Context Specificity in Adolescents' Implicit Theories of Morality

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Abstract

This study investigated between and within person differences in adolescents' endorsement of moral essentialism and moral incrementalism across various types of morally-relevant situations. The sample included 97 adolescents (age range = 12-15 years). Adolescents responded to vignettes depicting recurrent and nonrecurrent actions in prosocial and antisocial contexts, with questions assessing moral essentialism, incrementalism, and other character and situation judgments. The majority of the variance for essentialism and incrementalism was linked to within-person differences across contexts. Findings revealed between-person associations between moral mindset, implicit theories of personality, and externalization of blame. Adolescents endorsed moral essentialism more in prosocial contexts and incrementalism more in antisocial contexts. Within-person variations in essentialism were linked to likability, acceptability, person attributions and consequence judgments in particular contexts. Results corroborate research and theorizing about the flexible endorsement of moral essentialism and incrementalism, and document the ways in which adolescents' judgments are responsive to the unique features of events. Findings are discussed in terms of their contributions to scholarship on moral mindsets during adolescence.

Keywords: Morality; Incremental Mindset; Essentialist Mindset; Adolescence; Context-specificity

Context Specificity in Adolescents' Implicit Theories of Morality

As they navigate through everyday experiences, adolescents engage with the complexities of moral life. In their day to day interactions, adolescents reason about morally-laden situations, weigh conflicting considerations, and apply their moral concepts flexibly (Turiel & Wainryb, 2000; Wainryb, 2006; Wainryb & Recchia, 2013). In this regard, the mindsets that adolescents have developed may be linked to how they navigate their moral experiences. That is, adolescents may process and respond to situations differently depending on their endorsement of moral essentialism (i.e., that moral attributes are stable and due to internal factors) and incrementalism (i.e., that attributes are unstable, change with effort, and due to external factors; Huang et al., 2017). However, little is known about how morality and these social information processing patterns intersect, and whether these associations are similar or different across prosocial and antisocial moral contexts. In other words, while mindsets in the moral domain are typically considered with respect to between-person differences, it is also important to capture within-person variations in adolescents' essentialist and incremental attributions (e.g., Hughes, 2015). Furthermore, given evidence suggesting people can hold both incremental and essentialist beliefs simultaneously (e.g, Dweck et al., 1995; Molden & Dweck, 2006), it is useful to consider moral essentialism and incrementalism as distinct processes. Examining adolescents' essentialist and incremental beliefs in the moral domain is important, inasmuch as they increasingly develop a sense of their moral identities during this period (Krettenuer & Hertz, 2015) as well as advancing in their thinking about whether and how others can change (Killen et al., 2002; Yeager at al., 2011). Yet this age range is understudied in that most research on moral mindsets has focused on either childhood or adulthood. Therefore, the purpose of this study was to extend a growing body of research on moral mindsets by

investigating between and within person differences in adolescents' endorsement of moral essentialism and incrementalism across various types of morally-relevant situations.

Moral Essentialism and Incrementalism Across Development

Children formulate theories about their social worlds that guide the ways in which they understand and evaluate themselves and their experiences (Dweck & Legett, 1988; Levy & Dweck, 1998). Specifically, there are two overarching types of mindsets that inform how children think about and react to social events. The first involves an understanding that qualities, aptitudes, and traits are fixed (i.e., fixed mindset; essentialist view). In this mindset, individuals believe that intelligence, personality, and moral character are decided by inheritance, are innate, and do not change with effort or time (Dweck et al., 1993). By contrast, incremental theorists understand that qualities, traits, and aptitudes are malleable, in that they are shaped by the environment and personal experiences (Chiu et al., 1997; Dweck, 2006; Levy & Dweck, 1998). Importantly, distinct implicit theories can be held across different domains (Dweck et al., 1995).

Cognitive-developmental scholarship suggests that essentialism is a cognitive bias that emerges early on (e.g., Eidson & Coley, 2014; Gelman, 2003; Gil-White, 2001). For instance, describing behavior using trait labels (e.g., "smart") influences 4-years-olds' predictions of future behavior (Liu et al., 2007). More specific to the moral domain, kindergarteners expect a character's future antisocial behaviors to match the valence of their previous actions (Cain et al., 1997). There is also emerging evidence that moral essentialism and incrementalism are influential in informing prosocial behaviors, such as sharing resources, in early childhood (i.e., 4-5 years-old; Rhodes et al., 2018).

Across the elementary school years, children increasingly expect people to behave in consistent ways, such as anticipating that a child who shared with a hungry peer would also

behave generously in the future by helping someone perform a chore (Rholes & Ruble, 1984). One interpretation of these findings is that older children make more trait-based inferences; in this sense, they appear to increasingly understand morality in essentialist terms whereby morally relevant behaviors stem from internal, unchanging characteristics (Heyman, 2009; Heiphetz, 2020). Indeed, moral characteristics may be perceived as especially fundamental to one's "essence": school aged children were more likely to believe that a change of identity occurred if one's moral beliefs changed as compared to non-morally relevant characteristics, such as preferences (Heiphetz, et al., 2018). Further, mindset has been shown to influence how elementary school aged children make social judgments, whereby essentialist views are linked to more generalized, global negative evaluations and trait labels such as "bad", less empathy, and more endorsement of punishment (Erdley & Dweck, 1993; Heyman & Dweck, 1998).

Early to middle adolescence is a crucial period for the emergence of a moral identity (Krettenauer & Hertz, 2015). In this age range, morality and identity become increasingly connected and ideologically-based, and adolescents begin to define themselves in light of their moral ideals and commitments (Hardy & Carlo, 2011; Hardy et al., 2014). Moreover, adolescents' self-understandings become more nuanced, differentiated and complex as they become increasingly adept at drawing self-connections and exploring the psychological facets of their morally laden experiences (McLean & Pasupathi, 2012). Alongside self development, adolescents also develop in their understandings of whether and how others can change (Yeager at al., 2011). Nevertheless, it is unclear whether essentialism is likely to increase or decrease from middle childhood to adolescence. As compared to younger children, adolescents may hold more fixed views regarding a peer's ability to change their aggressive behavior (Killen et al., 2002). Moreover, adolescents increasingly use previous information regarding a peer's prior

transgressions in judging their current actions (Killen et al., 2010). Conversely, there is other evidence suggesting that essentialism might decline across this age range; elementary school aged children have been found to hold more essentialist beliefs than adults and to perceive less environmental influence (e.g., Cimpian & Steinberg, 2014; Heiphetz, 2019). With respect to individual differences, adolescents who hold more essentialist views of personality are more likely to experience negative feelings such as shame and sadness as well as endorse vengeful responses such as punishment and retaliation (Yeager et al., 2011). As such, though there is emerging evidence to suggest the predictive significance of mindset in adolescence, little research has examined *moral* mindsets during this developmental period.

Among adults, research suggests that individuals who endorse essentialist beliefs tend to be more concerned with duty-based morality than those who endorse incremental beliefs, as they are more likely to support the status quo and focus on sanctioning and punishing deviance. On the other hand, those who endorse moral incrementalism are more concerned with rights-based morality as they tend to focus on social change and support people's rights to equality (Chiu et al., 1997; Dworkin, 1978; Hughes, 2015; Wurthmann, 2017). Additionally, moral incrementalism and essentialism are linked to distinct moral character attributions such that adults who hold a more essentialist view use less information to cast judgments and make moral decisions (Chiu et al., 1997; Haselhun et al., 2010). Moreover, adults who hold an incremental view of moral character are more likely to trust and forgive after a received apology and to engage in voluntary service behavior (Han et al., 2018; Haselhun et al., 2010). Nevertheless, as noted above, these associations have not been widely examined in adolescence, and thus it is important to address whether these patterns are evident across development.

Context Specificity in Incremental and Essentialist beliefs

Overall associations with moral mindsets, however, should be considered in conjunction with evidence suggesting context-specificity in incrementalism and essentialism, both generally and more specifically in the domain of morality. That is, even though overall levels of incrementalism and essentialism tend to be negatively correlated with one another, adults have been shown to hold distinct beliefs depending on the domain (i.e., intelligence, personal attributes, morality; Hughes, 2015). For instance, someone with a view that intelligence is malleable and can be changed through effort might also simultaneously believe that others are born with a stable personality that cannot change regardless of how much effort is applied. Moreover, even within a given domain such as intelligence, there is evidence to suggest that pre-adolescents (i.e., 7-9th grade students) can hold distinct implicit theories depending on the particular focus of consideration (i.e., mathematics versus other academic domains; Tarbetsky et al., 2016).

There is also recent evidence pointing to context-specificity of implicit theories within the domain of morality. Findings by Heiphetz (2019) indicated that goodness is viewed in more essentialist terms than badness, by both 5- to 8-year-old children and adults, implying that moral essentialism should be considered in relation to specific domain components (e.g., goodness/badness). This is in line with work suggesting a person-positivity bias, whereby adults tend to see human beings in a positive light and tend to regard people's "true selves" as fundamentally good (Newman, Bloom, & Knobe, 2014; Newman, De Freitas, & Knobe, 2015). Conversely, other studies suggest negativity and extremity biases in impression formation, such that negative moral behaviors are viewed as more diagnostic (Skowronski & Carlston, 1987; 1989). It is worth noting that recent reviews on diagnosticity suggest that these processes are primarily at play when there are alternative categories to choose from (e.g., consistent vs.

inconsistent behavior) and also that the effect might be particularly robust when applied to extreme behaviors (Rusconi et al., 2020). With respect to age-related change, Lockhart et al. (2002) found that the tendency to essentialize positive qualities more readily than negative qualities may be particularly evident in early childhood (as compared to middle childhood and adulthood), although these patterns have not been examined in adolescence. In sum, these findings suggest that it is useful to extend research on the context-specificity of moral mindsets into the adolescent period.

A second important feature of the context to consider involves behavioral repetition. Both moral transgressions and prosocial actions tend to be understood differently when they occur repetitively. For instance, Heiphetz (2019) notes that, in a legal context, three strike laws tend to suggest that multiple offences are indicative of bad moral character and that it is especially important to punish multiple offenders harshly. Further, adults who are induced with an incremental mindset tend to blame others significantly more after they show continual (but not single) failure as compared to participants induced with an essentialist mindset, suggesting increased blame when participants were primed with perceived control over one's abilities (Ryazanov & Christenfeld, 2018a). As such, both valence and recurrence of moral behaviors are relevant contexts to explore.

Some scholars have also pointed to context-specificity in considering the outcomes associated with mindset. Overall, as noted above, incrementalism tends to be associated with positive outcomes and essentialism with negative outcomes among both children and adults (e.g., Erdley & Dweck, 1993; Haselhuhn et al., 2010). However, it has also been suggested that essentialized thinking is not always detrimental; rather, the effects associated with essentialized thinking depend on motivation and context (Ryazanov and Christenfeld, 2018a). For instance,

essentializing the good aspects of oneself or of one's group can be beneficial (Rayzanov & Christenfeld, 2018b). In prosocial situations, characterological (i.e., "helper") rather than behavioral attributions (i.e., "helping") has been shown to encourage 3- to 6-year-olds' prosocial behavior, and similarly, asking people to not be a "cheater" rather than to not "cheat" has been shown to discourage cheating (Bryan et al., 2014), although these attributions may also backfire if children experience setbacks (Foster-Hansen et al., 2020). Thus, it is important to go beyond characterizing individuals as moral essentialists or incrementalists and to consider how patterns and outcomes of social information processing vary depending on the unique features of the moral situation under consideration.

The Current Study: Summary of Hypotheses

The present study aimed to assess both between- and within-person variations in adolescents' endorsement of moral mindsets. To address this goal, we developed a new vignette-based measure of incrementalism and essentialism across various morally-laden contexts. We considered global between-person differences by examining associations with a measure of implicit theories of personality (Dweck et al., 1995) as well as affective reactions to moral events (Tangney et al., 1991), based on established links to these factors and other definitional elements associated with moral incrementalism and essentialism in the literature (e.g., Dweck et al., 1993; Han et al., 2018). That is, adolescents who hold more essentialist views of personality tend to experience more negative feelings about themselves and are more likely to experience shame or depressive symptoms after victimization (Erdley et al., 1997; Graham & Juvoven, 1998); as such, we expected to find that moral essentialism would be linked to shame- and guilt-proneness.

We also assessed whether and how adolescents' moral mindsets varied across contexts depicting others' prosocial and antisocial actions that were described as recurrent or

nonrecurrent, as well as the judgments of others associated with adolescents' situation-specific endorsement of essentialist and incremental attributions. Based on past theory and research (e.g., Dweck et al., 1993; Heiphetz, 2019; Rayzanov & Christenfeld, 2018b; Yeager et al., 2011) we expected adolescents to endorse moral essentialism more when stories depicted a hypothetical character acting prosocially, whereas we expected adolescents to endorse moral incrementalism more when the stories depicted antisocial behavior. We further expected that adolescents would endorse moral incrementalism more than moral essentialism in one-time incidents since individuals who hold a more incremental mindset tent to draw less abrupt conclusions (Yeager et al., 2011). Conversely, we expected adolescents to endorse moral essentialism more than moral incrementalism when actions were described as recurrent. We anticipated that this might be particularly the case for prosocial actions described as recurrent, given research suggesting that children and adults have predispositions to essentialize goodness (Heiphetz, 2019).

Regarding associations between adolescents' moral mindsets and their character and situation judgments in response to hypothetical moral situations, on the basis of past research (e.g., Erdley & Dweck, 1993; Heiphetz, 2019; Yeager et al., 2011; Yeager & Dweck, 2012) we expected that within-person variations in essentialist and incremental attributions across contexts would be linked to predictable differences in judgments of action acceptability (whether the behavior was okay or not okay), character likability (whether the protagonist was likable or unlikable), consequences of actions (whether the behavior was deserving of praise/punishment), and person attributions (whether the protagonist was a good/bad person). Specifically, we hypothesized that greater endorsement of moral incrementalism and less endorsement of essentialism would be linked to less extreme judgments of (un)acceptability and character likability, less endorsement of praise and punishment, and fewer person attributions. We also

considered whether these associations differed across contexts; given the limited literature on moral mindsets among adolescents, we tested the variations in the magnitude of these associations between prosocial/antisocial contexts and recurrent/nonrecurrent events on an exploratory basis.

Finally, we considered associations with age, especially considering the substantive ways in which adolescents' understandings of themselves and others develop across early adolescence (Krettenauer & Hertz, 2015). These associations were exploratory, given inconsistencies in the current literature. For example, some research suggests that 5-8-year-olds hold more essentialist beliefs than adults (Cimpian & Steinberg, 2014; Gelman et al., 2007; Heiphetz, 2019). Conversely, other evidence suggests that older children expect more consistent moral behavior and make more make trait-based inferences (Rholes & Ruble, 1984; Heiphetz, 2020). Gender differences were also examined in an exploratory way, given that gender differences in mindset have not been widely investigated in the adolescent years.

Method

Participants

Participants consisted of 97 early to middle adolescents (51 girls, 46 boys) with sampling aimed at ensuring approximately equal coverage across the 12- to 15-year age range (M = 13.5 years). They were recruited from the Montreal 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.

Participating families were mostly Canadian born (74%) and White (78%) with the remaining families representing a variety of racial/ethnic backgrounds (1% Chinese, 2% Latin American, 2% West Asian, 3% Middle Eastern, 4% South Asian, 4% Black, 6% Eastern

European). Most mothers in the sample were well educated (52% had a University degree) with a mean age of 43.7 years. The adolescents' other parent (85% described as fathers) were also well-educated (47% had a University degree) with a mean age of 46.7 years. English was the predominant language spoken at home (84.2%) and all adolescents were fluent in English, although some also spoke French, Russian, Arabic, Spanish and Persian in the home setting. Most adolescents had one or more siblings (87.4%).

Procedure

Ethics approval was received from Concordia University Human Research Ethics Committee. Parental consent and adolescent written assent were obtained for each participant. Participants received either $20 or two movie tickets as an incentive for participating. 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. Participants initially completed the implicit theories of personality measure (Dweck, 1999) followed by the test of self-conscious affect (Tangney et al., 1991). These measures were included to validate the new measure of moral essentialism and incrementalism used in this study, in order to assess whether between-person variations in implicit theories of morality were related to personality, as well as moral emotions such as guilt and shame. Next, participants were presented with four hypothetical vignettes and follow-up questions regarding the vignettes. Some of these follow-up questions assessed moral essentialism and incrementalism, and others provided information about adolescents' character and situation judgments in particular morally-laden contexts.

Measures

Implicit theories of personality. The Implicit Theories of Personality measure (Dweck et al., 1995) is comprised of six statements about whether someone's personality can change, with six-point Likert-type response scales ranging from *strongly disagree* [1] to *strongly agree* [6]. The items were averaged and combined into a single scale, with higher scores indicating more agreement with an incremental (rather than essentialist) view of personality. For this sample, internal consistency reliability of this measure was adequate (Cronbach's alpha = 0.74).

Moral emotions. Adolescents responded to the TOSCA-Adol (Test of Self-Conscious Affect for Adolescents) by Tangney and colleagues (1991). This measure is comprised of ten negative and five positive scenarios yielding indices of Shame-Proneness, Guilt-Proneness, Externalization, Detachment/Unconcern, Alpha Pride, and Beta Pride. Participants were asked to rate on a 5-point Likert scale how likely each statement is true of them, ranging from *not at all likely* [1] to *very likely* [5]. Cronbach's alphas for this sample were 0.80 for TOSCA-shame, 0.86 for TOSCA-guilt, 0.82 for TOSCA-externalization, 0.44 for TOSCA-unconcern, 0.5 for TOSCA-alpha pride, and 0.34 for TOSCA-beta pride. Detachment/Unconcern, Alpha Pride and Beta Pride were omitted from subsequent analyses given low internal consistency reliabilities.

Vignette-based measure of others' morally-laden actions. Hypothetical vignettes were designed with ecological validity in mind, depicting situations that adolescents of this age range might encounter in their daily lives. Hypothetical situations were first pilot tested with a small group of adolescents and refined accordingly. Each participant was presented with four hypothetical vignettes in a randomly generated order, each of which portrayed actions representing a distinct value (i.e., fairness, honesty, dependability, and caring; see Supplementary Materials for details). One value was assigned to each combination of the valence (prosocial/antisocial) and recurrence (recurrent/non-recurrent) conditions, counterbalanced

across participants using a latin square design. The gender of the characters was matched to the gender of the adolescent. The prosocial stories involved a hypothetical character behaving consistently with a moral value. For example, Charles is depicted as dependable by keeping Sergio's secret. The antisocial stories involved the hypothetical character behaving inconsistently with a moral value. For example, Jason is not dependable by telling the entire class who Tommy has a crush on. Recurrent stories involved a character behaving in this way more than one time (i.e., "oftentimes"). Non-recurrent stories involved a character behaving in this way only one time (i.e., "one day"). Following each of the four hypothetical vignettes, the adolescents were asked a series of questions to assess moral essentialism and incrementalism, as well as their character and situation judgments.

Moral essentialism and incrementalism. The moral essentialism and incrementalism measures included items assessing dimensions based in attribution theory (i.e., internal/external; stable/changing) and consistent with established conceptions of essentialist and incremental mindsets (e.g., Han et al., 2018; Heiphetz, 2019). Alongside these conceptual considerations, item analysis informed the construction of two internally consistent scales measuring moral essentialism and incrementalism, respectively. Specifically, the moral essentialism measure included 16 items (i.e., four items per vignette) that assessed fixed mindset components, with an overall Cronbach's alpha of $\alpha = 0.77$. That is, given that fixed or essentialist patterns of thinking involve perceiving qualities, aptitudes and traits as stable and unchanging (Dweck & Legett, 1988; Dweck et al., 1993; Levy & Dweck, 1998), items were designed to assess stability across time and situations. We asked adolescents to rate their perceptions of the stability of the actor's behavior over time (e.g., "Do you think [name] will do something like this again?") and relationship contexts (e.g., "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 *very unlikely* [1] to *very likely* [6]. Items also assessed attributions that the hypothetical character acted the way they did due to internal factors (e.g., "it is a part of who he/she is") and that their behaviors can be explained by broader personality traits (e.g., "he/she is mean in other ways"). These items were rated on a six-point Likert-type scale ranging from *strongly disagree* [1] to *strongly agree* [6].

In turn, the moral incrementalism measure included eight items (i.e., two items per vignette), with a Cronbach's alpha of $\alpha = 0.71$. Adolescents were asked to provide ratings on a six-point Likert-type scale ranging from *strongly disagree* [1] to *strongly agree* [6]. This measure assessed adolescents' endorsement that behaviors can be explained by external processes (e.g., Levy & Dweck, 1998). Adolescents rated their perceptions that the hypothetical character's actions were due to external factors (e.g., "[name]'s life experiences have led him/her to act this way"), as well as their perception that traits and behaviors can be cultivated through effort and that people are able to change and grow over time (e.g., "[name] could become nicer"). See Supplementary Materials for a complete list of items assessing moral essentialism and incrementalism.

Character and situation judgments. For each vignette, participants responded to questions about character acceptability, likability, consequence judgments, and person attributions. Character acceptability was examined on a four-point Likert-type scale ranging from *not okay* [1] to *okay* [4]. Adolescents rated the protagonist's actions in response to the question "do you think what [name] did was okay or not okay?" The scale for the antisocial scenarios were reversed for multilevel analyses such that higher scores in this context were indicative of

greater unacceptability. This allowed for direct comparisons between the two sets of scenarios in the magnitude of predicted associations.

Character likability was rated on a six-point Likert-type scale ranging from *dislike a lot* [1] to *like a lot* [6]. Adolescents rated how much they liked the protagonist, in response to the question how much do you think you would like [name] if you met him/her?" Similar to acceptability, the scale for the antisocial scenarios were reverse scored such that higher scores in this context were indicative of more unlikability.

Regarding consequence judgments, adolescents rated on a four-point Likert-type scale ranging from *not at all* [1] to *a lot* [4] whether they believed the character was deserving of praise (for the two prosocial scenarios) or punishment (for the two antisocial scenarios). For example, "if you were Mark, how much would you want Carl to be praised?" or "if you were Jenna, how much would you want Sabrina to be punished?". In each case, higher scores indicated greater endorsement of relevant consequences.

Finally, for person attributions, adolescents responded to questions to assess their person-centered moral attributions ("Do you think that he/she is a good/bad person?) on a four-point Likert-type scale ranging from *not at all* [1] to *a lot* [4]. For prosocial scenarios, they were asked to indicate whether they thought the character was a good person, and in antisocial scenarios, when the character was a bad person. In each case, higher scores indicated greater endorsement of relevant characterological attributions.

Plan of Analysis

First, to assess between-person differences and validate the overall vignette-based measures of moral incrementalism and essentialism, we conducted hierarchical linear regressions to investigate how moral incrementalism and essentialism predicted adolescents' responses to the

Implicit Theories of Personality measure as well as externalization, guilt and shame scales of the TOSCA. Age and gender were entered in the first step of the models. Adolescents' ratings of moral essentialism and incrementalism were entered together at step two to assess their unique associations, as moral essentialism was significantly, positively correlated with moral incrementalism ($r = .31$, $p = 0.007$). An analysis to determine how much data was missing revealed that 1.64% of values were incomplete due to item nonresponse. Ten iterations of multiple imputation using the automatic method were conducted on all variables to account for missing data. Parameters based on pooled data are reported.

Next, to assess within-person variations in measures of moral incrementalism and essentialism, we conducted multilevel modeling with HLM ver. 7.00 with adolescents' responses for specific vignettes at level 1 (L1) nested within the participant at level 2 (L2) (Raudenbush & Bryk, 1992). In each case, model building began with an unconditional model to assess the distribution of variance in the dependent variables across L1 and L2 (i.e., ICCs).

The first set of models examined essentialism and incrementalism as the outcome variables, respectively, to examine how they varied as a function of condition, age, and gender. We tested within-person variations as a function of condition by sequentially testing the effects of story valence, recurrence, and their two-way interaction. Main effects of age and gender (boys coded as 1, girls coded as 2) were tested at L2 in each model, as well as cross-level interactions.

A second set of models examined how within-person variations in moral essentialism and incrementalism were related to character and situation judgments in particular contexts. We constructed one model for each of the four types of judgments (i.e., acceptability, likability, consequence judgments, person attributions). The effects of story valence and recurrence were entered first as controls, followed by main effects of essentialism and incrementalism, and finally

by two-way interactions between conditions and the two measures of mindset (e.g., recurrence x essentialism). Essentialism and incrementalism were centered and final estimation of fixed effects with robust standard errors were reported. Age and gender effects were also tested at L2. All significant fixed effects reported below were also accompanied by a statistically significant reduction in deviance (in each case, at $p < .05$).

Results

How are between-person variations in moral essentialism and incrementalism associated with measures of implicit theories of personality and moral emotions?

Final regression models are presented in Table 1. After accounting for age and gender effects, as expected, moral essentialism was significantly negatively associated with adolescents' responses to the implicit theories of personality measure, wherein higher scores reflect the belief that personality can change. In turn, moral incrementalism was significantly positively associated with adolescents' scores on the implicit theories of personality measure.

Regarding the TOSCA, moral essentialism significantly positively predicted adolescents' externalization of blame. On the other hand, moral incrementalism did not predict scores on the TOSCA. Gender predicted adolescents' responses to the shame dimension of the TOSCA, such that girls scored higher on shame-proneness as compared to boys.

How does adolescents' endorsement of moral essentialism and incrementalism vary across contexts?

Initially, ICC values were calculated for moral essentialism and incrementalism. An ICC value of 0.16 was calculated for essentialism, whereas an ICC value of 0.40 was calculated for incrementalism.

Our first analysis examined the main and interactive effects of story valence (i.e., prosocial vs. antisocial) and recurrence on moral essentialism. Results revealed greater endorsement of moral essentialist attributions in prosocial stories (M = 4.79, SE = 0.05) as compared to antisocial stories (M = 4.04, SE = 0.05), $t(92)$= 12.53, b = 0.78, SE =0.06, $p < 0.01$. The main effect of recurrence was not significant, nor did recurrence interact with story valence.

Our next analysis examined the main and interactive effects of story valence (i.e., prosocial vs. antisocial) and recurrence on moral incrementalism. Results revealed a nonsignificant trend towards less endorsement of moral incrementalism when stories were prosocial (M = 4.23, SE = 0.07) as compared to antisocial stories (M = 4.34, SE = 0.06), b = -0.14, SE =0.08, $t(92)$ = -1.77, p = 0.07. The main effect of recurrence was not significant, nor did recurrence interact with story valence. Final models are reported in Table 2. Results for the L2 model further revealed a main effect of gender on moral incrementalism, $t(90)$ = 2.62, b = 0.35, SE = 0.13, $p < 0.01$, such that girls (M =4.47, SD = 0.65) endorsed moral incrementalism significantly more than boys (M = 4.12, SD = 0.61).

How are within-person variations in moral essentialism and incrementalism associated with character and situation judgments in particular contexts?

In this section, we focus on associations with moral essentialism and incrementalism, although all retained effects in final models are presented in Table 3. Regarding acceptability, analyses revealed that acceptability judgments were significantly associated with moral essentialism, such that endorsement of essentialism was linked to higher acceptability of the character's actions in prosocial stories and higher *un*acceptability in the antisocial stories. Similarly, results revealed that likability judgments were significantly associated with moral essentialism, such that greater endorsement of essentialism was linked to higher likability ratings

in the prosocial stories and higher *un*likability ratings in the antisocial stories. Results revealed similar patterns for consequence judgments and person attributions: moral essentialism was associated with more endorsement of praise and "good person" attributions for prosocial stories, and similarly associated with more endorsement of punishment and "bad person" attributions for antisocial stories. In each case, the magnitude of the associations was similar across vignette types, in that valence and recurrence conditions did not significantly moderate any of these associations. There were no significant unique or interactive effects of age or gender.

Discussion

Overall, the findings from this study emphasize that adolescents' implicit theories of morality do not take a "one size fits all" approach. Although we did observe meaningful between-person variations in adolescents' moral mindsets, youths' endorsement of moral incrementalism and essentialism was also sensitive to the features of particular contexts, and predicted how they made judgments about others in hypothetical situations. Each of these sets of findings is discussed in turn.

Individual Differences in Moral Essentialism and Incrementalism

In this study, moral essentialism and incrementalism were positively associated, emphasizing the value of examining them as distinct factors rather than assuming that they represent two ends of one dimension. This is also broadly consistent with past research showing that children and adults can be higher or lower on essentialism depending on the item or characteristic in question (Gelman et al., 2007; Heiphetz et al., 2017).

In line with past work emphasizing overall differences in mindset between individuals (e.g., Dweck et al., 1995; Hughes, 2015), a meaningful portion of the variance in essentialism and incrementalism (16% and 40%, respectively) was associated with between-person

differences. Overall, the between-person findings provided some preliminary evidence that supported the convergent validity of a new vignette-based measure of these constructs, inasmuch as they were related to implicit theories of personality in the expected directions. That is, moral essentialism was negatively associated with adolescents' responses to the implicit theories of personality measure (wherein higher scores reflect the belief that personality can change), whereas moral incrementalism was positively associated with adolescents' scores on the implicit theories of personality measure. Nevertheless, the amount of shared variance between the moral mindset measures and the ITP was relatively modest, in line with research suggesting that moral mindsets can be distinguished from implicit theories of personality more generally (Hughes, 2015). Contrary to our expectations, measures of moral mindset were not significantly associated with TOSCA scores for shame and guilt. However, moral essentialism was positively linked to adolescents' responses to the externalization dimension of the TOSCA. This link with essentialism is consistent with past theorizing, inasmuch as it reflects a tendency to externalize blame, which is described as a defensive reaction in response to attributing one's failures to global, enduring qualities (Levy & Dweck, 1998; Tangney, 1990; 1995).

Context Specificity of Moral Essentialism and Incrementalism

One key contribution of our work was the joint assessment of between and within person differences in implicit theories within the domain of morality. Although our findings did reveal between-person differences, as described above, the majority of the variance for both essentialism and incrementalism was linked to within-person variations across contexts. Thus, it appears as though context *is* meaningful, particularly in the case of moral essentialism (for which 84% of the variance was linked to intraindividual variations).

With respect to differences across contexts, findings revealed that adolescents endorsed moral essentialism significantly more in the prosocial domain, as well as a nonsignificant trend for incrementalism to be endorsed more in the antisocial domain. That is, when the hypothetical moral situations depicted prosocial actions (e.g., the protagonist acts honestly by telling the truth about their unequal contribution to a group project), adolescents were more likely to endorse statements that reflected internal factors, stability, and unchangeable qualities, aptitudes and traits. This is in line with evidence from Heiphetz (2019) suggesting that individuals tend to essentialize "goodness" more than "badness." For instance, positive characteristics such as "niceness" are more likely to be perceived as stable and transferrable as compared to negative characteristics like "meanness" (Meyer et al., 2017). Relatedly, younger children have been shown to hold optimistic views in negative contexts by believing people can change in a positive direction (e.g., Lockhart et al., 2009). These patterns may be adaptive in that essentializing the good aspects of oneself or of others can be quite beneficial (Rayzanov & Christenfeld, 2018b), whereas this is less likely to be the case in the antisocial domain.

In contrast, adolescents' endorsement of moral essentialism and incrementalism did not differ significantly depending on whether the story depicted behavioral repetition. We had expected to see differences based on whether the action was described as a one-time event (i.e., "one day") versus an event that has occurred many times before (i.e., "oftentimes") given that individuals who hold a more incremental mindset tend to draw less abrupt conclusions (Yeager et al., 2011). When actions were described as recurrent, we expected adolescents to endorse moral essentialism more strongly, and particularly for prosocial actions given adolescents' predispositions to essentialize goodness over badness (Heiphetz, 2019). It may be that our manipulation of repetition was too subtle. We explored this possibility using an additional item

that had been initially intended to measure essentialism but that was removed from the scale because it was deemed to overlap somewhat with the notion of behavioral repetition ("Do you think [Name] has done something like this before"?). Although this item was not intended to serve as a manipulation check (in that acting in a particular way on "one day" did not preclude the possibility that it had happened before), findings revealed no difference in the endorsement of this item across recurrence conditions. In this sense, it is possible that the lack of significant findings for recurrence may be at least partially due to the way in which recurrence was manipulated in this study, although past research on mindset and behavioral repetition has often focused on subtle linguistic cues (i.e., category labels versus generic language; e.g., Rhodes et al., 2012). Nevertheless, most work on this topic has been focused on nonmoral domains (e.g., levels of intelligence; Niiya et al., 2010), and thus more work is needed to address issues of recurrence in the context of actions reflecting moral values.

How are intraindividual variations in moral essentialism and incrementalism associated with character and situation judgments?

Past work has largely painted the consequences of moral essentialism and incrementalism in broad brush strokes. That is, incrementalism tends to be associated with positive outcomes (e.g., better academic performance, overcoming setbacks, empathy, forgiveness) and essentialism with negative outcomes (e.g., stereotyping, punishment) (Blackwell et al., 2007; Erdley & Dweck, 1993; Haselhuhn et al., 2010). However, in line with other recent research (e.g., Ryazanov & Christenfeld, 2018a), this study implies that essentialized thinking may not necessarily be detrimental under all circumstances. For instance, we found that adolescents who made essentialist attributions also tended to judge prosocial actors as more likable and their

actions as more acceptable. Thus, rather than positioning essentialism as a uniformly "bad mindset," it may be more fruitful to consider the context at hand.

Our findings also revealed that adolescents endorsed consequence judgments (i.e., praise and punishment) and person attributions (i.e., "good" and "bad" person) in moral contexts wherein they made more essentialist attributions. These findings are in line with previous research examining between-person effects suggesting that essentialism is linked to endorsing punishment (Yeager et al., 2011), but extend this work by addressing intraindividual variations and considering prosocial contexts. Similarly, our finding that adolescents endorsed person attributions and thus evaluated the moral and immoral character engaging in the prosocial or antisocial behavior as a "good person" or "bad person" provides further evidence to suggest that essentialism is linked to more stable, dispositional and trait-like attributions across both prosocial and antisocial contexts (Dweck et al., 1993; Yeager & Dweck, 2012). Taken together, these patterns of finding suggest that it is meaningful to consider how moral essentialism and incrementalism are linked to distinct judgments and outcomes across contexts.

Given that there are not well-established patterns in the mindset literature regarding gender and age effects in adolescence, this study examined these factors in exploratory ways. We found a main effect of gender on moral incrementalism, such that girls endorsed moral incrementalism more than boys. This is consistent with Killen et al. (2002), who found that girls are more tolerant to differences and hold less fixed perceptions about excluding others. Of course, more research is needed to corroborate this finding, especially given the overall absence of gender effects in this study. With regards to age-related findings, we posited two competing hypotheses given some research suggesting age-related decreases in essentialized thinking (e.g., Heiphetz, 2019) and other work suggesting possible increases (Heyman, 2009; Heiphetz, 2020;

Rholes and Ruble, 1984). However, we did not find any significant associations with adolescents' ages. Although early to mid-adolescence is a developmental period in which changes might be anticipated in light of youths' burgeoning moral identity development and the increasing complexity with which they make sense of their morally laden experiences (Hardy & Carlo, 2011; McLean & Pasupathi, 2012), it would be useful to examine these processes across a wider age span in future work. That said, our findings contribute to research and theorizing on moral mindsets in adolescence, a period that is crucial for self development and currently understudied in the moral mindset literature.

Conclusion

The results of this study were based on a community sample consisting primarily of well-educated, White, and Canadian families. There is evidence to suggest that in some domains (e.g., implicit theories of intelligence), factors such as socioeconomic status (SES) and parental education are associated with mindset, such that students from higher SES and educated backgrounds tend to be less likely to hold a fixed mindset (e.g., Claro et al., 2016). More research is needed to disentangle how these factors might be associated with moral essentialism and incrementalism. Thus, future research should encompass a more heterogenous and a larger sample size to test these associations. A further limitation of this study is that the moral essentialism scale included more items than the moral incrementalism scale, which may account for the lower reliability of our measure of moral incrementalism, and perhaps the larger number of significant associations evident with moral essentialism. Lastly, the recurrence manipulation may not have adequately captured adolescents' responsiveness to repetitive behaviors across contexts; rephrasing "One day" events to "Only this one time" might be less ambiguous. As well,

including a check question specifically designed to assess the manipulation would have been useful.

Despite these limitations, our study makes a number of contributions to research on moral mindsets. First, our findings suggest that moral incrementalism and moral essentialism are both relevant, distinct processes associated with how adolescents make sense of their morally-laden experiences. Moreover, our findings illuminate both between- and within-person variations in moral essentialism and incrementalism, and demonstrate that these beliefs are applied in context-specific ways. That is, our findings illustrate that adolescents' endorsements of both types of moral mindsets are sensitive to the features of the moral scenario at hand, and in particular, whether it involves prosocial or antisocial actions. Further, our findings address how within-person variations in moral essentialism are associated with character and situation judgments in particular contexts, and that signal the potentially adaptive features of these types of attributions. In sum, our results provide a novel contribution to research on moral mindset by examining the inter and intra-individual differences during an understudied developmental period. Our work also corroborates and extends recent research and theorizing (e.g., Heiphetz, 2019) by illustrating adolescents' flexible endorsement of moral essentialist and incremental perspectives, and the ways in which their judgments are responsive to the unique features of morally-laden events.

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Table 1

Final Models for Overall Associations between Moral Mindset, Implicit Theories of Personality, and Self-Conscious Emotions

	ITP		TOSCA-Externalization		TOSCA-Shame		TOSCA-Guilt	
Variable	*B*	*SE B*	*B*	*SE B*	*B*	*SE B*	*B*	*SE B*
Constant	5.52**	1.53	1.00	1.01	2.03*	0.93	2.78*	0.96
Age	-0.06	0.09	-0.01	0.06	0.11	0.05	0.02	0.06
Gender	-0.06	0.19	0.31	0.13	0.35*	0.12	0.18	0.13
Moral essentialism	-0.56*	0.21	0.42*	0.13	0.2	0.13	0.07	0.14
Moral incrementalism	0.42*	0.16	-0.06	0.10	-0.18	0.1	0.04	0.11
R^2	0.12*		0.14*		0.08		0.05	
R^2 Change for step 2	0.08*		0.14*		0.03		0.01	

Note. *$p < .05$. ITP = Implicit Theories of Personality; TOSCA = Test of Self-Conscious Affect.
Age and gender were entered together in step 1, followed by moral incrementalism and essentialism in Step 2. Boys were coded as 1 and girls were coded as 2.

Table 2

Final Fixed Effects and Variance Components for Multilevel Models of Moral Essentialism and Incrementalism Across Contexts

	Essentialism *b* (SE)	Incrementalism *b* (SE)
Intercept	4.02** (0.07)	4.42** (0.07)
Prosocial	0.78** (0.06)	-0.14 (0.08)
Recurrence	0.04 (0.05)	-0.07 (0.06)
Variance components		
Intercept	0.30	0.29
Prosocial	0.09	0.21
Recurrence	0.06	0.01

Note. ** p <0.001. Higher scores indicate greater endorsement of essentialism and incrementalism. The two-way interaction between conditions at L1 (i.e., prosocial x recurrence) was tested but not retained due to nonsignificant results. The main effects of age and gender at L2 as well as age and gender as moderators of associations at L1 were tested separately; a significant main effect of gender on moral incrementalism is reported in the text, but gender did not qualify any of the L1 patterns.

Table 3

Final Fixed Effects and Variance Components for Multilevel Models of Acceptability, Likability, Consequence Judgments, and Person Attributions across Contexts

	Acceptability *b* (SE)	Likability *b* (SE)	Consequence Judgment *b* (SE)	Person Attribution *b* (SE)
Intercept	3.74** (0.05)	4.12** (0.09)	2.71** (0.08)	2.45** (0.06)
Prosocial	-0.06 (0.08)	1.05** (0.16)	0.18 (0.11)	0.25* (0.08)
Essentialism	0.15* (0.05)	0.32** (0.08)	0.29** (0.06)	0.50** (0.05)
Incrementalism	0.02 (0.04)	-0.00005 (0.08)	-0.04 (0.05)	-0.03 (0.05)
Variance components				
Intercept	0.06	0.32	0.06	0.37
Prosocial	0.23	1.16	0.02	0.35
Essentialism	0.04	0.10	0.01	0.02
Incrementalism	0.05	0.16	0.05	0.01

Note: ** p <0.001, * p < 0.05. In prosocial stories, higher scores indicate greater acceptability, likability, praise and good person attributions. In antisocial stories, higher scores indicate greater unacceptability, unlikability, punishment and bad person attributions. The effects of recurrence were tested but this variable was removed for parsimony as it did not significantly contribute to the model nor did it interact with other predictors. Two-way interactions between conditions and mindset variables at L1 were considered but not retained due to nonsignificant results. Similarly, the main effects of age and gender at L2 as well as age and gender as moderators of associations with L1 variables were tested but these analyses did not reveal any significant effects.

Supplementary Online Materials

Hypothetical Vignettes

Each participant was presented with two prosocial and two antisocial vignettes (with one recurrent and one nonrecurrent story within each valence condition). The assignment of values to conditions 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 conditions.

Value	Prosocial Condition	Antisocial Condition
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.

Moral Essentialism Items

Items followed the presentation of each vignette; when wording varied between prosocial and antisocial vignettes, the wording for prosocial vignettes is in parentheses.

[Name] acts this way because it is a part of who he/she is.
[Name] is mean (nice) in other ways too.
Do you think [Name] will do something like this again?
Do you think [Name] will do something like this with other people?

Moral Incrementalism Items

Items followed the presentation of each vignette; when wording varied between prosocial and antisocial vignettes, the wording for prosocial vignettes is in parentheses.

[Name] could become nicer (less nice).
[Name]'s life experiences have led him/her to act in this way.