Interpersonal Relationship Orientations, Leadership, and Managerial Level: Assessing the practical usefulness of the FIRO-B in organizations

Gorkan Ahmetoglu*, Tomas Chamorro-Premuzic* and Adrian Furnham**

*Department of Psychology, Goldsmiths, University of London, New Cross, SE14 6NW, UK. E-mail: t.chamorro-premuzic@gold.ac.uk
**Department of Psychology, University College London, London, UK

This paper investigated whether interpersonal relationship orientation, as measured by the Fundamental Interpersonal Relationship Orientations-Behaviour (FIRO-B), predicts ratings of leadership capability and managerial level of attainment. In all, 547 participants reported their managerial level in their organization, and were rated by trained consultants on their leadership capability. Results showed that several scores on the FIRO-B positively predicted ratings of leadership capability and managerial level reached even after controlling for the effect of intelligence and demographic variables. This study provides some initial evidence for the validity of the FIRO-B in the prediction of perceptual and objective measures of leadership capability. Implications for selection and assessment are discussed.

1. Introduction

Since its publication in 1958, the Fundamental Interpersonal Relationship Orientations-Behaviour (FIRO-B; Schutz, 1958) has been actively used in organizations for a variety of purposes. These include training (Pfeiffer, Heslin, & Jones, 1976), understanding senior management functioning (Pendelton, 2003), enhancing leadership effectiveness (Schnell & Hammer, 1997), coaching (Thompson, 2000), and crucially, personnel selection and placement (OPP, 2007; Ryan, 1977).

The popularity of the FIRO-B in applied settings suggests this is an appealing and useful tool. However, little academic research has directly examined how scores on this measure relate to senior management functioning or leadership. Furthermore, with the exception of a recent study by Furnham, Crump, and Chamorro-Premuzic (2007), which found that interpersonal characteristics may be relevant for managerial promotion, evidence on the utility of the FIRO-B for selection and assessment purposes has been rather scarce.

In recent research, Furnham (2008) acknowledged the *potential* usefulness of the FIRO-B for selection and assessment purposes. Conversely, he noted that 'those interested in selection and assessment are eager to show that a particular self-report test predicts *actual* work-related outcomes. Further, to justify the use of any particular instrument, particularly used in conjunction with other better-established measures, it is advisable and desirable to demonstrate incremental validity, over other trait measures' (p. 43). The current study aimed to take one step in the suggested direction. Specifically, using structural equation modelling (SEM; Byrne, 2006), this study investigates: (a) whether interpersonal relationship orientations, as measured by the FIRO-B, predict expert ratings of leadership capability, and managerial level of attainment, (b) whether the FIRO-B predicts ratings of leadership and managerial level, after taking into account intelligence and demographic variables, and (c) explore whether the effectiveness of certain interpersonal behavior for leadership, depends on the leaders' intelligence level.

There is little in the FIRO-B literature that speaks directly to which scores predict leadership outcomes. However, based on Furnham et al. (2007), and Furnham (2008) it is expected that Hypothesis 1: (a) Expressed

Inclusion and (b) Expressed Control will positively predict ratings of leadership capability and managerial level; Hypothesis 2: (a) Wanted Control and (b) Wanted Affection will negatively predict ratings of leadership capability and managerial level; and Hypothesis 3: high disparity scores on the (a) Control and (b) Affection dimensions will positively predict ratings of leadership capability and managerial level.[1]

Finally, a novel component of the current study is to consider the relationship between FIRO-B dimensions and intelligence, and how these might interact to influence ratings of leadership capability and managerial level of attainment. Specifically, the aim is to test one aspect of the cognitive resource theory (Fiedler & Garcia, 1987), which states that a leader's intelligence contributes to the performance of the team only when the leader's approach is directive. When leaders are more intelligent, in order for their plans and decisions to be implemented, they need to tell people what to do, and be directive. Accordingly, it is predicted that: Hypothesis 4: the positive relationship between Expressed Control and perceived leader capability will be stronger when leader intelligence is high; and Hypothesis 5: the positive relationship between Expressed Inclusion, Expressed Affection and perceived leader capability will be stronger when leader intelligence is low.

2. Method

2.1. Participants

The sample comprised 547 managers and executives from different countries and different industries.[2] Males constituted 73% of the participants, while females made up 27% of the sample. The mean age of the sample was 38 years ($SD = .67$) and participants were drawn from a variety of levels within the organizations they were working.

2.2. Instruments

AH5 (Heim, 1968). This is a well-established measure of verbal and spatial ability. It was designed to test cognitive ability in highly intelligent samples. The test is split into two parts of 36 items each and taps into a wide range of abilities as well as assessing overall analytical/conceptual reasoning. The test is 20-min long and has good psychometric properties (Chamorro-Premuzic, Furnham, & Moutafi, 2004; Collings, & Smithers, 1983; Watts, 1953, 1954).

FIRO-B (Schutz, 1958). This is a 54-item questionnaire: 24 questions are completed on a 6-point scale (from 1 = *nobody* to 6 = *most people*) where respondents compare their behavioral preferences and patterns with other people. The remaining questions are completed on a 6-point scale (from 1 = *never* to 6 = *usually*) which describes usual or typical patterns of behavior. The test manual provides impressive evidence of the reliability of the measure and British data shows acceptable to high Cronbach's α ranging from .68 to .91 (Furnham & Moyle, 2000).

Leadership capability was assessed using the items from the benchmark profile questionnaire. This questionnaire consisted of 10 leadership items in total; these included strategic framing, commercial judgment, impact and influence, driving results, motivational leadership, orchestration, functional strength, breadth of experience, promotability, and overall potential. A principal component analysis on the 10 leadership items revealed one factor, which accounted for 61% of the variance. The reliability of this scale was .92. Thus a general factor was computed by adding the item scores.

Managerial level was assessed on a 7-point scale that ranged from 1 = *individual contributor* to 7 = *group CEO*.

2.3. Procedure

Managers attended a management assessment session and reported their managerial level in their organization. The assessment was aimed at determining the suitability of each manager for promotion or recruitment. They all went through a 4-hr semistructured interview. Each interview was carried out by a single consultant. There were a total of 23 consultants rating the managers. After the interview four psychometric tests were administered (two of which were not used in the current study) and the consultant completed a benchmark profile questionnaire concerning the person's leadership capability and effectiveness. All consultants in the organization had received several years of extensive training and were calibrated and recalibrated to ensure their ratings were reliable.

3. Analysis and results

3.1. Correlations

The bivariate zero-order correlations, means, and standard deviations for the dataset are shown in Table 1.

As can be seen in Table 1, none of the *wanted* scores reached significance. Thus, Hypotheses 2(a) and 2(b) were not supported. Only age and Expressed Control were significantly related to managerial level.

3.2. SEM

SEM was carried out using AMOS 5.0 (Arbuckle, 2003). Only predictor variables that were found to have non-zero correlations with the criterion variables were included in the SEM model. In line with the hypotheses, and previous research (Furnham et al., 2007; Judge, Piccolo, & Ilies, 2004; Lord, De Vader, & Allinger, 1986), Expressed Control was allowed to influence ratings of leadership and managerial level, and paths from Expressed Inclusion, Expressed Affection and intelligence were allowed to load on ratings of leadership. The

Table 1. Means, standard deviations, and correlations between the leadership capability, managerial level, AH5 (intelligence), age, gender, and the six FIRO-B factors

	LC	ML	AH5	EI	EC	EA	WI	WC	WA	Age	Sex	Mean	*SD*
1. LC												0.0	1.0
2. ML	.65**											3.3	1.1
3. AH5	.15**	.08										15.4	5.0
4. EI	.14**	.02	−.07									4.9	1.7
5. EC	.11*	.10*	.06	.10*								5.3	2.3
6. EA	.15**	.01	−.02	.45**	.08							4.1	2.2
7. WI	.01	−.03	.06	.49**	.11*	.36**						3.3	3.1
8. WC	.05	.04	.01	.17**	−.04	.12**	.11*					2.6	1.7
9. WA	.04	−.02	.03	.29**	−.05	.57**	.43**	.11*				4.9	2.0
10. Age	.16**	.23**	.00	−.05	−.04	−.02	−.08	.06	.02				
11. Sex	−.03	−.09*	−.08	.05	−.05	.10	.06	.04	.04	−.14**			

Notes. LC = Leadership Capability, ML = Managerial Level, AH5 = Intelligence, EI = Expressed Inclusion, EC = Expressed Control, EA = Expressed Affection, WI = Wanted Inclusion, WC = Wanted Control, WA = Wanted Affection. $N = 547$; *$p < .05$, **$p < .01$.

model's goodness of fit was assessed via the χ^2 statistic (Bollen, 1989); comparative fit index (CFI; Bentler's, 1990); the root mean square residual (RMSEA; Browne & Cudeck, 1993); the Akaike's Information Criterion (AIC; Akaike, 1973) and expected cross-validation index (ECVI; Brown & Cudeck's, 1989).

The hypothesized first model did not fit the data well: $\chi^2(19, N = 547) = 76.54$, $p < .01$; CFI = .89; RMSEA = .07; AIC = 111.54; ECVI = .20. In line with modification indexes, theoretically meaningful paths were added from age to ratings of leadership and managerial level. Sex was removed from the model as it had no significant effects on either ratings of leadership or managerial level. The modified model (Figure 1) explained the data well: $\chi^2(11, N = 547) = 14.97$, $p < .01$; CFI = .99; RMSEA = .03; AIC = 48.97; ECVI = .09.

Considering the high correlation between the dependent variables, an alternative model was tested, where a latent factor of general leadership capability (on which ratings and leadership and managerial level loaded) was specified. In this model all paths from the exogenous variables were loaded on the latent variable. The alternative model did not fit the data well $\chi^2(20, N = 547) = 108.20$, $p < .01$; CFI = .73; RMSEA = .09; AIC = 140.24; ECVI = .26. Modifications were, therefore, made in order to improve fit. On the basis of the modification indices, five substantively meaningful paths were added to the model, and nonsignificant paths were removed (see Figure 2). The fit statistics of the modified latent model were $\chi^2(12, N = 547) = 13.82$, $p < .01$; CFI = .99; RMSEA = .02; AIC = 45.82; ECVI = .08. The fit statistics show that the model with the latent leadership capability factor explained the data better and was more parsimonious than the model without the latent factor.

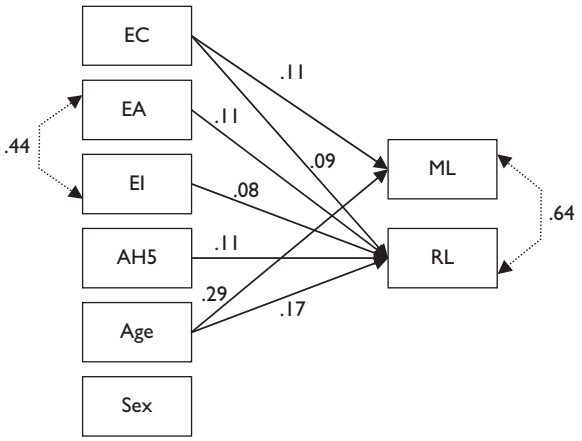

Figure 1. *Note*. $N = 547$. The modified model. Only the exogenous variables found to have nonzero correlations with the corresponding criterion variables were included in the structural equation modelling model (completely standardized solutions; note: paths between EA and EI, and ML and RL, are correlations). AH5 = Intelligence EI = Expressed Inclusion, EC = Expressed Control, EA = Expressed Affection, ML = Managerial Level, RL = Ratings of Leadership.

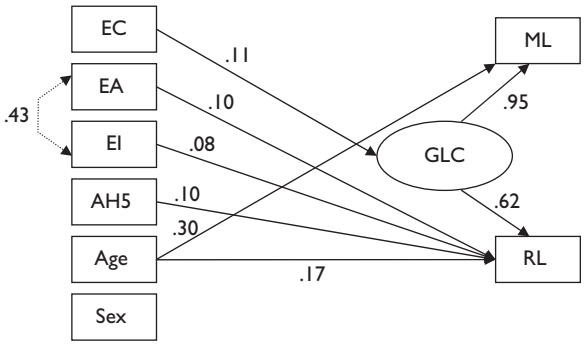

Figure 2. *Note*. $N = 547$. The modified model with a latent general leadership capability factor (completely standardized solutions). AH5 = Intelligence EI = Expressed Inclusion, EC = Expressed Control, EA = Expressed Affection, ML = Managerial Level, RL = Ratings of Leadership, GLC = General Leadership Capability.

3.3. Difference and total need scores

In addition to the six FIRO-B dimensions, models with FIRO-B difference scores and total need scores were

tested. Only the model with the latent factor was analyzed as this model showed better fit to the data. In the first model, the three 'expressed need' dimensions of the FIRO-B were all loaded on the general leadership factor. The fit statistics of difference score model were: $\chi^2(13, N = 547) = 41.71$, $p < .01$; CFI = .93; RMSEA = .06; AIC = 71.71; ECVI = .13. This model did not fit the data well. Based on AMOS modification indices, three modifications were made (see Figure 3). The modified difference score model fitted the data well: $\chi^2(13, N = 547) = 41.71$, $p < .01$; CFI = .93; RMSEA = .06; AIC = 71.71; ECVI = .13.

Next, the total need score dimensions were modelled and tested. As with the difference scores, these dimensions (Inclusion, Control, and Affection) were loaded on the latent factor of general leadership capability. The fit statistics for the total need score model were: $\chi^2(13, N = 547) = 40.87$, $p < .01$; CFI = .95; RMSEA = .06; AIC = 70.87; ECVI = .13. The CFI was somewhat below the desired value (> .96 = good fit), and in further fitting efforts one path was added and one path deleted from the model. The modified total need score model shown in Figure 4 fitted the data well: $\chi^2(9, N = 547) = 10.85$, $p < .01$; CFI = .10; RMSEA = .02; AIC = 34.85; ECVI = .06.

3.4. Multigroup analysis

To determine whether different FIRO-B dimensions predicted leadership and managerial level differently depending on the intelligence of the leader, a second set of analyses was carried out testing for invariance between high ($n = 293$) and low ($n = 254$) intelligence groups. This comparison yielded a χ^2 difference value of 11.4 with 9 *df*, for the model with observed variables only, and a χ^2 difference value of 11.1 with 9 *df*, for the model with the latent factor, which are both nonsignificant at $p < .05$, indicating that the models were invariant across intelligence levels.

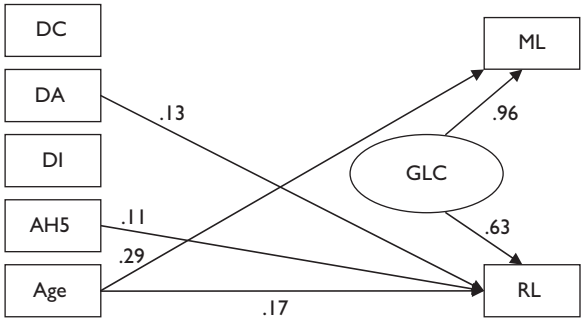

Figure 3. *Note. N = 547.* The modified difference score model (completely standardized solutions). AH5 = Intelligence DI = Difference on Inclusion, DC = Difference on Control, DA = Difference on Affection, ML = Managerial Level, RL = Ratings of Leadership, GLC = General Leadership Capability.

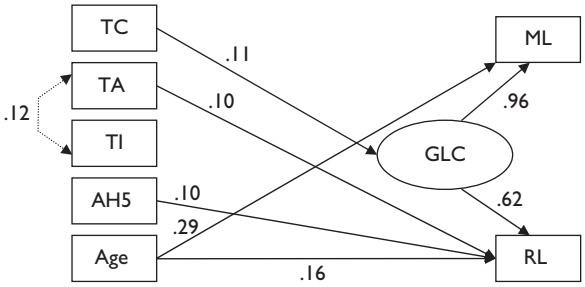

Figure 4. *Note. N = 547.* The modified total need score model (completely standardized solutions). AH5 = Intelligence TI = Total Inclusion, TC = Total Control, TA = Total Affection, ML = Managerial Level, RL = Ratings of Leadership, GLC = General Leadership Capability.

4. Discussion

The current study is the first to empirically assess the FIRO-B in relation to ratings of leadership and also extends on Furnham et al.'s (2007) study by including intelligence and demographic variables and applying SEM. Some of our hypotheses were supported by the results. Hypotheses 1(a) and (b) were supported: leaders rated as more competent had higher need to express inclusion and control. These findings are not surprising as leaders are in constant interaction with a variety of individuals and groups, such as stakeholders and subordinates. Furthermore, the nature of the leadership role often comes with a necessity to direct others and delegate responsibilities. Hypotheses 2(a) and 2(b) were not supported (Wanted Control and Wanted Affection were not significantly related to ratings of leadership). The current results also showed that leaders perceived as more competent had higher needs to express affection, that is, show concern and support for followers, and look out for their welfare (see also Bass, 1990; Judge et al., 2004, for related results).

Notably, Expressed Control was the only variable (apart from age) that significantly correlated with managerial level. An interesting feature of the current results was the specification of a latent leadership capability factor (this model showed better fit to the data and was more parsimonious). Expressed Control was found to be the only significant predictor of the latent leadership capability factor (and the only variable – apart from age – that significantly correlated with managerial level). Markedly, after removing the variance attributed to the general factor, Expressed Inclusion, Expressed Affection, intelligence, and age significantly affected ratings of leadership, and age significantly affected managerial level.

In line with Hypothesis 3(b), the current results showed that a high disparity score on the Affection dimension was related to higher ratings of leadership (even after controlling for the general leadership factor). It may be that such an orientation *allows* leaders to be affectionate and considerate, while remaining in control

of the emotional involvement they have with others. Hypothesis 3(a) was not supported (difference scores on Control were not related to ratings of leadership).

It is noteworthy that higher total need scores on the Control dimension were significantly and positively related to the general leadership capability factor. This indicates that higher Wanted Control might not necessarily be inappropriate, so long as it is accompanied by high Expressed Control. The results further showed that as leaders overall need for affection increased ratings of leadership capability (independently of the leaders general leadership capability) increased.

The final aim of the study was to investigate whether certain interpersonal needs are perceived as more (or less) desirable for leaders, depending on leaders' intelligence. The results of the current study did not support these assumptions [Hypotheses 6(a) and 6(b)]. While previous research has found support for the cognitive resource theory (see Judge, Colbert, & Ilies, 2004), the incongruity between the current and past findings could be due to the different statistical methods used. For instance, while Judge and colleague's meta-analysis computed only three variables, namely, directive behavior, intelligence, and leadership effectiveness, the current study integrated – in the same model – participative and affectionate behavior, demographic variables, as well as two outcome measures of leadership capability. Indeed, when the statistical method of Judge and colleague's was used (i.e. dividing the sample into two and testing for correlations) significant results were found. It would be interesting for future research to investigate these discrepancies further. In particular, it would be desirable to examine the cognitive recourse theory by testing more comprehensive models using statistical analysis that allows for the simultaneous testing of predictors and criteria, as well as multiple criteria. This could have important theoretical as well as practical implications.

4.1. Limitations

Inevitably, a number of limitations of the study need to be pointed out. First, despite the fact that many explicable associations were found between the FIRO-B and the criterion variables, the effect sizes were generally small. Nevertheless, the weights of the paths between the FIRO-B scales and leadership are comparable to that of intelligence and leadership. Moreover, the Control dimension of the FIRO-B showed stronger associations with leadership capability and predicted leadership more consistently than intelligence.

A second limitation of the current study is that it does not provide evidence of causation. For instance, one might argue that those managers with a higher need for Control are 'naturally' better leaders – and get promoted accordingly. On the other hand, it might be that high managerial positions increase leaders Control levels, as a response to the requirements of the role. It could also be a combination of both. Longitudinal studies into interpersonal orientations and leadership could be carried out to assess this.

A final limitation was the fact that ratings of leadership were obtained by consultants. Preferably one should have organizational members' (supervisor, peer, or subordinate) ratings of leadership capability. On the other hand, ratings made by organizational members could be criticized for potential contamination (Lord et al., 1986) and consultants (unlike lay peers or subordinates) in the current study had several years of experience in assessment and selection, and were calibrated and extensively trained to ensure reliability of ratings, and are, thus, less likely to use implicit theories of leadership. Furthermore, the current study, unlike many previous studies on leadership, included both a perceptual and an objective measure of leadership capability. Judge et al. (2004) argued that a study that combines the use of perceptual and objective measures could overcome the limitations of each measure. Nevertheless, it would be desirable for future research to include additional perceptual (e.g. multisource feedback) and objective (e.g. group performance) measures of leadership capability. Including these in an SEM analysis would also be desirable in order to account for the overlap between the measures.

4.2. Practical implications and conclusion

Despite the above-mentioned limitations, results of the current study provide some grounds for optimism regarding the utility of the FIRO-B measure in organizational settings. Several practical implications are suggested by the findings. It could be beneficial for practitioners using the measure for selection purposes, to consider the Control dimension in particular. Control has been shown to be the most unique of the three dimensions in relation to other well-established trait measures (Furnham, 2008). This study now shows that this dimension could possibly also be the most critical for leadership, as it is the only characteristic that predicts both perceptual and objective measures of leadership capability. The fact that Control but not intelligence predicts managerial level reached (as well as general leadership capability), gives a good indication of the significance of this dimension.

Of course, being a directive, commanding, and dominant leader may not be enough. Other individual difference factors such as cognitive ability, emotional intelligence, achievement motivation, and multiple other traits may be needed to secure a senior position and be regarded as a capable leader. In addition, traits may combine multiplicatively in their effects on leadership (Judge et al., 2004). If this is the case, then the relationship of any one trait with leadership is likely to be low. It would thus be desirable, in selection processes, to

include additional trait and ability measures in order to provide a more comprehensive view of a leader's capability. This could also be an interesting area for future research.

Notes

1. Total need scores on the FIRO-B (calculated by the addition of the expressed and wanted dimensions) were also included in the analysis on exploratory basis.
2. Data were obtained from a recruitment company and this is the first and only planned research report on these data.

References

Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B.N. Petrov & F. Csaki (Eds.), *Proceedings of the 2nd international symposium on information theory* (pp. 267–281). Budapest, Hungary: Akademiai Kiado.

Arbuckle, J. (2003). *Amos 5.0 update to the Amos user's guide*. Chicago, IL: Smallwaters Corporation.

Bass, B.M. (1990). *Bass and Stogdill's handbook of leadership*. New York, NY: Free Press.

Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246.

Bollen, K.A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.

Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Byrne, B.M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Chamorro-Premuzic, T., Furnham, A., & Moutafi, J. (2004). The relationship between estimated and psychometric personality and intelligence scores. *Journal of Research in Personality*, *38*, 505–513.

Collings, J., & Smithers, A.G. (1983). Psychological profiles of physical and biological science choosers. *Research in Science and Technological Education*, *1*, 5–15.

Fiedler, F.E., & Garcia, J.E. (1987). *New approaches to effective leadership: Cognitive resources and organizational performance*. New York, NY: Wiley.

Furnham, A. (2008). Psychometric correlates of FIRO-B scores: Locating three FIRO-B scores in personality factor space. *International Journal of Selection and Assessment*, *16*, 30–45.

Furnham, A., Crump, J., & Chamorro-Premuzic, T. (2007). Managerial level, personality, and intelligence. *Journal of Managerial Psychology*, *22*, 805–818.

Furnham, A., & Moyle, P. (2000). *A psychometric evaluation of the FIRO-B*. Unpublished paper.

Heim, A.W. (1968). *Manual for the AH 5 group test of high-grade intelligence*. Oxford, UK: N.F.E.R.

Judge, T.A., Colbert, A.E., & Ilies, R. (2004). Intelligence and leadership: A quantitative review and test of theoretical propositions. *Journal of Applied Psychology*, *89*, 542–552.

Judge, T.A., Piccolo, R.F., & Ilies, R. (2004). The forgotten ones? The validity of consideration and initiating structure in leadership research. *Journal of Applied Psychology*, *89*, 36–51.

Lord, R.G., De Vader, C.L., & Alliger, G.M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. *Journal of Applied Psychology*, *71*, 402–410.

OPP. (2007). *Psychometric Tools: The FIRO-B Questionnaire – Applications*. Retrieved July 21, 2007, from http://www.opp.eu.com/prod.aspx?title=241&%20t1=242&t2=243&t3=244&t4=245&%20t5=246&t6=247&Img=402

Pendelton, D. (2003). *Using the FIRO in consulting*. Private communication.

Pfeiffer, J., Heslin, R., & Jones, J. (1976). *Instrumentation in human relations training: a guide to 92 int10 behavioural sciences* (2nd ed.). San Diego, CA: University Associates.

Ryan, L. (1977). *Clinical interpretation of the FIRO-B*. Palo Alto, CA: Consulting Psychologist Press.

Schnell, E., & Hammer, A. (1997). Integrating the FIRO-B with the MBTI: Relationships, case examples, and interpretation strategies. In C. Fitzgerald & L. Kirby (Eds), *Developing leaders* (pp. 439–464). Palo Alto, CA: Davies-Black.

Schutz, W. (1958). *FIRO: A three dimensional theory of interpersonal behaviour*. New York, NY: Holt, Rinehart & Winston.

Thompson, H.L. (2000). FIRO element B™ and psychological type. *Bulletin of Psychological Type*, *23*(2), 18–22.

Watts, K.P. (1953). Influences affecting the results of a test of high-grade intelligence. *British Journal of Psychology*, *44*, 359–367.

Watts, K.P. (1954). The effect of a university training in mathematics on the scores in an intelligence test. *British Journal of Educational Psychology*, *24*, 32–37.