Relationships between Self- and Peer-reported Integrative Self-knowledge and the Big Five Factors in Iran

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Abstract An Integrative Self-Knowledge (ISK) Scale measures tendencies to engage in a cognitive process of uniting past, present, and desired future self-experience into a meaningful whole. In the present project, 288 Iranian university students responded to the ISK and Big Five scales and rated their dormitory roommates on these characteristics as well. These procedures most importantly revealed a positive correlation between self- and peer-reported ISK. Self-reported ISK also predicted higher levels of self-reported Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience, and this pattern of relationships appeared with the peer-report data as well. In these results and also in correlations of the self- with peer-report scales, associations of ISK with greater Emotional Stability and Openness to Experience were especially noteworthy. This study confirmed the validity of the ISK scale and the adaptive behavioral significance of what it measures.

Keywords Integrative self-knowledge · Big five factors · Self-report · Peer-reported personality characteristics · Iran

Self-knowledge is acclaimed as a vital psychological process not only in the philosophical and religious traditions of the West (e.g., Hadot 2002), but in other cultures as well. As Haque (2004) points out, for instance, early Islamic scholars emphasized the importance of self-knowledge in attempts of the individual to live

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life fully. Interest in self-knowledge has also been obvious in the research and practice of contemporary psychology (e.g., Wilson and Stone 1985; Brown and Ryan 2003; Ghorbani et al. 2003). Indeed, an understanding of self-knowledge seems crucial to the construction of a positive psychology that emphasizes the dynamics of human psychological flourishing (Ghorbani et al. 2007). This is true because "a psychology that can promote the realization of potentials and the development of human strengths must focus heavily on self-reflective capacities" (Caprara and Cervone 2003, p. 67).

Efforts to study individual differences in self-knowledge obviously require valid measuring instruments. In light of the cross-cultural significance of self-knowledge, one research program has used Iranian and American samples to address this need and has operated from the assumption that self-knowledge is a process organized in time (Ghorbani et al. 2003, 2008). An Experiential Self-Knowledge Scale was devised to record personal tendencies to maintain an ongoing awareness of the self in the present. A Reflective Self-Knowledge Scale operationalized instead attempts to understand experiences of the self relative to its own past (Ghorbani et al. 2003). The adaptive implications of these measures was confirmed in correlations with a wide array of self-reported psychological constructs, and these scales also predicted superior academic performance in an American university classroom (Ghorbani et al. 2003). In Iran, Experiential and Reflective Self-Knowledge also usefully clarified Muslim religious commitments (Watson et al. 2002), interests in philosophy among high school teachers and students (Ghorbani et al. 2005), promotions earned by executives in business organizations (Ghorbani and Watson 2004), and basic need satisfaction among factory workers (Ghorbani and Watson 2006).

However, an ideal form of self-knowledge presumably should integrate past, present, and desired future self-experience into a meaningful whole. An Integrative Self-Knowledge (ISK) Scale was, therefore, developed to assess an adaptive and empowering attempt of the self to understand its own psychological dynamics across time (Ghorbani et al. 2008). Self-knowledge based upon past experience was evident in such statements as, "If I need to, I can reflect about myself and clearly understand the feelings and attitudes behind my past behaviors." A processing of present self-experience was exemplified in the reverse scored assertion, "Most of the time, I get so involved in what is going on that I really can't see how I am responding to a situation." Indicative of an orientation of the self toward its desired future was the self-report, "By thinking deeply about myself, I can discover what I really want in life and how I might get it." This ISK scale was internally reliable, displayed measurement equivalence across Iranian and American samples, and was associated with criterion, convergent, discriminant, and incremental validity (Ghorbani et al. 2008).

The purpose of the present project was to obtain a more behavioral source of evidence for evaluating the ISK scale. Assessments of self-knowledge suggest a number of somewhat unique psychometric challenges. With regard to self-report data, the paradox is that some degree of self-knowledge seems necessary for an individual to understand that he or she lacks self-knowledge. On the other hand, observations of apparently relevant behaviors by others familiar with an individual will not be based upon information about the inner psychological dynamics that essentially define true self-knowledge. In discussing such interpretative difficulties, Vogt and Colvin (2005) have argued that at least some advantages are associated

with an approach designed "to compare self-reports of personality with ratings of personality provided by a knowledgeable source" (p. 239).

With such a procedure, personal subjective assessments of the self-knowledge process can be corroborated by more objective behavioral evaluations obtained from a knowledgeable observer. Numerous studies have in fact documented the utility of examining correlations between self-report and peer-report assessments of personality constructs and have essentially argued that such data yield a more objective, behaviorally-based source of evidence (e.g., John and Robins 1994, 1993; Clifton et al. 2004; Kolar et al. 1996; McCrae et al. 1998). In the present investigation, self-report and peer-report evaluations of self-knowledge were obtained from Iranian students who lived together in a university dormitory.

Self-report and peer-report measures of the Big Five personality factors (Goldberg 1999) were obtained as well. Big Five measures were included to offer what is generally presumed to be a comprehensive assessment of personality functioning, involving the traits of Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience (McCrae and Costa 1999). This procedure enabled the accomplishment of three additional purposes. First, such data made it possible to once again test the claim that ISK records an adaptive psychological process. If true, self-reported ISK should correlate positively with all of the self-reported Big Five traits. Second, the hypothesized advantages of ISK should have behavioral consequences that are apparent to others. Self-reported and peer-reported ISK consequently should also correlate positively with peer-report assessments of the Big Five factors. Finally, addition of the Big Five measures presented an opportunity to assess the validity of peer-report procedures in Iran. The ideal for such procedures presumably would be met if each self-report scale displayed its strongest positive correlation with the corresponding peer-report measure and vice versa.

In summary, this study obtained self-report and peer-report assessments of ISK and the Big Five personality factors from university students sharing a dormitory room in an Iranian university. The most important prediction from a theoretical point of view was that self-reported ISK would correlate positively with peer-reported ISK. Such a result would supply more objective, behaviorally-based evidence for the validity of the ISK scale. Additional hypotheses included predictions (1.) that self-reported ISK would correlate positively with self-report assessments of the Big Five factors, (2.) that self-reported and peer-reported ISK would correlate positively with peer-reports of the Big Five factors, and (3.) that each self-report measure would display its maximal positive correlation with the corresponding peer-report variable and vice versa.

Method

Participants

Participants were 144 pairs of undergraduates enrolled in the University of Tehran. These 142 woman and 146 men were 20.9 years old on average (SD=3.20). At the time of this project, each pair had shared a dormitory room for more than six months, and 70% had been acquainted with each other for more than one year.

Measures

Persian versions of all scales were included in a single questionnaire booklet. The ISK scale appeared first and was followed by the Big Five personality measures. These instruments were then presented again in the same order, but this time with special instructions designed to have respondents evaluate their roommate in terms of each questionnaire item. These peer-report instructions specifically asked participants to determine the extent to which each statement applied to their roommate based upon his or her actual behavior, "assessing it objectively." Emphasis was placed on obtaining evaluations based upon "the way he (or she) really acts, not the way that he (or she) thinks or imagines things to be."

Development of the ISK scale occurred in projects using both Iranian and American samples, and the adequacy of all Persian translations of English statements was established during those initial procedures (Ghorbani et al. 2008). In the self- and peer-report conditions of the present study, responding to each of the 12 ISK items involved a five-point Likert scale ranging from "largely untrue" (0) to "largely true" (4). The Big Five factors were assessed using the 50-item Goldberg (1999) index of these constructs. Previous Iranian studies have established the adequacy of the Persian translations of each of these ten-item scales (e.g., Ghorbani et al. 2003, 2005, 2008; Ghorbani and Watson 2004). Self- and peer-report responding to the Big Five items occurred along a "very inaccurate" (0) to "very accurate" (4) Likert scale.

All scales were scored in terms of the average response per item. Table 1 presents the Cronbach α, mean, and standard deviation for each self- and peer-report measure. As these data reveal, internal reliabilities for all instruments were generally acceptable for research purposes.

Procedure

All participation in this study was fully voluntary. Responding occurred in various campus settings, and confidentiality was guaranteed. Each participant identified his

Table 1 Internal reliability (α), mean (M), and standard deviation (SD) of self-reported and peer-reported integrative self knowledge and big five personality measures

Measures	Self-reported			Peer-reported		
	α	M	SD	α	M	SD
Integrative self-knowledge	0.76	2.33	0.62	0.78	2.88	0.63
Extraversion	0.70	2.18	0.66	0.70	2.22	0.64
Agreeableness	0.72	2.82	0.57	0.79	2.55	0.66
Conscientiousness	0.75	2.55	0.76	0.75	2.34	0.69
Emotional stability	0.81	1.99	0.78	0.70	2.09	0.72
Openness to experience	0.74	2.59	0.59	0.73	2.33	0.60

All measures were scored in terms of mean response per item. With self-reported data, each participant responded to questionnaire items under standard self-assessment instructions. Peer-reported data describe each participant as evaluated by a dormitory roommate.

or her roommate, indicated the period of their acquaintance, and completed the questionnaire booklet. Data were analyzed using correlation and multiple regression procedures.

Results

Table 2 reviews the correlations among the self-report scales (above the diagonal) and among the peer-report measures as well (below the diagonal). Under self-report conditions, ISK was associated with higher levels of each Big Five measure. The five factors also correlated positively with each other; so, these self-report ISK data were further clarified using multiple regression procedures. All five self-report Goldberg (1999) scales were entered simultaneously into a prediction equation in order to explain variance in ISK. Only Emotional Stability ($\beta=0.31$, $t=5.71$, $p< 0.001$) and Openness to Experience ($\beta=0.26$, $t=4.39$, $p<0.001$) proved to be significant predictors.

Peer-reported ISK similarly displayed positive correlations with each of the peer-reported Big Five measures. Most relationships among the peer-report Big Five scales were again significant and positive. In multiple regression procedures, peer-reported Agreeableness ($\beta=0.19$, $t=3.40$, $p<0.01$), Emotional Stability ($\beta=0.38$, $t=7.71$, $p<0.001$), and Openness to Experience ($\beta=0.31$, $t=5.52$, $p<0.001$) served as significant predictors of peer-reported ISK.

Relationships between the self-and peer-report measures are reviewed in Table 3. Most important in these data was the significant positive correlation between self- and peer-reported ISK. Self-reported ISK also correlated positively, albeit less strongly with peer-reported Emotional Stability and Openness to Experience. In multiple regression procedures, peer-reported Openness to Experience was the sole reliable predictor of self-reported ISK ($\beta=0.20$, $t=3.04$, $p<0.01$), but the effect for peer-reported Emotional Stability approached significance ($\beta=0.11$, $t=1.85$, $p= 0.065$). Conversely, peer-reported ISK displayed significant positive correlations with self-reported Extraversion, Emotional Stability, and Openness to Experience. These relationships were once again not as strong as the linkage between peer- and

Table 2 Correlations among integrative self-knowledge and five factors using self-report (above diagonal) and peer-report (below diagonal) instructions

Measures	1.	2.	3.	4.	5.	6.
1. Integrative self-knowledge	–	0.16**	0.25***	0.25***	0.38***	0.36***
2. Extraversion	0.20**	–	0.31***	0.14*	0.23***	0.30***
3. Agreeableness	0.44***	0.16**	–	0.31***	0.15*	0.41***
4. Conscientiousness	0.24***	0.00	0.38***	–	0.17**	0.27***
5. Emotional stability	0.46***	0.27***	0.25***	0.03	–	0.19**
6. Openness to experience	0.44***	0.20**	0.44***	0.30***	0.08	–

Under self-report conditions, participants responded to questionnaire items in terms how they applied to themselves, whereas peer-report data described participants as evaluated by a dormitory roommate.
*$p<0.05$; **$p<0.01$; ***$p<0.001$

Table 3 Correlations of self-reported with peer-reported integrative self-knowledge and big five measures

Self-reported measures	Peer-reported measures					
	1.	2.	3.	4.	5.	6.
1. Integrative self-knowledge	0.28***	0.07	0.11	0.07	0.13*	0.21*
2. Extraversion	0.13*	0.38***	0.15*	0.07	0.06	0.13*
3. Agreeableness	0.11	0.10	0.27***	0.12*	0.08	0.13*
4. Conscientiousness	0.09	−0.01	0.08	0.37***	0.02	0.08
5. Emotional stability	0.19**	0.05	0.04	0.04	0.30***	0.06
6. Openness to experience	0.18**	0.14*	0.13*	0.07	0.13*	0.25***

Under self-report conditions, participants responded to questionnaire items in terms how they applied to themselves, whereas peer-report data described participants as evaluated by a dormitory roommate.
*$p<0.05$; **$p<0.01$; ***$p<0.001$

self-reported ISK. In multiple regressions, self-reported Emotional Stability was the lone significant predictor of peer-reported ISK ($\beta=0.15$, $t=2.51$, $p<0.05$), with the finding for self-reported Openness to Experience approaching significance ($\beta=0.12$, $t=1.77$, $p=0.078$). Finally, each self-reported Big Five factor displayed its strongest positive correlation with the corresponding peer-reported Big Five measure and vice versa.

Discussion

As operationalized in the ISK scale, self-knowledge is a process in which individuals actively work to unite past, present, and desired future self-experience into a meaningful whole. Those high in ISK should by definition be aware of their own self-reflective activities, whereas those low in ISK presumably should have enough "self-knowledge" to understand that they do not. Implicit in this conceptualization is the further assumption that individual differences in ISK should be apparent in individual differences in behavior. Those high in ISK should communicate a self-reflective thoughtfulness in responding that is apparent to those who know them. Support for that hypothesis was obtained in the present project when self-reported ISK in fact correlated positively with peer-reported ISK. Peers in this instance were roommates in a university dormitory who had lived with each other for at least six months. Such close experience across extended periods of time apparently made it possible for peers to discern evidence of ISK in the verbal and other behaviors of their roommates.

Associated with development of the ISK scale was the further assumption that self-knowledge is adaptive. Numerous lines of evidence supported this hypothesis. Self-reported ISK correlated positively with all five self-reported Big Five measures. Positive relationships also appeared between peer-reported ISK and the peer-reported Big Five factors. Those who were perceived to be higher in ISK therefore seemed to have the social advantages of appearing to be more extraverted, agreeable, conscientiousness, emotionally stable, and open to experience. When these two sets of data were analyzed with multiple regression procedures, Openness to Experience

and Emotional Stability proved to be the most noteworthy and consistent Big Five predictors of ISK. The importance of Emotional Stability further documented the adaptive implications of ISK, and the Openness to Experience result seemed to confirm ISK as an operationally defined openness to inner psychological experience.

Further evidence of the important ISK relationship with Emotional Stability and Openness to Experience was obvious in linkages between self-reported ISK and the peer-reported Big Five and vice versa. In both instances, positive correlations appeared between the ISK and these two Big Five measures. Multiple regressions also demonstrated significant or near-significant associations of these two Big Five factors with ISK.

Especially noteworthy was the pattern of overall relationships between the self- and peer-report measures. Each self-report variable displayed its maximal positive correlation with the corresponding peer-report measure. This pattern was first noteworthy because it supplied compelling evidence that these roommates were genuinely familiar with each other. In addition, the magnitude of the positive correlation between self- and peer-reported ISK was roughly in the middle of the range of correlations observed between the self-reported and corresponding peer-reported Big Five measures. Such an outcome suggested that the behavioral significance of ISK was roughly of the same order as that observed for the Big Five. Finally, these data demonstrated that peer-report procedures were valid in exploring personality processes in an Iranian sample. Further supporting that conclusion were observations that correlations obtained in the present project were generally comparable to self- and peer-report correlations observed between Big Five measures in samples examined in other societies (e.g., John and Robins 1994, 1993; Clifton et al. 2004; Kolar et al. 1996; McCrae et al. 1998).

This study was of course associated with a number of limitations that future research will need to address. Perhaps most obviously, this project examined only one source of peer-report data. Future investigations should explore a wider range of groups, including, for instance, siblings, spouses, and adolescents and adults of varying ages and socioeconomic backgrounds. Second, the behavioral implications of ISK might be examined more directly. For example, individuals high and low in ISK might be compared in their ability to cope with stressful situations. Finally, the correlational methodology of the present project made it impossible to make causal inferences about connections between ISK and adaptive functioning. Researchers might examine this issue by explicitly attempting to enhance ISK through such procedures as Intensive Short-Term Dynamic Psychotherapy (Davanloo 2000) and various types of insight meditation like Vipassana (Goenka and Hart 2001).

In summary, this investigation supplied additional evidence supporting the validity of the ISK scale. The present data revealed that self-knowledge appears to have adaptive behavioral implications that are apparent to others. ISK may also be specifically noteworthy in efforts to understand adjustment in terms of processes associated with Emotional Stability and Openness to Experience. These data were collected in Iran, but previous procedures have demonstrated that the ISK scale is useful in examining the personality functioning of Americans (Ghorbani et al. 2008). Self-knowledge is also identified as a virtue within the religious and philosophical traditions of many societies (Ghorbani et al. 2003). The ISK scale may, therefore, deserve additional research attention in the cross-cultural study of personality.

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