS + B04 * INC + r0 + e$$

$$(4) Outcome = B00 + B01 * AGE + B02 * BOY + B03 * ESS + B04 * INC + B05 * CONSIST + B06 * ESS * CONSIST + B07 * INC * CONSIST + r0 + e$$

Results

Narrative Descriptive Information

Adolescents most often nominated their most important moral value, and consequently, provided inconsistent and consistent narrative experiences pertaining to honesty (41.2%), followed by caring (27.2%), dependability (17.9%) and fairness (13.7%). A series of preliminary analyses were conducted to examine associations with moral essentialism, moral incrementalism, and age (one-way ANOVAs) and gender (chi-squared tests). These analyses indicated that value selections were not significantly associated to any of the model predictors (i.e., age, gender, essentialism, or incrementalism), and thus value selections were not considered further. Adolescents' narrative accounts described a wide range of experiences. For instance, inconsistent narratives included actions such as spreading rumours, lying, stealing, and acting selfishly. Consistent narratives often focused on actions such as sharing resources, helping others, providing emotional support, and keeping secrets. Descriptive information regarding number of words, reported recency, and relationship context of each event are reported in Supplementary Tables S1 and S2. Inconsistent narratives were significantly longer than consistent narratives but the two events did not differ in their recency or relationship context.

Variations in Narrative Content and Process across Event Types

Pairwise comparisons revealed some significant differences across the two events vis-à-vis narrative content and process categories (see Table 1). Specifically, with regards to narrative content, change event connections and references to moral emotions were significantly more prevalent in inconsistent, as compared to consistent narratives. References to internal attributions, external attributions, and stable event connections were not significantly different across event types. With regards to narrative processes, levels of disengagement, meaning-making and psychological elaborations were significantly higher in inconsistent, as compared to consistent narratives. On the other hand, elaboration on factual information was not significantly different across event types.

Associations Between Age, Gender, and Narrative Variables

Age and gender related patterns for narrative content and processes are presented in Tables 2 and 3. Regarding narrative content, with increasing age, adolescents made more external attributions (Δ marginal $R^2 = 0.02$), an unanticipated finding. In terms of narrative process, as expected, adolescents' narratives included greater psychological elaboration of the self (Δ marginal $R^2 = 0.04$) and more references to meaning-making (Δ marginal $R^2 = 0.03$) with increasing age. In terms of gender differences, results revealed that girls made more internal attributions (Δ marginal $R^2 = 0.05$), and as expected, also made more references to moral emotions (Δ marginal $R^2 = 0.03$) in their narratives as compared to boys.

Associations between Narrative Content and Measures of Moral Mindset

A series of models were used to examine associations with moral essentialism and incrementalism for narrative content categories, including internal attributions, external attributions, stable event connections, change event connections and moral emotions. Results are reported in Table 2. With age and gender controlled, consistent with expectations, analyses revealed a significant positive association between moral incrementalism and narrative references to moral emotions (Δ marginal $R^2 = 0.03$). None of the other effects were significant. Furthermore, examination of cross-level interactions revealed that none of the effects were moderated by narrative type.

Associations between Narrative Process and Measures of Moral Mindset

A series of models were also used to examine associations with moral essentialism and incrementalism for the narrative process categories, including psychological elaborations of self, factual information, meaning-making and disengagement. Results for the main effects are reported in Table 3. As hypothesized, analyses revealed a significant positive association between moral incrementalism and psychological elaboration of self (Δ marginal $R^2 = 0.07$). In line with expectations, analyses also revealed a significant positive association between moral

incrementalism and meaning-making (Δ marginal $R^2 = 0.04$). Additional exploratory analyses were also conducted to examine whether associations with incrementalism were moderated by levels of essentialism. This series of analyses revealed one significant interaction effect. Specifically, the association between meaning-making and incrementalism was stronger at lower levels of essentialism, $b = -0.67$, $SE = 0.33$, $t(90) = -2.06$, $p = 0.04$ (Δ marginal $R^2 = 0.02$). Lastly, results revealed an interaction between event type (consistent versus inconsistent narrative) and incrementalism for disengagement, $b = 0.32$, $SE = 0.15$, $t(93) = 2.09$, $p = 0.03$ (Δ marginal $R^2 = 0.007$). As expected, there was a negative association (at the trend level) between endorsement of incrementalism and disengagement only in the inconsistent narratives (see Figure 1).

Discussion

Adolescence is a crucial period wherein youth experience tensions between moral commitments and their own actions and yet past research has not examined how moral mindsets are linked to adolescents' narrative constructions of meaning about their own moral experiences. This study was the first to investigate interrelations between moral mindsets and adolescents' narrative construction of meaning of their own, personally significant experiences. Results suggest that variations in adolescents' moral mindsets are linked to aspects of both narrative content and process.

Overall Descriptive Patterns for Narrative Content and Process

Various aspects of narrative content and process differed across youth's narratives of experiences in which they described acting consistently or inconsistently with an important value. Overall, adolescents' inconsistent narratives included more references to moral emotions, meaning-making, psychological elaborations, and self-change connections, as compared to consistent narratives. These findings underline the importance of self-discrepant narration as it contributes to self-development, solving a current problem or guiding future behavior through lessons learned and gaining insights (e.g., McAdams & McLean, 2013). These results are also aligned with past findings that meaning-making was more common in self-defining narratives that contained conflict or tension, as compared to those that did not (McLean & Thorne, 2003). As such, findings are consistent with the notion that self-discrepant narratives serve as contexts for considering change and transformation in the aftermath of challenging experiences (McLean, 2005). Conversely, although disengagement has yet to be explicitly investigated across narrative types, features of disengagement such as minimizing agency and responsibility (e.g., de Silveira & Habermas, 2011) were more often evident in inconsistent narratives. This finding makes sense, inasmuch as adolescents' reflections on

their actions that are inconsistent with their sense of self may be threatening to their positive self-views, producing discomfort. Importantly, however, as elaborated in the next section, some features of narrative content and processes were linked to variations in moral mindset.

How are Individual Differences in Moral Essentialism and Incrementalism Associated with Narrative Content?

In this study, adolescents' moral mindset was significantly linked with one feature of narrative content; specifically, moral incrementalism was positively associated with youth's discussion of moral emotions in their value-laden narratives. That is, adolescents who endorsed an understanding that moral qualities, aptitudes and traits are malleable, shaped by the environment and personal experiences (e.g., Dweck & Yeager, 2019), included more references to pride, shame, regret, and/or guilt in their narrative accounts. For example, as expressed by one participant:

I felt pure guilt. I felt like I didn't do my part to help her and I just let her be sad about herself. I wasn't caring [...] I also feel guilty for not telling her that I knew she wasn't feeling well [...] I feel like I did the wrong thing and now that I can't go back and fix it I feel like I'm lying to her everytime.

Perhaps endorsing a mindset that values growth and cultivation makes it easier to reflect on and discuss one's feelings about moral events, in general. Alternatively, constructing understandings of emotions in narratives, whether positively or negatively valenced, might support adolescents' thinking about change and personal growth. Arguably, grappling with feelings of guilt, regret or shame might promote a mindset whereby growth and change over time is possible, opening the door to redemption. Positive emotions, also, may be relevant to youth's construction of a positive sense of self; emotionality of narratives has been shown to be a predictor of self-esteem (McLean & Breen, 2009). Perhaps discussing moral emotions across both narrative types is an important way for adolescents to engage in exploratory processing (i.e., considering how the experience can be integrated within a person's life story; Wainryb et al., 2018); as discussed further below, this type of processing might generally be more common among youth who endorse an incremental mindset.

How are Individual Differences in Moral Essentialism and Incrementalism Associated with Narrative Processes?

Understanding the process of how moral experiences are interpreted and constructed is a central goal of the current study. This not only builds on previous scholarship to provide a more complete understanding of how

adolescents construct an understanding of themselves as moral agents (e.g., Pasupathi & Wainryb, 2010a) but also extends this work by documenting how individual differences in moral essentialism and incrementalism are associated with adolescents' constructions of meaning. Results revealed that moral incrementalism, in particular, was associated with youth's elaboration on their own psychological perspective on events, as well as meaning-making processes such as drawing lessons and insights. Similar to the pattern for moral emotions, adolescents who endorsed moral incrementalist beliefs also appeared to grapple more with their own understandings, intentions, and goals in relation to specific moral experiences. Relatedly, in both consistent and inconsistent moral narratives, adolescents who view themselves and others as capable of change might feel less threatened to elaborate on their psychological experience. It is also plausible that adolescents who make references to interpretive information (rather than just stating the "facts") and therefore delve into their own unique, subjective perspective on events might come to focus more on self-improvement and the ways in which they can grow or change over time. For example, as stated by one participant: "after months of fighting with my Dad specifically (because he knew I was lying), I finally gave in and started dealing with my emotions with my Dad. I developed emotional awareness, became stronger and learned to defend myself."

Moral incrementalism was also linked to insights or lessons learned (e.g., McAdams & McLean, 2013). An exploratory analysis indicated that this association was stronger at lower levels of essentialism, suggesting that narrative meaning-making is particularly evident among adolescents who endorse incrementalist beliefs (i.e., that moral attributes can change over time and are informed by life circumstances) while also eschewing moral essentialist beliefs (i.e., that attributes are internal, generalizable, and stable). Since insights and lessons entail assertions of growth and self-improvement, it makes sense to find more explorations of meaning among adolescents who endorse moral incrementalism (e.g., as noted by one participant: "I realize that I was being very selfish and unfair to my sister, who had spent so much time making it [a cake] for the family, not just me"). This is consistent with previous work demonstrating more explorations of meaning in narratives for individuals who described themselves as open and flexible (Pals, 2006), as well as past work on links between implicit theories of personality and adults' narrative meaning-making (Lilgendahl et al., 2013).

Taken together, these findings may imply that moral incrementalist beliefs are beneficial when it comes to the developmental of moral identity. This is because an emphasis on psychological interpretations has been shown to have numerous benefits (Pasupathi & Wainryb, 2010). For instance, narratives that elaborate on interpretive

information, as opposed to factual information, are related to greater well-being and other adaptive outcomes in both childhood and adolescence (e.g., McAdams, 2006). Moreover, the positive resolution that comes from gleaning insights and lessons from negative situations is associated with higher levels of happiness and well-being (e.g., Lilgendahl & McAdams, 2011).

Causal associations between mindset and narrative construction are likely to be reciprocal; moral incrementalism may influence meaning-making processes, and meaning-making within narratives may impact adolescents' endorsement of moral incrementalism. Past experimental work confirms that inducing an incremental mindset can impact adolescents' subsequent reasoning (Yeager et al., 2013), and also that evoking particular kinds of narratives can impact emotions and the self-concept (Jennings & McLean, 2013). Engaging in meaning-making processes may support moral incrementalism since reflecting on how one has grown or changed could further the notion that self-growth is possible and that it is inevitable that people change over time and across situations. Ultimately, this interpretation would be consistent with the fundamental role that narratives are thought to play in the development of moral agency (Pasupathi & Wainryb, 2010a).

Results also revealed one instance in which event type moderated the association between mindset and narrative processing. Specifically, an inverse association was observed between endorsement of incrementalism and disengagement only in the inconsistent narratives. As noted above, adolescents may be more motivated, in general, to disconnect the self from their experiences that are threatening. In other words, disengagement may be a more prominent feature of inconsistent narratives, overall. Nevertheless, the results provide some evidence to suggest that moral incrementalism is associated with less disengagement in this challenging context. Instead, adolescents who endorse higher levels of incrementalism may grapple more with their inconsistent moral experiences, even though it may feel uncomfortable at the time. Doing so provides opportunities for youth to make sense of their self-discrepant experiences and construct an understanding of themselves as a person who may sometimes do the wrong thing but is not defined by it. Rather, they may be more likely to consider ways in which they can learn and grow from these experiences (Pasupathi & Wainryb, 2010a).

Interestingly, results also provide evidence to suggest that moral incrementalism, as compared to moral essentialism, might be more strongly associated with adolescent moral narrative construction. This finding might partially be explained by the fact that, in this dataset, more of the variance in scores on moral incrementalism was between individuals, whereas a smaller proportion of the variance in moral essentialism was associated with

individual differences (redacted for review). For this reason, the measure of moral incrementalism might be more robust in tapping overall differences in mindset between individuals (e.g., Hughes, 2015).

How are Age and Gender Associated with Narrative Contents and Processes?

Adolescence is an understudied age range in the moral mindset literature, albeit a crucial one given that adolescents are developing an understanding of the self that becomes increasingly differentiated as they explore the facets of their morally-laden experiences (Hardy & Carlo, 2011). Findings replicated past work concerning age-related changes in features of narrative accounts. Specifically, results demonstrated increases in interpretive information and meaning-making with age, with respect to psychological elaborations and references to insights and lessons learned (Pasupathi & Wainryb, 2010b). Although an association between age and attributions was not hypothesized, older adolescents made more external attributions in their narratives. Perhaps, given the increasing differentiation of self that comes with increase age (Proulx & Chandler, 2009), older adolescents may view their actions as more context specific and thus explain their behavior more often in relation to the situation at hand (e.g., they acted caring because they saw a need or uncaring because they were having a bad day). Regarding gender, as expected, girls included more references to moral emotions and internal attributions in their moral narratives. These findings are consistent with established patterns in past literature suggesting that girls tend to include more discussion of internal states and emotions in their narratives as compared to boys (Bohanek & Fivush, 2010).

Limitations and Future Directions

This study was based on a rather homogenous community sample consisting primarily of well-educated, White, and Canadian families. Given evidence to suggest factors such as greater parental education and higher socioeconomic status (SES) are linked to lower levels of fixed mindset in some domains (i.e., intelligence; Claro et al., 2016), it will important for future studies to examine these processes in a larger and more heterogenous sample. A further limitation of this study is that the moral essentialism scale included more items than the moral incrementalism scale, constraining the reliability of the latter. Even so, a larger number of significant associations with the measure that had more items (i.e., moral essentialism measure) was not found. Moreover, the narratives produced by the participants were generated in writing. Although past research has examined narratives in the form of both written reflections (Mutluturk & Tekcan, 2016) and verbal accounts (de Silveira & Habermas, 2011), the narratives produced by the adolescent sample may have been more elaborative if they had been verbally elicited. That said, asking the adolescents to provide written narratives may have provided a greater sense of privacy that

allowed participants to respond honestly when asked to narrate the challenging moral experience that could otherwise have rendered them uncomfortable in an interview setting. An additional limitation involved the generation of narratives in a fixed order. Adolescents first provided their inconsistent and then consistent moral value narratives. Although a counterbalanced order would be ideal to minimize potential confounds, the events were elicited in this order to ensure the procedure ended on a positive note (McLean, 2005). A final limitation is that only moderately-sized interactions between event type and mindset were detected. Nevertheless, most nonsignificant interaction effects were very small in magnitude, suggesting that they would also not have been detected in a larger sample.

Despite these limitations, this study made a number of contributions to research on moral mindsets during the adolescent period. First, findings suggest that individual differences in moral incrementalism, in particular, are associated with how adolescents think about and construct an understanding of themselves as a moral person. More specifically, results point to how individual differences in youth's views of moral traits and behavior as malleable and explained by situational factors may be associated with important aspects of moral identity development such as delving into the psychological and emotional facets of their experiences and engaging in meaning-making processes. Results also illustrate one instance in which adolescents' endorsement of moral incrementalism was related particularly to the narration of challenging events; adolescents who endorsed incrementalism disengaged less when asked to narrate a self-discrepant account. In sum, findings provide a novel contribution to research on moral mindset and narrative identity construction in adolescence by illuminating inter- and intra-individual differences in both the narrative content and process of youth's own relevant morally laden experiences. Ultimately, the observed associations between moral incrementalism and adolescents' self-constructions illuminate how a moral growth mindset may be connected to the development of moral agency.

Importantly, the concurrent design used in this study does not illuminate causal pathways. A key direction for future research will be to examine whether moral incrementalism prospectively predicts changes in meaning-making over time, and/or whether constructions of meanings may lead to changes in mindset. Moreover, future research would benefit from examining whether and how moral socialization processes are associated with moral mindsets. For instance, it would be illuminating to explore whether and how adolescent moral mindsets may be co-constructed via conversations with others, such as parents and friends.

Conclusion

To date, moral essentialism and incrementalism have not been investigated in relation to youth's construction of meaning in their narratives and have been overlooked during the adolescent years. This research has extended the literature on adolescent moral identity development by identifying associations between moral incrementalism and adolescents' narration of personally-meaningful events. Results suggest that individual differences with respect to adolescents' perspectives on moral traits and/or actions as malleable and cultivated over time (i.e., moral incrementalism) are associated with narrative references to moral emotions, elaborative psychological interpretations, and meaning-making. These novel findings have various implications for the field of adolescent development. First, they suggest that moral mindsets are important to consider in the adolescent years as they are associated with the construction of moral selfhood. Second, this research is aligned with the view that both consistent and inconsistent narratives are important for adolescent self-development as findings revealed that moral incrementalism is linked to adolescents' narrative constructions of self across different types of moral events (i.e., ones that are self-consistent and self-discrepant). Findings also have practical implications for parents and educators who spend significant time with adolescents and aim to foster youth's personal and social development. When it comes to adolescents' own self-construction in moral contexts, findings suggest that it may be useful for these socializing agents to scaffold youth's understandings of how moral attributes are malleable and vary across situational circumstances. Therefore, parents and educators can play a role in providing adolescents with opportunities to reflect on and narrate their own morally-laden experiences in psychologically rich and growth-supportive ways. Ultimately, the observed associations between moral incrementalism and adolescents' self-constructions illuminate that a mindset focused on moral growth is connected to understandings of self that are sustainable in the face of both successes and setbacks.

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Table 1*Narrative Content and Process across Consistent and Inconsistent Narratives*

	Consistent Narratives <i>M (SD)</i>	Inconsistent Narratives <i>M (SD)</i>	<i>Exact p for difference between narratives</i>	<i>Cohen's d for difference score</i>
Narrative Content				
Internal Attributions	2.30 (1.82)	2.26 (1.94)	0.81	0.02
External Attributions	1.10 (1.19)	1.31 (1.48)	0.21	-0.12
Stable Event Connections	0.46 (0.84)	0.51 (0.98)	0.67	-0.04
Change Event Connections	0.33 (0.69)**	0.61 (0.86)**	0.01	-0.26
Moral Emotions	1.14 (0.89)*	1.50 (1.50)*	0.01	-0.24
Narrative Process				
Psychological Elaborations of Self	1.79 (0.90)*	1.98 (0.95)*	0.02	-0.22
Factual Information	1.65 (1.09)	1.46 (1.02)	0.15	0.14
Disengagement	0.67 (1.02)**	1.07 (1.20)**	<0.01	-0.44
Meaning-making	1.35 (1.65)*	1.78 (1.91)*	0.02	-0.24

Note: The difference across events was tested based on a paired-samples t-test.

* $p < 0.05$, ** $p < 0.01$.

Table 2*Final Fixed Effects for Multilevel Models Examining Narrative Content Categories*

	Internal Attributions	External Attributions	Stable Event Connections	Change Event Connections	Moral Emotions
	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
Intercept	2.26 (0.16)	1.20 (0.10)	0.48 (0.06)	0.047 (0.05)	1.30 (0.09)
	$p < 0.01$	$p < 0.01$	$p < 0.01$	$p < 0.01$	$p < 0.01$
Age	0.15 (0.16)	0.23* (0.10)	0.12 (0.06)	-0.02 (0.05)	-0.05 (0.09)
	$p = 0.33$	$p = 0.03$	$p = 0.06$	$p = 0.70$	$p = 0.52$
Gender	-0.86* (0.35)	-0.19 (0.22)	-0.03 (0.14)	-0.09 (0.12)	-0.49* (0.20)
	$p = 0.01$	$p = 0.40$	$p = 0.80$	$p = 0.44$	$p = 0.01$
Essentialism	0.05 (0.33)	-0.11 (0.21)	0.07 (0.14)	0.03 (0.11)	-0.08 (0.19)
	$p = 0.87$	$p = 0.61$	$p = 0.60$	$p = 0.77$	$p = 0.66$
Incrementalism	-0.13 (0.29)	-0.09 (0.18)	0.03 (0.12)	0.13 (0.10)	0.34* (0.16)
	$p = 0.64$	$p = 0.63$	$p = 0.76$	$p = 0.17$	$p = 0.04$
Marginal R^2	0.06	0.04	0.02	0.05	0.10

Note: Girls were coded as 0 and boys were coded as 1; all other predictors were grand mean centered. Variance that is explained by the fixed effects is reported (i.e., marginal R^2).

* $p < 0.05$.

Table 3*Final Fixed Effects for Multilevel Models Examining Narrative Process Categories*

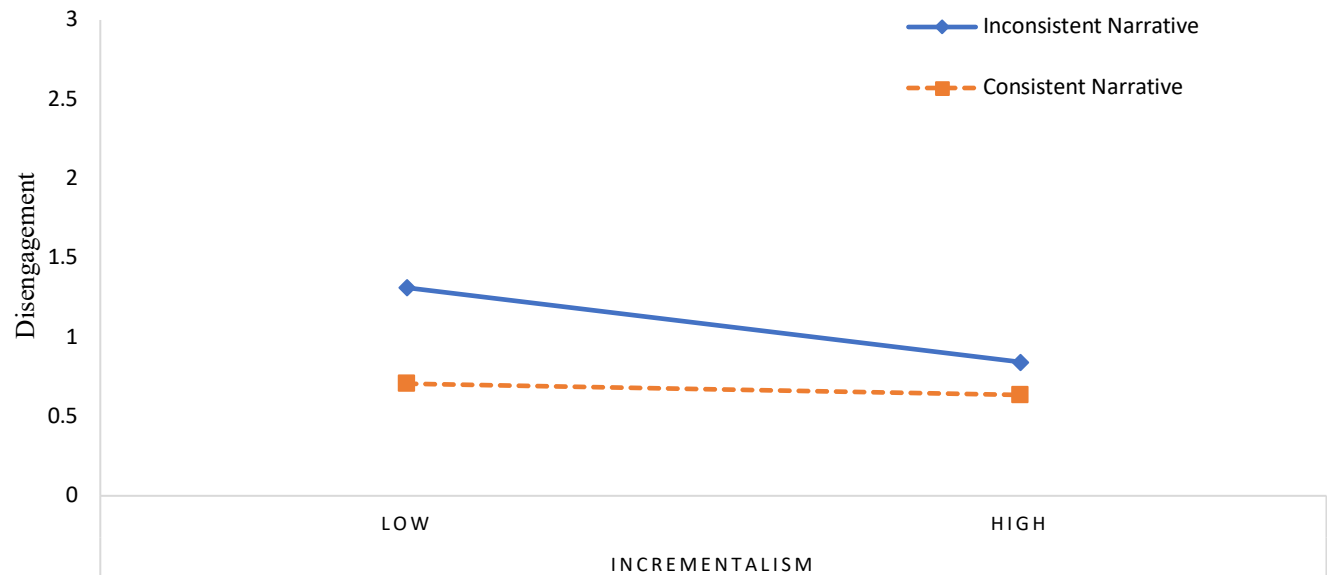
	Psychological Elaborations of Self	Factual Information	Disengagement	Meaning- Making
	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)	<i>b</i> (SE)
Intercept	1.88* (0.07) <i>p</i> < 0.01	1.56 (0.09) <i>p</i> < 0.01	0.87 (0.10) <i>p</i> < 0.01	1.56* (0.15) <i>p</i> < 0.01
Age	0.19* (0.07) <i>p</i> = 0.01	0.16 (0.09) <i>p</i> = 0.09	-0.10 (0.10) <i>p</i> = 0.32	0.33* (0.15) <i>p</i> = 0.02
Gender	-0.10 (0.16) <i>p</i> = 0.50	-0.15 (0.20) <i>p</i> = 0.44	0.23 (0.21) <i>p</i> = 0.28	-0.08 (0.32) <i>p</i> = 0.78
Essentialism	-0.12 (0.15) <i>p</i> = 0.42	-0.26 (0.19) <i>p</i> = 0.19	0.24 (0.21) <i>p</i> = 0.24	-0.35 (0.31) <i>p</i> = 0.26
Incrementalism	0.43* (0.13) <i>p</i> = 0.002	0.27 (0.16) <i>p</i> = 0.10	-0.20 (0.18) <i>p</i> = 0.26	0.61* (0.26) <i>p</i> = 0.02
Marginal R ²	0.15	0.06	0.07	0.09

Note: Girls were coded as 0 and boys were coded as 1; all other predictors were grand mean centered. Variance that is explained by the fixed effects is reported (i.e., marginal R²).

**p* < 0.05.

Figure 1

Associations between Incrementalism and Disengagement in Consistent and Inconsistent Moral Value Narratives



Note: The plotted scores are based on model-predicted values. High and low moral incrementalism values correspond to 1 *SD* above and below the mean.

Simple effects tests indicated a negative association between incrementalism and disengagement for the inconsistent narrative at the trend level and a nonsignificant association for the consistent narrative, respectively.

$b = -0.36$, $SE = 0.19$, $t(123) = -1.85$, $p = 0.06$; $b = -0.04$, $SE = 0.19$, $t(123) = -0.21$, $p = 0.82$.

Appendix A

Each participant was presented with four vignettes depicting actions towards peers (two depicting prosocial actions and two depicting antisocial actions; see Supplementary Materials and [redacted] for details). Following each vignette, participants responded to a series of question assessing moral essentialism and incrementalism. When wording varied between prosocial and antisocial vignettes, the wording for prosocial vignettes is presented in parentheses.

Moral Essentialism Items (5 items x 4 vignettes = 20 items; Cronbach's alpha $\alpha = 0.82$)

These items were rated on a six-point Likert-type scale ranging from *strongly disagree* [1] to *strongly agree* [6].

E1: [Name] acts this way because it is a part of who he/she is.

E2: [Name] is mean (nice) in other ways too.

These items were rated on a six-point Likert-type scale ranging from *very unlikely* [1] to *very likely* [6].

E3: Do you think [Name] has done something like this before?

E4: Do you think [Name] will do something like this again?

E5: Do you think [Name] will do something like this with other people?

These items were rated on a six-point Likert-type scale ranging from *strongly disagree* [1] to *strongly agree* [6].

Moral Incrementalism Items (2 items x 4 vignettes = 8 items; Cronbach's alpha $\alpha = 0.71$)

These items were rated on a six-point Likert-type scale ranging from *strongly disagree* [1] to *strongly agree* [6].

I1: [Name] could become nicer (less nice).

I2: [Name]'s life experiences have led him/her to act in this way.

Note. Item E3 was excluded in a previous study using the same dataset that examined contextual differences (see [redacted for review]), as the analysis focused in part on contextual variations in behavioral repetition, and this item was deemed to overlap with that construct. However, the item was included in the current study (which did not examine the repetition manipulation but rather collapsed scores across all vignettes) to maximize the reliability of the scale.

Supplementary Materials

Narrative Elicitation Prompt and Follow-up Questions

Inconsistent Narrative

“You mentioned that being a [CARING, HONEST, DEPENDABLE, FAIR], person is the most important to you. Please take some time to think about a time when you were NOT [CARING, HONEST, DEPENDABLE, FAIR] and you think it was wrong.

Think about a time that is important to you and that you remember well.

Now that you have thought about this time when you were not [caring, honest, dependable, fair], please write it down.

Write down everything you remember about this time in the box- Please provide as much detail as you can.”

Prompt: “Please write about how this experience makes you THINK and FEEL about YOURSELF.”

Consistent Narrative

“Please take some time to think about a time when you were [CARING, HONEST, DEPENDABLE, FAIR] and you think it was the right thing to do.

Think about a time that is important to you and that you remember well.

Now that you have thought about this time when you were [caring, honest, dependable, fair] please write it down.

Write down everything you remember about this time in the box- Please provide as much detail as you can.”

Prompt: “Please write about how this experience makes you THINK and FEEL about YOURSELF.”

Follow-up questions after each narrative

When did this event happen?

- More than 5 years ago
- More than 2 years ago
- More than 1 year ago
- A few months ago
- A few weeks ago
- A few days again

Who did it involve?

- Friend
- Close Friend
- Best friend
- Sister or brother
- Parent
- Teacher
- Stranger
- Romantic partner
- Classmate
- Other family member
- Other-Write in

Hypothetical Vignettes

Each participant was presented with two prosocial and two antisocial vignettes (with one recurrent and one nonrecurrent story within each valence). The assignment of stories to prosocial/antisocial and reoccurent/nonrecurrent versions was counterbalanced using a Latin square design. The gender of the characters in each vignette was matched to that of the participant. Grammar was adjusted across recurrent and nonrecurrent events.

Story	Prosocial Acts	Antisocial Acts
Fairness	Carl, Rick and Mark all play basketball and soccer together in the after-school program. One day [Oftentimes], Rick (who is the basketball team captain) picks Mark last because he does not like him. Carl picks Mark first in soccer.	One day [Oftentimes], Sabrina tripped Jenna during a race so that Jenna would fall and Sabrina could win the race.
Dependability	One day [Oftentimes], Serena told Caroline a secret and asked her not to tell anyone. Caroline kept the secret.	One day [Oftentimes], Tommy tells Jason who, in their class, he has a crush on and asks Jason not to tell anyone. Jason tells the whole class.
Honesty	One time [Oftentimes], on a group project, Kara does more than her partner, Lola. When they are asked by the teacher if they participated equally, Lola is honest and says Kara did more.	One day [Oftentimes], Bob did not do his French homework. He takes his classmate Peter's homework because Peter does well in French. He changes the name and hands it in to the teacher.
Care	One day [Oftentimes], Felicia started to cry because she is going through a hard time at home. Victoria saw her cry, gives her a hug and tries to talk to her.	One day [Oftentimes], Manuel was teased about his new shoes and cried. Lucas saw the whole thing and did not stop it or try to help him feel better.

Narrative Coding Scheme

ATTRIBUTIONS

Definition: explanations for why they acted the way they did. Coded as frequencies of references to:

- **Internal attributions:** Actions are due to something internal/personal/intrinsic to the self. Could be due to emotions, goals, cognitions (i.e., thoughts, mindset, impressions they had or misunderstanding about something), lack of reflection or negligence, or personality.
 - Example: “I did it because I was so angry”; “I am very caring for animals”; “I just wasn’t thinking”
- **External attributions:** Actions are due to something external/exterior to the psychology of the actor. Could be because they were provoked, influenced by someone, or due to extenuating circumstances.
 - Example: “She started it”; “he punches me and of course I’m going to fight back”; “because it was like she was taking away time from my electronics”

SELF-EVENT CONNECTIONS (e.g., Pasupathi & Mansour, 2006)

Definition: This category involves making explicit links between the event and the self (including characteristics and capabilities). The connections made can involve change or stability. Coded as frequencies of references to:

1. **Change connections:** Event has produced a change in how they see themselves or they have changed because of the event (e.g., “I am different now”; “I have changed a lot and now I’m a lot more honest”).
2. **Stable connections:** They make references to the self as stable/unchanging (e.g., “I thought I was caring the whole time”; “I am still the person I always was and still aspire to be”) and/or mention the event revealed something that was pre-existing about themselves (e.g., “it shows I am an honest person and have always been”).

MORAL EMOTIONS

Definition: This category involves positive or negative emotions including pride, guilt, shame or regret. Coded as the frequency of references to:

1. **Guilt/Shame/Regret:** Feeling guilty or ashamed for the behavior or actions. (e.g., “I feel so bad; It makes me feel a little ashamed about myself”). Feeling like there was something else they could have, should have done (e.g., “I could have done something else instead”; “we could have been better friends if that never happened”; “I should never have done that”)
2. **Pride:** Feeling proud or happy about their behavior or actions. (e.g., “I feel good that I did it”; “I felt proud of myself”).

PSYCHOLOGICAL ELABORATIONS OF SELF AND FACTUAL INFORMATION (adapted from Pasupathi, Wainryb, Bourne, & Posada, 2017)

Definition: Psychological elaborations aimed to capture their own internal psychological or interpretive experiences. This included their thoughts, beliefs, desires, emotional responses. On the other hand, factual information aimed to capture verifiable information or facts included in the narratives. Both are coded on a 0 to 3 scale. Zero indicates absence, 1 indicates a low level, 2 indicates a moderate level, and 3 indicates a high level.

(1) **Factual information (0, 1, 2, or 3)**

(2) **Psychological elaborations of self (0, 1, 2, or 3)**

Scale (0, 1, 2, 3)	Factual Information	Psychological Elaboration of Self
Level 3: Refers to a “just right” amount of information	The narrator provides many factual details of the event that allow the reader to accurately know the sequence of the events and to be transported to that event. Example: “I can think of a few times but this is the most recent one. I was sleeping over at a friends house and we were hanging out, i was petting his dogs and I noticed he looked a little sad but I couldn't put my	The narrator provides many references to their own psychological experience and own interpretations of the event. Example: “Both of my friends were fighting. One I was closer to, and one I had grown apart from. Even due to the circumstances, I knew that I had to treat them both equally. One of the days that they had fighting, both of them suggested

	finger on why, I decided not to ask him. I then asked him where his dog Sparky was , he started to look a lot more sad and he told me that she had to be put down . I genuinely felt bad for him but I didn't show it very well, i gave him a little; oh, sorry dude, but nothing more. We then proceeded to play video games as if nothing had happened and i still feel bad about it."	different things to do apart from each other. I chose neither, I wanted them to stop. Even if it weren't like those obvious kid ofights, I knew that they had been avoiding each other, and were using me as a barricade. On Valentine's Day, I wrote cards for both of them, using each other's names and sending it to them. They didn't know it was me. I made them think they had both had sent each other cards. They didn't hug or anything like that. I just knew that from that day on, they were closer."
Level 2: A moderate amount of information	The narrator provides a moderate amount of facts. Example: " I was very young when this happened I'm not sure if it counts but i think it does so one day i was on my dad's phone and i wanted to hide it just to see how long can my dad go without his phone (ik how dumb that idea was)so idk how long it took for my dad to notice I wasn't on his phone anymore but when he did i was being HONEST and i said that i hid it somewhere in the house and i felt good about it and in the end we never found the phone but i was being honest and felt knew i was doing the right thing"	The narrator provides a moderate amount of psychological elaborations regarding the self. Example: "If my friend would usually mean to me (same friend) and he did something wrong I wouldn't care for him until he apologizes. Example: Once he hit me by accident and hurt really bad and I thought he have done on purpose so I did not care for him that much until he apologized. This experience makes me feel ok and I got over it very quick. I think it didn't change our friendship and we moved on from it.
Level 1: Minimal presence of information	The narrator provides very little factual information. Example: I was in 7 grade so this year i was lying to my mom about a lot of things and i felt really bad For all the bad things that i was lying about to my mom and for one of them my mom was so mad at me that what she said made me really sad but i know that it was my fault that she said that. It made me feel really bad about my self and ever since i've Bine trying to change everything about me."	The narrator provides very little psychological elaborations regarding the self. Example: "Once when i was in 4th grade I wasn't allowed to use my tablet in the bathroom and my parents asked me if i had it in there and i hid it and lied about not having it there. After school I couldn't find it and i still lied about it. My parents knew that I had it in the bathroom so finally i confessed that i did have it there and i got grounded for the day. It made me tell myself to NEVER lie again."
Level 0: Refers to a complete absence	The narrator does not provide any factual information. The narrative is told uniquely from their subjective experience. Example: "When my parents wanted to tell me something important and I didn't care at all. Something bad came out of it and that's when I realized that if I did care maybe things would be better."	The narrator does not provide any psychological self elaborations. Example: "I was honest towards my dad when I asked my dad for help!"

DISENGAGEMENT

Definition: The degree to which participants implicitly or explicitly disconnect the self from their experience. This includes diluting agency and minimizing responsibility for their actions (de Silveira & Habermas, 2011; McAdams & McLean, 2013). Disengagement is coded on a 0 to 3 scale:

Level 3: Full disengagement	The narrator appears not to want to discuss the event and either mentions this explicitly with the provision of a vague narrative account or does not write many details about the event (i.e., there is a lack of agency). The narrator may also avoid discussing the event and discuss something off topic or in the case of a challenging event, present the self in positive ways. The story could either not regard their moral experiences or they say they do not want to share it. Example: “When my friends are mean to me. I try to be caring all the time”
Level 2: Moderate disengagement	The narrator provides some details about the story but there are important parts that are missing and/or the act that they performed is left out. Example: “There was I time I did something and I regretted it”
Level 1: Little disengagement	The narrator provides information about their actions and they are clearly the actor in the story, however they do not fully take responsibility for their actions or discuss the event in a clear manner. Example: “I tend to be biased in some situations. At a point and time in my life it was more important for people to like me and not talk bad about me instead of being fair and doing the right thing. These days I'm often not fair to myself, I feed myself negative thoughts and bring myself down and sometimes that impacts the people around me which isn't fair. I shouldn't push my personal issues onto someone else.”
Level 0: No disengagement	The narrator provides information about their actions and they are clearly the actor in the story, with a clear sense of agency. There is enough information about the event for the reader to understand what happened and what they did. Example: “When I was in second grade, I sometimes cheated in gym class and didn't admit it. In dodgeball, if you hit the other person in the head, it does not count. I would say that the ball hit me in the head so as not to be eliminated from the game. It makes me feel a little ashamed about myself because I was not being honest about my defeat. Cheating is not goo and does not help you in any way shape nor form. It only showses other people that you are not an honest person ☹️”

MEANING-MAKING (e.g., Mclean, 2005; Mclean & Thorne, 2003)

Definition: This category involves the frequency with which the narrator draws lessons and/or insights from the event described. Meaning-making should be coded if the narrator makes reference to any lessons they have learned or any insights they have developed since the event or because of the event.

- 1. Lessons Learned:** Discussion of a lesson they have learned because of or since the event (e.g., “Its very important to think and care about others feelings”; I've learned to care about my work because in the future it will be good for college”)
- 2. Insights:** Narrator discusses any revelations/insights they have because of or since the event (e.g., “It was an experience that made me realize how important it is to talk and deal with your feelings. I realized that my feelings are my feelings and that no one could tell me they weren't”; “I wasn't being very fair towards my partners [in a school project] and i noticed that”)

Table S1*Narrative Length in Words*

	<i>M</i>	<i>SD</i>	95% <i>CI</i> of the difference	<i>Paired</i> <i>samples t</i>	<i>df</i>	<i>Cohen's</i> <i>d</i>	<i>p</i>
Consistent Narrative	105.54	67.61	[-33.32- -5.82]	-2.82	95	-0.29	0.006
Inconsistent Narrative	125.12	83.01					

Table S2*Recency and Relationship Context of Narrated Events*

	Consistent Narrative	Inconsistent Narrative
Recency		
A few days ago	7.7%	11.5%
A few weeks ago	22.1%	13.5%
A few months ago	30.8%	36.5%
More than 1 year ago	20.2%	13.5%
More than 2 years ago	6.7%	13.5%
More than 5 years ago	5.8%	6.7%
Not reported	6.7%	4.8%
Relationship Context		
Friend	40.4%	31.7%
Parent	15.4%	21.0%
Sibling	6.7%	9.6%
Classmate	8.7%	8.7%
Other (e.g., teacher, romantic partner, stranger, other family member)	28.8%	29.0%

Note: McNemar's tests were performed for each category across the two event types and did not reveal any significant differences.

Table S3*Distribution of Variance for Narrative Coding Categories*

Dependent Variable	ICC
Internal Attributions	0.54
External Attributions	0.25
Stable Event Connections	0.10
Change Event Connections	0.05
Moral Emotions	0.21
Psychological Elaborations of Self	0.55
Factual Information	0.51
Disengagement	0.66
Meaning-Making	0.48

Note. Distribution of variance is reported as an intraclass correlation (ICC) based on the unconditional model for each dependent variable.

Table S4*Standardized effects for Narrative Content Categories*

	Internal Attributions	External Attributions	Stable Event Connections	Change Event Connections	Moral Emotions
Age	0.08	0.18*	0.13	-0.02	-0.04
Gender	-0.22*	-0.07	-0.01	-0.05	-0.19*
Essentialism	0.01	-0.04	0.04	0.03	-0.03
Incrementalism	-0.04	-0.04	0.02	0.13	0.18*

Note: Standardized effects were calculated by multiplying the unstandardized coefficient by the *SD* of the predictor and then dividing by the *SD* of the outcome variable.

* $p < 0.05$.

Table S5*Standardized effects for Narrative Process Categories*

	Psychological Elaborations of Self	Factual Information	Disengagement	Meaning- Making
Age	0.21*	0.15	-0.09	0.19*
Gender	-0.05	-0.06	0.10	-0.02
Essentialism	-0.07	-0.13	0.11	-0.10
Incrementalism	0.30*	0.16	-0.11	0.22*

Note: Standardized effects were calculated by multiplying the unstandardized coefficient by the *SD* of the predictor and then dividing by the *SD* of the outcome variable.

* $p < 0.05$.