

# Moral Motivation Based on Multiple Developmental Structures: An Exploration of Cognitive and Emotional Dynamics

Ulas Kaplan

*New York University and University of Groningen, the Netherlands*

Terrence Tivnan

*Harvard Graduate School of Education*

**ABSTRACT.** Intrapersonal variability and multiplicity in the complexity of moral motivation were examined from Dynamic Systems and Self-Determination Theory perspectives. L. Kohlberg's (1969) stages of moral development are reconceptualized as soft-assembled and dynamically transformable process structures of motivation that may operate simultaneously within person in different degrees. Moral motivation is conceptualized as the real-time process of self-organization of cognitive and emotional dynamics out of which moral judgment and action emerge. A detailed inquiry into intrapersonal variation in moral motivation is carried out based on the differential operation of multiple motivational structures. A total of 74 high school students and 97 college students participated in the study by completing a new questionnaire, involving 3 different hypothetical moral judgments. As hypothesized, findings revealed significant multiplicity in the within-person operation of developmental stage structures, and intrapersonal variability in the degrees to which stages were used. Developmental patterns were found in terms of different distributions of multiple stages between high school and college samples, as well as the association between age and overall motivation scores. Differential relations of specific emotions to moral motivation revealed and confirmed the value of differentiating multiple emotions. Implications of the present theoretical perspective and the findings for understanding the complexity of moral judgment and motivation are discussed.

**Keywords** *dynamic systems, intrapersonal variation, moral development, moral motivation*

The complexity of psychological experience in moral judgment has been receiving increasing attention in moral psychology (Gibbs, 2010; Krebs & Denton, 2005; Narvaez, 2010a). This complexity was a challenge to Kohlberg's (1969) cognitive-developmental theory, which was prevalent in the field for several decades. Moral complexity remains puzzling to contemporary moral psychology. The recognition of limitations of the developmental theory that once dominated scientific moral inquiry left a developmental vacuum in moral psychology, with strong tendencies

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Received December 20, 2012; accepted July 9, 2013.

Address correspondence to Ulas Kaplan, New York University, CREATE Lab, 196 Mercer Street, 8F, New York, NY 10012, USA; u.kaplan@rug.nl. (e-mail).

to abandon (Krebs & Denton, 2005) or exclude (Haidt, 2008) the cognitive-developmental perspective entirely. With notable exceptions (e.g., Malti & Buchmann, 2010; Malti, Gummerum, Keller, & Buchmann, 2009), most contemporary approaches to moral judgment place no emphasis on development.

While transcending the limitations of the cognitive-developmental approach is necessary, developmental stages can still be useful in understanding the complexity of moral judgment. The gist-like meaning (Lewis, 2002) of Kohlberg's stages may emerge in real-time moral judgment in ways that are contextualized as strategies (Siegler, 1996, 2006). The individually constructed meaning of each strategy is likely to be a contributor to the process by which people are motivated to carry out moral judgments and actions. As an aspect of the soft-assembly of cognition, this meaning is not fixed or rigid. Rather, it is individualized and contextualized each time it emerges in moral understanding. Consistently based on Self-Determination Theory (SDT; Deci & Ryan, 2000) and Dynamic Systems (DS; Thelen & Smith, 1994; van Geert, 1993; van Geert & Steenbeek, 2008) perspectives, we present a reconceptualization of Kohlberg's stages as locally emergent structures of motivation that operate simultaneously in multiplicity in real-time moral judgment and action. Accordingly, stages are soft-assembled and dynamically transformable. They operate together in the real-time process of self-organization in the service of moral adaptation, reflecting the adaptivity of multiplicity (Siegler, 1996).

While Kohlberg had recognized the possibility that several stages were reflected in participants' responses to dilemmas, he decided to take the highest level in the Moral Judgment Interview (MJI) to characterize a person's moral functioning and development. Most neo-Kohlbergian approaches, even those that used more sophisticated analyses (e.g., Boom, Wouters, & Keller, 2007; Dawson, 2002), have maintained and endorsed this reductionist methodological tendency in search of developmental order. We propose that it is not only useful but also necessary to pay closer attention to and systematically document within-context intrapersonal variability to understand the developmental complexity of moral judgment and motivation.

In the present study, we expected to find significant intrapersonal variability in terms of differential operation of multiple stage structures within person in each judgment context. Variability in psychological systems is not random, but organized and orderly (Fischer & Bidell, 2006; van Geert & van Dijk, 2002). Thus, our sample of high school and college students are expected to reveal developmental differences in patterns of multiple stage structures (e.g., differences in the strengths of preconventional and postconventional stages).

Our approach resonates with Siegler's (1996) Overlapping Waves theory based on multiplicity of cognitive strategies within person at any given time, including the notion that "cognitive development involves gradual changes in the frequency of these ways of thinking" (Chen & Siegler, 2000, p. 7). Likewise, (a) multiple moral motivational structures are likely to operate simultaneously within-person, and (b) moral development is a process of changing frequencies (i.e., distributions and probabilities) of multiple ways of approaching what is right or wrong.

Further, consistently with Thelen and Smith's (1994) DS framework as well as SDT (Deci & Ryan, 2000), (c) moral cognition is motivated; and applying the DS perspective of Lewis (2002), (d) emotional experiences are dynamically interconnected with moral cognition and motivation. These assertions (c and d) are in keeping with recent advances in neuroscience as well as emotion research, which reveal that the human mind is continuously emotional and motivated (Izard, 2009; Lewis, 2005; Tucker, 2007). This emerging understanding of holistic and interconnected functioning reflects the broad reconceptualization of moral motivation in

the present study. Accordingly, not only overt moral action, but also moral understanding and judgment are functions of a motivational process toward moral adaptation.

This inherent multiplicity and dynamism of moral cognition can be represented by a dynamic view. Accordingly, stages are locally emergent soft-assembled products of moral self-organization, rather than fixed structures in the mind that cause moral thinking. As emergent strategies of an activity of moral adaptation, they in turn contribute to moral self-organization in reciprocal causality. Each stage structure can be revisioned as a dynamic skill (Fischer & Bidell, 2006) that emerge and develop in context-specific ways. Applying this view, it can be argued that a moral stage structure “is not a separately existing entity, such as a logical stage dictating behavior, or a preformed linguistic or cognitive capacity awaiting actualization, but instead is a property of human activity systems” (Fischer & Bidell, 2006, p. 320).

Performance and development reflect orderly and organized patterns of multiplicity and variability that are subject to change in multiple time scales. In each social-moral context (e.g., a particular moral dilemma), an individual is likely to construct a particular combination of degrees of multiple strategies, specific to that context, and specific to his or her own developmental history, including the just-preceding activity (Thelen & Smith, 1994). This activity of construction undergoes changes over time in terms of probabilities. Thus, moral development involves changes in probabilities of actively constructing and using multiple motivational strategies (shifting landscape of multiple attractors) within a dynamic system.

### Moral Judgment as a Function of Dynamic Motivation

Moral motivation has been an “underresearched topic of moral psychology” (Malti & Buchmann, 2010, p. 145). It has been conceptualized by Nunner-Winkler (1998) as “a formal readiness to follow whatever is recognized as the right thing to do in a given situation” (p. 596), and “an intrinsic, formal second-order desire” (p. 601) as a relatively stable aspect of moral character. By contrast, from SDT (Deci & Ryan, 2000) and DS (Thelen & Smith, 1994) perspectives, we propose that not only moral judgment, but also moral motivation itself is subject to significant contextual and intrapersonal variability. Moreover, unlike most current conceptions, this perspective broadens motivation to include judgment as well as action. We conceptualize moral motivation as a dynamic system, self-organized through the relationships within and between cognitive and emotional elements. Moral judgment and action emerge out of this dynamic system of interactions.

### SDT and Dynamic Motivation

SDT identified four major levels of motivation, representing increasing levels of autonomy: (a) external regulation, (b) introjected regulation, (c) identified regulation, and (d) integrated regulation. An individual’s motives for a particular action or judgment may be based on a combination of the four levels of regulation (Chirkov, Ryan, Kim, & Kaplan, 2003). To the extent that higher levels are operative, motivation has a higher quality of self-regulated autonomy (Ryan, 1995). The same dynamic process may also operate in the moral domain based on the six developmental structures Kohlberg had identified. Increased autonomy is also an essential feature of moral development according to Kohlberg (1969; McDonough, 2005). In both models, experience becomes

more autonomous at higher levels. Therefore, despite significant epistemological and methodological differences between the two theories (e.g., SDT does not view motivational levels as stages), Kohlberg's moral development stages can be reconceptualized the same way that the SDT methodology views levels of motivation. That is, the motivational qualities of various pre-conventional, conventional, and post-conventional structures can emerge and operate simultaneously in the moral judgment process in ways that are context-specific.

This reflects superposition and complementarity of multiple motivational structures. According to the superposition principle of complex dynamic systems (van Geert & Steenbeek, 2008), human behavior may be characterized by two or more distinct structures. From this view, each motivational structure can be seen as an attractor with certain probabilities of real-time assembly in specific types of social-moral contexts. An attractor is a state in which the system is more likely to gravitate toward or experience relatively frequently (Fisher, Newman, & Molenaar, 2011; van Geert, 2003). The present conception of developmental stages as both strategies and attractors confirms Lewis (2002) that strategies are good candidates for attractors in a dynamic system. An essential characteristic of this system is substantial intrapersonal variability.

### Intrapersonal Variation and Multiplicity in Motivation

As van Geert and van Dijk (2002) pointed out, "in the field of developmental psychology, intra-individual variability is often neglected as a meaningful phenomenon" even though it is "a potential driving force of development and a potential indicator of ongoing processes" (p. 341). Consistently, Lapsley (1996) highlighted "clear evidence of stage fluctuation within, and stage inconsistency across, dilemmas, indicating that moral structures are quite flexible and that adults base their moral judgments on *several* stage structures" (pp. 96–97). Rest's neo-Kohlbergian (Rest, Narvaez, Bebeau, & Thoma, 1999) perspective is consistent with this view. As Thoma and Rest (1999) argued, an individual is likely to assign different priorities to multiple stages in a given judgment context: "a shift in the pattern of stage-based responses" (p. 326) can characterize moral judgment, the assessment of which is probabilistic.

In SDT methodology (Chirkov et al., 2003; Ryan & Connell, 1989), individuals are asked to indicate the degree to which each level of motivation represents their experience, reflecting within-context variability. However, SDT research on intrapersonal variability mainly explored differences across time and context. The within-context intrapersonal variability has not been subject to in-depth exploration. Similarly, our model is in keeping with the dynamic aspect of Rest's schema conceptualization of moral stages (Rest et al., 1999), but the promise of the schema approach has not yet been fully realized with detailed empirical exploration in moral psychology. The present study is a step in this direction.

Consistently with the schema view, individuals may not necessarily *reason* through moral dilemmas consciously and explicitly. The emerging contextualized meaning of a developmental stage of reasoning may be operative intuitively as a motive and a strategy in decision making. This formulation resonates with the prevalence of implicit cognition and intuition in moral judgment (Banerjee, Huebner, & Hauser, 2010; Haidt, 2001, 2008; Hauser, 2006). The meaning of such intuitions can be identified through reflection on their judgments. This assertion reflects a departure from Haidt's social intuitionist model, which would regard such reflections mainly as ad hoc justifications, relatively isolated from emotions and intuitions. In

contrast to the premise of the social intuitionist model, opportunities for self-explanation can reveal valuable insights into the process of using strategies in problem solving contexts (Siegler, 2006). The use of strategies in moral problem solving is likely to be interconnected with emotions (Lewis, 2002).

### Exploration of Emotions

The present study takes into account both the social-emotional and rationalist understandings of moral motivation, which have traditionally been used in isolation. Integrating the insights of these two distinct perspectives and sources of moral understanding was emphasized as a significant need in moral psychology (Haidt, 2001; Moll, Oliviera-Souza, & Zahn, 2009). Haidt argued that “moral judgment is generally the result of quick, automatic evaluations (intuitions)” and “moral intuition is a kind of cognition, but it is not a kind of reasoning” (p. 814). Even though the conscious and explicit nature of reasoning may seem to disconnect it from intuition, the gist-like meaning of a particular experience of moral reasoning can be highly involved in moral motivation as intuition. This is consistent with the emphasis of Lewis (2002) on appraisals as rapid evaluations that are dynamically interconnected with emotions.

In the present study, participants’ experiences of various emotions in terms of their self-ratings are examined as they make sense of moral dilemmas. This is significant as emotional self-attributions were found central to moral motivation (Gasser & Keller, 2009; Malti et al., 2009). Also, emotional awareness was assessed by using a new scale that was developed for this study. This is of particular significance from a developmental perspective because increasing awareness is a key aspect of human development (Kegan, 1982; Selman, 1980) and becoming a more fully functioning person (Rogers, 1963). Furthermore, increasing awareness has been identified as the major developmental pathway for emotional experience (Basch, 1988). In his model of emotional development, Basch identified (a) affect, (b) feeling, (c) emotion, and (d) empathic understanding as reflecting increasing levels of awareness. Because empathy involves higher levels of awareness according to Basch’s developmental model, and has been associated with moral development by various studies (e.g., Eisenberg, 2005; Hoffman 2000), emotional awareness can be a significant aspect of moral experience and development. Still, this connection has not been directly explored previously, and will be examined here.

### Hypotheses

In light of these insights, the present study tests the following hypotheses:

1. Hypothesis 1. Multiplicity: Multiple motivational structures will be used by individuals in each moral judgment context.
2. Hypothesis 2. Intrapersonal variation in operation degrees: Motivational structures will operate in different degrees within-person.
3. Hypothesis 3. Developmental pattern: Moral motivation will reveal a developmental pattern based on shifting distributions of multiple motivational structures, and hence increasing overall quality of motivation with age. Thus, we expected age-related differences between high school and college samples in the distributions of stages.

4. Hypothesis 4. Quality of moral motivation and emotional awareness: Moral development, as reflected by the quality of moral motivation, will be positively associated with emotional awareness.

In addition, possible relationships between moral motivation and the self-reported experience of various emotions are explored as a research question.

## METHOD

### Participants

Data were obtained from 74 students of a private high school and 97 students of a private liberal arts college in the southeastern United States. In each sample, there were 36 male students (7 high school and 3 college students did not report their sex). The age ranges were 14–19 years ( $M$  age = 15.97 years,  $SD = 1.05$  years) for the high school sample, and 17–25 years ( $M$  age = 19.66 years,  $SD = 1.86$  years) for the college sample. The mean of the total sample was 18.18 ( $SD = 2.41$ ). Students of the college were significantly diverse in their states of origin; approximately 80% came from states outside of its home state, with a total of 38 states. Students of the high school were mostly from its home state. On the other hand, the high school's student body was similar to that of the college in terms of socioeconomic status. As private schools, each school has a major part of its student body from upper middle-class households. This observation is based on the high tuition cost of each private school, as well as the conversations of the first author of this study with faculty and students of the liberal arts college regarding the general characteristics of its student body.

The similarity in terms of socioeconomic status is important for developmental comparisons, despite a discrepancy between the two groups in terms of academic achievement levels. The academic culture of the college is known for its liberal and progressive worldview. On the other hand, this school is not among the highly selective colleges in terms of academic achievement. The high school is academically highly rigorous, and its alumni generally attend colleges that are significantly more selective than the liberal arts college of the present study. Students at both schools participated in the study anonymously and voluntarily during class time by completing a questionnaire on paper.

### Instrument

The present questionnaire was developed for this study by using two dilemmas Kohlberg used in his research. The first dilemma tells the story of Heinz, as he faces the decision to steal a very expensive drug to save his wife, who is dying from cancer, while the druggist asks for too much money and is not willing to compromise. The second dilemma is about Joe, a 14-year-old boy who wanted to go to camp. Following his father's promise, Joe works hard to save enough money. However, the father changes his mind, and demands Joe's money so that he could go on a fishing trip with his friends. Joe faces a decision to refuse his father's demand. These two dilemmas were chosen because of the neo-Kohlbergian nature of the present study. Under the Heinz dilemma

we examined two moral judgments: (a) whether Heinz should steal the drug, and (b) if you were the judge, after Heinz was caught stealing, whether you would give him any sentence. Under Joe dilemma we examined a third judgment: (c) should Joe refuse to give his father's demand for the money he saved? Thus, our study is based on a total of three different moral judgment contexts.

The questionnaire assessed participants' emotional experience, as they were asked to imagine hearing the story from Heinz or Joe whom they have just met. Participants were asked to indicate how much they would feel each of the following emotions on a 5-point Likert-type scale from 1 (*not at all*) to 5 (*very much*): fear, anger, hate, guilt, distress, compassion, love, appreciation, and gratitude. These emotions were chosen to represent a range of common negative and positive emotions (Ekman, 2003; Goleman, 2003). Participants were asked to provide this evaluation of their emotional responses toward Heinz, the druggist, Joe and his father. Afterwards, moral judgment was evaluated based on participants' decision as to the right thing for Heinz and Joe to do. In Defining Issues Test (DIT) methodology, this judgment choice is what Rest, Thoma, and Edwards (1997) referred to as the *action choice*. Participants indicated their judgments regarding each of the three different judgment choices as explained above.

For each judgment context, after participants indicated their decision, moral motivation was assessed by asking them to reflect on the reason for their judgment. After participants indicated the right thing to do in the particular context of the dilemma (e.g., for Heinz to steal the drug to save his wife), they were asked "why?" This is followed by brief descriptions of Kohlberg's six stages of moral reasoning. Participants were asked to indicate on a Likert-type from 1 (*not at all*) to 5 (*very much*), how much each reason represented their own reason(s) for their judgment. This procedure is identical to the assessment of motivation according to SDT's four levels (Chirkov et al., 2003; Ryan & Connell, 1989). This questionnaire was revised several times, including: (a) removal of characteristic titles for each stage (which existed in the initial version), so that participants' ratings are only based on descriptions; (b) reducing any significant discrepancy between descriptions in length; and (c) improvements in clarity of descriptions to represent Kohlberg's (1969) descriptions.

The questionnaire also included an assessment of emotional awareness with a new 12-item scale, developed for this study. The items (such as "When I experience anger, I am fully aware of it") are partly based on conceptions of emotional awareness and self-awareness as emphasized by Basch (1988) and Rogers (1963). The formation of this scale was also influenced by the Levels of Emotional Awareness model (Lane & Schwartz, 1987), according to which emotional awareness is the ability for an individual to recognize emotions in him- or herself and others. The Cronbach's alpha reliability coefficient for this new scale was .71 in the present study. This new scale is presented in the Appendix.

## RESULTS

### Hypothesis 1: Multiplicity in the Use of Motivational Structures

In order to explore the extent to which participants used multiple motivational structures (developmental stages), we analyzed ratings of each of the 6 structures on a 5-point Likert-type scale, ranging from 1 (*not at all*) to 5 (*very much*) representative of the individual's own reason(s) behind moral judgment. First we took a rating of 3 or more in our recognition task as a threshold for the

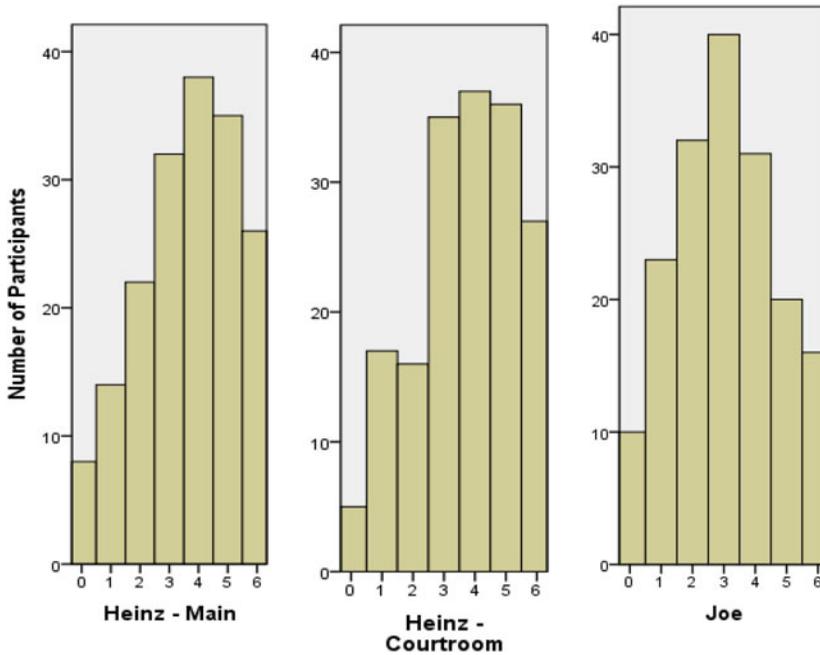


FIGURE 1 Frequencies (y-axis) at each level of multiplicity (x-axis) based on the number of motivational structures recognized to be operative at a level of 3 or more of 5 for each moral judgment. Note. Frequencies represent the number of participants using each degree of multiplicity. Numbers on x-axis represent possible degrees of multiplicity. For example, category 0 indicates no stages were used; 2 represents the use of two stages at a rating of 3 or more (color figure available online).

operation of a motivational structure. For each dilemma we obtained the number of motivational structures that each participant gave a rating of at least 3. This number (from 0 to 6) represented each participant’s degree of multiplicity, namely, the number of cognitive strategies recognized to be operative. Figure 1 shows the distribution of multiplicity in our sample for each of the three moral judgments at this threshold of operation.

Based on the number of stages each person used at a rating of 3 or more, the distribution representing multiplicity of stages for each judgment was tested using a one sample *t*-test. Each distribution was found to be significantly different from a hypothetical condition of no multiplicity that formed as a contrast in the *t*-test. For a more strict multiplicity level, only a rating of 4 or more was accepted as the operation of a particular motivational structure. One-sample *t*-tests revealed significant differences for distributions at a rating level of 4 out of 5 as well. These results are shown in Table 1.

### Hypothesis 2: Intrapersonal Variation Based on Different Degrees of Operation

Individuals could use each stage to the same degree, representing multiplicity without varying degrees of operation. By contrast, we postulated that there is significant intrapersonal variability

TABLE 1  
 One-Sample *t* Test Results, Testing the Extent to Which Multiple Motivational Structures Are Recognized to Be Operative in Each Moral Judgment Context

Degree (criterion) of stage operation	Moral judgment	Number of stages recognized to operate within-person at the corresponding degree				
		M	SD	df	t	p
Rating of 3, 4, or 5	Heinz (main)	3.64	1.68	174	20.81	<.001
	Heinz (courtroom)	3.72	1.64	172	21.83	<.001
	Joe	3.06	1.65	171	16.36	<.001
Rating of 4 or 5	Heinz (main)	1.97	1.42	176	9.07	<.001
	Heinz (courtroom)	2.02	1.50	176	9.01	<.001
	Joe	1.57	1.32	176	5.69	<.001

Note. The first three *t*-tests are based on accepting a rating of 3 or more of 5 to be reflective of the operation of a stage. The second group of three *t* tests is based on accepting only a rating of 4 or 5 as the operation of a stage.

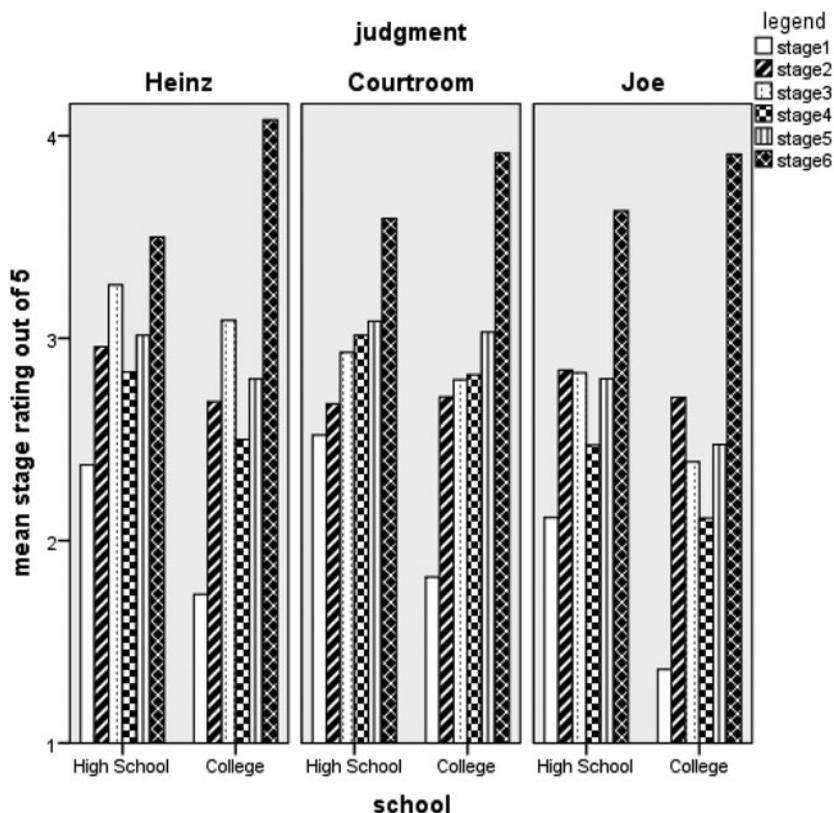


FIGURE 2 Total variation across six stages of moral motivation or development in three different moral judgment contexts by school.

TABLE 2

Repeated Measures Analysis of Variance Results Testing Within-Person Differences in Degrees of Stage Use, Including Main Effects, and Pairwise Comparisons Among the Within-Person Operations of Six Stages of Moral Motivation and Development for Each Judgment Context (Dilemma), Including Mean Stage Ratings Out of 5

Dilemma	Motivational structures												Main effects*	
	1		2		3		4		5		6		Wilks's $\lambda$	Multivariate $\eta^2$
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
Heinz Main	2 <sub>a</sub>	0.91	2.80 <sub>b</sub>	1.02	3.16 <sub>c</sub>	1.22	2.64 <sub>b</sub>	1.09	2.89 <sub>bc</sub>	1.17	3.84 <sub>d</sub>	1.16	.33	.67
Heinz Court	2.11 <sub>a</sub>	1.08	2.70 <sub>b</sub>	1.12	2.85 <sub>bc</sub>	1.17	2.90 <sub>bc</sub>	1.16	3.05 <sub>c</sub>	1.14	3.78 <sub>d</sub>	1.09	.45	.55
Joe	1.67 <sub>a</sub>	0.98	2.76 <sub>b</sub>	1.10	2.57 <sub>b</sub>	1.19	2.26 <sub>c</sub>	1.03	2.61 <sub>b</sub>	1.11	3.79 <sub>d</sub>	1.15	.33	.67

Note. Bonferroni correction was carried out based on 15 pairwise tests within each judgment context. As a result, the *p* value for significance was taken as .05/15 = .003. Thus, mean stage ratings that are significantly different from each other at the .003 level are shown with different subscripts.

\*All main effects were significant at *p* < .001 level.

in their degrees of operation. In order to understand this variation, we first examined total variation in degrees of stage use, as shown in Figure 2.

Total variation shown here comes from interpersonal and intrapersonal variability. The significance of within-person variability was tested with a repeated measures analysis of variance (ANOVA) for each judgment context. In this analysis, stage was entered as the factor with six levels, and the ratings (out of 5) were taken as the values of the dependent variable. All main effects were significant (*p* < .001): for Heinz main judgment,  $F(5, 169) = 70.03$ ; for Heinz courtroom judgment,  $F(5, 166) = 40.45$ ; and for Joe judgment,  $F(5, 164) = 66.17$ .

To further examine this variability, pairwise comparisons were conducted. The majority of pairwise comparisons were significant. Each motivational structure was recognized by participants to operate in significantly different degrees from at least several other structures. Stages 1 and 6 were significantly different from all other stages. Six of the eighteen total comparisons among stages 2, 3, 4, and 5 revealed differences at the Bonferroni correction level (.003). Table 2 shows these results and main effects.

### Hypotheses 3 and 4: Quality of Moral Motivation in Relation to Age and Emotional Awareness

In order to explore moral motivation as a function of age (Hypothesis 3) and emotional awareness (Hypothesis 4), each participant's scores for 6 motivational structures were used to compute a single overall motivation score. This procedure is equivalent to the assessment of motivation through the Self-Regulatory Questionnaire of Cultural Practices (Chirkov et al., 2003; Ryan & Connell, 1989). In this procedure, different motivation levels are assigned different weights based on their degree of autonomy (from -2 to +2 for four levels of SDT; from -3 to +3 for the present six structures). The overall developmental quality of motivation for an individual is a function

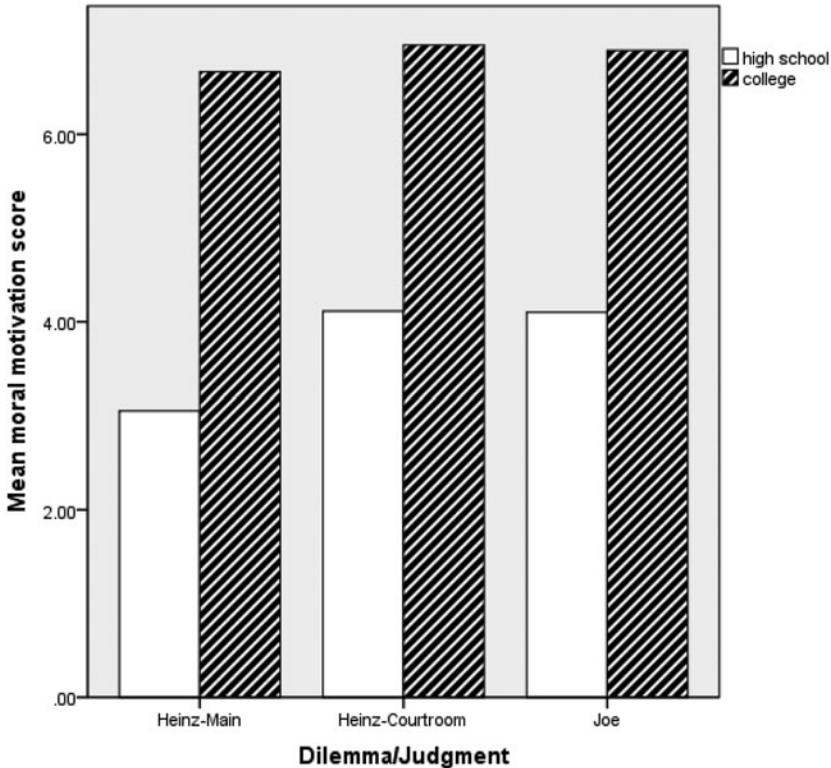


FIGURE 3 Moral motivation scores for Heinz dilemma main judgment, the courtroom judgment and the Joe dilemma by school.

(weighted sum) of the subjective rating of each stage and their standard weights:

$$\text{Moral motivation} = -3\text{Stage1} - 2\text{Stage2} - \text{Stage3} + \text{Stage4} + 2\text{Stage5} + 3\text{Stage6}.$$

Figure 3 represents average motivation scores by school, revealing higher scores for the college sample in moral motivation regarding all three judgments.

To examine the relation between motivation and age, box plots were obtained for each of the three judgements. Figures 4, 5, and 6 represent overall motivation scores by age for Heinz dilemma main judgement, courtroom judgement, and Joe judgement, respectively.

Multiple regression analysis was carried out to explore the overall quality of moral motivation as a function of age, sex, and emotional awareness. The coefficients for these analyses show the relationships of these variables to moral motivation, while controlling for the other variables in the model. Regression coefficients of age and emotional awareness reveal their relationship with moral motivation, testing Hypotheses 3 and 4, as presented in Table 3.

Overall, moral motivation quality was positively associated with age and emotional awareness: older participants and those with higher emotional awareness tended to have higher moral

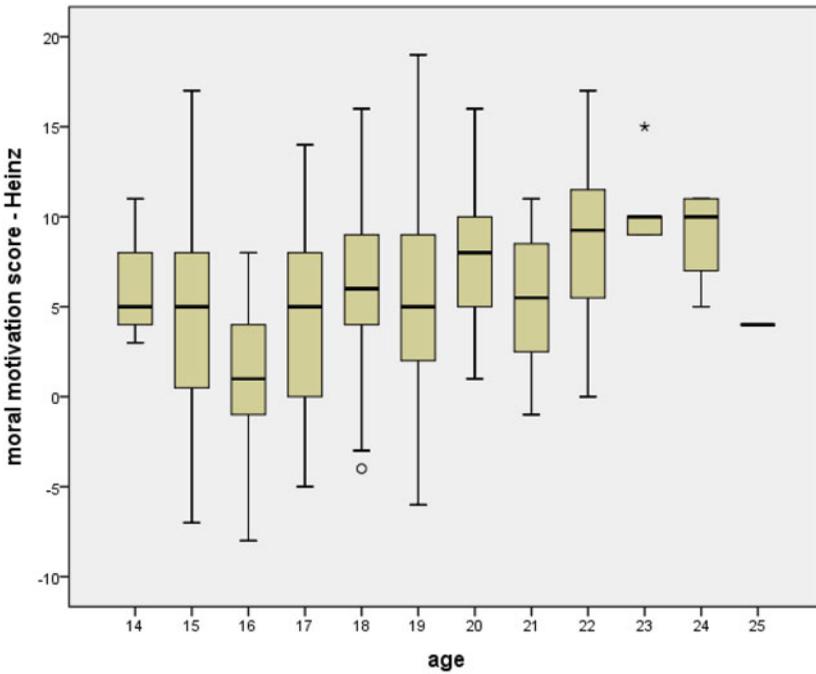


FIGURE 4 Distribution of moral motivation scores by age in Heinz dilemma (main judgment; color figure available online).

motivation scores. While this relationship was robust for age, it was more limited for emotional awareness. Sex was significant only for the court judgment in the Heinz dilemma, with females scoring higher in their moral motivation. Also, a separate correlation analysis revealed that emotional awareness was positively associated with age ( $r = .23, p = .003$ ).

As additional analyses, correlations between stage ratings were computed in order to observe possible developmental patterns in the differential assembly of multiple motivational structures.

TABLE 3  
Multiple Regression Results (Including Standardized Coefficients) for the Relation of Age, Emotional Awareness, and Sex to Moral Motivation in Heinz and Joe Dilemmas

Variable	Heinz (main)	Heinz (court judgment)	Joe dilemma
Age	.29***	.25**	.23**
Emotional awareness	.13 <sup>†</sup>	.20*	.16 <sup>†</sup>
Sex	-.12	-.17*	-.12
Adjusted $R^2$	.12	.14	.09
$F$	8.43***	9.27***	6.45**

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

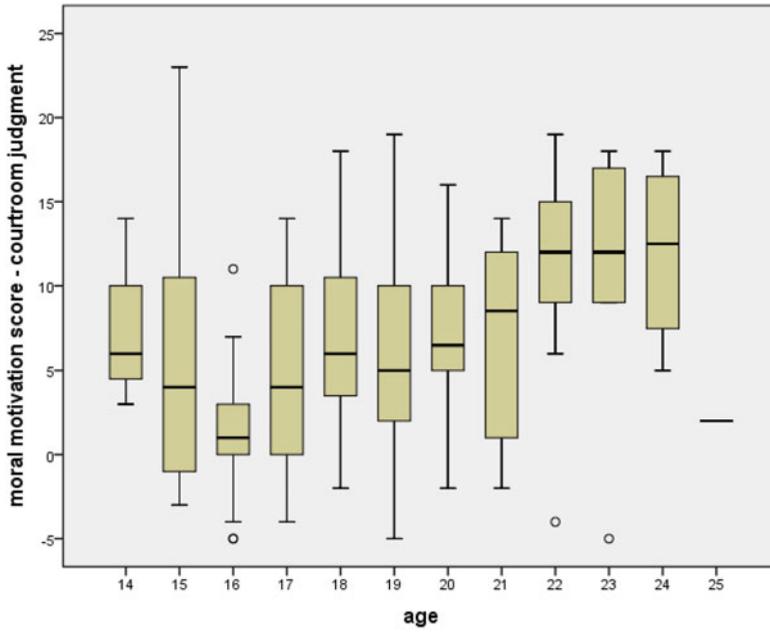


FIGURE 5 Distribution of moral motivation scores by age for the courtroom judgment of Heinz dilemma (color figure available online).

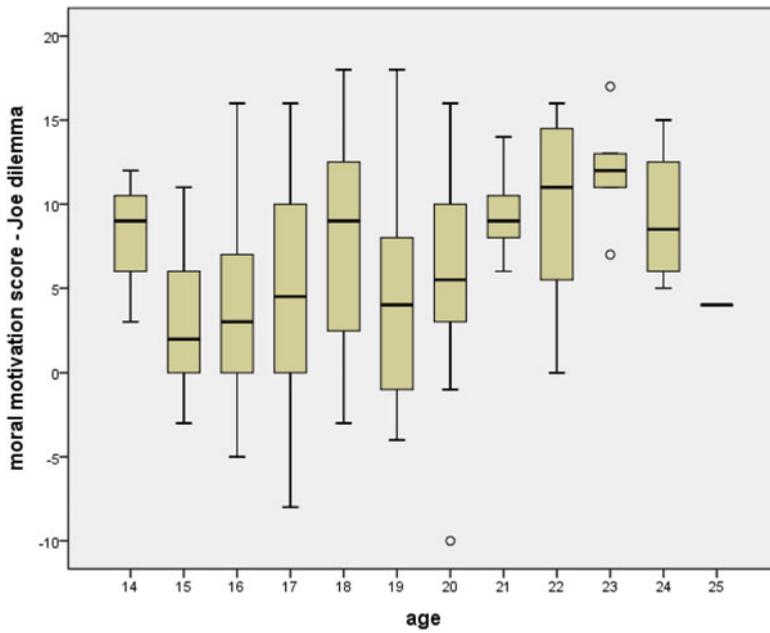


FIGURE 6 Distribution of moral motivation scores by age in Joe dilemma (color figure available online).

TABLE 4  
Correlations Between Intrapersonal Operation (Ratings) of Different Stages for Each of the Three Moral Judgments

<i>Dilemma</i>	<i>Stage</i>	<i>Stage</i>				
		2	3	4	5	6
Heinz main	1	.33***	.44***	.42***	.26***	.11
	2		.32***	.20**	.21**	.12
	3			.46***	.42***	.31***
	4				.40***	.18*
	5					.30***
Heinz courtroom	1	.32***	.26***	.27***	.15*	-.02
	2		.47***	.26**	.22**	.13 <sup>†</sup>
	3			.32***	.44***	.31***
	4				.45***	.19*
	5					.21**
Joe	1	.28***	.38***	.34***	.28***	-.09
	2		.25**	.24**	.23**	.061
	3			.45***	.47***	.24**
	4				.52***	.17*
	5					.35***

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

A particular question in this context was whether correlations varied based on developmental proximity. These correlations are presented in Table 4.

While the majority of stage operations are significantly correlated, there is an overall pattern for closer stages to be more strongly associated. This pattern remains consistent across the three contexts, providing support for the construct validity of the present instrument, as stage ratings reflect the hierarchical relatedness of motivational structures.

### Exploration of Emotional Experience in Relation to Moral Motivation

The relations of the self-ratings of nine emotions to the developmental quality of moral motivation were examined through multiple regression analyses. Two separate regression analyses were carried out for each of the three judgment contexts (Heinz main, Heinz courtroom, and Joe dilemma) based on the corresponding emotion target (i.e., Heinz, the druggist, Joe, and the father). A total of six regression analyses were carried out, each of which included the nine emotions as predictors. Each analysis revealed a significant association between at least one specific emotion and the developmental quality of moral motivation. In addition, the overall group of nine emotions was a significant predictor set for moral motivation in five of the six analyses. The results of these regression analyses are presented in Table 5.

## DISCUSSION

In this study, we explored moral judgment and motivation in terms of multiple developmental stages as soft-assembly structures and strategies, and found substantial multiplicity and intrapersonal variability. First, participants used multiple stages as they made sense of each moral

TABLE 5  
Results of Six Different Multiple Regression Analyses (Presenting Standardized Coefficients), Each Examining Moral Motivation as a Function of Multiple Emotions Toward a Specific Target in a Specific Judgment Context

<i>Emotion target</i>	<i>Heinz (main)</i>		<i>Heinz (courtroom)</i>		<i>Joe dilemma</i>	
	<i>Heinz</i>	<i>Druggist</i>	<i>Heinz</i>	<i>Druggist</i>	<i>Joe</i>	<i>Father</i>
Fear			-.20*			
Anger	-.19 <sup>†</sup>			.22*		.39***
Hate		-.25*		-.41***		-.30**
Guilt					-.15 <sup>†</sup>	
Distress					.23**	
Compassion	.20*				.23*	
Love			.23*			.20 <sup>†</sup>
Appreciation			-.23*			
Gratitude					-.21 <sup>†</sup>	
Adjusted <i>R</i> <sup>2</sup>	.05	.03	.09	.08	.13	.11
<i>F</i>	1.98*	1.57	2.83**	2.65**	3.60***	3.34*

<sup>†</sup>*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

dilemma. Second, stages were used in different degrees. Our third hypothesis was also supported as the new method of assessing moral motivation revealed a developmental pattern, and the quality of moral motivation differed based on age. Fourth, the developmental quality of moral motivation was positively associated with emotional awareness, as well as the reported experience of certain emotions toward specific targets.

As revealed by our recognition task, not only is it rare to rely on a single stage, it is common to use cognitive strategies that are characteristic of as many as three or four stages as dynamic motivational structures in moral judgment. This finding reflects the kind of the multiplicity emphasized by Gibbs (2010): “During any ongoing interaction with reality, however, a given individual is likely to activate multiple stages and other schemas (cf. Fischer & Bidell, 2006; Siegler, 1996a)” (p. 53).

The confirmation of our third hypothesis reflects the connection between moral motivation and development. While participants’ recognition responses were variable across multiple motivational structures, there was a developmental order. This included an age-related pattern in overall moral motivation quality, and differential distribution of stage operations between high school and college students. This supports the possibility that real-time assembly and operation of multiple motivational structures are connected to long-term development (Lewis, 2002; Thelen & Smith, 1994). This assertion was additionally supported by a developmental pattern in correlations between stage ratings. This inference requires further inquiry through microgenetic and longitudinal studies that examine the differential construction and operation of multiple moral strategies over time.

Differences between the high school and college samples in the overall quality of moral motivation can be understood further by examining Figure 3. Across the three moral judgment contexts, high school students recognized motivational structures reflecting stages 1, 2, and 3 to be more strongly operative, and stage 6 to be less strongly operative than did college

students. If each stage structure is a possible attractor, it follows that stages 1, 2, and 3 were stronger attractors for high school students. Our findings also resonate with the emphasis of Rest et al. (1999) that moral development involves shifting distributions in use of stages, even though this inference is limited because of the cross-sectional nature of our developmental study.

### Possible Roles of Emotional Experience

Self-report ratings of some emotions were associated with the cognitive-developmental measurement of moral motivation. Certain positive emotions toward victims and negative emotions toward perceived perpetrators were significantly associated with moral development (developmental quality of moral motivation) as measured by the new instrument. For example, compassion toward victims was positively associated with moral motivation in two judgment contexts. In addition, the self-reported experience of love was also associated. To the extent that these two emotions reflect a positive emotional bond with others, these findings provide support for the moral developmental significance of care (Gilligan, 1982), empathy (Eisenberg, 2005; Hoffman, 2000), and sympathy (Wilson, 1993).

In terms of negative emotions, while the quality of moral motivation was positively associated with distress toward Joe, and anger toward the druggist and Joe's father, it was negatively associated with hate toward the druggist and Joe's father. The most robust and consistent finding regarding specific emotions was the fact that hate toward perpetrators was negatively associated with the developmental quality of moral motivation in all three judgment contexts. This is striking, considering that another negative emotion, anger toward perpetrators, was positively associated with moral motivation in two judgment contexts. The experience of anger as righteous indignation against injustice may have a positive developmental aspect, while the experience of hate resonates with lower levels of moral motivation. It can be inferred that hating a wrongdoer neither supports nor follows moral development.

The differential pattern displayed by the perceived operation of two distinct negative emotions provides support for the notion that multiple emotions play different roles in the complex processes of moral judgment and motivation. Our findings confirm the value of and the need for differentiating multiple emotions (Chapman & Anderson, 2011) in moral judgment research in ways that are sensitive to differences between emotion targets (Gray & Wegner, 2011). These findings, as well as the association between emotional awareness and moral motivation can be seen as promising indications to explore emotional and cognitive factors together in moral judgment (Greene & Haidt, 2002; Moll et al., 2009; Narvaez, 2010a).

Our finding confirming the relationship between emotional awareness and moral development (even though this is a statistically weak association) reflects the value of self-awareness in moral maturity, as well as the connection between autonomy and moral development. As autonomy is based on self-regulation (Chirkov et al., 2003; Kegan, 1994), self-awareness might facilitate moral development through increased autonomy. As part of this process, individuals who are more aware of their emotional experiences are more likely to access and incorporate emotional information in their moral judgments effectively and constructively.

## Postconventional and Preconventional Structures Revisited

Our evidence regarding the strong operation of postconventional stages for high school and college students (in combination with earlier stages) is particularly informative. This suggests that more advanced structures of moral development can be strongly operative before the ages in which traditional studies (Colby, Kohlberg, Gibbs, & Lieberman, 1983; Kohlberg, 1969) identified them to be functioning in the form of explicit reasoning. Consistently, Hauser (2006) emphasized the prevalence of implicit operation of universal moral principles throughout the lifespan. Because the universality and significance of such principles are recognized by young children (LoBue, Nishida, Chiong, DeLaoche, & Haidt, 2010; Nunner-Winkler, 1998), it is not surprising that postconventional morality emerges strongly for high school and college students as they carry out moral judgments.

However, our finding does not imply or necessitate that postconventional morality is the strongest mode of reasoning for the individuals in our sample. Moral performance is task-specific and context-specific. Moreover, stages do not have to operate in reasoning form. Still, our finding does lead to the following conclusion: when considered as soft-assembly process structures that may operate intuitively, postconventional stages are not as rare as found from Kohlberg's perspective (Gibbs, 2010; Lapsley, 1996). Our finding reflects the contention of Gibbs that postconventional thinking is a developmental experience "in which even the bright, well-read, contemplative adolescent can and sometimes does participate" (p. 70). Similarly, according to the intrapersonal complementarity of moral motivation, cognitively more mature individuals who are capable of complex reasoning are often likely to incorporate earlier (i.e., preconventional) strategies.

Part of our perspective is compatible with the basic premise of the social intuitionist perspective (Haidt, 2001, 2008) that intuitive functioning is important in moral judgment. On the other hand, our study and findings depart from such models in our reaffirmation that cognitive-developmental stages are strongly operative in moral functioning, and hence, useful in understanding its complexity. As reasoning alone is insufficient to account for the complexity of moral judgment and motivation; so is intuition incapable as a single determinant. As Narvaez (2010b) emphasized, "before a truly synthetic moral psychology theory is possible," extensive inquiry and a more comprehensive understanding of "the dynamic interplay of multiple capacities" is necessary: "Mature moral functioning requires multiple capacities in which reasoning and intuition are dynamically interrelated" (p. 185). Similarly, our study confirms Gibbs' (2006) reply to Krebs and Denton (2005): "Before the cognitive developmental approach is replaced, however, important contributions (e.g., Rest's schema interpretation of the stages) toward refining or improving the approach must be adequately considered" (p. 666).

## Methodological Implications and Suggestions for Future Research

Building on the finding that the quality of moral motivation varied by gender (females scoring higher) in the court judgment, future studies could examine the role of gender in more detail using the present methodology. The isolated effect of gender (only in one judgment context) implies its possible interactions with the characteristics of the judgment context. Such a context-specific effect may be partly related to specific social implications of particular types of moral judgment.

In addition, gender could be examined in more detail as a possible moderator variable for the relations of age and emotional awareness to moral motivation.

Based on a recognition task using Kohlberg's stages, the present procedure is similar to Rest's DIT, which has been widely used to assess moral development (Rest, Thoma, & Edwards, 1997; Thoma & Rest, 1999). A major difference is the dynamic motivational approach of the present methodology. Based on its foundation on DS and SDT perspectives, the present approach is promising to assess moral motivation in specific contexts, whereas DIT is "an objective measure of moral judgment development" (Thoma & Rest, 1999, p. 325). From a DS perspective, there is no standard and stable competence independent of context-specific performance. This is consistent with the assertion of Kloos and Van Orden (2009): "fluid soft assembly of cognition is the essential human competence and performance is transparent to this competence" (p. 264).

The fact that the present measurements are limited to three hypothetical judgment contexts is a limitation of our study. Still, our methodology is readily applicable to various real-life contexts, as well as hypothetical judgments that may more strongly simulate possible real-life contexts of participants. Based on the present findings, we predict that such applications will reveal (a) within-context intrapersonal multiplicity, (b) contextual variability, and (c) patterns of dynamic developmental order in the real-time assembly of multiple strategies. In addition, toward a more comprehensive understanding, the present questionnaire can be combined with in-depth interviews with fewer individuals over time using both recognition and production tasks. This way, it will be possible to assess which moral strategies emerge and operate to what degrees in various contexts, as well as how motivational attractor strengths shift in development.

## AUTHOR NOTES

**Ulas Kaplan** is a researcher at New York University Steinhardt School of Culture, Education, and Human Development, and at the University of Groningen, exploring moral motivation in addition to psychological well-being. In both research programs, he has been applying Dynamic Systems and Self-Determination Theory perspectives. **Terrence Tivnan** is a lecturer on education and the former director of the human development and psychology program at the Harvard Graduate School of Education.

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## APPENDIX

### The New Emotional Awareness Scale Developed in the Study

Please indicate how much each statement represents your own experience, by giving a number from 1 to 5 for each statement, using the following scale.

This item represents my experience.

---

1	2	3	4	5
almost never/ not at all	rarely/slightly	sometimes/somewhat	quite often/quite strongly	almost always/very much

---

1. When I experience anger, I am fully aware of it.
2. During a conversation with someone, I can pretty much sense what he or she is feeling.
3. Each day I am pretty much aware of any mood changes I experience, as well as why such changes occur.
4. Whatever I feel, I can sense what changes occur in my body.
5. When I feel fear, understanding what I feel is not a priority for me.
6. I often find myself run or driven by emotions without much awareness of what I really feel.
7. When I experience anxiety, I am often aware how and why it emerges.
8. I can often detect and recognize subtle and quick emotional changes in the people I interact with.
9. I get angry at people without knowing I am angry.
10. When I experience fear, I have a pretty good sense about the source of that emotion.
11. When I feel something bad inside, I avoid directly experiencing and getting to know it.
12. At any given moment, I am aware which specific emotion I am feeling.

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