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The linkage of Intelligence, Prosocial Moral Reasoning and Moral Identity among Iranian University Students

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This study examined the relationships between intelligence, moral identity and prosocial moral reasoning with the mediating role of moral identity. From the population of undergraduate university students of Salman Farsi University of Kazerun, 245 students (163 female and others male) were selected by convenience sampling. They completed the questionnaires for the assessment of general intelligence (Cattell, 1957), moral identity (Aquino & Reed, 2002), prosocial moral reasoning (Carlo, Eisenberg, & Knight, 1992) and social desirability (Reynolds, 1982). Lie/nonsense responding and social desirability were controlled from correlations by the partial correlation method. The findings showed that there were positive and significant relationships between intelligence, prosocial moral reasoning and internalization subscale of moral identity ($p < .01$, for all). The mediating role of moral identity (internalization) was

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confirmed for internalized prosocial moral reasoning by the path analysis method. The importance of both rationality and social learning in making the different types of prosocial reasoning was discussed for explanation the findings.

Keywords: intelligence, moral identity, prosocial moral reasoning.

Followers of cultural relativism, in moral philosophy, believe that morality originates from cultures and humans learn moral norms from their cultures (Gensler, Spurgin & Swindal, 2004; Holmse, 2006). Also, in moral psychology, the social cognitive theory (Bandura, 1991) and somewhat the social intuitionism theory (Haidt, 2001) believe that learning from society, peers and parents, forms morality. One the results of these ideas can be that the moral judgments are culturally specific, so different moralities are equally appropriate in different cultures. Such idea had been protested by Kohlberg and other cognitive developmental theorists (Carpendale, 2000). Kohlberg believed that after stage 4 the morality doesn't imitate the societies' norms and approach to universalism (Gensler et al., 2004).

The cognitive developmental theories are somehow accord with the moral philosophy of Kant (Huebner, Dwyer and Hauser, 2008). Kant proposed a deontological ethics that was based on reasoning about "Golden rules": One should treat others as one would like others to treat oneself (Flew, 1979). Reasoning according to the "Golden Rule" theorem and preservation the "Golden rule" consistency conditions need rationality (Gensler et al., 2004; Holmse, 2006). Piaget, as the pioneer of the cognitive developmental approach in moral psychology believed that moral reasoning develops sequentially along logical reasoning (Goodwin, Gudjonsson, Morris, Perkins & Young, 2012). Indeed in the view of many philosophers and

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some moral psychologists, by rationality humans can get to universalistic moral values (Gensler et al., 2004).

But does the moral reasoning just originate from learning social values? Or is it formed by the deliberation capacity of the reasoner? Or do both the social learning and the individual deliberation affect the form of moral reasoning? This study presumes that the positive relationship between intelligence as rational capacity and prosocial moral reasoning as a type of moral reasoning (Carlo, Eisenberg, & Knight, 1992), can confirm the idea of cognitive developmental psychologists' view that moral reasoning is deliberative and really rational. The study also presumes that if the moral identity, as social cognitive construct and indicator of moral learning (Aquino, Freeman, Reed, Lim & Felps, 2009), positively correlates with prosocial moral reasoning, the probable correctness of the social cognitive claims about the importance of social learning for shaping moral reasoning, can be confirmed.

Prosocial Moral Reasoning

Kohlberg's theory, as the most influential rationalistic theory in the history of moral psychology, studied justice-oriented or prohibition-oriented moral reasoning (Arnold, 2000). But Gilligan (2003) suggested care-oriented moral reasoning and Eisenberg continued the Gilligan' outlook with the phrase "prosocial moral reasoning" (Eisenberg, Carlo, Murphy & Van Court, 1995). The prosocial moral reasoning can be considered as thinking about situations in which one's needs are in conflict with the needs of others in the relative absence of formal laws or rules (Carlo, McGinley, Roesch, & Kaminski, 2008).

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Carlo, et al. (1992) summarized five types of prosocial moral reasoning. Hedonistic (reasoning according the gains to self, direct reciprocity or some affectional relationships) and approval-oriented prosocial moral reasoning (reasoning according others' approval and acceptance) are low level reasoning types. Needs-oriented (orientation to the physical, material, or psychological needs of the other person) and stereotypic reasoning (reasoning according to stereotyped images of good or bad) are middle level reasoning types and internalized reasoning (reasoning according to sympathy, perspective taking, internalized affects, or abstract internalized reasoning) is the high level reasoning. Although some studies confirmed the linkage of care-oriented or prosocial moral reasoning to emotional dimensions such as empathy and sympathy (Eisenberg & Morris, 2001; Azimpour, et al, 2013), its relationship to the cognitive dimensions such as intelligence or cognitive development were less studied.

Relation of Moral Reasoning Development and Intelligence

In the view of some cognitive developmental theorists both social (moral) and nonsocial cognitive development proceed from surface appearance to the construction of an inferred underlying reality. Indeed although moral reasoning development should be determined by its own distinct and homogeneous domain, it should be some what affected by intelligence and cognitive development and even some cognitive capacity like working memory (Gibbs, Basinger, Grime & Snarey, 2007).

The relationship between moral reasoning and intelligence, cognitive development or other cognition-related abilities was

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confirmed in many studies (Flynn, 1984). Pasupathi and Staudinger (2012) reported the positive relationship between moral judgment and wisdom and Tomlinson-Keasey and Keasey (1974) found a high relationship between cognitive development and moral reasoning development. Jurkovic and Prentice (1977) found that psychopathic adolescents, beside more immature levels of moral development have significantly more concrete thinking. Lee and Prentice (1998) in the study of delinquent and normal juvenile males, found that logical cognition positively correlated with moral reasoning. They also showed that a normal group had more formal operations thinking than delinquent groups.

Hoffman (1975) in his study on elementary school children showed that intelligence had relationships with some areas of moral reasoning. But Flynn (1984) in the study of preschool children (M age: 35 to 70 months) , reported that intelligence was unrelated to both moral judgment tests. Eisenberg-Berg (1997), in the study of students in grades 9, 11, and 12, found that when the effects of age were controlled, male level of prosocial moral reasoning highly correlated with intelligence.

Tirri, Nokelainen and Mahkonen (2009) in the study of mathematically gifted adolescents, found that moral reasoning of these gifted adolescents was above that of normal senior people. However, the intelligence quotient (IQ) of these highly gifted adolescents did not positively correlate with moral reasoning scores. Langdon, Clare and Murphy (2010), in the review of literature about the moral development of people with intellectual disabilities (IDs), concluded that when the mental age of people with ID and chronological age of typically developing children were matched, there were not any

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differences between them and younger children in Piagetian moral reasoning. But some studies (e. g., Abel, 1941) showed that other variables such as length of institutionalization, more than mental age, can predict moral reasoning.

Langdon, Murphy, Clare and Palmer (2010), found the positive relationships between intelligence and moral reasoning in IDs and non IDs. Goodwin, et al (2012) in their research on male mentally disordered offenders found that when controlling age, psychiatric diagnosis and ethnicity, social desirability and antisocial personality, IQ was the single most powerful predictor of socio-moral reasoning.

The relationship between moral reasoning and IQ is also reported by the pioneers of the cognitive developmental approach to moral development. Kohlberg reported correlation coefficients of his interviews for assessing moral reasoning and intelligence, in the range of .3 to .5 and Rest reported the correlation coefficients of Defining Issues Test (DIT) and intelligence in the range of .2 to .5 (Haidt, 2001). Although the relationship of moral reasoning and intelligence or other cognitive capacities was generally confirmed, there are some inconsistencies in the literature. Flynn (1984) explained this inconsistency by using moral reasoning measures with different difficulty and by using participants with different ages. Except for the study of Eisenberg-Berg (1997), the researchers studied Piaget and Kohlberg moral reasoning. The relationship with using prosocial moral reasoning of adults and the normal population (like university student) was not studied.

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Relation of Moral Reasoning and Moral Identity

In the social cognitive theory (Bandura, 1991), moral reasoning like moral behavior, can be learned from models and can be affected by environment. Bandura and McDonald (1963) in an experiment on children, showed that modeling can promote moral reasoning. Although Bandura (1991) accepted some age trends in moral judgment and believed that cognitive competence, besides increasing experience, helps to progress moral reasoning, he was opposite to view to the moral reasoning in the stage theories outlook. Also, he didn't consider moral reasoning as the core of morality and as the predictor of moral behavior. In the social cognitive theory (Bandura, 1991) and also in social intuitionism theory (Haidt, 2001) moral reasoning, like moral justification, can be considered as a post hoc procedure that is carried out after moral judgment and moral behavior. In the social cognitive theory (Bandura, 1991) moral behavior is explained by learning and self-regulatory mechanisms instead to be explained by moral reasoning.

Today, the construct of moral identity is interpreted by the social cognitive theory outlook and is viewed as a self-regulating mechanism (Aquino, et al, 2009). Moral identity is considered as a social identity (Aquino & Reed, 2002) and can be defined as a cognitive schema that a person holds about his or her moral character (Aquino, et al, 2009). Studies showed that moral identity can predict moral or prosocial behavior besides moral reasoning or even better than moral reasoning (Arnold, 2000; Hardy & Carlo, 2005; Hardy, 2006; Azimpour, Neasi, Arshadi, Shehni-Yailagh, & Beshlideh, 2012a).

However there are few studies about the relationship of moral identity and moral reasoning. In the study of Eisenberg-Berg

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(1997) on students in grades 9, 11, and 12 female' moral judgment (and not male) correlated with liberal sociopolitical attitudes. Narvaez, Lapsley, Hagele and Lasky (2006) showed that moral chronicity (a construct like moral identity) can affect information processing about morality. Aquino, Reed, Thau and Freeman (2007), showed that moral identity can affect cognitive and emotional reactions to war. Aquino and Reed (2002), by using the DIT for the study of convergent validity of moral identity measure, showed that two subscales of their moral identity scale (internalization and symbolization) have different correlations with moral reasoning and only internalization had a positive relationship with moral reasoning. Also, in the study of Azimpour et al (2012a), only internalization subscale had positive and significant relationship to prosocial moral reasoning. In the study of Azimpour et al (2012a), for examining a model of predictors the prosocial behaviors of the Iranian university students, the path of moral identity to both prosocial moral reasoning and prosocial behavior were confirmed. Hardy (2006) in a study on university students confirmed that moral identity and prosocial moral reasoning both can predict prosocial behaviors; but there was not any report about the relationship between prosocial moral reasoning and moral identity in the study.

Moral identity as a social cognitive construct is affected by situation and environmental stimulation (Aquino et al, 2007; Aquino et al, 2009). If the moral identity highly predict moral reasoning, perhaps it will be considered as a confirmation of social cognitive theory.

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Relation of Moral Identity and Intelligence

Some theorists believe that there are no theoretical reasons to presume that the moral identity -as how much the moral traits are essential to a person's self concept-, depend on cognitive development or cognitive perspective-taking. However, some believe that the ability to conceptualize consistent traits requires certain levels of cognitive sophistication (Aquino & Reed, 2002). The ability or capacity of learning is one the components, that is used in many definitions of intelligence (see Legg and Hutter, 2007). In the social cognitive theory, social learning from models is one of the key procedures (Bandura, 1991). The learning from exemplars is considered as an important factor in forming moral identity (Bucher, 1998). The possibility of a relation between moral identity and intelligence, by viewing moral identity as a result of social learning and viewing intelligence as the ability of learning, can be understood. Perhaps it can be said that intelligence facilitates learning moral norms from society for forming moral identity.

Nevertheless, it was supposed that the construct of moral identity in social cognitive models, less needs cognitive ability and IQ than construct like moral reasoning in cognitive developmental models (Aquino & Reed, 2002). Whereas the relationship of the moral identity and cognitive maturity is indeterminate, one purpose of present research is the study of the relationship between moral identity and intelligence.

The Mediation Role of Moral Identity

Emotivist moral philosophers, somewhat according to Hume's law in moral philosophy, reject moral rationality (Gensler et al, 2004). According to Hume's law or "is – ought

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problem", prescriptive statement about "what ought to be" cannot be logically resulted from the descriptive statements about "what is". Therefore pure logical reasoning cannot result in imperative sentences and moral ought. But logical reasoning and descriptive predicates can steer the postulated moral value to moral conduct and moral reasoning (e.g., I must help poor people; he is a poor person; so I must help him.) (Soroush, 2000). Perhaps it is supposed that moral values (moral identity) that are learned from society, steer the reasoning capability (intelligence) to be moral (moral reasoning).

Aquino and Reed (2002) supposed that people with high moral identity are more motivated to expend their cognitive resources when contemplating on moral dilemmas. One possibility is viewing moral identity as guide the cognitive capacities to moral reasoning. One of the goals of the present research is to study the mediating role of moral identity in the relation of intelligence and prosocial reasoning. If this mediation is fully confirmed, intelligence cannot make moral reasoning without moral identity. This can be considered as a confirmation of social cognitive theory and a rejection of cognitive developmental theory.

Method

Participants

It is better to use a larger sample size in the path analysis and other correlation methods. Some researchers suggested less than 100 as small sample size, between 100 and 200 as medium size and more than 200 as large sample size (Kline, 2005). As much as volunteer participants could be found in Salman Farsi University of Kazerun (Kazerun, Iran), the students were used

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by convenience sampling and finally the 269 undergraduate students completed the tests. After omitting the imperfect questionnaires, 245 complete questionnaires remained (163 female and others male, mean age 20.58, SD 2.96). Those were from all four years of university and from different fields (Persian literature, information technology, physics, electronic, urban planning and juniors in psychology).

Procedure

The testing was done collectively after the time of classrooms at 2013 and 2014. The questionnaires were nameless but in order to motivate students for participating and carefully responding, they could individually know afterwards about the content of she/he measures and would understand their results (in comparison with the means of the sample) through a code by email.

Measures

Adult Version of the Prosocial Reasoning Objective Measure (PROM-R). The measure was made by Carlo, et al. (1992) for the assessment of prosocial moral reasoning and includes seven main stories and a sample story. All seven main stories included a moral predicament and for each story, three choices were listed about what the character ought to do on the story. The scoring is according to selecting the level of importance (from 1 to 7) the reasons that are listed under any main story, the reasons about why the character should behave that way. The reasons for each of the stories are according to the five types of prosocial moral reasoning in previous Eisenberg studies (e.g. Eisenberg, Guthrie, Murphy, and Shepard, 2005). Also, there was a

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meaningless item (reason) in any story for assessment the lie/nonsense responding. The measure can be scored in form of overall score of prosocial reasoning or can be scored in the form of scores for ratios of any five subscales of prosocial reasoning (hedonistic, approval-oriented, needs-oriented, stereotypic and internalized).

The internal consistency (Cronbach alpha) of this measure, in the study of Carlo et al. (1995) was .72 for hedonistic, was .78 for approval-oriented, was .56 for need-oriented, was .67 for stereotypic, and was .70 for internalized subscale. PROM-R was translated to Persian and validated on the Iranian university students by Azimpour , Neasi, Shehni-Yailagh, Arshadi and Beshlideh (2013). In their study the construct, criterion-referenced, divergent and convergent validity of this measure and the reliability by internal consistency and test retest, were confirmed. The Cronbach alpha was .81 for the hedonistic subscale, was .92 for approval-oriented, was .64 for needs-oriented, was .66 for stereotypic, and was .79 for internalized subscale.

Cattell's Cultures Fair Test, Scale 3 (form A). This measure was made by Cattell (1957) for the measurement of general intelligence, through measuring nonverbal reasoning skills. This measure consists of two forms (A and B). In this study only the form A was used. Each form consists of 4 sections and each section is taken in a time restriction and progresses in difficulty (Stephenson & Halpern, 2013). Cattell and Cattell in 1973 calculated the reliability of this measure by test retest ($r = .69$) and the internal consistency method ($\alpha = .73$). Its average correlation with several standardized IQ measures was desirable

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(Raz, Willerman & Yama, 1987). In an Iranian sample, the reliability of this measure, by formula of Kuder-Richardson was .67, and by split–half method was .55; also convergent validities were in the range of .5 to .68 (YarMohammadian, 2007).

The Self-importance of Moral Identity. This measure was used for measuring moral identity and has two subscale, Internalization (degree to which the moral traits are central to the self-concept) and Symbolization (degree to which the moral traits are reflected in the respondent's actions in the world). For administering this measure firstly must be wanted from participants for imagine a person who have some moral traits (like Caring, Compassionate, Fair, or Friendly). Then they must answer 10 questions about these traits (Aquino & Reed, 2002).

Aquino and Reed (2002) constructed this measure using the explanatory factor analysis method. Internal consistency (Cronbach's alpha) for internalization and symbolization were .77 and .76. This measure was translated to Persian and was validated on the Iranian university students by Azimpour et al. (2014). In that study the validity and reliability of the measure by different methods was desirable. The Cronbach alpha for internalization and symbolization were .79 and .78.

Marlowe-Crowne Social Desirability Scale. The 13 item form of this measure (Reynolds, 1982) was used. The responding scale of this measure is 0 and 1 (true/false). The measure was validated in different societies (Verardi, et al. 2010). The Persian translation and validation of this measure were done by Najarian (Najarian & Soudani, 2001) and the criterion-oriented validity of the measure was satisfactory. Azimpour, Neasi,

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Shehni-Yailagh, and Arshadi (2012b) in the study of Iranian university students sample reported internal consistency of 0.51 for this measure by formula of Kuder-Richardson (KR20).

Research Design

In the studies that use the self-report questionnaires, usually the social desirability tendency and lie/nonsense responding interact to responding the questionnaires. Social desirability is "a tendency of self-report instruments to respond according to what is perceived as socially desirable rather than on personal true characteristics" (corsini, 1999). In the present study if social desirability and lie/nonsense responding (a subscale of PROM-R) relate to variables, controlling them by partial correlation will be considered.

Also by path analysis the mediation role of moral identity was examined. The fitness of model in path analysis was measured by some indices. These indices included goodness of fit index (GFI), adjusted goodness-of-fit index (AGFI), relative chi-square (X^2/df) and the Steiger–Lind root mean square error of approximation (RMSEA). GFI and AGFI are ranged from 0-1 and higher level show the better fitness. If X2/df was less than 3 there is usually the good fitness. RMSEA $\leq$ .05 indicates close approximate fit; values between .05 and .08 suggest reasonable error of approximation and RMSEA $\geq$ .10 Suggests poor fitness (Kline, 2005).

To study the indirect effects the Baron and Kenny (1986) method was used. In this method if the coefficients of the exogenous variable to indigenous variable is decreased after adding the mediator variable the indirect effect is confirmed. Also, by using the Sobel test the significance of indirect effects

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was studied. In this method if the statistic of the Sobel test was significant the indirect effects was confirmed.

Result

Table 1 shows the descriptive statistics of this study. Except the symbolization of moral identity all skewness and kurtosis of variables were in range of -2 to +2.

Table 1
The Descriptive Statistics of the Variables

	Mean	SD	Skewness	Kurtosis
Intelligence	96	18.76	-.59	.75
Hedonistic reasoning	.18	.03	-.37	1.33
Approval-oriented reasoning	.13	.04	.43	1.05
Needs-oriented reasoning	.23	.03	1.05	.94
Stereotypic reasoning	.22	.03	.9	.42
Internalized reasoning	.24	.03	.26	.11
Overall score of prosocial reasoning	1.93	.08	.09	.122
Internalization	29.66	4.91	-1.19	1.15
Symbolization	20.05	6.7	1.7	12.66
lie/nonsense responding	.07	.26	.08	-.08
Social desirability	7.35	2.4	-.43	.05

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Table 2 shows the relationship between the variables of the present study to social desirability and lie/nonsense responding. As table 2 shows the social desirability and lie/nonsense responding has some relationships with other variables; so the control of them from the relationships was done by partial correlation. Table 3 shows the partial correlation matrix of variables.

Table 2
The Relationship of Variables to Social Desirability and Lie/nonsense Responding

	1	2	3	4	5	6	7	8	9
Social desirability	.02	-.22***	-.01	.05	.05	.13**	.14**	.1*	.13**
lie/nonsense	-.17***	-.03	. 1	.15**	-.02	.06	-.02	-.05	.09

Note; 1: Intelligence, 2: Hedonistic reasoning, 3: Approval-oriented reasoning, 4: Needs-oriented reasoning, 5: Stereotypic reasoning, 6: Internalized reasoning, 7: Overall score of prosocial reasoning, 8: Internalization of moral identity and 9: Symbolization of moral identity.

* : p > .1, **: p > .05, ***: p > .01

As Table 3 shows intelligence had positive and significant correlations with the overall score of prosocial moral reasoning, internalized and need-oriented prosocial moral reasoning and also the internalization subscale of moral identity. The intelligence had negative and significant correlations with approval-oriented prosocial moral reasoning and had not any significant correlation with stereotypic prosocial moral reasoning and symbolization subscale of moral identity.

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Table 3
Relationships of the Variables after Controlling the Effect of Social Desirability and Lie/nonsense Responding by Partial Correlation Method

	1	2	3	4	5	6	7	8	9
1	1								
2	-.1	1							
3	-.18***	.27***	1						
4	.14**	-.32***	-.46***	1					
5	.04	-.54***	-.51***	-.11*	1				
6	.16**	-.47***	-.66***	.04	.33***	1			
7	.19***	-.67***	-.86***	.37***	.58***	.87***	1		
8	.21***	-.24***	-.27***	.1	.25**	.24***	.31***	1	
9	.09	.01	.02	-.06	.00	.02	.00	.15**	1

1: Intelligence, 2: Hedonistic reasoning, 3: Approval-oriented reasoning, 4: Needs-oriented reasoning, 5: Stereotypic reasoning, 6: Internalized reasoning, 7: Overall score of prosocial reasoning, 8: Internalization of moral identity and 9: Symbolization of moral identity.

* : p > .1, **: p > .05, ***: p > .01

The internalization subscale of moral identity only did not have significant correlations with needs-oriented moral reasoning; but it had a positive relationship with intelligence, needs-oriented reasoning, stereotypic reasoning, internalized reasoning and also the overall score of prosocial moral reasoning. But the symbolization subscale of moral identity only had positive and significant correlation with the internalization subscale of moral identity.

Because of correlations the internalization subscale of moral identity with other variables (Table 3), and attending to

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definition of this subscale (see Aquino and Reed, 2002), for study the mediating role of moral identity (Figure 1) only internalization subscale of moral identity was used as moral identity. Figure 1 shows the results of standard regression coefficients (betas) of the model by using path analysis. Table 4 shows the fit indices of the present model. Considering the RMSEA > .1 and X^2/df> 3, the fitness of this model was poor.

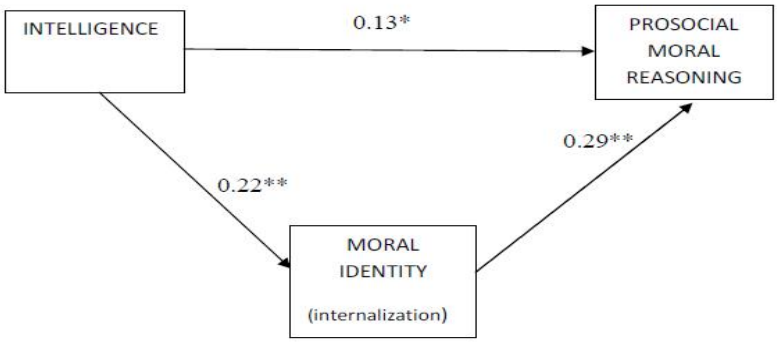


Figure 1. Standard Regression Coefficients (betas) of the Primary Model.

* : p > .05, ** : p > .01

Table 4

The Fitness Indices of Primary Model

	RMSEA	X^2/df	GFI	AGFI
Fitness Indices of Model	.233	14.257	.889	.778

The overall score of prosocial reasoning consists of from different types of prosocial reasoning (Carlo, et al, 1992). As the correlation matrix (Table 3) showed the different types of prosocial moral reasoning have different correlations with intelligence or moral identity (internalization). Perhaps the poor

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fitness of the hypothetical model was because of these different correlations; so the model was re-examined by using different types of prosocial reasoning that have positively significant correlations with intelligence or the internalization subscale of moral identity. Figure 2 presents the modified model according to the subscales of prosocial moral reasoning.

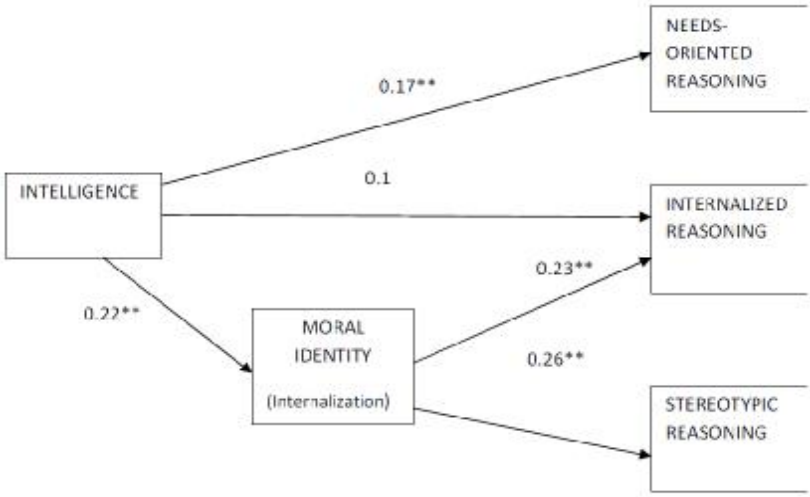


Figure 2. Standard Regression Coefficients (betas) of the Model with Different Types of Prosocial Reasoning

* : p > .05, ** : p > .01

Table 5

The Fitness Indices of Modified Model

	RMSEA	X^2/df	GFI	AGFI
Fitness Indices of Model	.138	5.641	.958	.874

As Table 5 shows the model still has poor fitness (RMSEA > 0.1 and X^2/df > 3), but after eliminating the non significant path

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(intelligence to internalized reasoning) and doing some modification that were proposed by the software of Amos (Arbuckle, 2007), (Figure 3) the fitness of the model was confirmed (Table 6).

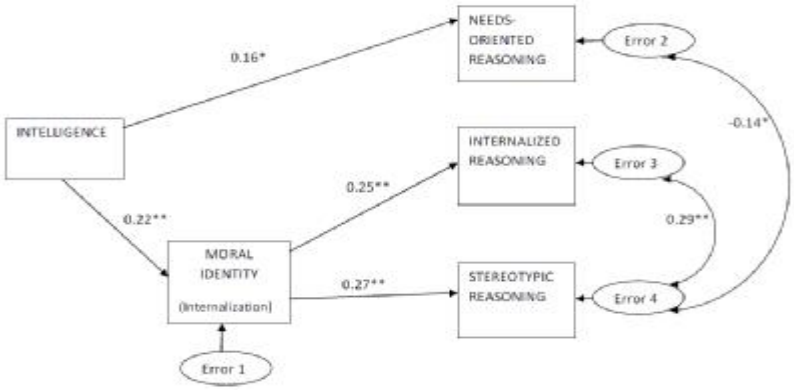


Figure 3. Standard Regression Coefficients (betas) of the Final Modified Model

Table 6
The Fitness Indices of Final Modified Model

	RMSEA	X^2/df	GFI	AGFI
Fitness indices of model	.028	1.185	.992	.971

Because of the non significant path of intelligence to stereotypic reasoning in the model (Figure 2) the mediating role of moral identity in the path of intelligence to stereotypic reasoning was not confirmed. But for studying the mediating role of moral identity (internalization) in the indirect path of intelligence to internalized moral reasoning the method of Baron and Kenny (1986) was used and betas for predicting internalized prosocial reasoning by intelligence (see Figure 3) after and before adding the mediator variable (moral identity) was compared (Table 7).

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Table 7
The Coefficients of Regression (Dependent Variable: Internalized Prosocial Reasoning)

Independent Variable		B	Std. Error	Beta	t	Sig.
only IQ	IQ	.000	.000	.150	2.364	.019
IQ and Moral identity	IQ	.000	.000	.101	1.589	.113
	Moral identity	.001	.000	.225	3.544	.000

As Table 7 shows when mediator variables were added to the independent variable in regression, the beta (.101) becomes less and non significant ($p > .05$) rather than when only the independent variable (IQ) was used in regression (Beta = .15, $p > .05$). The result of the Sobel test (3.38) also was significant ($p < .001$) so the mediating role of moral identity (internalization) in the indirect path of intelligence to internalized prosocial reasoning was confirmed. Because no significant beta, after adding moral identity in regression (Table 7), it was found that moral identity is a full mediator in the relationship of intelligence and internalized moral reasoning.

Discussions

The present investigation was the study about relationships between rational ability (intelligence), moral contemplate (prosocial reasoning) and moral belief (moral identity). The positive relationship of moral identity (internalization) and moral reasoning was predictable and was reported in some studies in both types of justice-oriented moral reasoning

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(Aquino & Reed, 2002) and prosocial or care-oriented moral reasoning (Azimpour et al., 2012a). This can be considered as a confirmation of social cognitive claims and the importance of social learning in the formation the prosocial reasoning.

The positive relation of intelligence and moral reasoning was reported more by using justice-oriented moral reasoning (see Hoffman, 1975, review of Langdon et al., 2010; Langdon et al., 2010 and Goodwin et al., 2012). Just Eisenberg-Berg (1997) studied this relationship (on adolescents) by using prosocial moral reasoning. The present study confirmed that intelligence has a positive relationship with prosocial moral reasoning and high level types of prosocial reasoning except for the stereotypic prosocial reasoning. Perhaps it can be said that stereotypic claims probably don't need deliberative thinking; so the absence of relationship between stereotypic reasoning and intelligence is comprehensible. Intelligence also had a negative relationship with approval-oriented reasoning as low level prosocial reasoning.

Unlike the stereotypic prosocial reasoning, needs-oriented reasoning had a positive relationship with intelligence and did not have a significant relationship with moral identity (internalization). Through this finding, needs-oriented reasoning can be considered more as deliberative and intelligence-correlated reasoning than social learning-correlated reasoning. The relationship of intelligence and prosocial moral reasoning confirms the importance of rationality in morality (or at least moral thinking); the idea that had been emphasized in the view of philosophers like Kant (Holmse, 2006) and moral psychologists like Kohlberg (Gibbs, et. al., 2007).

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Results of the present study can be interpreted as confirmation of some aspects of both social cognitive and cognitive developmental theories. In other words, both moral identity and intelligence could predict the prosocial moral reasoning. Although one type of prosocial moral reasoning (stereotypic) is more interpretable by the social cognitive model and another type (needs-oriented) is more interpretable by the cognitive developmental model.

The surprising finding of the present study was the positive relationship between moral identity (internalization subscale) and intelligence. Two explanations can be given about this finding. One explanation is confirmation of considering rationality as an important factor of morality, not only in moral reasoning but also in some non deliberative aspects of morality. The second explanation is considering moral identity as a learned moral characteristic (Aquino, et al, 2009) and considering intelligence as learning capacity (see Legg and Hutter, 2007). Indeed individuals with high intelligence could better learn moral norms from society. This view is more compatible with the social cognitive theory outlook (Bandura, 1991).

Moreover, another alternative explanation could be the effect of attention on responding as an extraneous variable. In other words the participants with more attention to responding to the measures might respond to intelligence scales and other questionnaires more carefully and the relationships are significant because of it. But this explanation is not correct because one of the variables that was controlled from the relationship was lie/nonsense responding that measured as a subsidiary subscale in PROM-R (Carlo, et al., 1992).

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One the other findings of the present investigation was the full mediation of moral identity in the path of intelligence to internalized prosocial reasoning. This type of moral reasoning is considered as the highest level of prosocial reasoning (Carlo, Eisenberg & knight, 1992). The finding indicates that humans cannot reach this type of reasoning just by intelligence or rationality and without learned moral identity. Indeed pure rationality cannot lead to this reasoning although it can lead to needs-oriented reasoning without the need for moral identity.

According to Hume's law (Soroush, 2000) it can be concluded that pure rationality cannot make moral reasoning and just presumed moral values can steer rationality to morality. Full mediating the moral identity (as moral value) in the path of intelligence to internalized prosocial moral reasoning can be considered as confirmation of such claims. If moral identity is supposed as socially learned variable, it can also be a confirmation of viewing morality according to the social cognitive theory outlook.

Perhaps it can be said that from the present types of prosocial reasoning, just needs-oriented prosocial reasoning can be interpreted by pure rationalistic or Kantian perspective of ethics. Albeit the strong logical reasons of Hume's law, brings some suspicions for accepting the pure rational explanation of any moral-related variable even the needs-oriented prosocial moral reasoning. Perhaps other moral variables and not social learning (moral identity), steer rationality (intelligence) to morality (moral reasoning) in this case, the variables such as empathy or other moral emotions. Future study must deed to examine such claims.

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The present investigation indicates that different aspects of prosocial reasoning are differently correlated to moral learning (moral identity) or rationality (intelligence). Indeed the rationalistic or cognitive developmental view to moral reasoning is in coordination to some aspects of moral reasoning (needs-oriented prosocial reasoning in the present study) and the social cognitive view is in coordination with some other aspects of moral reasoning (stereotypic reasoning in the present study). But for some aspects of moral reasoning like internalized reasoning, rationality without moral learning cannot make moral reasoning.

Limitation

The study was done on undergraduate university students: the age near adolescence and its idealistic theme. Perhaps some findings of the present study, especially the positive relationship between moral identity and intelligence would not be repeated on older people. Also because the sample was from volunteer participants, this is a probability that the people with low moral reasoning or low moral identity didn't participate in the study and it might affect the findings. So the generalization of the findings on other populations must be scrupulous. Perhaps repeating the study on other populations and samples, with different ages or status, can make more confident conclusions.

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References

Abel, T. (1941). Moral judgments among subnormals. *Journal of Abnormal and Social Psychology, 36,* 378–392.

Aquino, K., Freeman, D., Reed, A., Lim, V. K. G., & Felps, W. (2009). Testing a social-cognitive model of moral behavior: The interactive influence of situations and moral identity centrality. *Journal of Personality and Social Psychology, 97,* 123-141.

Aquino, K., & Reed, A. (2002). The Self-Importance of Moral Identity. *Journal of Personality and Social Psychology, 83(6),* 1423–1440.

Aquino, K., Reed, A. Thau, S., & Freeman, D. (2007). A grotesque and dark beauty: How moral identity and mechanisms of moral disengagement influence cognitive and emotional reactions to war. *Journal of Experimental Social Psychology, 43,* 385–392.

Arbuckle, J. L., (2007). Amos™ 16.0 User's Guide. Chicago: Amos Development Corporation.

Arnold, M. L. (2000). Stage, Sequence, and Sequels: Changing Conceptions of Morality, Post-Kohlberg. *Educational Psychology Review, 12, (4),* 365-383.

Azimpour A., Neasi A., Shehni-Yailagh M., & Arshadi N. (2012b). Validation of "Prosocial Tendencies Measure" in Iranian University Students. *Joural of Life Science and Biomedicine, 2(2),* 34-42.

Azimpour, A., Neasi, A., Shehni-Yailagh, M., Arshadi, N., & Beshlideh, K. (2012a). designing and testing a model of important precedents of prosocial behavior in student of Shahid Chamran university. *Journal of Psychological Achievements, 19(3),* 15-44.

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Azimpour, A., Neasi, A., Shehni-Yailagh, M., Arshadi, N., & Beshlideh, K. (2013). Assessment prosocial moral reasoning on Iranian: evaluation the measurement models and validation the measure of Prosocial Moral Reasoning on Iranian university students. *Journal of Life Science and Biomedicine, 3(1),* 10-15.

Azimpour, A., Neasi A., Shehni-Yailagh, M., Arshadi, N., & Beshlideh, K. (2014). Validation the measure of "the self-importance of moral identity" on university students. *Journal of Personality and Individual Differences (Iran), 3(4),* 19-38.

Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development (Vol. 1, pp. 45-103)*. Hillsdale, NJ: Erlbaum.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Bandura, A., & McDonald, F. J. (1963). Influence of social reinforcement and the behavior of models in shaping children's moral judgments. *Journal of Abnormal and Social Psychology, 67,* 274-281.

Bucher, A. A. (1998). The influence of models in forming moral identity. *International Journal of Educational Research, 27(7),* 619–627

Carlo, G., Eisenberg N., & Knight, G. P. (1992). An objective measure of adolescent's prosocial moral reasoning. *Journal of research on adolescence, 2(4),* 333-349.

[Downloaded from ijpb.ir on 2026-11-04]

Carlo, G., McGinley, M., Roesch, S. C., & Kaminski J. W. (2008). Measurement invariance in a measure of prosocial moral reasoning to use with adolescents from the USA and Brazil. *Journal of Moral Education, 37(4),* 485–502.

Carlo, G., & Randall, B. A. (2002). The Development of a Measure of Prosocial Behaviors for Late Adolescents. *Journal of Youth and Adolescence, 31(1),* 31-44.

Carpendale, J. I. M. (2000). Kohlberg and Piaget on stages and moral reasoning. *Developmental Review, 20,* 181–205.

Cattell, R. B. (1957). Culture fair intelligence test, a measure of ‘‘g”: Scale 3 forms A and B (high school pupils and adults of superior intelligence). Savoy, IL: Institute for Personality and Ability Testing.

Corsini, R. J. (1999). The dictionary of psychology. Philadelphia: Bruner/ Mazel.

Eisenberg-Berg, N. (1997). Relationship of Prosocial Moral Reasoning to Altruism, Political Liberalism, and Intelligence. *Developmental Psychology, 15(1),* 1979, 87-89.

Eisenberg, N., Carlo, G., Murphy, B., & Van Court, P. (1995). Prosocial Development in Late Adolescence: A Longitudinal Study. *Child Development, 66,* 1179- 1197.

Eisenberg, N. C. A., Guthrie, I. K., Murphy, B. C., & Shepard, S. A. (2005). Age changes in prosocial responding and moral reasoning in adolescence and early adulthood. *Journal of research on adolescence, 15(3),* 235–260.

Eisenberg, N., & Morris, A. S. (2001). The origins and social significance of empathy-related responding. a review of empathy and moral development: implications for caring

[Downloaded from ijpb.ir on 2026-11-04]

and justice by M. L. Hoffman. *Social Justice Research, 14, (1),* 91-120.

Flew, A. (1979). *A Dictionary of Philosophy*. London: Pan Books in association with The Macmillan Press.

Flynn, M. F. (1984). Age, sex, Intelligence, and parent's occupation and the moral development of the preschool child. *The journal of psychology, 117,* 251-255.

Gensler, H. J., Spurgin, E. W., & Swindal, J. C. (2004). *Ethics, a contemporary introduction*. London: Routledge.

Gibbs, J. C., Basinger, K. S., Grime, R. L., & Snarey, J. R. (2007). Moral judgment development across cultures: Revisiting Kohlberg's universality claims. *Developmental Review, 27,* 443–500.

Gilligan, C. (2003), Hearing the difference: Theorizing connection. *Anuario de Psicologia, 34, (2),* 155-161.

Goodwin, E. J., Gudjonsson, G. H., Morris, R., Perkins, D., & Young, S. (2012). The relationship between sociomoral reasoning and intelligence in mentally disordered offenders. *Personality and Individual Differences, 53,* 974–979.

Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review, 108,* 814–834.

Hardy, S. A. (2006). Identity, Reasoning, and Emotion: An Empirical Comparison of Three Sources of Moral Motivation. *Motivation and Emotion, 30,* 207–215.

Hardy, S. A., & Carlo, G. (2005). Identity as a source of moral motivation. *Human Development, 48,* 232–256.

Hoffman, S. (1977). Intelligence and the development of moral judgement in children. *Journal of Genetic Psychology, 130,* 27–34.

[Downloaded from ijpb.ir on 2026-11-04]

Holmse, R. L. (2006). *Basic Moral Philosophy*. Boston: Wadsworth.

Huebner, B., Dwyer, S., & Hauser, M., (2008).The role of emotion in moral Psychology. *Trends in Cognitive Sciences, 13(1),* 1-6.

Jurkovic, G. J., & Prentice, N. M. (1977). Relation of moral and cognitive development to dimensions of juvenile delinquency. *Journal of Abnormal Psychology, 86(4),* 414-420.

Kline, R. B., (2005). *Principles and practice of structural equation modeling*. New York and London: the Guiford press.

Langdon, P. E., Clare, I. C. H., & Murphy, G. H. (2010). Developing an understanding of the literature relating to the moral development of people with intellectual disabilities. *Developmental Review, 30,* 273–293.

Langdon, P. E., Murphy, G. H., Clare, I. C., & Palmer, E. J. (2010). The psychometric properties of the Socio-Moral Reflection Measure–Short Form and the Moral Theme Inventory for men with and without intellectual disabilities. *Research in Developmental Disabilities, 31,* 1204–1215.

Lee, M., & Prentice, N. M. (1988). Inter relations of empathy, cognition and moral reasoning with dimensions of juvenile delinquency. *Journal of Abnormal Child Psychology, 16(2),* 127-139.

Legg, S., & Hutter, M. (2007). A collection of definitions of intelligence. *Technical Report, 7(7),* 1-13.

Najarian, B., & Soudani, M. (2001). Construction and Validation of a scale for the measurement of reality

[Downloaded from ijpb.ir on 2026-11-04]

distortion. *Journal of Education and Psychology of Shahid Chamran University of Ahvaz, 3(8),* 99-114.

Narvaez, D., Lapsley, D. K., Hagele, S., & Lasky, B. (2006) Moral chronicity and social information processing: Tests of a social cognitive approach to the moral Personality. *Journal of Research in Personality, 40,* 966–985.

Pasupathi, M., & Staudinger, U. M. (2001). Do advanced moral reasoners also show wisdom? Linking moral reasoning and wisdom-related knowledge and judgment. *International Journal of Behavioral Development, 25(5),* 401-415.

Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability scale. *Journal of Clinical Psychology, 38,* 119-125.

Raz, N., Willerman, L., & Yama, M. (1987). On sense and sense: Intelligence and auditory information processing. *Journal of Individual Differences, 8(2),* 201-210.

Soroush, A. (2000). Knowledge and value. Tehran: Yaran Publication.

Stephenson, C. L., & Halpern, D. F. (2013). Improved matrix reasoning is limited to training on tasks with a visuospatial component. *Intelligence, 41,* 341–357.

Tirri, K., Nokelainen, P., & Mahkonen, M. (2009). How morality and religiosity relate to intelligence: a case study of mathematically gifted adolescents. *Journal of Empirical Theology, 22,* 70-87.

Tomlinson-Keasey, T., & Keasey, C. B. (1974). The mediation role of cognitive development in moral judgment, *Child Development, 45(2),* 291-298.

YarMohammadian, A. (2007). Ability the Scale 3 of Cattell's intelligence test and Rey-Osterrieth Complex Figure in

[Downloaded from ijpb.ir on 2026-11-04]

identification of university students with exceptional talent. *Journal of Education and Psychology of Esfehan University*. *3(1)*, 7, 77-94.

Verardi, S., Dahourou, D., Ah-Kion, G., Bhowon, U., Tseung, C. N., Amoussou-Yeye, D., Adjahouisso, M., Bouatta, C., Cissé, D. D., Mbodji, M., Barry, O., Minga, D., Ondongo, F., Tsokini, D., Rigozzi, C., Meyer de Stadelhofen, F., & Rossier, J. (2010). Psychometric properties of the Marlowe-Crowne Social Desirability Scale in eight African countries and Switzerland. *Journal of Cross-Cultural Psychology*, *41(1)*, 19–34.

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