



Validation of the long- and short-form of the Ethical Values Assessment (EVA): A questionnaire measuring the three ethics approach to moral psychology

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Abstract

Moral psychology has been moving toward consideration of multiple kinds of moral concepts and values, such as the Ethics of Autonomy, Community, and Divinity. While these three ethics have commonly been measured qualitatively, the current study sought to validate the long and short forms of the Ethical Values Assessment (EVA), which is a questionnaire developed on the basis of the standard coding manual for the three ethics. Two studies were conducted, the first with a sample of 551 college students (18–29 years, 60% female, 61% European American) and the second with a nationally representative sample of 1,519 individuals (18–93 years, 51% female, 72% European American). Results from Study 1 indicated that a three factor solution using the EVA_L (long form) had adequate model fit, and internal reliability and validity of all three subscales were established. Results from Study 2 showed that model fit for a three-factor solution using the EVA_S (short form) was also acceptable. Measurement invariance as a function of age was established for some subscales and age groups, but not others. Discussion focuses on the implications of this measure for moral psychology and important future research directions.

Keywords

autonomy, community, divinity, early adulthood, emerging adulthood, EVA, later adulthood, middle adulthood, moral reasoning, three ethics

In recent decades, an argument for multiplicity has gained traction in the study of human psychology. Instead of a focus on one kind of self, one kind of intelligence, and one kind of creativity, for example, researchers have described multiple selves (Markus & Kitayama, 1991; Miller, Das, & Chakravarthy, 2011; Triandis, 1995), intelligences (Gardner, 1993; Sternberg, 1985, 2004), and creativities (Csikszentmihalyi, 1988; Kaufman & Bhegetto, 2009; Lubart, 1999). Moral psychology, too, has seen calls for the inclusion of multiple kinds of moral concepts and values (Colby & Damon, 1992; Dien, 1982; Gilligan, 1982; Miller, 1989; Padilla-Walker & Carlo, 2014; Shweder, 1990; Trommsdorff, 2012). More often than not, the arguments for multiplicity have been inspired by consideration of culturally diverse individuals and groups.

One approach to capturing diversity in peoples' moral psychology differentiates between the three Ethics of Autonomy, Community, and Divinity (Jensen, 1995, 2015; Shweder, 1990; Shweder, Much, Mahapatra, & Park, 1997). Briefly, the Ethic of Autonomy involves a focus on persons as individuals. Moral considerations within this ethic address the interests, well-being, and rights of individuals (self or other), and fairness between individuals. The Ethic of Community focuses on persons as members of social groups, such as family and society. Here moral considerations include duty to others, and concern with the welfare, interests, and customs of groups. The Ethic of Divinity focuses on persons as spiritual or religious beings, and moral considerations encompass divine and natural law, sacred lessons, and spiritual purity.

The majority of research with the three ethics has involved interviews. There is by now a substantive body of findings showing

the use of these ethics across diverse cultural and age groups. In order to broaden research on the ethics and to relate their use to other measures, however, the availability of a questionnaire for assessing use of the three ethics would be beneficial. The present aim was to validate the Ethical Values Assessment (EVA), a questionnaire that was recently developed for measuring the three ethics and that consists of both a long (EVA_L) and short (EVA_S) form. In the following, a review of previous research on the three ethics is followed by a description of the development of EVA.

Previous research on the ethics of autonomy, community, and divinity

Research with the three ethics has primarily involved the coding of oral discourse, such as from interviews with individual research participants (e.g., Arnett, Ramos, & Jensen, 2001; Hickman, 2014; Kapadia & Bhangaokar, 2015) or conversations between participants (DiBianca Fasoli, 2013; Hickman & DiBianca Fasoli, 2015). These materials have been analysed with the standard coding

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manual for the three ethics (Jensen, 2015). The standard coding procedure calls for each of a participant's moral reasons to be coded into one of the ethics. Each reason is also coded into one of numerous subcategories. The manual differentiates 13 to 16 subcategories for each ethic, such as "Self's Psychological Well-Being" and "Rights" for Autonomy, "Duty to Others" and "Social Order or Harmony Goals" for Community, and "Scriptural Authority" and "God-Given Conscience" for Divinity. Coding for both ethic and subcategory facilitates comprehensive and detailed coding of a person's moral reasons. The standard coding manual was originally developed on the basis of a wide-ranging review of developmental and cultural research in order to cull a full scope of moral concepts.

Findings have shown the presence and reliable differentiation of the three ethics among notably diverse cultural groups, including groups from Brazil, Finland, India, the Philippines, and the US (e.g., Guerra, Giner-Sorolla, & Vasiljevic, 2013; Jensen, 1997, 1998; Rozin, Lowery, Imada, & Haidt, 1999; Vainio, 2015; Vasquez, Keltner, Ebenbach, & Banaszynski, 2001). Recent studies have also largely supported the cultural-developmental proposal that life course development of the three ethics co-modulates with culture (Jensen, 2008, 2015). For example, the Ethic of Autonomy has been found to be lower among adults than children and adolescents in India where family and community typically are placed ahead of the individual (Kapadia & Bhangaokar, 2015), and among religiously conservative American communities where submission of the self to divinity is a paramount objective (Hickman & DiBianca Fasoli, 2015; Jensen, 2015). The Ethic of Autonomy has also been shown to be particularly popular among people in their late teens and twenties who live in cultures that afford a period of emerging adulthood—a developmental time characterized by a quest for self-determination and exploration (Arnett, 2004). In one study, emerging adults in Brazil, Israel, New Zealand, and the UK placed Autonomy above the other two ethics. The interesting, if not entirely surprising, exception was Japan where Autonomy was tied with Community (Guerra & Giner-Sorolla, 2015). Another study of Hmong dyads in the US found that emerging adults gave preference to the Ethic of Autonomy whereas their parents did not (Hickman, 2014).

The intersection of culture and development has also been observed for the other two ethics. Studies in India, for example, have shown that the Ethic of Community is higher among adults than adolescents (Kapadia & Bhangaokar, 2015), and that the Ethic of Divinity emerges early in both low- and high-SES children (Pandya & Bhangaokar, 2015). These two results, respectively, are likely shaped by the Indian family and group-orientation noted above, and the suffusion of religion in everyday life in India. The Ethic of Divinity has also been found to remain high among religiously conservative emerging adults from the US, reflecting how religious culture shapes development (Padilla-Walker & Nelson, 2015).

In sum, research with the Ethics of Autonomy, Community and Divinity has proven fruitful in describing multiplicity in peoples' moral psychology, and how trajectories of development for each ethic co-modulate with culture. Additional research is needed, however, to further examine the intersection of culture and development in use of the three ethics (Jensen, 2015), including how this intersection is related to context (Miller, 2015). Cultural-developmental research examining how the ethics are connected to other cognitive, emotional, and behavioral variables is also needed (Trommsdorff, 2015a). Finally, the measurement of the three ethics in conjunction with other approaches to morality from

evolutionary and social psychology as well as neuroscience would also add valuable new knowledge (Sunar, 2009).

EVA: A new measurement of the three ethics

A questionnaire, the Ethical Values Assessment (EVA), was created in order to facilitate such additional research with the three ethics. Compared to the coding of discourse, a questionnaire generally allows for data collection that is more time efficient and includes larger samples. It can also easily be distributed together with measures of other variables.

An 18-item EVA long form (EVA_L) was developed first, with a 12-item short form (EVA_S) being based off of the long form (as described in what follows). Having both long and short forms allows researchers a choice based on their study aims and logistics. For example, the distribution of a large battery of questionnaires to a nationally-representative sample (as in the present Study 2) places a premium on space, making EVA_S the best, or even only, choice. In contrast, for new research with culturally diverse groups, EVA_L (with its 50% additional items) is likely to be the better option. Interview research on the three ethics has shown that cultures vary on the salience of subcategories within each ethic (Jensen, 2015). In fact, this is why the standard coding manual comprises quite a large number of subcategories. The individual items on EVA constitute the equivalent of such subcategories (as described in more detail in what follows). Thus for new research in different cultures, having 18 rather than 12 items enhances the likelihood of the inclusion of numerous culturally salient items, and diminishes the risk of ending up with an insufficient number of such items.

Items for EVA_L were developed on the basis of the standard coding manual for the three ethics (Jensen, 2015). Table 1 lays out how the individual EVA items map onto subcategories from the standard coding manual. The following criteria guided the inclusion of items: 1) Items were based on the subcategories used most often by adolescents and adults across diverse cultures (Jensen, 2015). The coding manual includes a total of 42 subcategories, but a number of these occur infrequently (e.g., means-ends considerations) or are more typical of children (e.g., avoiding punishment to self). EVA_L only comprises items that correspond to common subcategories. 2) Items were included in order to represent important different facets within each ethic. For example, items for the Ethic of Autonomy pertained both to the self and other individuals. For the Ethic of Community, items encompassed different groups such as family and society. For the Ethic of Divinity, items pertained to God and individual spirituality. 3) Total number of items was kept to a number that would allow for the use of the EVA_L in a wide variety of studies.

As described, the questionnaire items represent moral concepts that previous research has shown to be quite common across numerous cultural groups. In order to further enhance the cross-cultural applicability of the questionnaire, it also includes an open-ended question that allows participants to indicate three additional ethical values of importance to them. On the EVA, participants are asked to respond to the following probe: "What moral values do you think are important to how you should live your life at this time in your life?" (Arnett et al., 2001). A probe pertaining to people's own lives (as opposed to a hypothetical person or other people in general) was used because research findings on moral reasoning and moral

Table 1. Subcategories used to create EVA items.

Three Ethics Coding Manual: Subcategory name	Three Ethics Coding Manual: Subcategory definition	EVA: Item
Autonomy		
Responsibility for Self	Taking responsibility for one's own actions (or failing to do so).	I should take responsibility for myself.
Self's physical well-being	Hurting the body, causing or failing to relieve hunger or thirst, injury, discomfort, pain, etc. of the self.	I should take good care of my body.
Self's psychological well-being	Causing or failing to alleviate unpleasant emotional states to one's own psyche, such as sadness, frustration, fear, and anger.	I should feel good about myself.
Self's interest	Advancing or protecting (or failing to do so) interests, goals, wants, or general welfare of the self.	I should try to achieve my personal goals.
Fairness and reciprocity	Treating like cases alike and different cases differently; proper ratio of give and take in an exchange; doing to others what you would have them do to you.	I should be fair to other individuals.
Rights	Entitlement to be treated or not treated in a certain way, or to act or abstain from acting in a certain way.	I should respect other individuals' rights.
Community		
Others' interest	Focus on interests of society or other form of collective entity, such as family.	I should take care of my family.
Duty to others	An obligation of station to behave in certain ways in certain circumstances due to one's status or position (e.g., citizen, teacher).	I should be a good member of society.
Virtues: Community-oriented	Attitude or trait which, if manifested in the situation would make behavior right, if not manifested would make behavior wrong. Also habitual manner of action. For Community includes being cooperative.	I should be cooperative.
Duty to others	See above.	I should know my place or role in a group.
Social order or harmony goals	See above.	I should strive for social harmony.
Duty to others	See above.	I should fulfill my responsibilities to others.
Divinity		
Reward-seeking from God(s)	Action should be done so that actor can receive benefits from God(s).	I should aim for spiritual salvation.
Interest of Self's soul	See above.	I should take care of my soul.
Conscience: God-given	Your conscience will feel bad because you know you have done wrong or will not feel bad because you do not believe you have done wrong or think you have done right. For Divinity when the conscience is the soul, or a part of the self through which a higher authority is experienced.	I should have a spiritual compass.
Duty as spiritual or religious being	An obligation of station to behave in certain ways in certain circumstances due to one's status or position (e.g., Brahmin, Muslim). For Divinity when the duties obtain due to a person's status a faithful person, or having been sworn to uphold a divine order.	I should aim to live a holy life.
God(s)' authority	God has indicated or exemplified by action or otherwise that it is wrong or right. Doing what is pleasing or not pleasing to God. This category includes references to sacrilege.	I should follow God's law.
Virtues: Divinity-oriented	See above.	I should strive for spiritual purity.

identity show that people invoke more diverse moral concepts when asked about their own lives, including personal goals and spirituality (e.g., Colby & Damon, 1992; Damon & Colby, 2015; Walker, 2013; Walker, Pitts, Hennig, & Matsuba, 1995). Furthermore, for purposes of assessing how people's use of the three ethics are connected to other cognitive, emotional, and behavioral variables in their lives, it seemed important to ask about their own values. For example, asking about the moral values that a person considers important for herself is more likely to be relevant to her moral behaviors than asking about others (Blasi, 1984, 1993; Hardy, Walker, Olsen, Woodbury, & Hickman, 2013). Depending on the aims of researchers, however, the probe for EVA may be substituted or supplemented. For example, an option would be to ask: "What moral values do you want to pass on to the next generation?" (Arnett et al., 2001). Additionally, researchers have the option of asking participants to indicate their top three moral values. The final fine-tuning of the phrasing of the EVA_L items, probe, and answer options involved reviews by moral psychology researchers and focus groups of lay people.

Thus, the present aim was to assess the validity of the EVA (long and short forms) among English speaking individuals from the United States. Two studies were carried out with different samples in order to examine the measure among individuals of diverse ages. The sample for the first study was comprised of college students, while the second study included adults ages 18–90+. Our specific goals were to validate both EVA_L and EVA_S using Confirmatory Factor Analysis (CFA) (Studies 1 and 2), examine cross-sectional correlates of each ethic (Study 1), and examine differences in the three ethics as a function of age (Study 2).

Study 1

As noted above, it is quite common for emerging adults to highly endorse an Ethic of Autonomy, although they have also been found to balance Autonomy and Community ethics in some contexts and cultures (Guerra & Giner-Sorolla, 2015). While the Ethic of Divinity is thought to be endorsed rarely by this age group, it may be prominent for emerging adults who are religious

(Padilla-Walker & Nelson, 2015). In Study 1, we sought to validate all three subscales of the EVA_L on a sample of emerging adult college students by conducting CFA on all 18 items. We also examined a number of relevant correlates of each ethic: self-worth, relationship quality with friends and parents, and religious faith. Self-worth is central to an Ethic of Autonomy, while a focus on others and relationships is central to an Ethic of Community, and faith is a strong component of an Ethic of Divinity (Jensen, 2008). Thus, although we thought it likely that there may be additional relations among the ethics and these variables, in order to establish convergent validity we expected that an Ethic of Autonomy would be positively associated with self-worth, an Ethic of Community would be positively associated with relationship quality, and an Ethic of Divinity would be positively associated with religious faith.

Method

Participants and procedures

Participants were drawn from a study of emerging adult college students and their parents entitled Project READY (Researching Emerging Adults' Developmental Years). This project is a collaborative, multi-site study that was conducted by a consortium of developmental and family scholars, and data used in the current study were collected during 2009–2010. The sample for the current study (age $M = 19.87$, $SD = 2.00$, range = 18–29) consisted of 551 undergraduate students (60% female). Participants were recruited from four universities across the United States, with an overall response rate of approximately 60%. The majority of emerging adults were European American (61% European American, 23% Asian American, 5% Latino American, 5% mixed/biracial, and 4% African American). Nearly 90% of emerging adults reported living outside of their parents' home in an apartment, house, or dormitory. Roughly 20% of emerging adults had parents with a combined income of less than US\$50,000 per year, and about 30% with a combined income of over US\$100,000.

Participants were recruited through faculty's announcement of the study in undergraduate courses, and completed the Project READY questionnaire via the Internet. Interested students then accessed the study website with a class-specific recruitment code. Informed consent was obtained online, and only after consent was given could the participants begin the questionnaires. Most participants were given a US\$20 Amazon gift code for their participation.

Measures

Three ethics. Participants completed the 18-item Ethical Values Assessment long form (EVA_L), with six items pertaining to each of the three ethics (Autonomy, Community, Divinity). Participants were asked to respond to "What moral values do you think are important to how you should live at this time in your life?" on a 5-point scale ranging from 1 (*not at all important*) to 5 (*completely important*). Table 2 lists all items.

Self-worth. Self-worth was assessed using the self-worth subscale (5-items) from the Self Perceptions Profile for College Students (Neeman & Harter, 1986). Emerging adults responded on a 4-point scale ranging from 1 (*not at all true for me*) to 4 (*very true for me*). Sample questions include, "I am often disappointed with myself (reverse scored)," and "I am happy being the way

I am." Higher mean scores represented higher feelings of self-worth ($\alpha = .84$).

Relationship quality. In order to assess closeness with best friend and parents (mother and father), the intimate disclosure (3 items), affection (3 items), emotional support (3 items) and guidance/advice (3 items) subscales were used from the Social Provisions Questionnaire (Carbery & Buhrmester, 1998). Participants answered questions on a 5-point scale ranging from 1 (*little or none*) to 5 (*the most*). Sample questions include, "How often do you turn to this person for support with personal problems?" and "How happy are you with the way things are between you and this person?" Subscales were averaged to create a mean score for relationship quality with friend ($\alpha = .96$), mother ($\alpha = .93$), and father ($\alpha = .95$). Because scales were correlated ($r = .22-.51$, $p < .001$) and to increase parsimony, an overall relationship quality scale was calculated by averaging the three scales.

Religious faith. Four items from the Santa Clara Strength of Religious Faith Questionnaire (Lewis, Shevlin, McGuckin, & Navrtil, 2001) were available in the current data set and were used to assess participants' religious faith ($\alpha = .98$). Questions were asked on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Sample questions include, "I look to my faith as providing meaning and purpose in my life," and "My relationship with God is extremely important to me." Higher mean scores indicated higher religious faith.

Results

Confirmatory factor analysis

Data were explored for univariate and multivariate outliers and normality; there were no outliers and all variables were normally distributed. A confirmatory factor analysis (CFA) was conducted using AMOS software (Arbuckle, 2010). It should be noted that missing data (which were very minimal, < 3%) were handled using the Full Information Maximum Likelihood feature of AMOS. Three latent variables were created with the corresponding six items loading on subscales of Autonomy, Community, and Divinity (18-items total). Model fit was considered acceptable with CFI > .90, TLI > .90, and RMSEA < .08 (Little, 2013).

Based on hypotheses and theory, we examined a three-factor model, and this solution was an acceptable fit to the data, ($\chi^2(130) = 540.58$, $p < .001$, CFI = .93, TLI = .91, RMSEA = .076, with all variables loading on their respective latent variables (see Table 2 for item correlations and Figure 1 for CFA model). Modification indices were examined and there was no evidence of cross-loading, though correlations between two sets of residuals were recommended for the divinity subscale. Tests of discriminant validity were conducted on the 18-item measure by constraining estimated correlation parameters between constructs to 1.0 and assessing $\Delta\chi^2$ (Anderson & Gerbing, 1988). Constraining all three correlations (one at a time) to 1.0 each resulted in a decrease in model fit, suggesting that the three variables were distinct constructs. This was true for the correlation between autonomy and community, $\Delta\chi^2 = 46.11$, $p < .001$, the correlation between community and divinity, $\Delta\chi^2 = 466.37$, $p < .001$, and the correlation between autonomy and divinity, $\Delta\chi^2 = 653.63$, $p < .001$. Cronbach's alphas were calculated, resulting in additional evidence of adequate internal reliability for subscales of Autonomy (6-items, $\alpha = .79$), Community (6-items, $\alpha = .75$), and Divinity (6-items,

Table 2. Descriptive statistics and correlations for 18-item EVA Long-Form.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Autonomy																		
1. I should take responsibility for myself	–																	
2. I should take good care of my body	.40	–																
3. I should feel good about myself	.43	.37	–															
4. I should try to achieve my personal goals	.44	.34	.45	–														
5. I should be fair to other individuals	.31	.31	.34	.36	–													
6. I should respect other individuals' rights	.43	.30	.39	.38	.56	–												
Community																		
7. I should take care of my family	.34	.22	.22	.24	.21	.25	–											
8. I should be a good member of society	.29	.39	.35	.33	.48	.43	.29	–										
9. I should be cooperative	.34	.35	.39	.33	.42	.41	.30	.49	–									
10. I should know my place or role in a group	.18	.32	.19	.20	.24	.24	.19	.29	.39	–								
11. I should strive for social harmony	.20	.24	.32	.25	.35	.40	.22	.41	.43	.42	–							
12. I should fulfill my responsibilities to others	.32	.31	.30	.35	.42	.44	.32	.38	.43	.30	.35	–						
Divinity																		
13. I should aim for spiritual salvation	.16	.31	.14	.10	.14	.08	.30	.25	.24	.28	.21	.21	–					
14. I should take care of my soul	.21	.40	.32	.18	.27	.28	.28	.42	.31	.26	.32	.30	.69	–				
15. I should have a spiritual compass	.18	.30	.24	.17	.23	.17	.24	.33	.30	.28	.27	.26	.85	.71	–			
16. I should aim to live a holy life	.11	.27	.14	.11	.19	.14	.26	.28	.29	.34	.33	.24	.84	.64	.80	–		
17. I should follow God's law	.15	.26	.13	.14	.16	.16	.26	.23	.25	.28	.26	.26	.82	.62	.75	.87	–	
18. I should strive for spiritual purity	.16	.28	.16	.14	.19	.16	.26	.25	.26	.31	.30	.32	.83	.66	.79	.86	.84	–
<i>M/SD</i>	4.5/.64	4.24/.75	4.36/.75	4.50/.66	4.31/.74	4.29/.75	4.01/.95	4.06/.82	3.92/.83	3.55/.94	3.70/.96	4.18/.77	3.12/.45	3.76/.23	3.16/.37	3.01/.47	3.14/.52	

Note. N = 551. All correlations are significant at $p < .05$ except for bolded. Items are on a 5-point scale with higher scores indicating greater self-reported importance of the value.

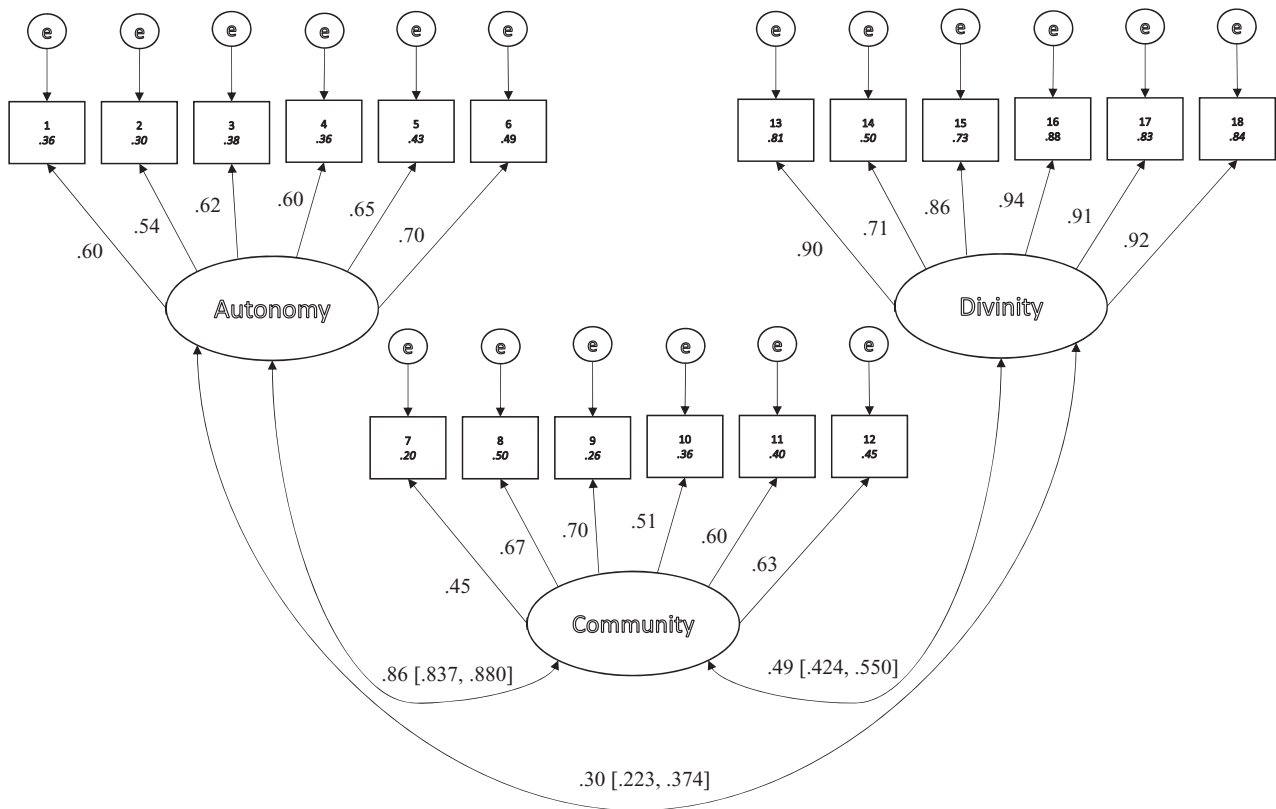


Figure 1. Initial SEM for EVA_Long-Form.

Note. $N = 551$. Squared multiple correlations are in italics. Confidence intervals are in brackets. All values are standardized. $\chi^2(130) = 540.58$, $p < .001$, CFI = .93, TLI = .91, RMSEA = .076.

$\alpha = .95$). In this sample, emerging adults most strongly endorsed an Ethic of Autonomy ($M = 4.37$, $SD = .50$) followed by an Ethic of Community ($M = 3.90$, $SD = .59$) and Divinity ($M = 3.19$, $SD = 1.27$), $F(2, 1100) = 387.63$, $p < .001$, partial $\eta^2 = .41$.

Regression analyses of associations between ethics and related outcomes

In an attempt to examine the unique relations between each ethic and conceptually relevant correlates, three regression analyses were conducted to determine whether the Ethics of Autonomy, Community, and Divinity were associated with self-worth, relationship quality, and religious faith. Thus, hierarchical regression was used with ethnicity (0 = European American/White, 1 = Non-White) and gender (0 = female, 1 = male) entered in the first step; and the three ethics in the second step. It should be noted that tolerance statistics for all regression analyses were $> .95$.

At Step 1, the regression analysis for self-worth suggested that ethnicity and gender accounted for a significant portion of variance, with gender positively ($\beta = .11$, $p < .01$) and ethnicity negatively associated with self-worth ($\beta = -.23$, $p < .001$), $F(2, 546) = 18.98$, $p < .001$. At Step 2, variables also accounted for a significant increase in the portion of variance ($\Delta R^2 = .08$, $p < .001$; $F(5, 543) = 18.35$, $p < .001$, $R^2 = .15$), with an Ethic of Autonomy ($\beta = .28$, $p < .001$) positively associated with self-worth. Ethics of Community ($\beta = .01$, $p = .82$) and Divinity ($\beta = -.03$, $p = .53$) were not significantly associated with self-worth.

In the regression analysis for relationship quality, ethnicity and gender accounted for a significant portion of variance, with gender positively ($\beta = .15$, $p < .001$) and ethnicity negatively associated with relationship quality ($\beta = -.13$, $p < .01$), $F(2, 544) = 10.59$, $p < .001$. At Step 2, variables accounted for a significant portion of variance ($\Delta R^2 = .05$, $p < .001$; $F(5, 541) = 10.20$, $p < .001$, $R^2 = .09$), with an Ethic of Community ($\beta = .12$, $p < .05$) significantly associated with relationship quality. Ethics of Autonomy ($\beta = .09$, $p = .12$) and Divinity ($\beta = .07$, $p = .16$) were not significantly associated with relationship quality.

In the regression analysis for religious faith, ethnicity accounted for a significant portion of variance ($\beta = -.12$, $p < .05$), $F(2, 547) = 4.35$, $p < .05$. At Step 2, variables accounted for a significant portion of variance, $\Delta R^2 = .73$, $p < .001$; $F(5, 544) = 312.11$, $p < .001$, $R^2 = .74$, with an Ethic of Divinity significantly associated with religious faith ($\beta = .92$, $p < .001$). The Ethic of Community was also significantly negatively associated with religious faith ($\beta = -.15$, $p < .001$), but a positive zero-ordered correlation revealed this to be a suppressor effect due to the correlation between the Ethic of Divinity and Community ($r = .30$, $p < .001$). Ethic of Autonomy was not significantly associated with religious faith ($\beta = -.02$, $p = .49$).

Study I discussion

Consistent with study goals, Study 1 established internal reliability for the EVA_L and supported a three-factor model with 6-item subscales for Autonomy, Community, and Divinity. Further, Study 1

sought to establish discriminant validity by examining the three ethics as predictors of self-worth, relationship quality, and religious faith, and findings were in line with expectations. More specifically, the Ethic of Autonomy was positively associated with self-worth, as expected. Further, the Ethic of Community was positively associated with relationship quality, supporting the notion that individuals whose moral values revolve primarily around collectivist ideals of interdependence also have strong relationship ties. Finally, the Ethic of Divinity was positively associated with religious faith. Indeed, it should be noted that a relatively small portion of variance was accounted for in the analyses for self-worth and relationship quality, while a relatively large portion of variance was accounted for in the analysis for religious faith, suggesting that an Ethic of Divinity is central to one's religiousness, while the other two ethics are not as central to these particular outcomes. Further research is needed in this regard to more clearly determine correlates and predictors of the three ethics, but analyses established initial evidence of both convergent and discriminant validity.

Limitations of Study 1 include a relatively homogenous sample and a cross-sectional data set that preclude examination of direction of effects. Also, while Study 1 was conducted on a relatively large sample, it was limited to college students age 18–29 years. Thus, Study 2 sought to build on these findings by validating the EVA_S on a nationally representative sample of adults.

Study 2

The cultural-developmental approach to morality suggests that the multifaceted nature of moral development is most accurately understood by examining both the developmental life period of the individual and the cultural context in which morality is socialized (Jensen, 2008, 2011). There is a sizable body of literature on cultural variations in moral reasoning, as well as an established line of research examining developmental change in morality from childhood through adolescence (e.g., see Jensen, 2015). However, there are a dearth of studies that examine morality with a developmental lens after adolescence, with most studies using emerging adults as a convenience sample (Padilla-Walker, in press) and even fewer studies following changes in moral reasoning over the course of adulthood. While research does suggest that moral reasoning may change and solidify through the course of adulthood (Shweder et al., 1997), there are few developmental theories that claim significant cognitive change past the formative years. However, with continued research suggesting prolonged brain development into emerging and early adulthood and beyond (Gutches & Boduroglu, 2015; Jetha & Segalowitz, 2012), as well as the influence of social contexts that are associated with morality and that increase in salience during early and middle adulthood (e.g., marriage, parenting, religious attendance), it is important to examine moral reasoning at different ages. Thus, the purpose of Study 2 was to validate the EVA_S, which is a 12-item measure assessing the three-ethics approach to morality, and to examine differences as a function of age in a nationally representative sample of US adults.

Method

Participants and procedures

Participants for this study were taken from the Moral Worldviews Study, which is a survey regarding individuals' experiences and attitudes toward various aspects of morality. The targeted

population was adults 18 years and older, and data used in the current study were collected during March of 2012. The sample for the current study consisted of 1,519 individuals aged 18–93 years (51% female). The majority of participants (72%) were European American (12% Hispanic, 10% African American). Roughly 32% of the sample reported having a Bachelor's degree or higher, with 40% reporting a high school degree or less. Mean household income was between US\$50,000 and US\$60,000 per year, with about 30% of the sample reporting making less than US\$40,000 per year.

This study used Knowledge Networks (KN) to gather an opinion poll, sampling households from its KnowledgePanel, which is a probability-based web panel designed to be representative of the United States. Panel members were randomly recruited through random digit dialing or probability address-based sampling, and households were provided with access to the Internet if needed. Once household members were recruited for the panel, they were assigned to the Moral Worldviews Study and notified by e-mail with directions for survey-taking. Surveys took approximately 40 minutes to complete and participants were offered US\$5 (or equivalent incentive, e.g. raffle) for completion. The response rate was 61%.

Measures

Participants completed the 12-item Ethical Values Assessment-Short Form (EVA_S). Items were selected from the longer measure based on factor loading and the conceptual considerations discussed above for EVA_L. Participants were asked to respond to "What moral values do you think are important to how you should live at this time in your life?" on a 5-point scale ranging from 1 (*not at all important*) to 5 (*completely important*). All items are contained in Table 3.

Results

Data were explored for univariate and multivariate outliers and normality; there were no outliers and all variables were normally distributed. A confirmatory factor analysis (CFA) was conducted using AMOS software (Arbuckle, 2010). It should be noted that missing data (which were very minimal, < 1%) were handled using the Full Information Maximum Likelihood feature of AMOS. Three latent variables were created with the corresponding 4-items loading on subscales of Autonomy, Community, and Divinity (12-items total). Model fit was considered acceptable with CFI > .90, TLI > .90, and RMSEA < .08 (Little, 2013).

Based on hypotheses, we examined a three-factor model, and this solution fit the data well, $\chi^2(50) = 373.73$, $p < .001$, CFI = .97, TLI = .96, RMSEA = .065. All variables loaded on their respective latent variables (see Table 3 for item correlations and Figure 2 for CFA model).¹ Modification indices were examined, and there was one covariance that suggested a cross-loading item, item number 5 (I should take care of my family), and one recommended correlation between residuals for the community subscale. The model was re-run with the cross-loaded item deleted from the community variable, $\chi^2(40) = 192.69$, $p < .001$, CFI = .98, TLI = .98, RMSEA = .05, and there were no additional modification indices that had a significant impact on model fit. With this item deleted, the covariance between the autonomy and community variables decreased to .79. Tests of discriminant validity were conducted on the 11-item measure by constraining estimated

Table 3. Descriptive statistics and correlations for 12-item EVA short-form.

	1	2	3	4	5	6	7	8	9	10	11	12
Autonomy												
1. I should take responsibility for myself	–											
2. I should try to achieve my personal goals	.54	–										
3. I should be fair to other individuals	.56	.63	–									
4. I should respect other individuals' rights	.53	.48	.50	–								
Community												
5. I should take care of my family	.58	.53	.54	.46	–							
6. I should be cooperative	.42	.50	.51	.41	.43	–						
7. I should know my place or role in a group	.40	.46	.48	.34	.38	.55	–					
8. I should strive for social harmony	.27	.32	.31	.21	.28	.45	.42	–				
Divinity												
9. I should aim for spiritual salvation	.26	.36	.28	.23	.31	.32	.32	.35	–			
10. I should aim to live a holy life	.27	.35	.28	.23	.33	.33	.32	.38	.85	–		
11. I should follow God's law	.28	.34	.29	.23	.35	.30	.29	.33	.81	.82	–	
12. I should strive for spiritual purity	.26	.36	.30	.24	.31	.34	.36	.39	.80	.80	.76	–
M/SD	4.38/.93	4.11/1.03	4.11/.99	3.87/1.04	4.40/.99	3.62/1.09	3.37/1.14	2.99/1.28	3.21/1.51	3.17/1.49	3.45/1.50	3.10/1.47

Note. $N = 1519$. All correlations are significant at $p < .001$. Items are on a 5-point scale with higher scores indicating greater self-reported importance of the value.

correlation parameters between constructs to 1.0 and assessing $\Delta\chi^2$ (Anderson & Gerbing, 1988). Constraining all three correlations (one at a time) to 1.0 each resulted in a decrease in model fit, suggesting that the three variables were distinct constructs. This was true for the correlation between autonomy and community ($\Delta\chi^2 = 109.01, p < .001$), the correlation between community and divinity ($\Delta\chi^2 = 304.69, p < .001$), and the correlation between autonomy and divinity ($\Delta\chi^2 = 1695.37, p < .001$). Cronbach's alphas were calculated, resulting in additional evidence of adequate internal reliability for subscales of Autonomy (4-items, $\alpha = .82$), Community (4-items, $\alpha = .74$; 3-items, $\alpha = .72$), and Divinity (4-items, $\alpha = .94$). It should be noted that we reported on the full 12-item measure in the figure because this item did not seem to act similarly in Study 1 and may only be problematic in this sample.

Multiple group analyses

While this study confirms the overall reliability of the short-form of the EVA, this data set also allowed us to examine the measure among different age groups. Thus, a multiple group analysis was conducted on the three-factor solution, with four age groups: 18–29 years (emerging adulthood), 30–44 years (early adulthood), 45–59 years (middle adulthood), and 60+ years (late adulthood). These age group designations and their corresponding ages are common in the developmental psychology literature. While there is notable cultural variation on ways of dividing the adult life course, the present divisions overlap with those used in standard

lifespan textbooks (e.g., Arnett, 2012; Papalia & Feldman, 2012; Santrock, 2012) and are applicable to the present sample. Multiple group analyses were conducted to determine whether invariance could be established across age groups on both factor loadings (weak invariance) and intercepts (strong invariance), which is what is needed to compare means across groups. In order to establish invariance of factor loadings, multiple group analyses compared a fully unconstrained model to a model where factor loadings were constrained. Then, this weak invariance model was compared to a model where intercepts were also constrained to be equal. The measure was considered to be invariant across age if the decrease in CFI at each step was not greater than .01 (Little, 2013). As can be seen in Table 4, invariance was established for factor loadings, but not for intercepts (so weak invariance was achieved, but not strong).

Multiple group analyses for each subscale. To understand more fully how this measure differed by age, we first conducted a multiple group analysis on all three subscales separately to determine if one ethnic primarily accounted for the differences. Using the same criteria described above, it was determined that strong invariance was not achieved for either autonomy or community, but it was for divinity (see Table 4). This suggests that the mean values of divinity can be meaningfully compared across age groups.

As a next step in understanding the autonomy and community subscales, we examined individual items on these two subscales to see if one item was primarily responsible for the lack of invariance, but no single item stood out in this analyses by contributing

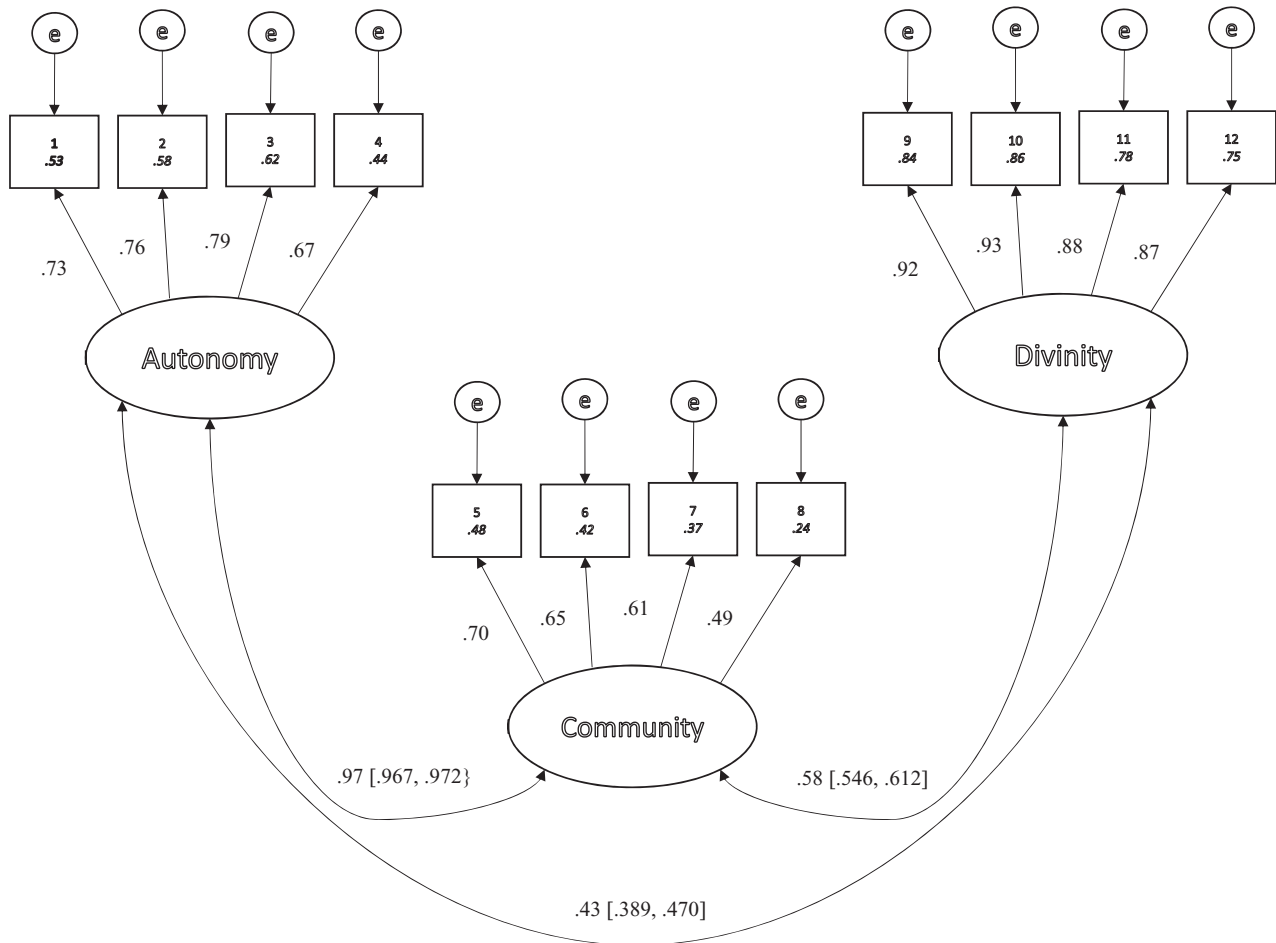


Figure 2. Initial SEM for EVA_Short-Form.

Note. $N = 1519$. Squared multiple correlations are in italics. 95% confidence intervals are in brackets. All values are standardized. $\chi^2(50) = 373.73, p < .001$, CFI = .97, TLI = .96, RMSEA = .065.

uniquely to the .01 drop in CFI. We then compared all four age groups to one another (constraining both factor loadings and then intercepts group by group) to see which age groups were contributing to the measurement variance. For example, we first constrained factor loadings (and then intercepts) for emerging adulthood and early adulthood to be equal, followed by emerging adulthood and middle adulthood (and so on), until all 12 possible comparisons were conducted (6 for factor loadings, 6 for intercepts). Again, we used the criteria of a drop in CFI < .01 as an indication of invariance.

This analysis for the Autonomy subscale suggested the only constraint to result in a reduction in CFI > .01 was when constraining intercepts from emerging adulthood to late adulthood to be equal ($\Delta CFI = .014$). For the community subscale constraining factor loadings between emerging adulthood and middle adulthood ($\Delta CFI = .022$) and between early adulthood and middle adulthood ($\Delta CFI = .014$); and constraining intercepts between emerging adulthood and middle adulthood ($\Delta CFI = .017$) resulted in a reduction in CFI > .01. Table 5 represents a repeated measures ANOVA on the three subscales for the four different age groups, though clearly not all of these mean differences are meaningful because invariance was not achieved across all ages. With that in mind, results suggest that on all three ethics, mean values are similar for emerging and early adulthood, and are significantly higher for

Table 4. Model fit statistics for measurement invariance across four age groups.

Model tested	χ^2	df	p	CFI	ΔCFI	TLI	ΔTLI	RMSEA
Full model:								
Configural	656.56	204	<.001	.958	–	.946	–	.038
Factor loadings	755.42	231	<.001	.952	.006	.945	.001	.039
Intercepts	907.28	267	<.001	.941	.011	.942	.003	.040
Autonomy subscale								
Configural	42.67	8	<.001	.983	–	.950	–	.053
Factor loadings	73.32	17	<.001	.973	.01	.962	.12	.047
Intercepts	139.45	29	<.001	.947	.026	.956	.006	.050
Community subscale								
Configural	8.26	8	>.05	1.00	–	.999	–	.005
Factor loadings	51.42	17	<.001	.970	.03	.963	.036	.034
Intercepts	109.04	29	<.001	.940	.03	.950	.013	.043
Divinity subscale								
Configural	21.85	8	<.01	.998	–	.993	–	.034
Factor loadings	31.84	17	<.05	.997	.001	.996	.003	.024
Intercepts	82.39	29	<.001	.991	.006	.992	.004	.035

Note. $N = 1519$. Bolded ΔCFI are those that did not pass the invariance test.

Table 5. Mean age differences in EVA short-form.

	Emerging adulthood 18–29 years. <i>n</i> = 223 <i>M</i> (<i>SD</i>)	Early adulthood 30–45 years. <i>n</i> = 330 <i>M</i> (<i>SD</i>)	Middle adulthood 46–59 years. <i>n</i> = 479 <i>M</i> (<i>SD</i>)	Late adulthood 60+ years. <i>n</i> = 487 <i>M</i> (<i>SD</i>)	<i>F</i> test (3, 1515)
Autonomy	3.99 (1.00) _a	4.01 (1.01) _a	4.21 (.61) _b	4.15 (.71) _b	6.41**
Community	3.49 (.98) _a	3.51 (.99) _a	3.66 (.73) _b	3.64 (.77) _b	3.53*
Divinity	3.02 (1.46) _a	2.96 (1.45) _a	3.31 (1.32) _b	3.44 (1.31) _b	10.32**

Note. *N* = 1519. Means with differing subscripts are different at $p < .05$. Mean scales are based on 5-point scales with higher scores indicating greater self-reported importance of the ethic. It should be noted that mean comparisons on the Community subscale are likely not meaningful due to an inability to establish measurement invariance across ages. Mean comparisons on the Autonomy subscale between emerging and late adulthood had similar invariance problems.

* $p < .05$; ** $p < .001$.

middle and late adulthood. We also computed Cronbach's alphas for each subscale separately by age (emerging, early, middle, and late adulthood, respectively), Autonomy ($\alpha = .90, .89, .69, .75$), Community ($\alpha = .76, .82, .68, .69$), and Divinity ($\alpha = .95, .95, .94, .94$). Again, no specific item stood out as problematic to reliability, but patterns suggested Autonomy and Community scales were slightly less reliable in older age groups.

Taken together, the above analyses suggest that the divinity short form of the EVA is comparable across all age groups, while caution should be taken when comparing the Autonomy and Community scales across age groups. The Autonomy scale seems to be comparable across most groups, except emerging adults and late adults, while the Community scale varied the most as a function of age and had the least consistent internal reliability, so mean comparisons may be invalid.

Study 2 discussion

Results from Study 2 suggested that the EVA_S functions at least as well as the EVA_L, providing support for using either form to assess the three ethics in a variety of age groups. That being said, future studies should use caution with the one item from the Community scale that showed evidence of cross-loading. Although this item was not a problem with the EVA_L, it did present problems with the EVA_S and contributed to a higher covariance between autonomy and community subscales. Future research should explore whether this is unique to the current sample, or a prevailing issue in need of further explanation. Study 2 also contributed by allowing for analyses by age, and suggested that how moral reasoning is conceptualized, especially as it relates to an Ethic of Community, may change as a function of development through adulthood. While this does not allow for comparison across all age groups on all ethics, it is an interesting finding suggesting a need for a more in-depth look at the ways in which the three ethics change over the course of adulthood and how this change is associated with behavior. Means in the current study suggest that all three ethics may become more salient over time, perhaps as a function of decreases in exploration and a greater solidifying of moral values into adulthood (Padilla-Walker & Nelson, 2015). However, this could also be a cohort effect in that the older generations in the current study may endorse moral values more because they mean something different to that generation than they do to the younger generation (Hart & Sulik, 2014). Thus, while this study benefitted from the strength of a nationally representative sample, researchers will need to utilize long-term longitudinal studies to more clearly determine how the three ethics develop over time and how they are cognitively and behaviorally negotiated.

General discussion

The present research provided support for the internal reliability and validity of the long and short forms of the Ethical Values Assessment (EVA). As described at the outset, the purpose of EVA is to assess a broad and diverse set of moral values, thus, EVA was based on theory and research on the three Ethics of Autonomy, Community, and Divinity. Given the present validation, we would suggest that EVA may now be deployed to extend both theory and research in moral psychology. This includes large-scale examinations of the intersection of culture and development in use of the three ethics, and the relations of the ethics to other cognitive, emotional, and behavioral variables. Trommsdorff (2015b), for example, has put forth a series of specific questions as to how the three ethics relate to prosocial behaviors, including in regards to those who are familiar versus strangers, and how both age and culture may be of significance.

The present validation study was limited to participants from the United States. As described above, the development of EVA was based on research with the standard coding manual for the three ethics which has been used across highly diverse cultures. Nonetheless, additional validation of the measure from other nations would be a next step. It would also be fruitful to extend the present study to older children and adolescents. Further, it is of note that autonomy and community subscales were strongly correlated in latent models, though tests of discriminate validity suggested meaningful differences. Future research should continue to determine the ways in which the three ethics overlap, and in which ways they are unique.

As the present findings indicate, EVA has applicability across the adult life course, although interpretations of findings for different age groups will need to be made with care. We know that as people develop from childhood through adulthood they become increasingly culturally diverse in their moralities. In today's globalizing world, the socialization and expertise that is gained with age often involves familiarity with the moral values of more than one culture. EVA_L and EVA_S hold the prospect of being useful in validly assessing diverse and intersecting moral values across most of the life course.

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Note

1. A separate CFA analysis was also run accounting for the sampling weights used in Study 2. There was very minimal change in factor loadings and covariances ($< .001$).

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