RELATIONSHIPS OF EXPERIENTIAL AND REFLECTIVE SELF-KNOWLEDGE WITH TRAIT META-MOOD SCALE, CONSTRUCTIVE THINKING INVENTORY, AND THE FIVE FACTORS IN IRANIAN MANAGERS [1,2]

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Summary.—The purpose of this study was to examine the validity and the incremental validity of recently developed Reflective and Experiential Self-knowledge Scales. Along with measures of the Five Factors and of psychological adjustment, 201 male Iranian managers responded to the Self-knowledge Scales along with tests relevant to emotional intelligence, including the Trait Meta-mood Scale and the Constructive Thinking Inventory. As hypothesized, Self-knowledge Scales predicted greater self-reported emotional intelligence. Multiple regression also confirmed the incremental validity of these scales, showed each explained a separate source of variance, and supported the presumed temporal dynamics that theoretically underlie these constructs.

Psychologists have examined two fundamental processes associated with the self, "(1) an ongoing sense of self-awareness and (2) stable mental representations" (Robins, Norem, & Cheek, 1999, p. 467). Tests for measuring these two facets of self-functioning were recently developed in a cross-cultural research program that included Iranian and American samples (Ghorbani, Watson, Bing, Davison, & LeBreton, 2003). The Experiential Self-knowledge Scale recorded tendencies to attend to the self in the present. This index of "an ongoing sense of self-awareness" is manifested in such claims as, "Usually, I am immediately aware of the feelings I am experiencing." Reflective Self-knowledge measured personal efforts to understand the self relative to its own past and so referred to processes associated with "stable mental representations." Exemplifying Reflective Self-knowledge was the statement, "Through reflection, I am able to see how my positive and negative moods influence how I communicate with others." The present investigation sought to further examine the validity and the incremental validity of these new Self-knowledge Scales.

Underlying development of these scales was the theoretical assumption

that Experiential and Reflective Self-knowledge promote psychological adjustment by bringing present and past self-experience into harmonious integration (Ghorbani, *et al.*, 2003). Numerous findings have supported this idea. In groups from both Iran and the United States, expected relationships appeared with a broad array of self-reported personality constructs and with peer reports of behaviors presumed to be indicative of greater self-insight. Self-knowledge also correlated positively with grades earned in an American university classroom (Ghorbani, *et al.*, 2003). With other Iranian samples, scores on these tests also correlated predictably with religious commitments (Watson, Ghorbani, Davison, Bing, Hood, & Ghramaleki, 2002), with interest in philosopy (Ghorbani, Ghramaleki, & Watson, 2005), and with the number of promotions earned by managers in a corporation (Ghorbani & Watson, 2004).

Given previous findings that self-insight is associated with superior managerial performance (Church, 1997), Iranian managers once again served as the research participants. The validity of the Self-knowledge Scales was examined by testing the hypothesis that Self-knowledge is associated with greater self-reported emotional intelligence. Two measures of emotional intelligence were employed, the Trait Meta-mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) and the Constructive Thinking Inventory (Epstein, 1994, 1998). Both are valid for use with Iranian samples (Ghorbani, Bing, Watson, Davison, & Mack, 2002; Ghorbani & Watson, 2005).

The Trait Meta-mood Scale essentially describes an information-processing model of emotional intelligence. The Attention Scale measures the "input" of emotional experience, e.g., "I pay a lot of attention to my emotions." The Clarity Scale records the processing of that input once it has been attended to, e.g., "I almost always know exactly how I am feeling." Repair reflects the adaptive "outputs" that define the overall process as "intelligent," e.g., "I try to think good thoughts no matter how badly I feel."

The Constructive Thinking Inventory operationalizes automatic, preconscious patterns of thinking that supposedly typify the "emotionally intelligent" individual. The Constructive Thinking Inventory Emotional Coping subscale records adaptive forms of thinking that include self-acceptance, avoidance of pessimistic overgeneralizations, refusal to obsess about unpleasant occurrences, and the lack of a negative sensitivity to others. Behavioral Coping monitors a positive, action-oriented response to life challenges. Destructive thinking is assessed in the subscales measuring Categorical (e.g., "I tend to classify people as either for me or against me"), Esoteric (e.g., "I believe in flying saucers"), and Personal Superstitious (e.g., "If something good happens to me, I tend to assume it was luck") Thinking. A Naïve Optimism subscale can have both positive and negative mental health implications (e.g., "I believe that anyone who isn't lazy can always find a job"). Of spe-

cial relevance to the present managerial sample were previous demonstrations that the Constructive Thinking Inventory predicts superior work performance (Epstein, 1998, pp. 99-112).

Again, a second goal of this project was to assess the incremental validity of the Self-knowledge Scales (e.g., Piedmont, 1999). The hypothesis was that Experiential and Reflective Self-knowledge explain additional variance in other measures that is not already accounted for by the Five Factors (Goldberg, 1999), a possibility that has already received empirical support (Ghorbani & Watson, 2004). In addition to emotional intelligence, these other measures included the Perceived Stress Scale (Cohen, Kamarack, & Mermelstein, 1983) and the Hospital Anxiety and Depression Scales (Zigmond & Snaith, 1983).

In summary, this study used a sample of Iranian managers to test further the validity and the incremental validity of the Experiential and Reflective Self-knowledge Scales. Relative to correlations and to the second step of multiple regressions after the Five Factors had been entered on the first step, the hypotheses were that these two scales would display positive relationships with Emotional Coping, Behavioral Coping, and the three Trait Meta-mood Scales and negative relationships with Destructive Thinking, Anxiety, Depression, and Perceived Stress.

METHOD

Participants

Research participants were 201 mid-level male executives who worked in a variety of private sector corporations in Iran. At the time of this study, each was enrolled in a 200-hr. managerial training program. All subjects were married; their average age was 40.9 yr. $(SD = 6.8)$.

Materials

Scales were written in Persian and presented in a single questionnaire booklet. Translation of the tests into Persian occurred in preparation for the present or previous projects. All Persian statements were translated back into English to confirm the adequacy of the translation process. Formal permission was obtained from the author-copyright holder of each test.[3]

Five-point Likert scales were used for all but the Hospital Anxiety and Depression Scales. With the Constructive Thinking Inventory and Trait Meta-mood measures, responses were based on anchors of 0: strongly disagree

and 4: strongly agree. Anchors of 1: very inaccurate and 5: very accurate al-
lowed participants to indicate the self-descriptiveness of each Five Factor
trait. The frequency of each Perceived Stress experience was noted with an-
chors of 0: never and 4: very often. Responses of the Self-knowledge Scales
were based on anchors of 0: very untrue and 4: very true. Each statement
from the Hospital Anxiety and Depression Scales was followed by variously
worded 0 to 3 response options that noted the frequency or severity of asso-
ciated symptoms.

Internal reliabilities for all tests were examined prior to computing de-
scriptive statistics. Any statement displaying a negative item-to-total correla-
tion was eliminated to maximize internal consistency. Based upon this crite-
rion, one item was dropped from the Constructive Thinking Inventory Su-
perstitious Thinking subscale, the Attention Trait Meta-mood Scale, the
Agreeableness Five Factor trait, and the Perceived Stress Scale.

After the Experiential ($\alpha = .90$, M response per item $= 2.6$, $SD = 0.7$) and
Reflective ($\alpha = .74$, $M = 2.9$, $SD = 0.5$) Self-knowledge Scales, the question-
naire included six measures from the Constructive Thinking Inventory:
Emotional Coping ($\alpha = .86$, $M = 2.4$, $SD = 0.6$), Behavioral Coping ($\alpha = .73$,
$M = 3.1$, $SD = 0.5$), Categorical Thinking ($\alpha = .73$, $M = 1.6$, $SD = 0.5$), Supersti-
tious Thinking ($\alpha = .55$, $M = 1.6$, $SD = 0.7$), Esoteric Thinking ($\alpha = .55$, $M =
1.7$, $SD = 0.5$), and Naïve Optimism ($\alpha = .72$, $M = 2.5$, $SD = 0.5$). Relatively
poorer internal reliabilities for Superstitious and Esoteric Thinking indicated
a need for caution in interpreting data associated with these measures. The
Trait Meta-mood Scales followed and displayed internal reliabilities margin-
ally acceptable for research purposes: Attention ($\alpha = .68$, $M = 2.2$, $SD = 0.5$),
Clarity ($\alpha = .69$, $M = 2.6$, $SD = 0.6$), and Repair ($\alpha = .62$, $M = 2.9$, $SD = 0.6$).

The 50-item version of the Goldberg Five Factor Scale (1999) was em-
ployed: Extraversion ($\alpha = .73$, $M = 2.1$, $SD = 0.6$), Agreeableness ($\alpha = .68$, $M =
3.1$, $SD = 0.5$), Conscientiousness ($\alpha = .71$, $M = 3.1$, $SD = 0.6$), Emotional Sta-
bility ($\alpha = .84$, $M = 2.5$, $SD = 0.8$), and Openness to Experience ($\alpha = .65$, $M =
2.5$, $SD = 0.6$). Again, the additional mental health measures included the
Hospital Anxiety ($\alpha = .82$, $M = 1.3$, $SD = 0.8$) and Depression ($\alpha = .88$, $M =
0.9$, $SD = 0.6$) Scales and the Perceived Stress Scale ($\alpha = .80$, $M = 1.3$, $SD =
0.5$).

Procedure

Managers responded to the questionnaire in groups of 15 to 40. Testing
occurred at the end of a session in which each was evaluated for placement
in the managerial training program. Involvement in this research was volun-
tary, and care was taken to guarantee confidentiality. Evidence documenting
the validity of the measures of emotional intelligence, Five Factors, and
other measures of this project has been reported with previous Iranian sam-

ples (e.g., Ghorbani, *et al.*, 2002, 2003, 2005; Ghorbani & Watson, 2004, 2005). Analyses consequently focused only on those results with implications for understanding the validity and the incremental validity of the two Self-knowledge Scales.

RESULTS

Experiential and Reflective Self-knowledge correlated positively (.49, $p <$ .001). As Table 1 demonstrates, no statistically reliable Self-knowledge associations appeared with Anxiety or Categorical Thinking, and direct associations with Esoteric Thinking were opposite expectations. With regard to this latter outcome, it may be important to remember that Esoteric Thinking exhibited a low internal reliability and that it also made reference to concepts like the "evil eye" and "flying saucers" that perhaps were not fully relevant to the Iranian context. The positive correlation for scores on Experiential Self-knowledge with Naïve Optimism was difficult to interpret in light of the ambiguous mental health implications of this Constructive Thinking Inventory measure in previous American (Epstein, 1998) and Iranian (Ghorbani & Watson, 2005) samples. Most importantly, however, all other findings reviewed in Table 1 supported the assumption that Self-knowledge promotes adjustment. Specifically, one or both of the Self-knowledge Scales correlated positively with Emotional and Behavioral Coping, the three Trait Meta-mood Scales, and the Five Factor traits and negatively with Superstitious Thinking, Depression, and Perceived Stress.

TABLE 1
PEARSON CORRELATIONS OF EXPERIENTIAL SELF-KNOWLEDGE (ESK) AND REFLECTIVE
SELF-KNOWLEDGE (RSK) WITH EMOTIONAL INTELLIGENCE, FIVE FACTORS,
AND PSYCHOLOGICAL ADJUSTMENT ($N = 201$)

Measures	ESK	RSK	Measure	ESK	RSK
Constructive Thinking Inventory			Five Factors		
Emotional Coping	.19*	.18*	Extraversion	.22†	.24†
Behavioral Coping	.39‡	.44‡	Agreeableness	.14	.32‡
Superstitious Thinking	−.12	−.17*	Conscientiousness	.21†	.24†
Categorical Thinking	−.01	−.07	Emotional Stability	.16*	.12
Esoteric Thinking	.21†	.27‡	Openness to Experience	.34‡	.25†
Naïve Optimism	.16*	.05			
Trait Meta-mood Scale			Psychological Adjustment		
Attention	.07	.26†	Anxiety	−.16	−.11
Clarity	.38‡	.27†	Depression	−.32‡	−.35‡
Repair	.29†	.38‡	Perceived Stress	−.29‡	−.20*

*$p < .05$. †$p < .01$. ‡$p < .001$.

Evidence of incremental validity appeared in five of the 12 analyses in which the Self-knowledge Scales were entered on the second step of multiple regressions after the Five Factors had been entered on the first step. As

Table 2 demonstrates, Experiential Self-knowledge was a reliable predictor of Behavioral Coping and Clarity, and significant associations also appeared for Reflective Self-knowledge with Behavioral Coping, Esoteric Thinking, Repair, and Depression.

TABLE 2
MULTIPLE REGRESSIONS IN WHICH SELF-KNOWLEDGE SCALES SIGNIFICANTLY PREDICTED PERSONALITY
VARIABLES ON STEP 2 AFTER ENTERING FIVE FACTORS ON STEP 1 ($N = 201$)

Personality Variable	Five Factors			Self-knowledge		
	R^2	Significant Predictor[a]	β	ΔR^2	Significant Predictor[a]	β
Behavioral Coping	.39‡	CON	.18*	.10‡	ESK	.14*
		ES	.39‡		RSK	.24†
		OE	.17*			
Esoteric Thinking	.11†	ES	−.23†	.07†	RSK	.19*
		OE	.17*			
Clarity	.17‡	EXT	.34‡	.08†	ESK	.28†
Repair	.28‡	AGR	.30†	.05†	RSK	.18*
Depression	.36‡	AGR	−.20*	.06†	RSK	−.18*
		ES	−.40‡			
		OE	−.20*			

[a]The Five Factors were Extraversion (EXT), Agreeableness (AGR), Conscientiousness (CON), Emotional Stability (ES), and Openness to Experience (OE); Self-knowledge Scales were Experiential Self-knowledge (ESK) and Reflective Self-knowledge (RSK).
*$p < .05$. †$p < .01$. ‡$p < .001$.

DISCUSSION

As hypothesized, Experiential and Reflective Self-knowledge displayed connections with greater emotional intelligence. Relationships with Behavioral Coping were most robust, but expected linkages also appeared with Emotional Coping, Superstitious Thinking, Attention, Clarity, and Repair. In addition, responding on one or both of the Self-knowledge Scales was associated with higher scores on Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience and with lower scores for Depression and Perceived Stress. Such data clearly supported the validity of these new measures and the theoretical assumptions upon which they were based.

Against expectations, scores for Esoteric Thinking correlated positively rather than negatively with those for Self-knowledge. This scale nevertheless displayed poor internal reliability and perhaps included some content not fully valid for the Iranian context. In light of the other observed correlations, this unexpected relationship, therefore, seemed to challenge the validity of the Esoteric Thinking rather than the new Self-knowledge Scales, at least for use in Iran.

Multiple regression results further confirmed the research utility of the new Self-knowledge Scales. As in a previous study (Ghorbani & Watson,

2004), these data documented the incremental validity of these two new scales. In addition, Experiential and Reflective Self-knowledge made separate contributions to the prediction of Behavioral Coping, indicating that each operationalized a noteworthy independent source of variance. Moreover, in these procedures, Experiential Self-knowledge was the reliable predictor of Clarity, a process that presumably occurs in the present, whereas Reflective Self-knowledge explained variance in Repair, which logically seems to rest more upon past "emotionally intelligent" self-experience. Relative to the present and to the past, therefore, these linkages supported the temporal dynamics that theoretically differentiate the two Self-knowledge Scales.

In summary, Self-knowledge Scales describe processes presumed to be essential for psychological adjustment (Ghorbani, *et al.*, 2003). Correlations with scores for emotional intelligence, Depression, and Perceived Stress supported that assumption. Multiple regression results also confirmed the incremental validity of these scales, demonstrated that Experiential and Reflective Self-knowledge scores explain independent sources of variance, and supported the temporal dynamics that theoretically underlie these measures.

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