LIST OF FIGURES

Figure Page

1. Portion of Gardner's (1985) model of L2 Communicative Competence 14

2. Portion of MacIntyre and Charos (1996) model of L2 Communicative Competence 18

3. Final MacIntyre and Charos (1996) model 21

4. Schematic representation of the variables influencing WTC 23

5. L2 communication model 26

6. L2 communication model (minus proficiency) 27

7. Proposed Model of L2 Willingness to Communicate 86

8. Proposed L2 Communication Model based on Yashima et al. (2004) 89

9. Rasch item-person map of the Listening Proficiency measure 126

10. Item-person map for the Breadth of Vocabulary Knowledge instrument 130

11. Item-person map for the L2 WTC instrument 138

12. Item-person map with Rasch-Thurstone thresholds of the Frequency of L2 Communication instrument 141

13. Item-person map for the Perceived Competence in English instrument 145

14. Item-person map for the Item-person map for the L2 Communicative Anxiety, Friend / Acquaintance Anxiety subscale 152

15. tem-person map for the L2 Communicative Anxiety, Stranger Anxiety subscale 153

16. Item-person response map for the FLCAS 159

17. Item-person response map for the Motivation instrument 165

18. Item-person map for the Intergroup Approach-Avoidance Tendency subscale 173

19. Item-person map for the Intercultural Friendship Orientation subscale 176

20. Item-person map for the Interest in International Vocation/Activities subscale 179

21. Item-person map for the Interest in Foreign Affairs subscale 183

22. Standardized solution of the 2-factor International Posture instrument 187

23. Item-person map with Rasch-Thurstone thresholds for the Extroversion subscale 194

24. Item-person map for the Diligence subscale 197

25. Item-person map with Rasch-Thurstone thresholds for the Emotional Stability subscale 200

26. Item-person map with Rasch-Thurstone thresholds for the Agreeableness subscale 203

27. Item-person map with Rasch-Thurstone thresholds for the Openness to Experience subscale 206

28. Item-person Rasch-Thurstone threshold map of the Perceived Distance instrument 213

29. Item-person map with Rasch-Thurstone thresholds for the Unusual Experiences subscale 220

30. Item-person map for the Need for Order subscale 223

31. Item-person map with Rasch-Thurstone thresholds for the Perceived Money-Time Competence instrument 227

32. Item-person map with Rasch-Thurstone thresholds for the Childlikeness subscale 230

33. Item-person map with Rasch-Thurstone thresholds for the Sensitiveness subscale 232

34. Hypothesized 2-factor model of Ego Permeability with Imposition of Order and Intracognitive Permeability 235

35. Item-person map with Rasch-Thurstone thresholds for the Attitudes about the Learning Situation instrument 239

36. Distribution of standardized residuals for the Intercultural Friendship Orientation variable 271

37. L2 Communicative Communication configuration with the addition of Perceived Distance 275

38. Standardized solution of the L2 Communicative Communication configuration with the addition of Extroversion 276

39. Standardized solution for the L2 Communicative Confidence configuration with the addition of Imposition of Order (Ego Permeability) 279

40. Revised MacIntyre and Charos (1996) model of L2 Willingness to Communicate 281

41. Standardized solution of the revised path-analytic model using communicative anxiety: Personality, attitudes, and affect as predictors of foreign language communication 284

42. Revised path-analytic model using FLCAS: Personality, attitudes, and affect as predictors of foreign language communication 288

43. Hypothesized model of L2 communication with ego permeability and distancing added 290

44. Core of the Yashima (2002) L2 communication model 292

45. Standardized solution of the original Yashima (2002) model of L2 communication with standardized estimates 293

46. Respecified original model of L2 communication with standardized estimates 295

47. Revised Yashima (2002) L2 communication model 283

48. Standardized solution of the revised Yashima (2002) model 298

49. Model of L2 communication 299

50. Results of SEM: Respecified revised model of L2 communication with standardized estimates 305

51. Revised model of L2 communication based on Yashima et al. (2004) 308

52. Standardized solution of the revised model of Yashima et al. (2004) 309

then directly influences language learning outcomes such as proficiency and fluency. Figure 1 shows a portion of Gardner's (1985) model.

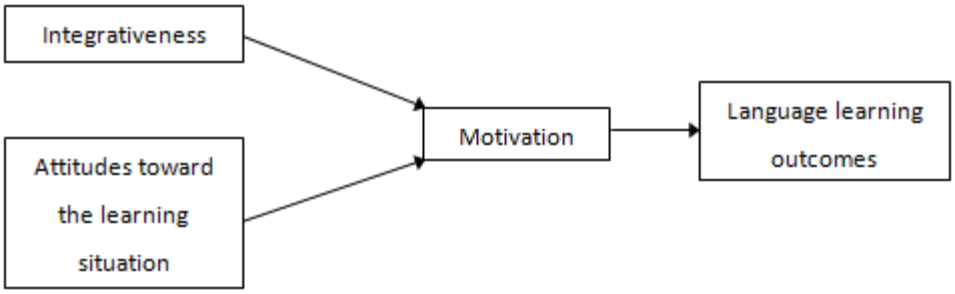


Figure 1. Portion of Gardner's (1985) model of L2 Communicative Competence. From "Personality, attitude, and affect as predictors of second language communication," by P. D. MacIntyre & C. Charos, (1996), *Journal of Language and Social Psychology, 15*(1), p. 5. Copyright 1996 by the *Journal of Language and Social Psychology.* Reprinted by permission.

Although the socioeducational model has proven very useful in helping researchers and educators to better understand SLA and in providing a theoretical basis for further research, it was developed in and from a specific context, the Canadian milieu, yet a general model needs to have support from various contexts (Dörnyei, 2003; Dörnyei & Csizér, 2002). Canada is officially bilingual, and its immigrant population is typically in an L2 situation vis-à-vis either English or French (or conceivably both). In that situation, the notion of integrativeness involves actual or metaphorical integration into a community. That notion is appropriate for that context, in which there is a clear need for non-English speaking immigrants to repeatedly use at least one L2 in order to function in daily life.

On the other hand, as in much of Asia outside of Hong Kong and Singapore, many Japanese learners of English are not seeking to integrate into an L2

willingness to communicate to the Gardner model by Peter MacIntyre in 1994. The MacIntyre (1994) model is the topic of the following section.

MacIntyre's (1994) Willingness to Communicate Model

In his 1994 study, MacIntyre advanced a model whose terminus was L2 willingness to communicate, which was hypothesized to predict actual speech acts. In the model tested (Figure 2), introversion underpinned both perceived competence and communication anxiety, while self-esteem predicted communication anxiety only. Anxiety influenced perceived competence, and both perceived competence and communication anxiety significantly predicted L2 WTC. The overall model had good fit to the data with χ^2 (21) = 13.4, p = n.s., GFI = .99, and AGFI = .96.[2]

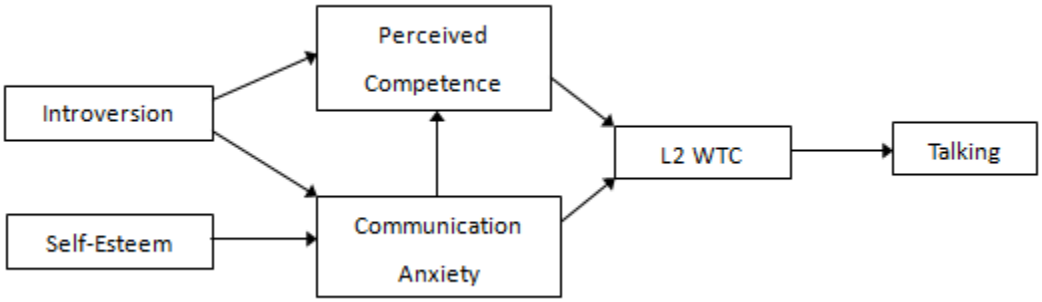


Figure 2. Portion of MacIntyre's (1994) willingness to communicate model. From P. D. MacIntyre & C. Charos, (1996), "Conceptualizing willingness to communicate in a L2: A situated model of confidence and affiliation." *Journal of Language and Social Psychology*, *15*(1), p. 8. Copyright 1996 by the *Journal of Language and Social Psychology*. Reprinted by permission.

[2] GFI is an asymptotic goodness-of-fit index and Adjusted GFI corrects for model complexity (Jöreskog & Sörbom, 1984). Values greater than .90 indicate good fit, but because both are insufficiently and inconsistently sensitive to model misspecification (Byrne, 2006) and strongly influenced by sample size (Marsh, Balla, & Hau, 1988), Hu and Bentler (1998) have advised against using them. Fit statistics are discussed in detail in Chapter 3.

respecification with four paths added to the hypothesized configuration and three paths deleted.

Building on this model, MacIntyre, Clément, Dörnyei, and Noels (1998) introduced the pyramid model (Figure 4), a conceptualization to account for individual differences in initiating communication in a L2 context. The pyramid model is outlined in the following section.

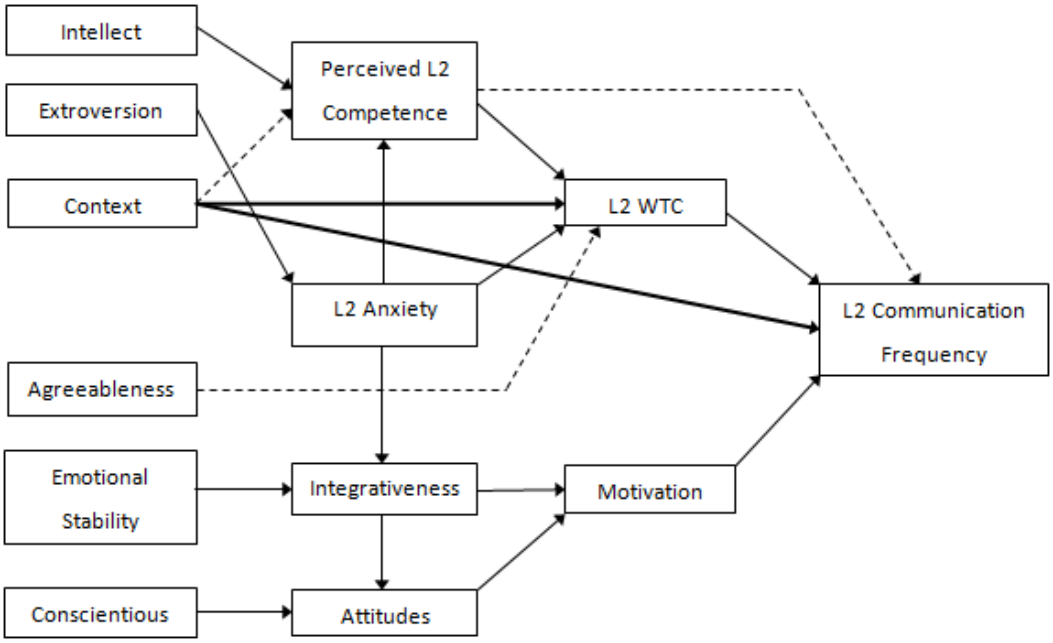


Figure 3. Final MacIntyre and Charos (1996) model of L2 willingness to communicate. Adapted from "Personality, Attitudes, and Affect as Predictors of Second Language Communication," by P. D. MacIntyre and C. Charos, 1996, *Journal of Language and Social Psychology, 15*(1), p. 18. Copyright 1996 by *Journal of Language and Social Psychology.* Reprinted with permission.

The Pyramid Model of MacIntyre and Colleagues

MacIntyre et al. (1998) introduced the well-known pyramid model (Figure 4) to account for individual differences in initiating communication in a foreign language. The pyramid conceptualization is composed of six layers. The lower

distance refers to physical distance between or among groups and individuals and is important in today's world, in which groups learning English or other foreign languages are often separated physically from the target groups. This physical separation is the case with most Japanese learners of English, whose country is an archipelago. Of course, modern transportation and media have reduced this distance, but, inasmuch as many Japanese university students lack travel experience (Elwood, 2005), it remains an important factor.

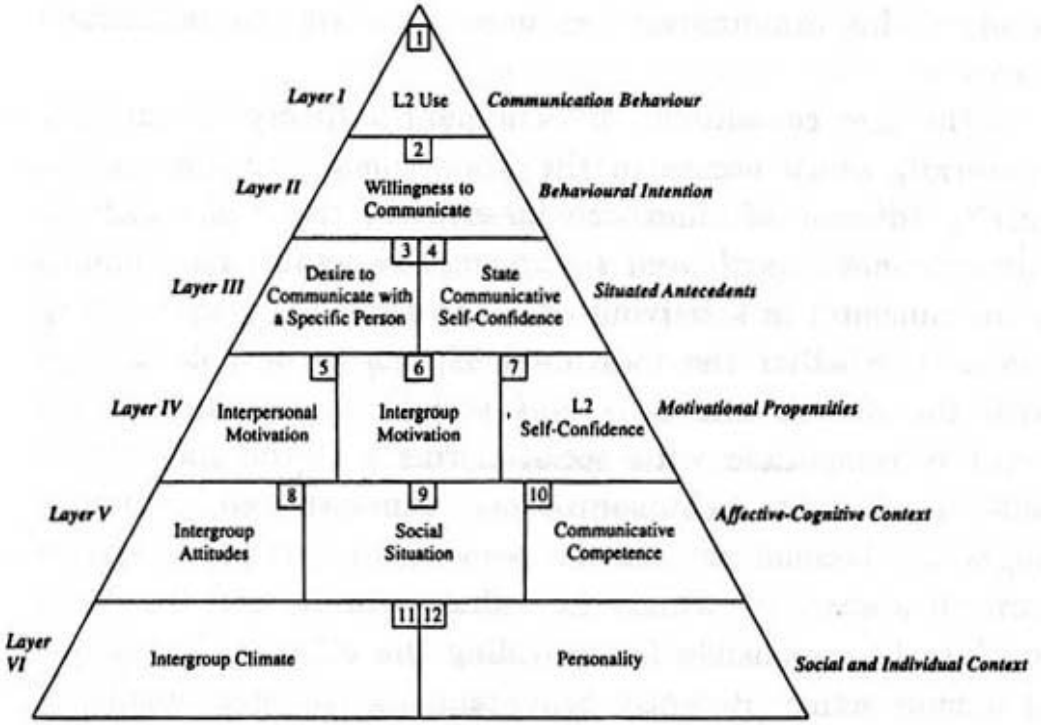


Figure 4. Schematic representation of the variables influencing L2 WTC. From "Conceptualizing Willingness to Communicate in a L2: A Situated Model of Confidence and Affiliation," by P. D. MacIntyre, R. Clément, Z. Dörnyei, and K. Noels, 1998, *Modern Language Journal, 82*, p. 547. Copyright 1998 by *The Modern Language Journal.* Reprinted with permission.

ego permeability mediates the extent to which that person can assume new roles and thereby function adequately.

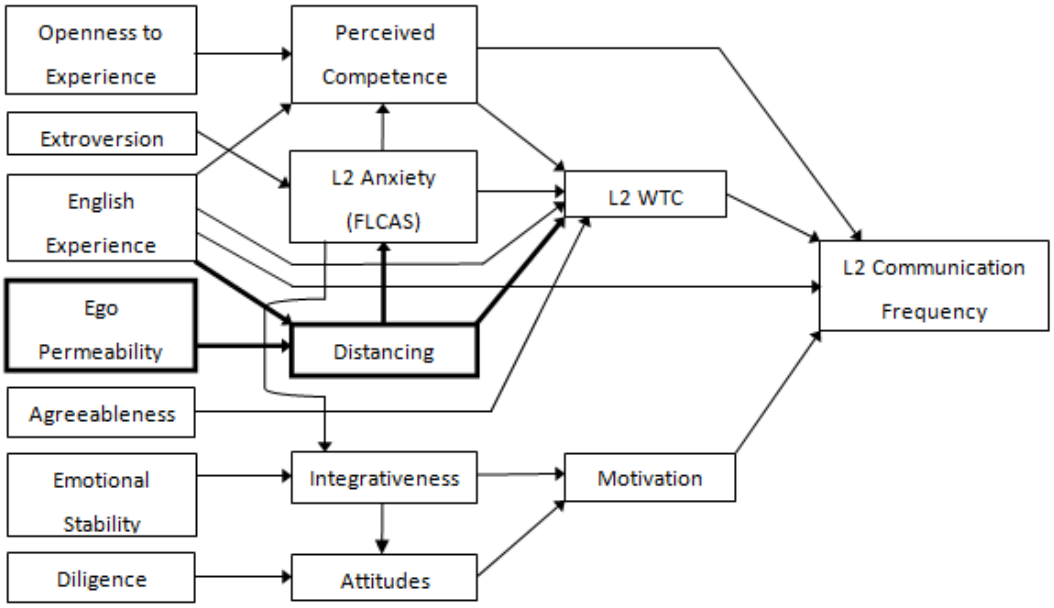


Figure 7. Proposed Model of L2 Willingness to Communicate. Adapted from "Personality, Attitudes, and Affect as Predictors of Second Language Communication," by P. D. MacIntyre and C. Charos, 1996, *Journal of Language and Social Psychology, 15*(1), p. 12. Copyright 1996 by *Journal of Language and Social Psychology.*

Perceived Distance. Perceived Distance was then added as a higher-level construct. Ego permeability should affect distancing, for a low degree of ego permeability inhibits a learner's assuming or perceiving any degree of psychological distance; in short, such learners are limited mainly to their own persona. On the other hand, learners with a high degree of ego permeability might be able to assume and perceive larger degrees of distance as they adopt different personae. Similarly, context also influences distancing because different situations

examination. In Yashima's model, L2 communicative confidence and L2 proficiency are identified by two indicators, respectively, and L2 WTC was split into two parcels that functioned as indicators. However, Kline (2005) suggested that at least three indicators (variables) be used to identify latent variables, and Kenny (1979) put it this way: "Two *might* be fine, three is better, four is best, and anything more is gravy" (p. 143; emphasis in original).

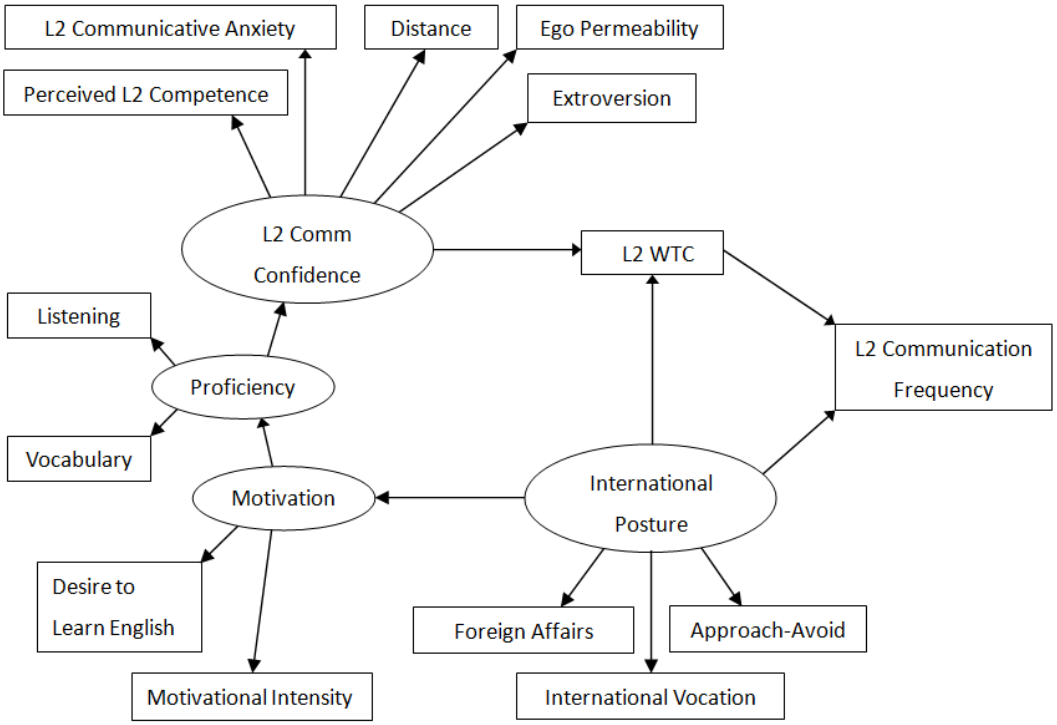
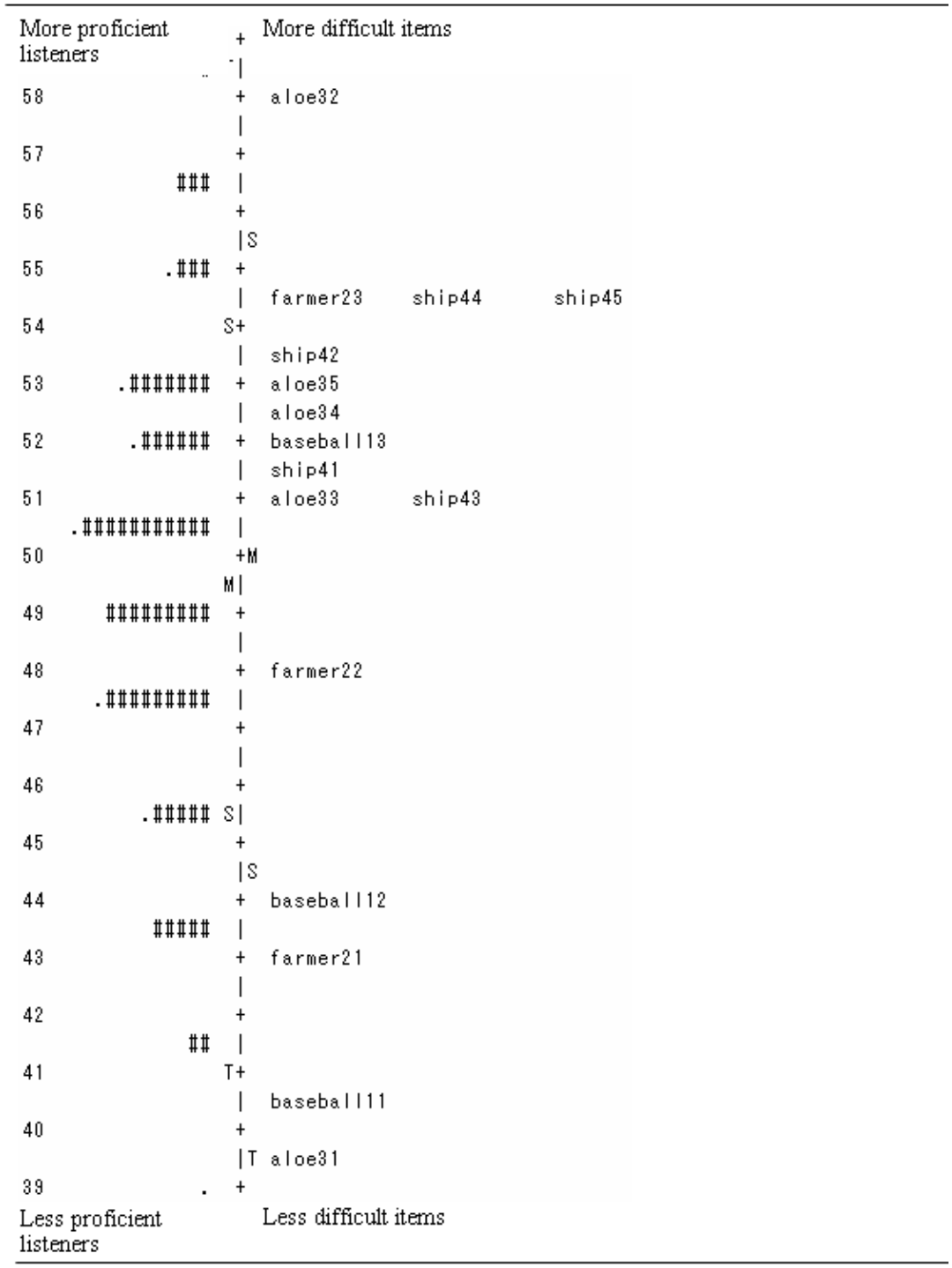


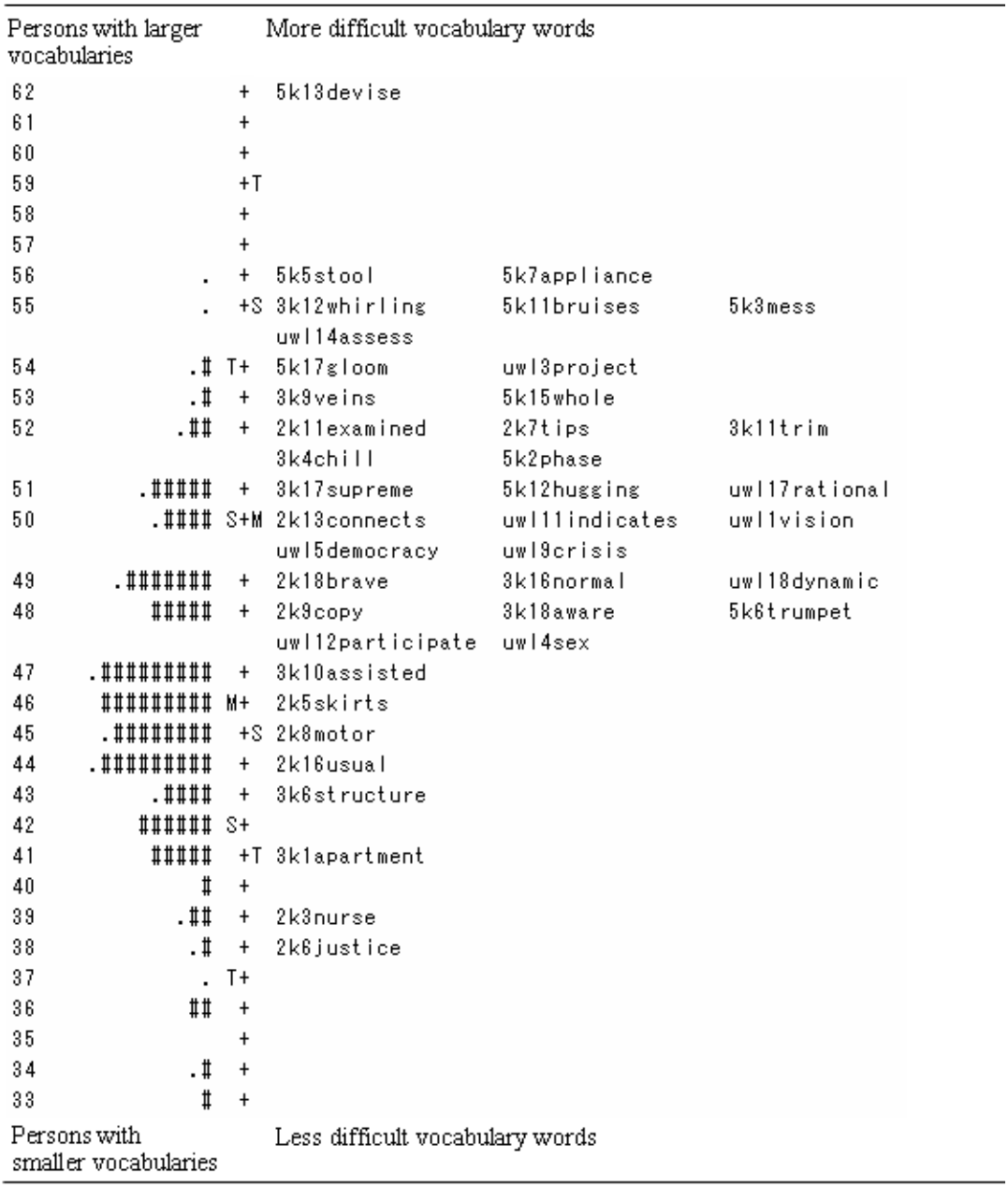
Figure 8. Proposed L2 Communication Model based on Yashima et al. (2004).

Although the models are similar, MacIntyre's included context and personality (the Big 5 personality factors) as an underlying layer. Yashima, however, addressed the L2 side more heavily by including International Posture



Note. M = mean, S = one standard deviation, T = two standard deviations

Figure 9. Rasch item-person map of the Listening Proficiency measure.

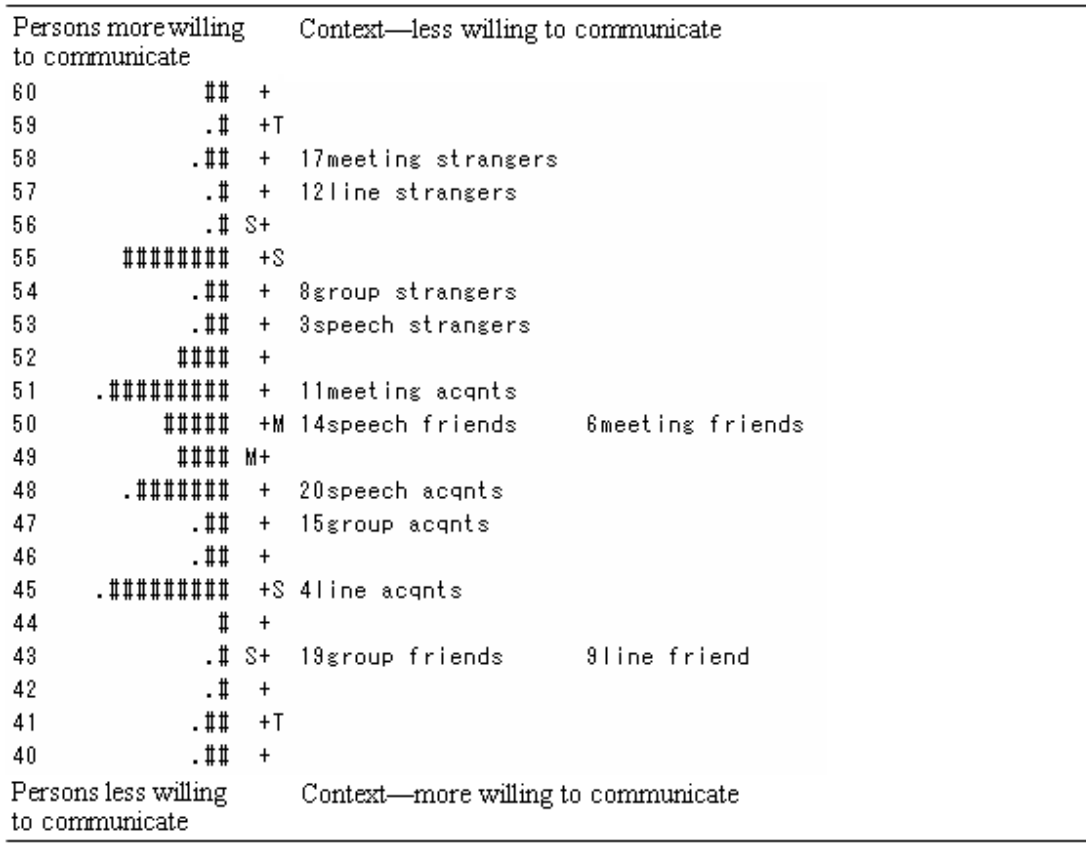


Note. M = mean, S = one standard deviation, T = two standard deviations

Figure 10. Item-person map for the Breadth of Vocabulary Knowledge instrument.

expected with 5,000-word list items comprising the more difficult items, the 3,000-word list items and UWL items in the middle, and the 2,000-word list items being the easiest.

The breadth of the L2 WTC items was adequate as the difficulty estimates covered a span of 14.57 CHIPS (43.25–57.82). The person ability estimates, however, ranged from 29.37 to 67.27, a span of 37.90 CHIPS, so the coverage was considered adequate. The difference between the item difficulty and person ability means was 1.20 CHIPS (48.80 – 50.00), which indicates that the instrument was appropriate for this sample.



Note. M = mean, S = one standard deviation, T = two standard deviations

Figure 11. Item-person map for the L2 WTC instrument.

Frequency of L2 Communication

On the 5-item Frequency of L2 Communication instrument, the 7-point Likert scale functioned poorly, as the thresholds were disordered in the first

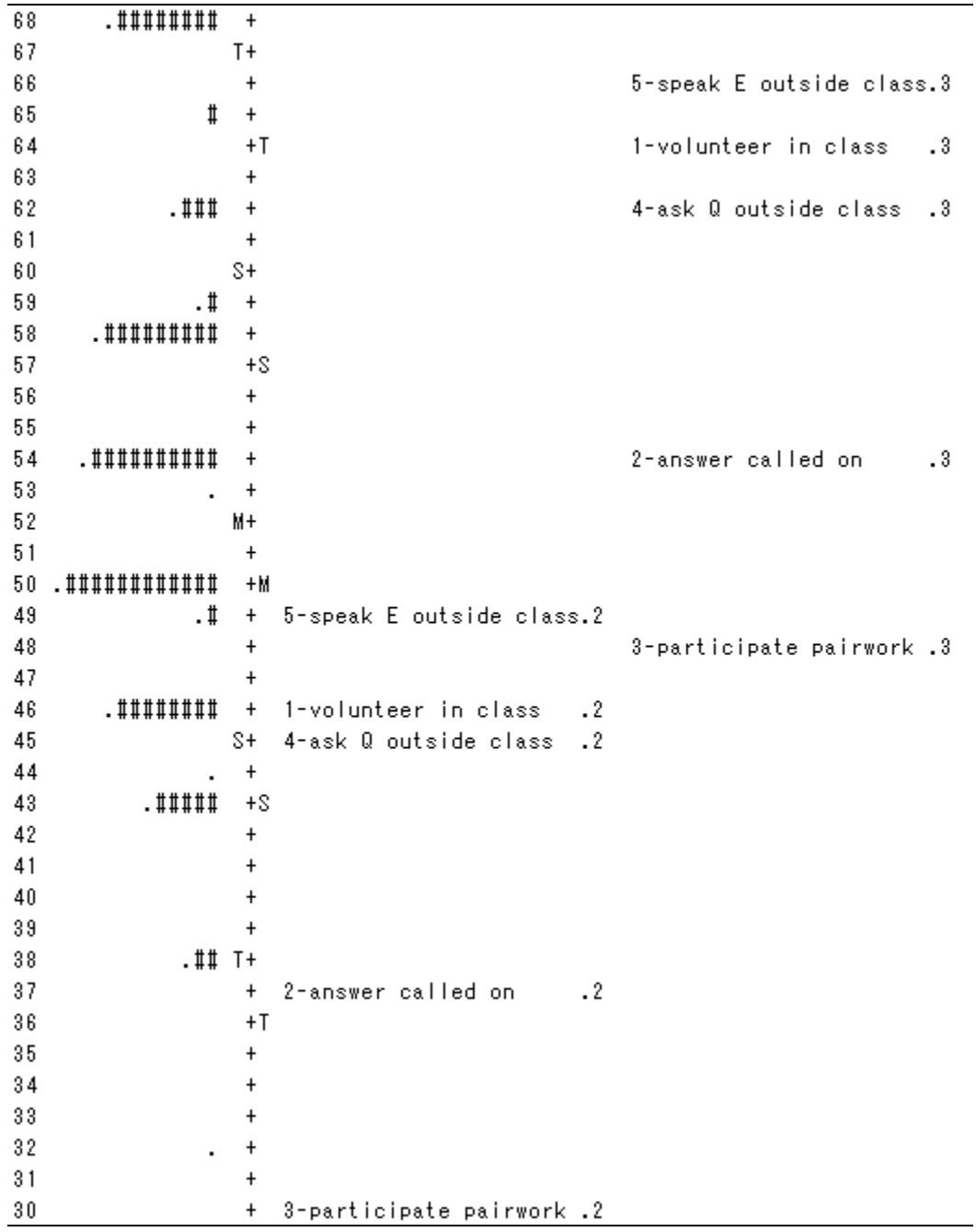
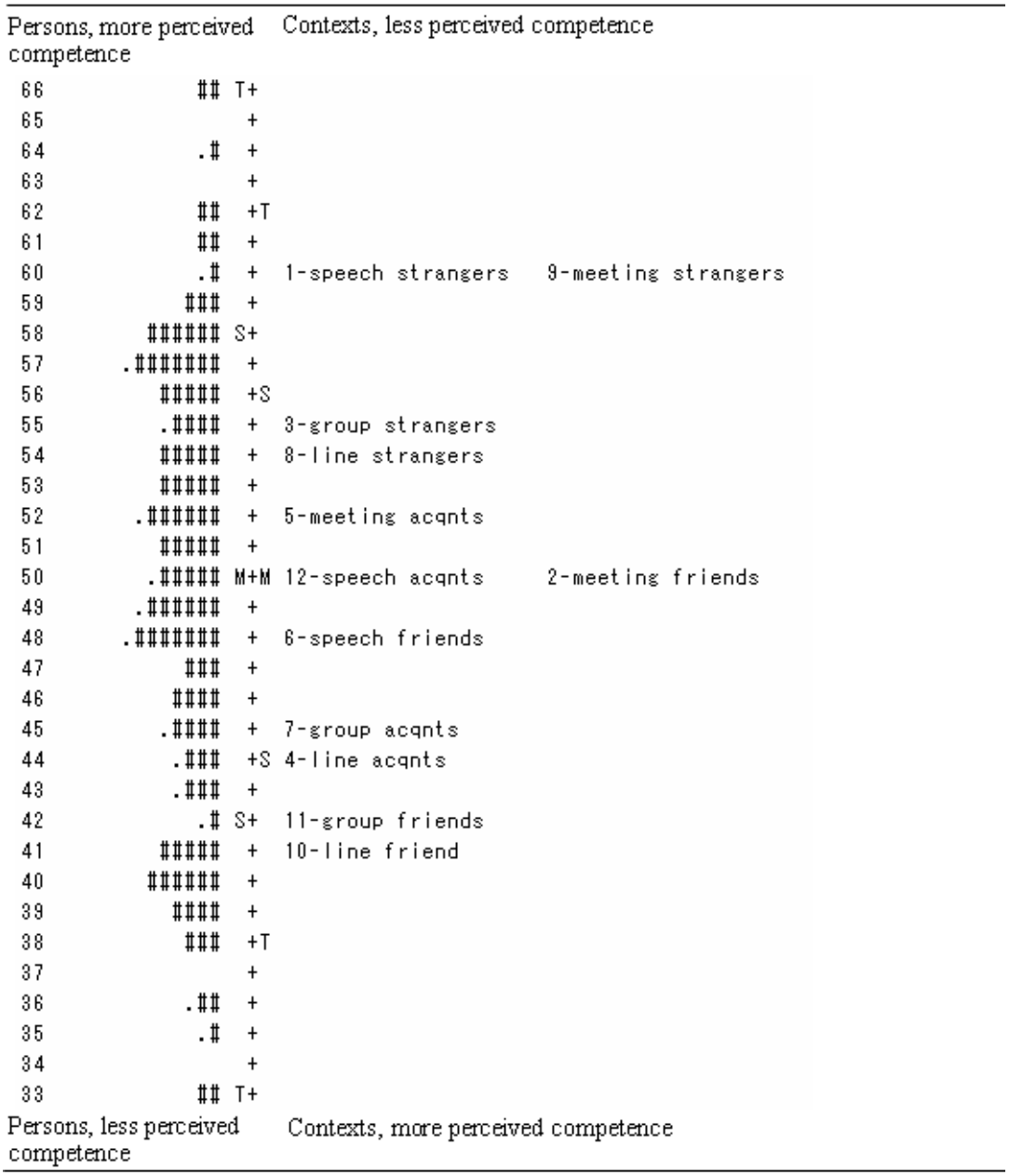


Figure 12. Item-person map with Rasch-Thurstone thresholds of the Frequency of L2 Communication instrument.

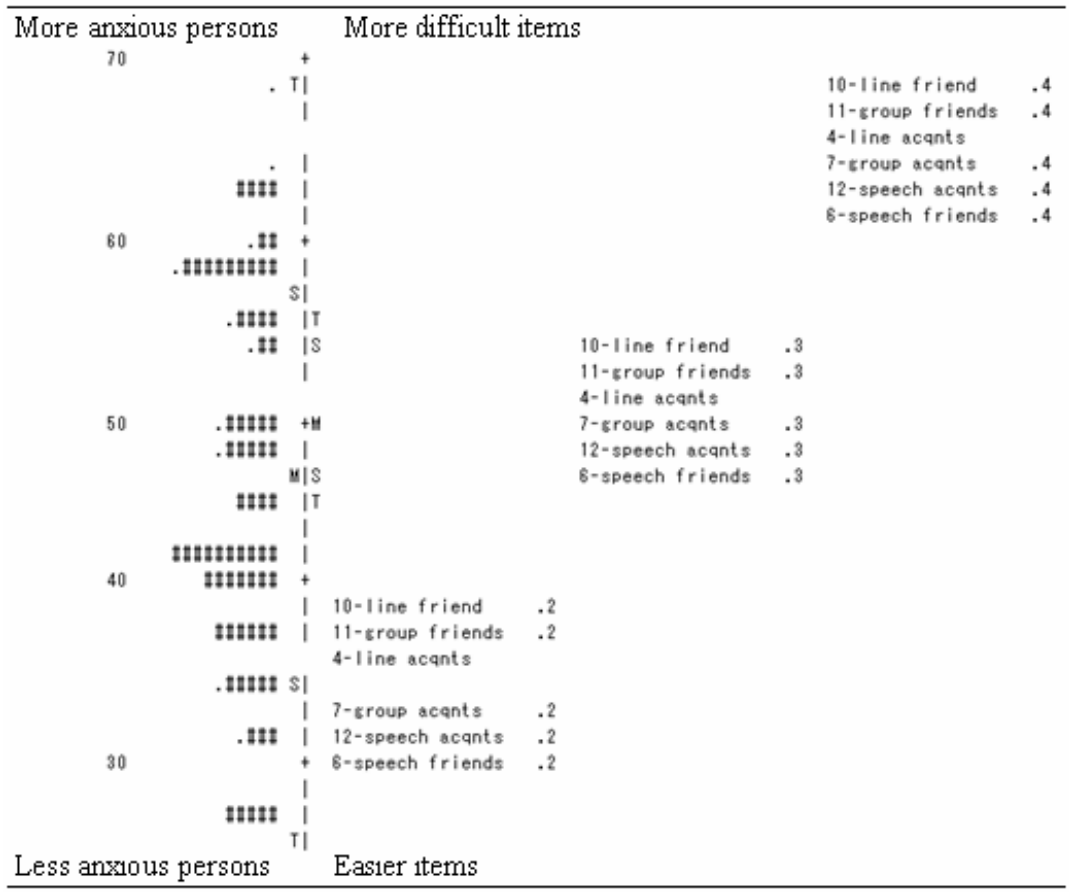
reliability estimate of .53, person separation of 1.07, and a person strata statistic of 1.76 were low. All five items exhibited adequate point-measure correlations.

speaking with a group of friends were viewed as contexts in which participants would have the highest levels of perceived competence.



Note. M = mean, S = one standard deviation, T = two standard deviations

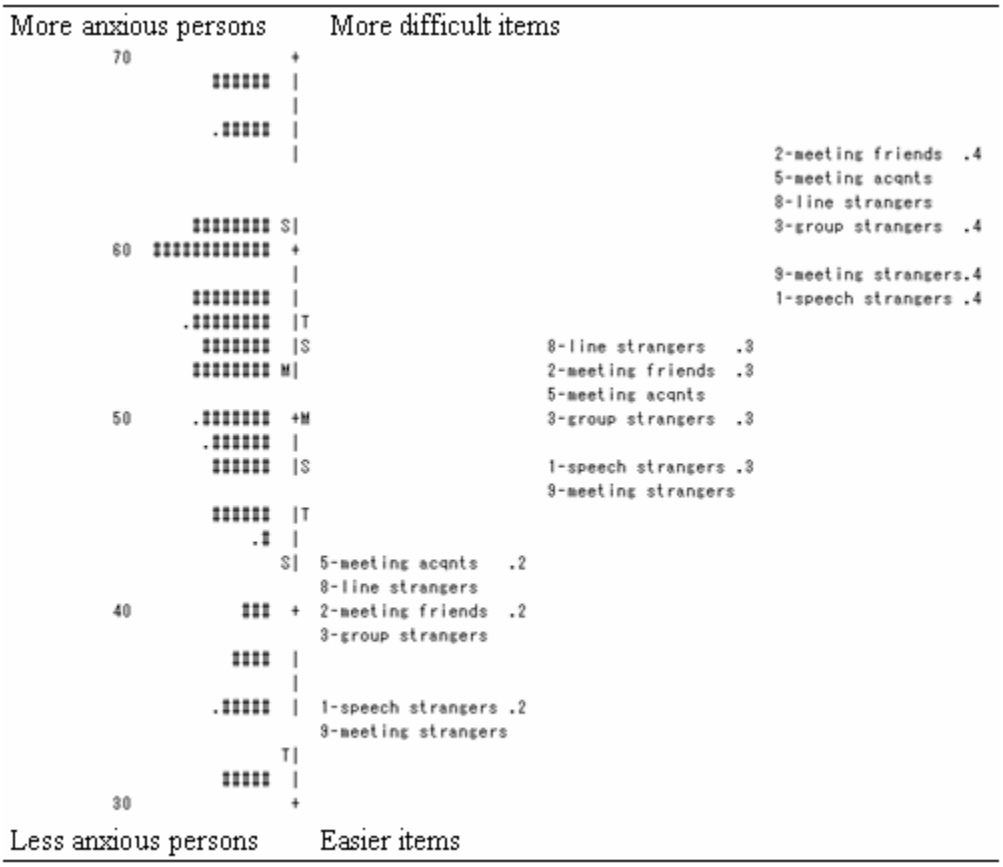
Figure 13. Item-person map for the Perceived Competence in English instrument.



Note. M = mean; S = 1 *SD*; T = 2*SD*.

Figure 14. Item-person map for the L2 Communicative Anxiety, Friend / Acquaintance Anxiety subscale.

In subsequent analyses of the MacIntyre and Charos (1996) model, the estimates of Rasch person measures from the two subscales were averaged and the L2 Communicative Anxiety variable treated as a measured variable.

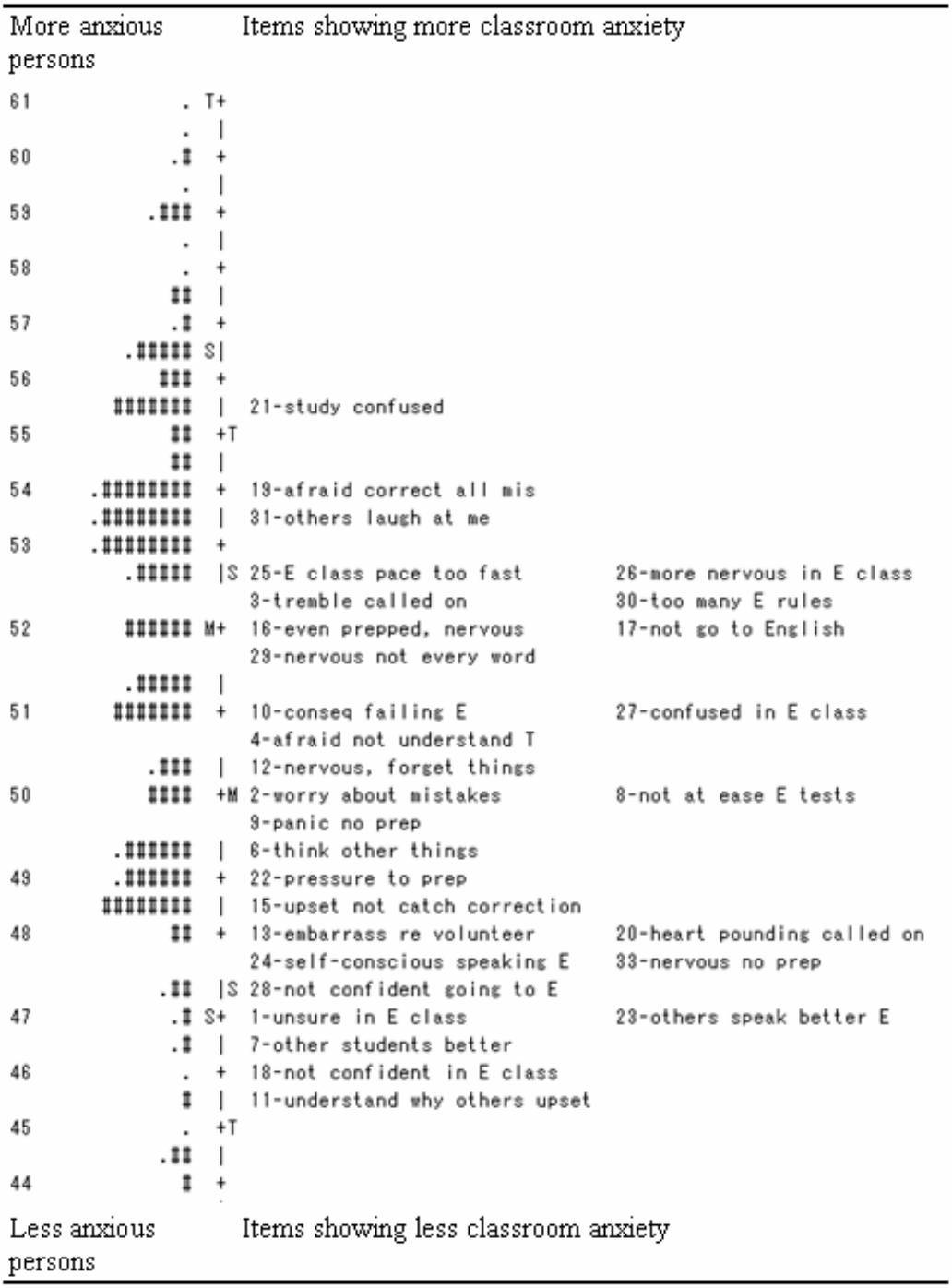


Note. M = mean; S = 1 *SD*; T = 2*SD*.

Figure 15. Item-person map for the L2 Communicative Anxiety, Stranger Anxiety subscale.

Foreign Language Classroom Anxiety Survey

The second anxiety instrument was the Foreign Language Classroom Anxiety Survey (FLCAS; Horwitz et al., 1986), a 33-item instrument that used a 7-point Likert scale. For the 33-item instrument, the average inter-item correlation was adequate (r = .35), and internal reliability was high (Cronbach's α = .95). However, Items 2, 5, 6, 7, and 8 correlated poorly with the scale with average inter-item correlations of .27, .27, .16, .23, and .25, respectively, so these five items were treated as candidates for deletion pending the results of the following analyses.

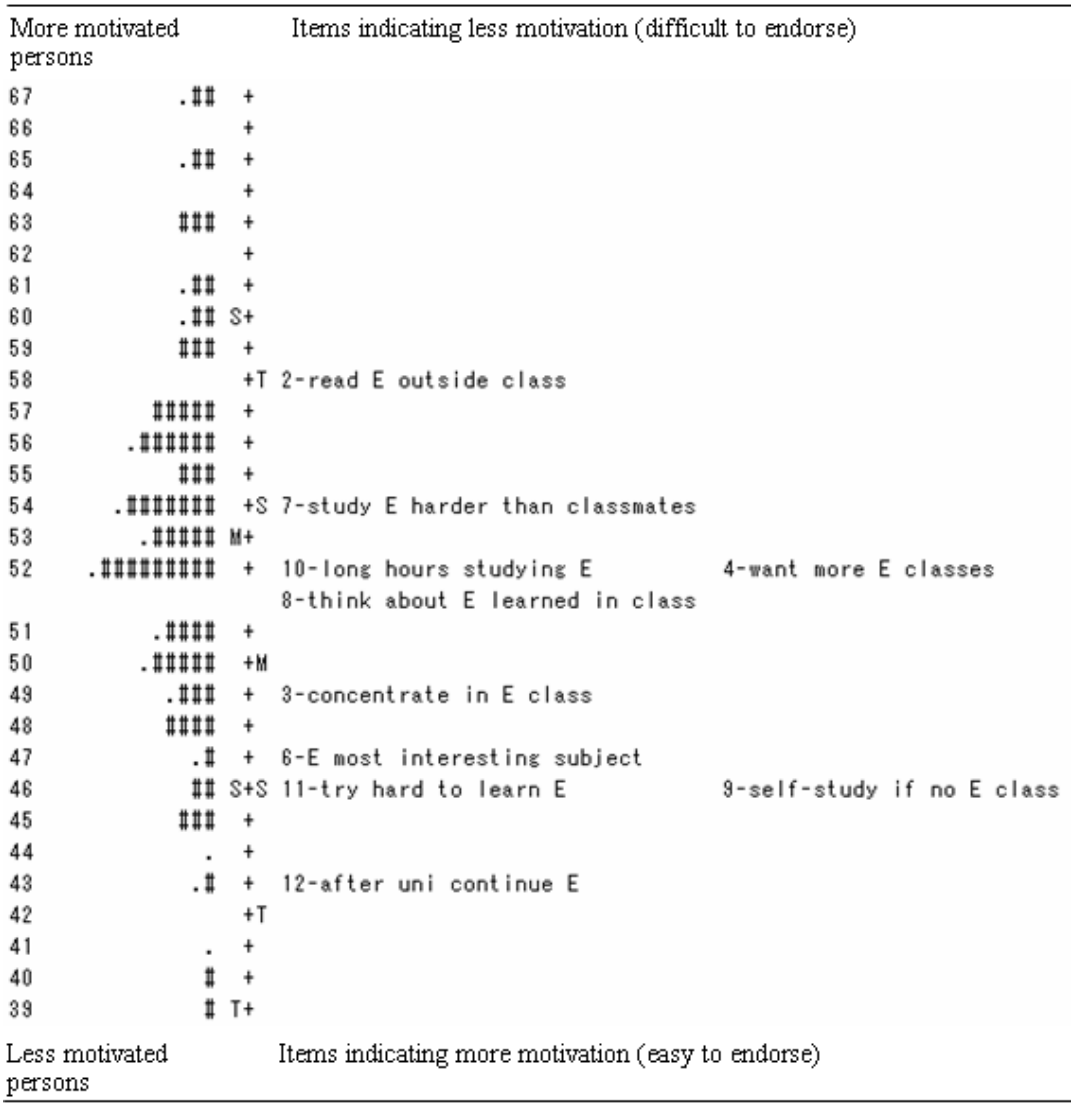


Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 16. Item-person response map for the FLCAS.

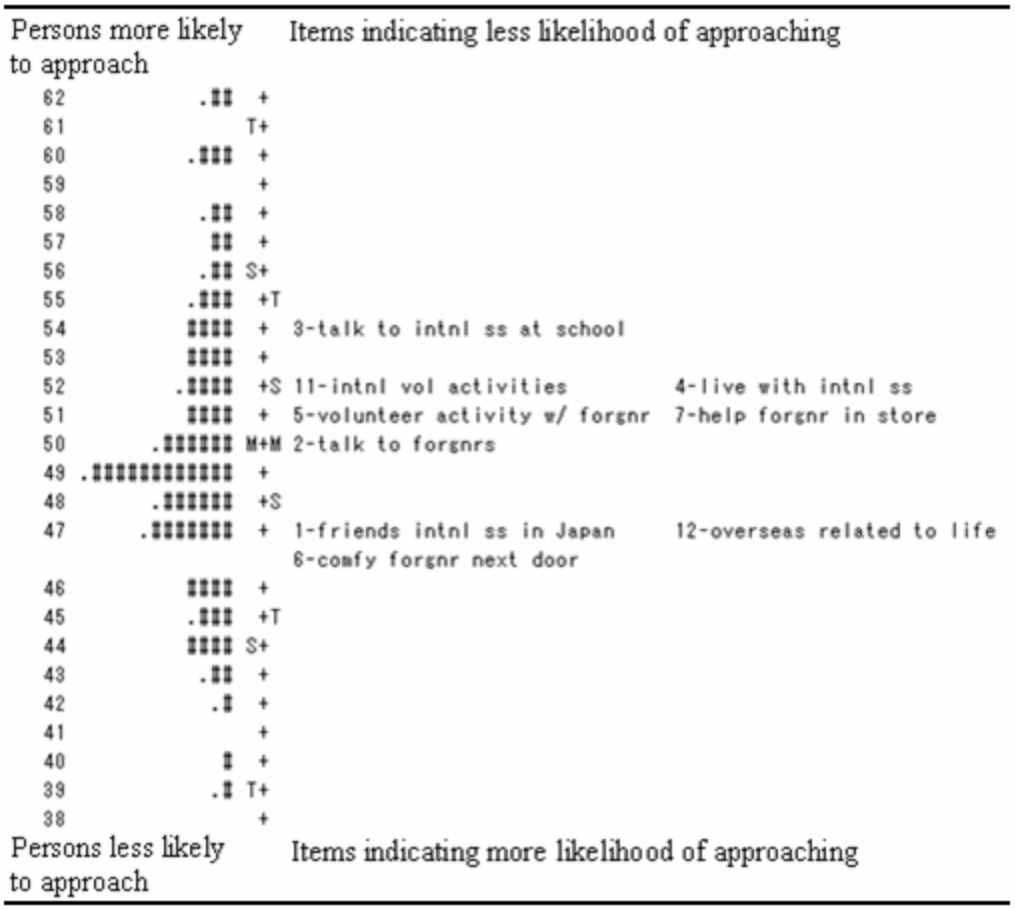
reliability estimate of .99, item separation of 8.86, a person reliability estimate of .86, person separation of 2.45, and thus a person strata statistic of 3.60.

As shown in Figure 17, the Motivation instrument exhibited reasonable coverage of the persons. Items were generally positioned as expected with several items



Note. M = mean, S = one standard deviation, T = two standard deviations

Figure 17. Item-person response map for the Motivation instrument.



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 18. Item-person map for the Intergroup Approach-Avoidance Tendency subscale.

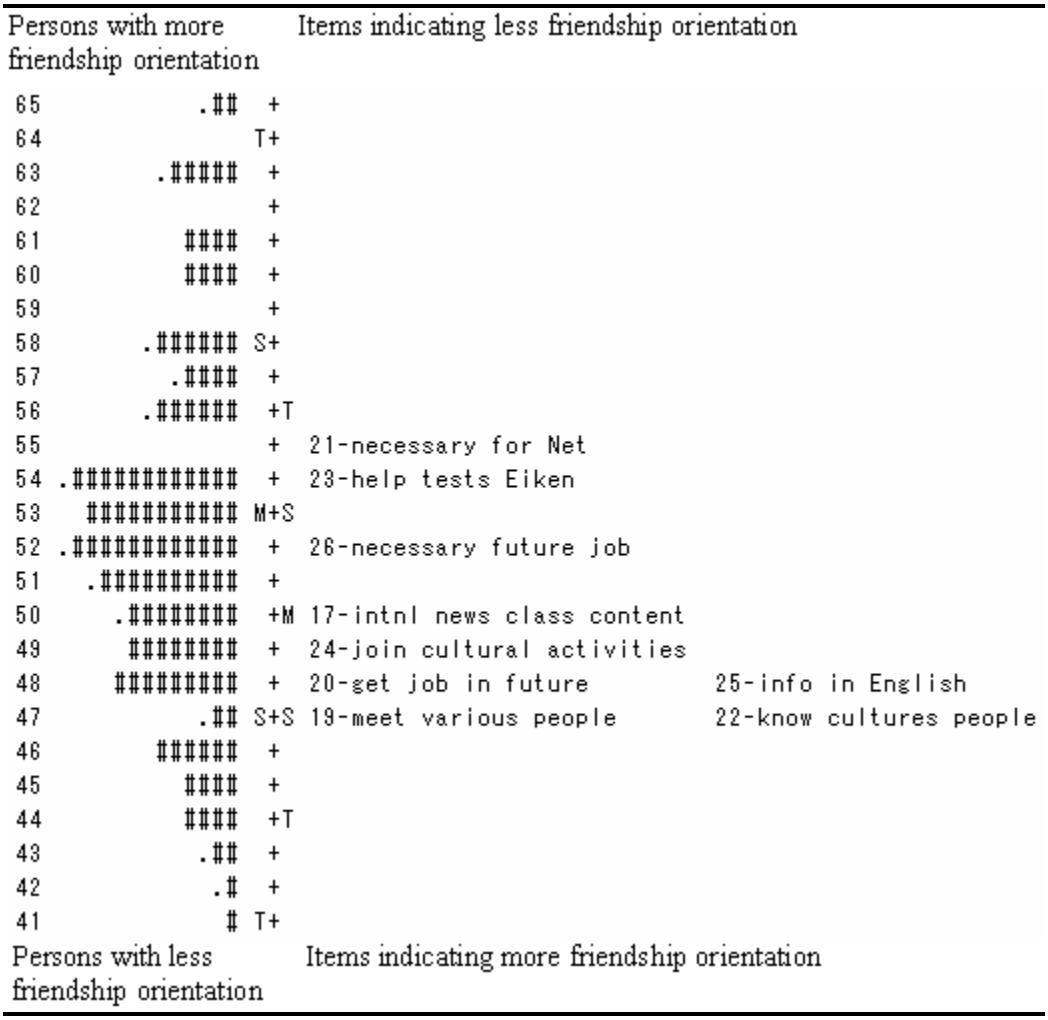
Table 32

Category Function Statistics for the Revised Intercultural Friendship Orientation Subscale

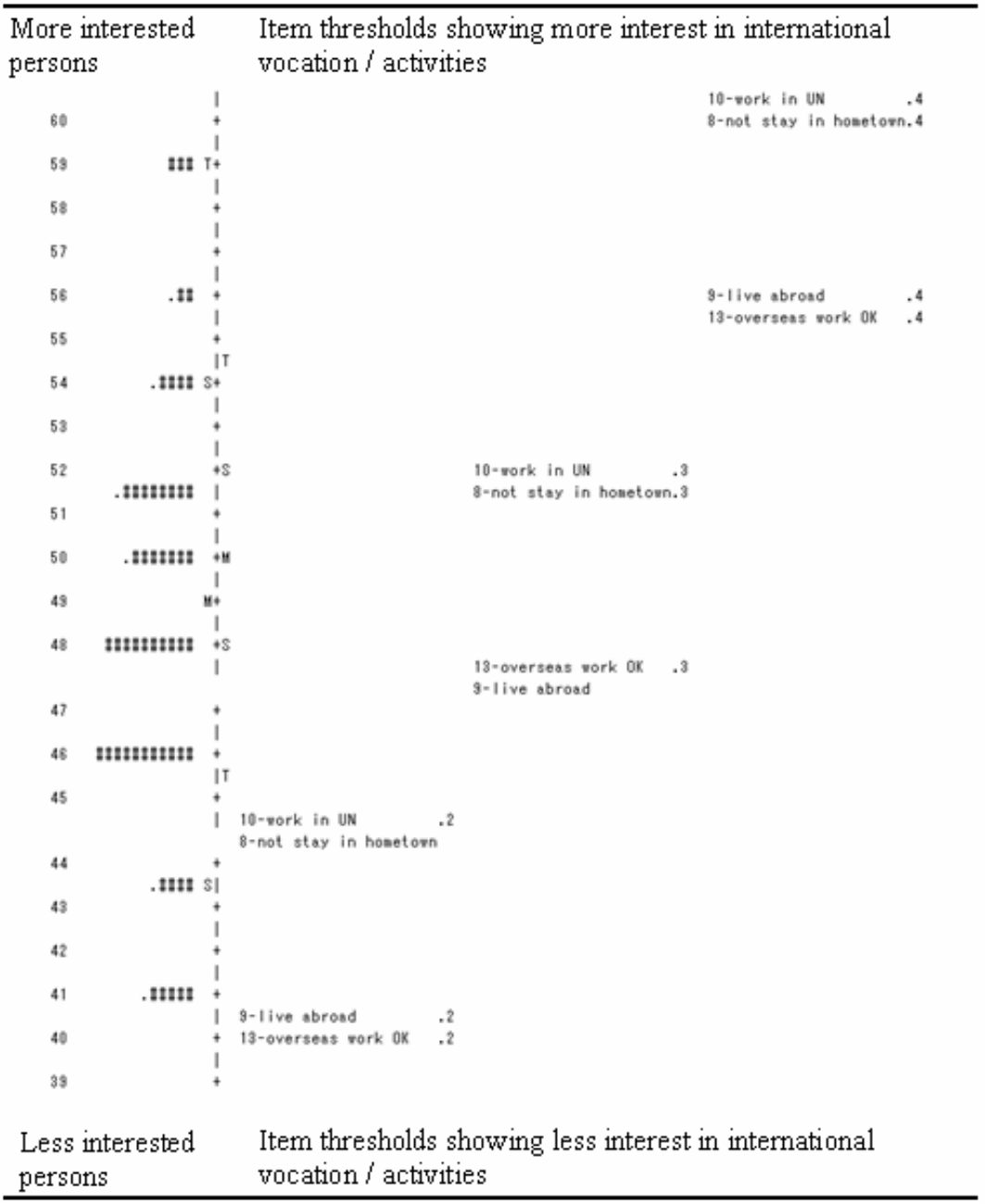
Cultural Friendship Orientation	Count (%)	Avg Measure	Exp Measure	Outfit MNSQ	Structure Measure	*SE*
Little interest	226 (9.96)	-4.28	-5.52	1.38	(none)	
Slight interest	637 (28.07)	-1.55	-1.10	.93	-8.00	.37
Some interest	888 (39.14)	3.07	3.36	.89	-.79	.24
Strong interest	518 (22.83)	9.41	8.85	.93	8.80	.27

Note. N = 252; Avg Measure = average measure; Exp Measure = expected measure.

the spectrum was more concerned with instrumental motivation such as using the Internet (Item 21, *A reason to study English is that it is necessary for using the Internet*), and thus was only tangentially related to the notion of friendship. Based on my teaching experience, a reasonable explanation is that Japanese students have seldom used English on the Internet and avoid doing so unless absolutely necessary. The range of the Intercultural Friendship Orientation subscale was 8.38 CHIPS (46.97-55.35). The subscale showed some redundancy and did not cover the tails of



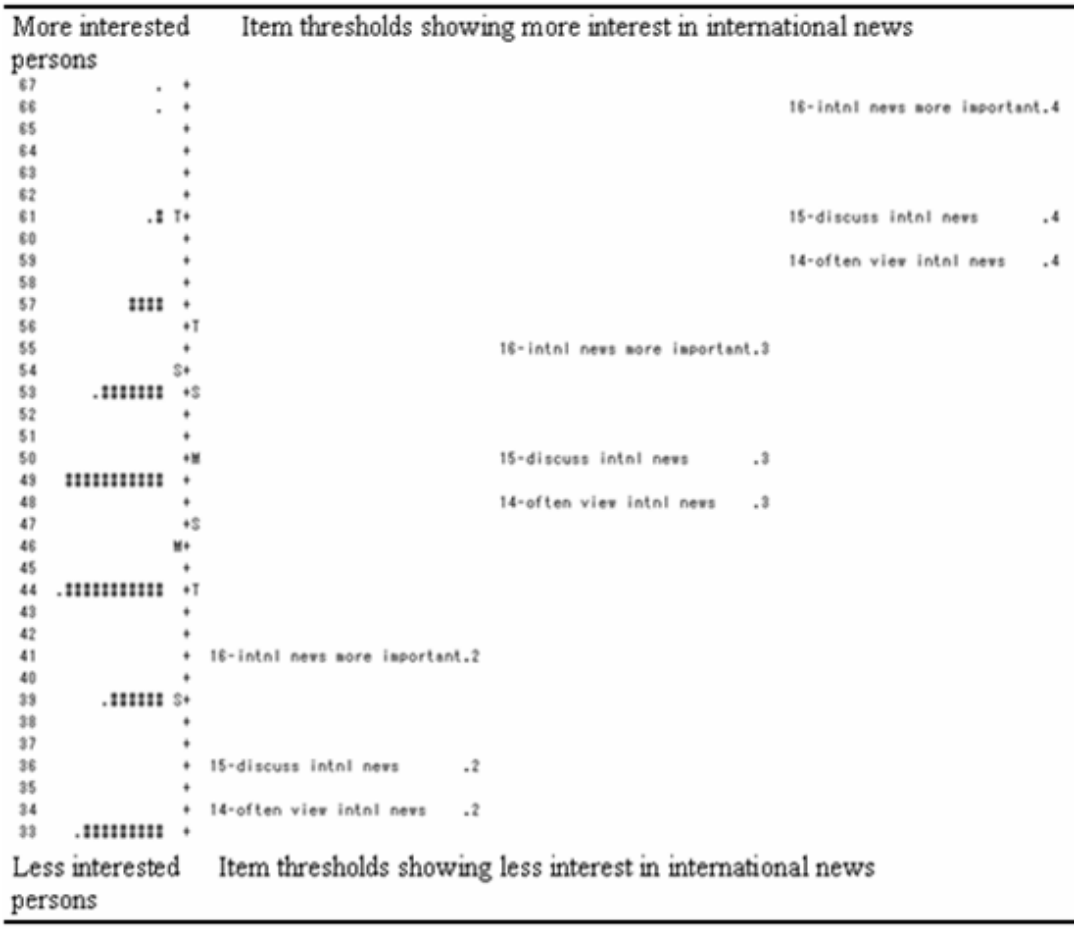
Note. M = mean; S = one standard deviation; T = two standard deviations.
Figure 19. Item-person map for the Intercultural Friendship Orientation Subscale.



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 20. Item-person map for the Interest in International Vocation/Activities subscale.

accounted for 55.5% of the variance, and the unexplained variance in the first residual component accounted for 1.5 units (16.6%) of the total variance.



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 21. Item-person map for the Interest in Foreign Affairs subscale.

A summary of the International Posture subscales and the overall International Posture instrument is shown in Table 39. The number of items decreased from 26 to 25 with the deletion of Item 18, and the analyses yielded reconfigurations of several subscales. Items 11 and 12 were moved from the Interest in International Vocation/Activities subscale to the Intergroup Approach-Avoidance subscale, and Item 17 was moved from the Interest in International News subscale to the Interest in International Vocation/Activities subscale.

Table 40 (continued)

Summary of Fit Indices for 2-Factor and 4-Factor International Posture Models

	2-factor	4-factor
Model χ^2		
Model estimation method	ML (Robust)	ML (Robust)
Independence model χ^2 (*df* = 136, 276)	1465.847	2288.288
Satorra-Bentler scaled χ^2 (*df* = 118, 248)	232.315	528.861
Probability value for the χ^2 statistic	.000	.000
χ^2/df ratio	1.969	2.133
Fit Indices		
Comparative fit index (CFI)	.914	.860
Incremental fit index (IFI)	.915	.862
Standardized root mean square residual (SRMR)	(.062)	(.070)
Root mean-square error of approximation (RMSEA)	.062	.067
RMSEA 90% confidence interval	.050-.074	.059-.075

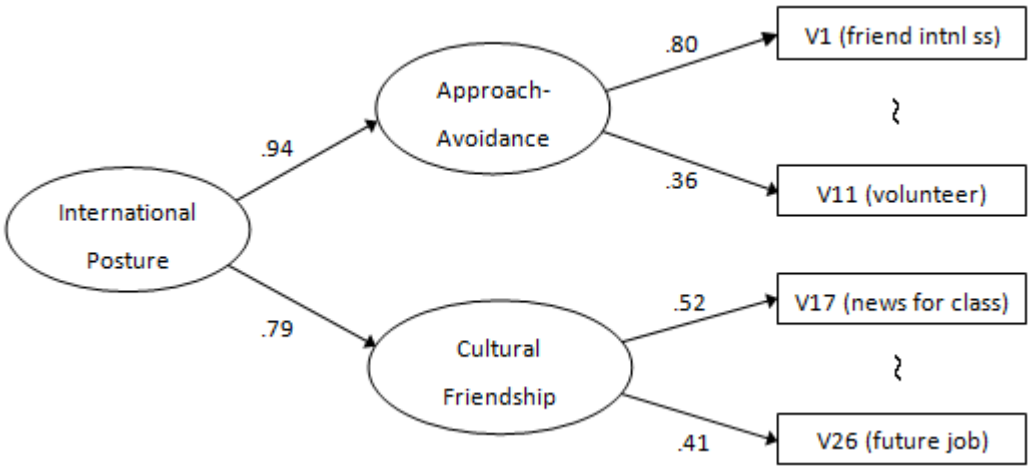
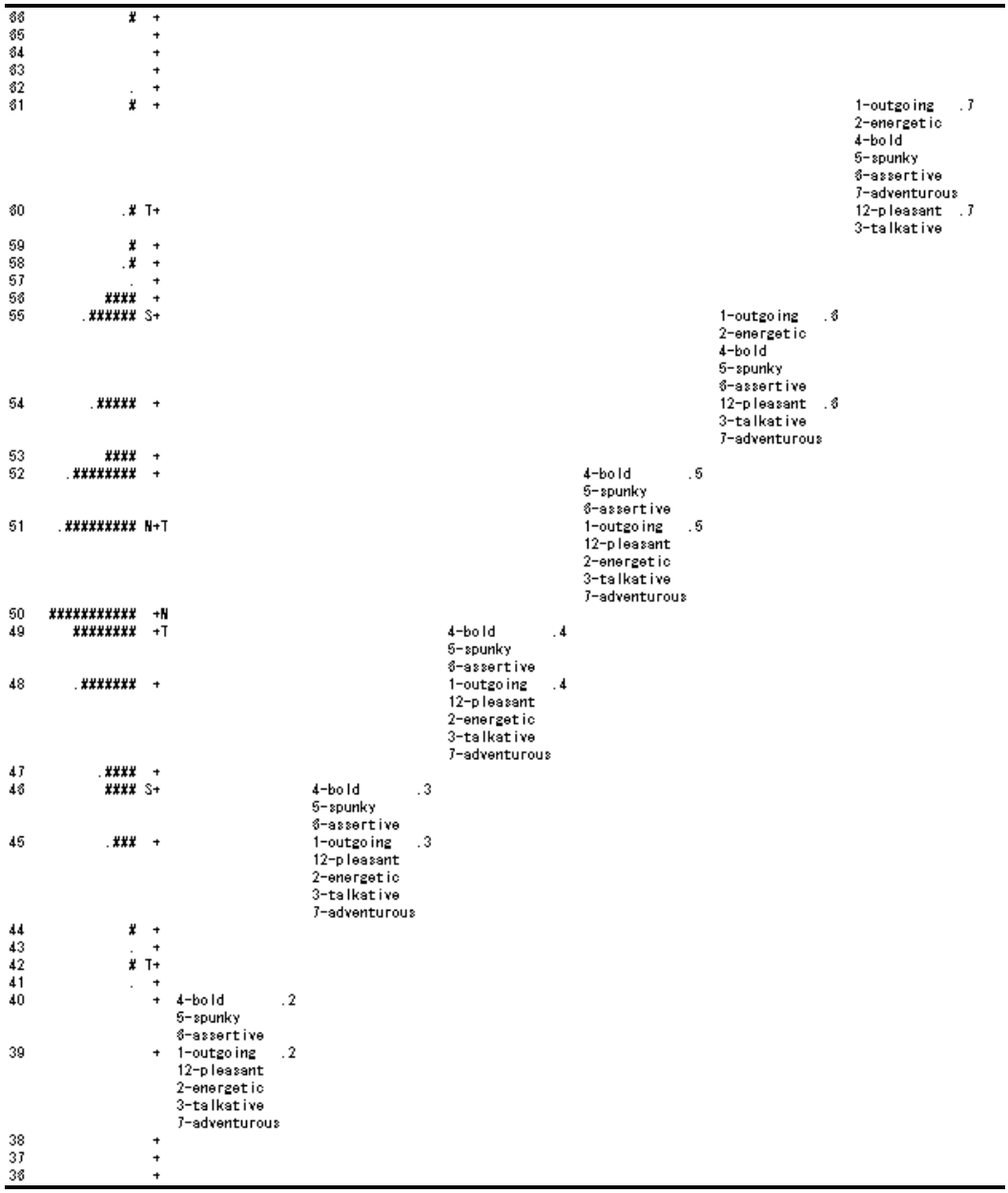


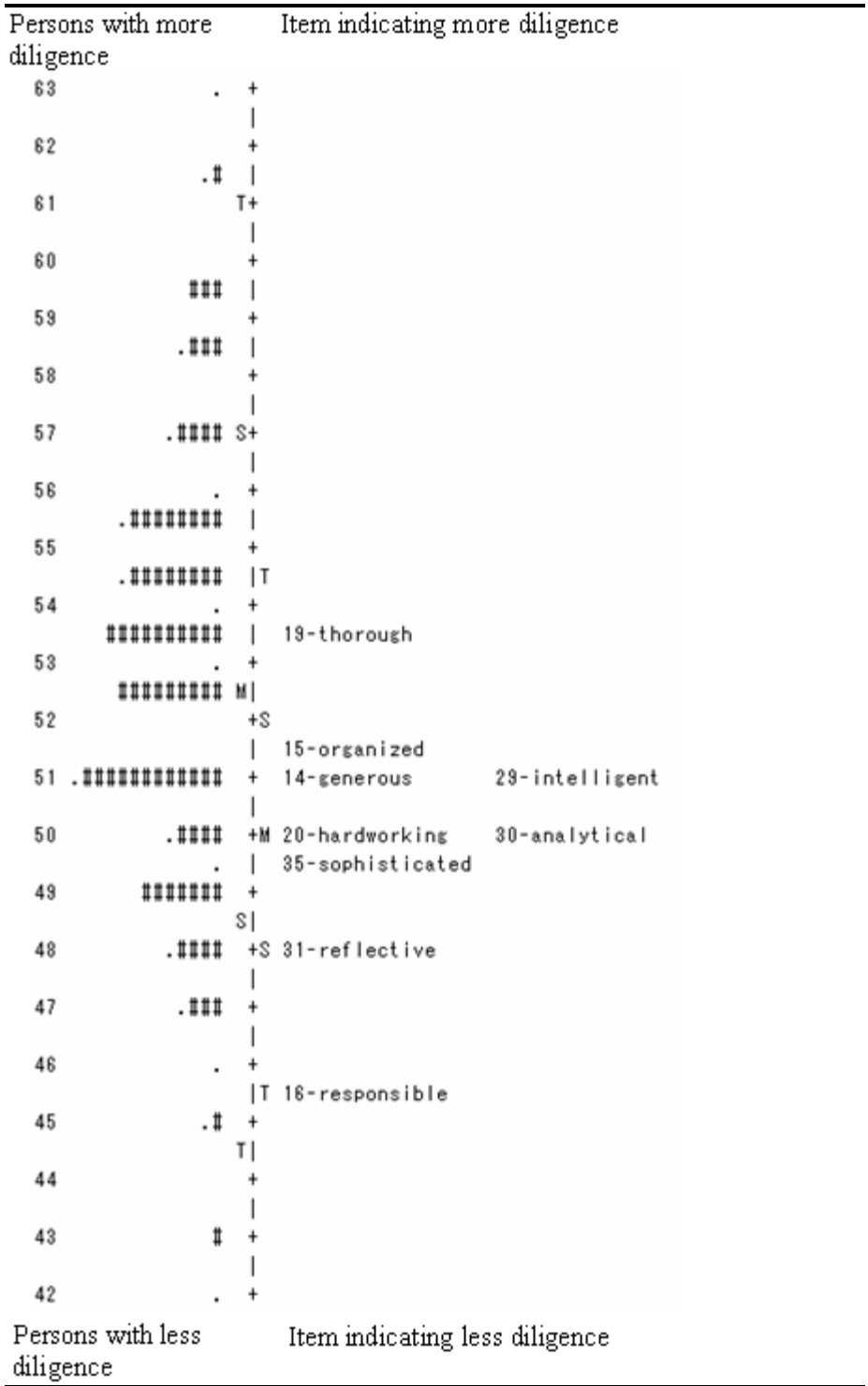
Figure 22. Standardized solution of the 2-factor International Posture instrument.

In addition, the 3-factor model of International Posture used in Yashima et al. (2004) was analyzed and yielded the following fit statistics: χ^2 (87, *N* = 252) = 281.236 ($p < .01$), CFI = .847, IFI = .849, RMSEA = .095, and 90% C.I. = .082-.107. These values indicate fit that is very similar to the 4-factor model and inferior to the 2-factor model.

inadequate separation. Combining categories ultimately yielded four categories with proper ordering, good fit, and adequate separation (Table 44).

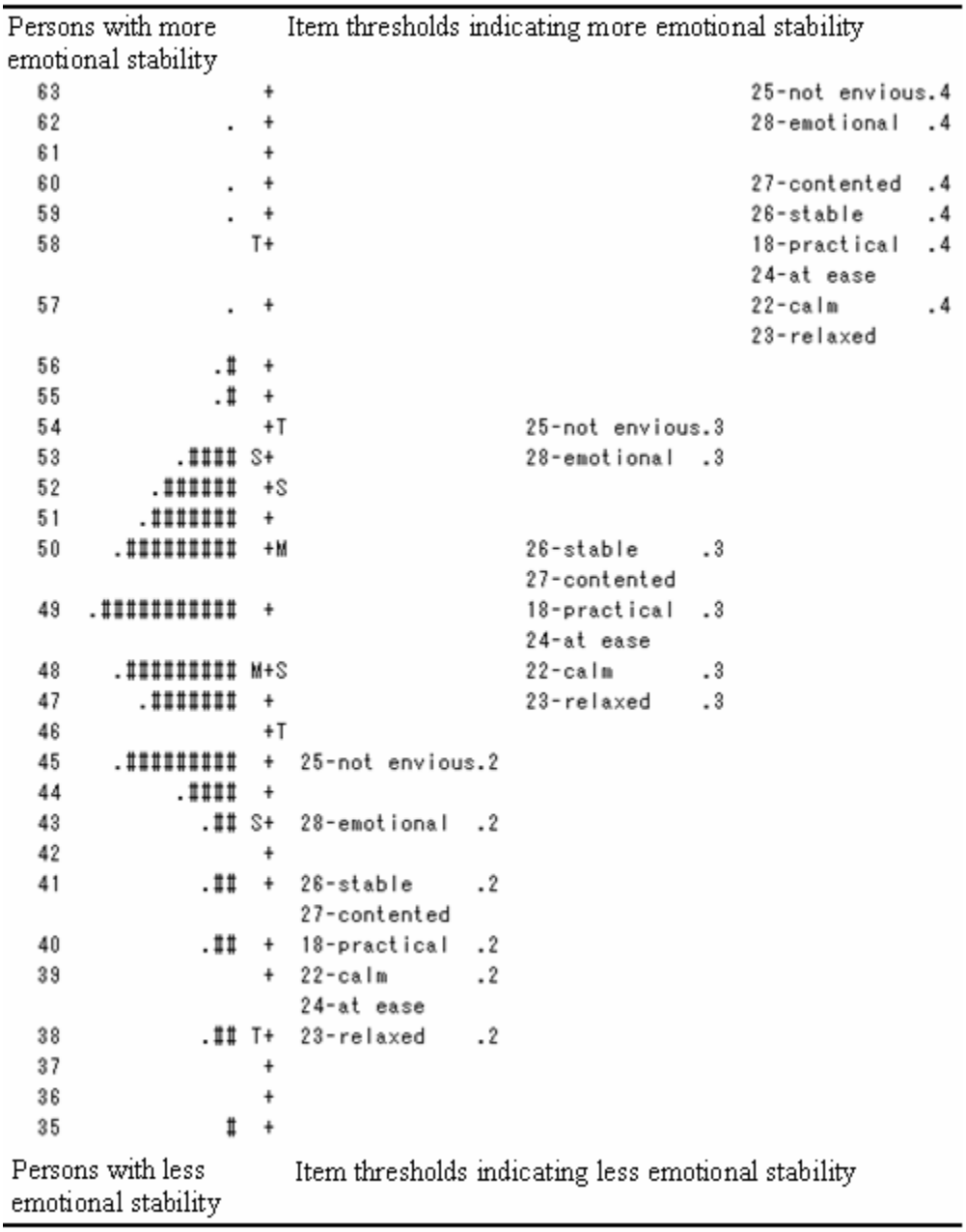


Note. M = mean, S = one standard deviation, T = two standard deviations.
Figure 23. Item-person map with Rasch-Thurstone thresholds for the Extroversion subscale.



Note. M = mean, S = one standard deviation, T = two standard deviations.

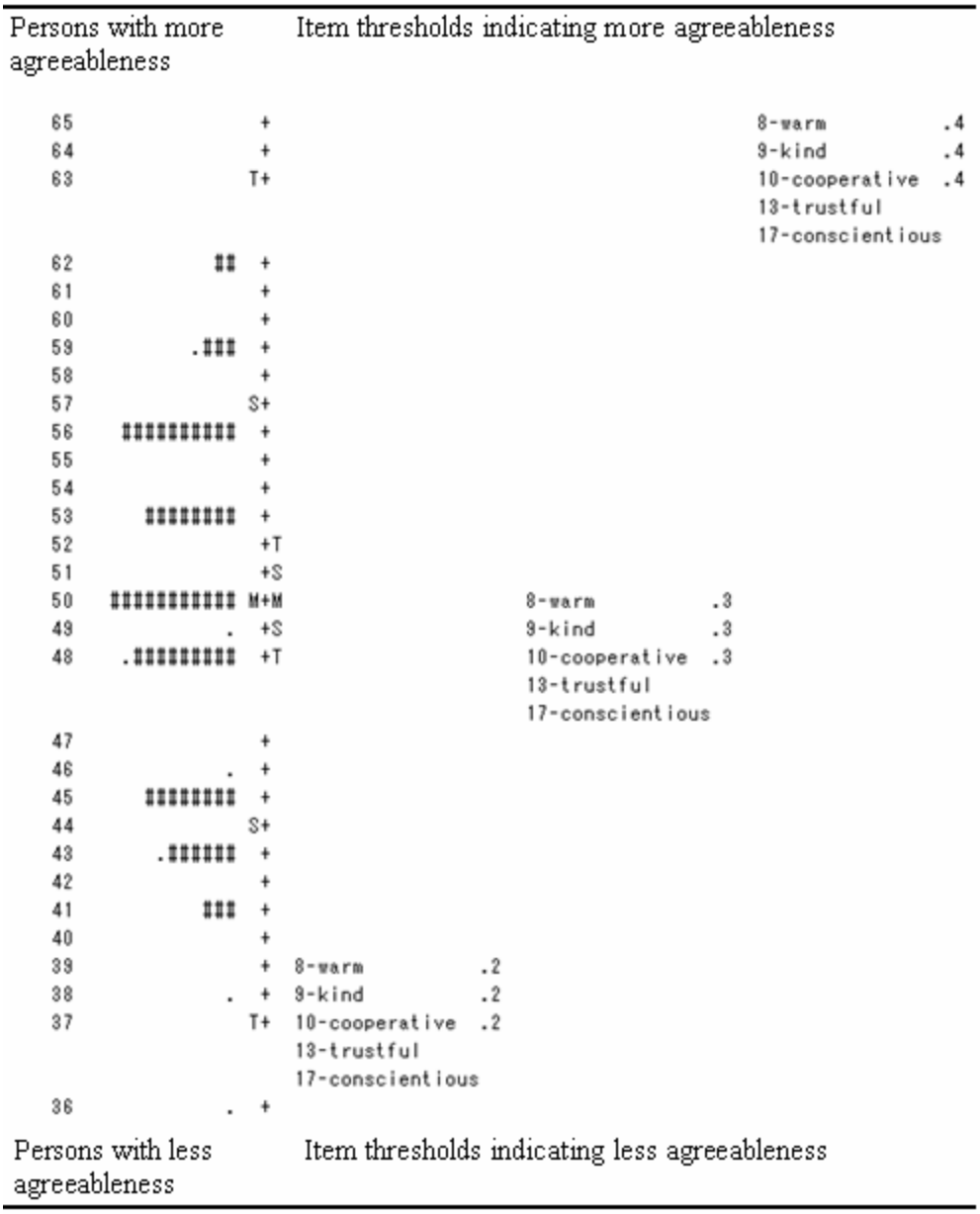
Figure 24. Item-person map for the Diligence subscale.



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 25. Item-person map with Rasch-Thurstone thresholds for the Emotional Stability subscale.

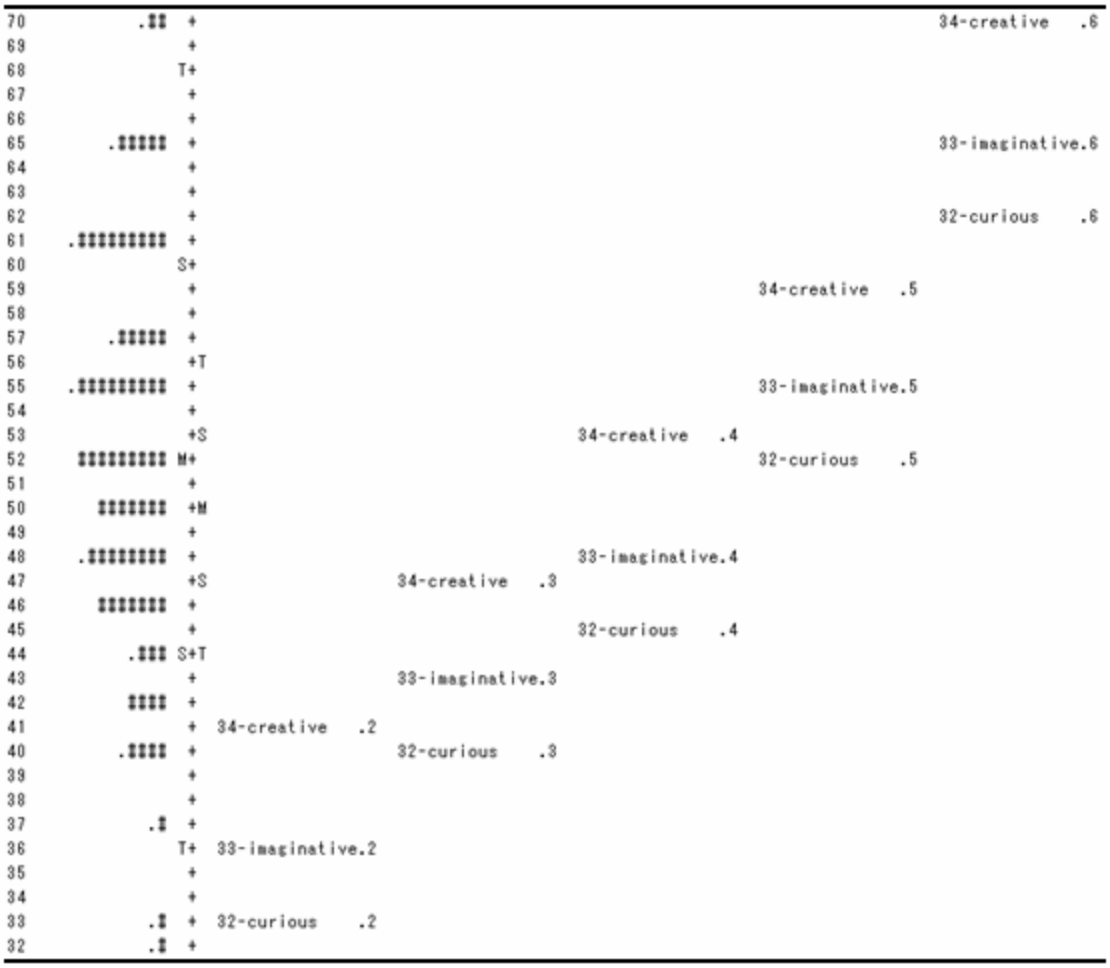
Agreeableness. Next, category function was investigated for the revised Agreeableness subscale (Items 8-10, 13, and 17) using WINSTEPS; the initial



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 26. Item-person map with Rasch-Thurstone thresholds for the Agreeableness subscale.

Openness to Experience. Finally, on the *Openness to Experience* subscale (Items 11, 32-34), WINSTEPS yielded adequate category function with a series of hills with properly ordered difficulty. However, Category 1 was rarely used, and a



Note. M = mean, S = one standard deviation, T = two standard deviations.

Figure 27. Item-person map with Rasch-Thurstone thresholds for the Openness to Experience subscale.

A summary of the subscales is shown in Table 52. Although all five subscales originally had seven items, the results from these data indicated that the deletion of two items and the realignment of the items on the subscales were appropriate.

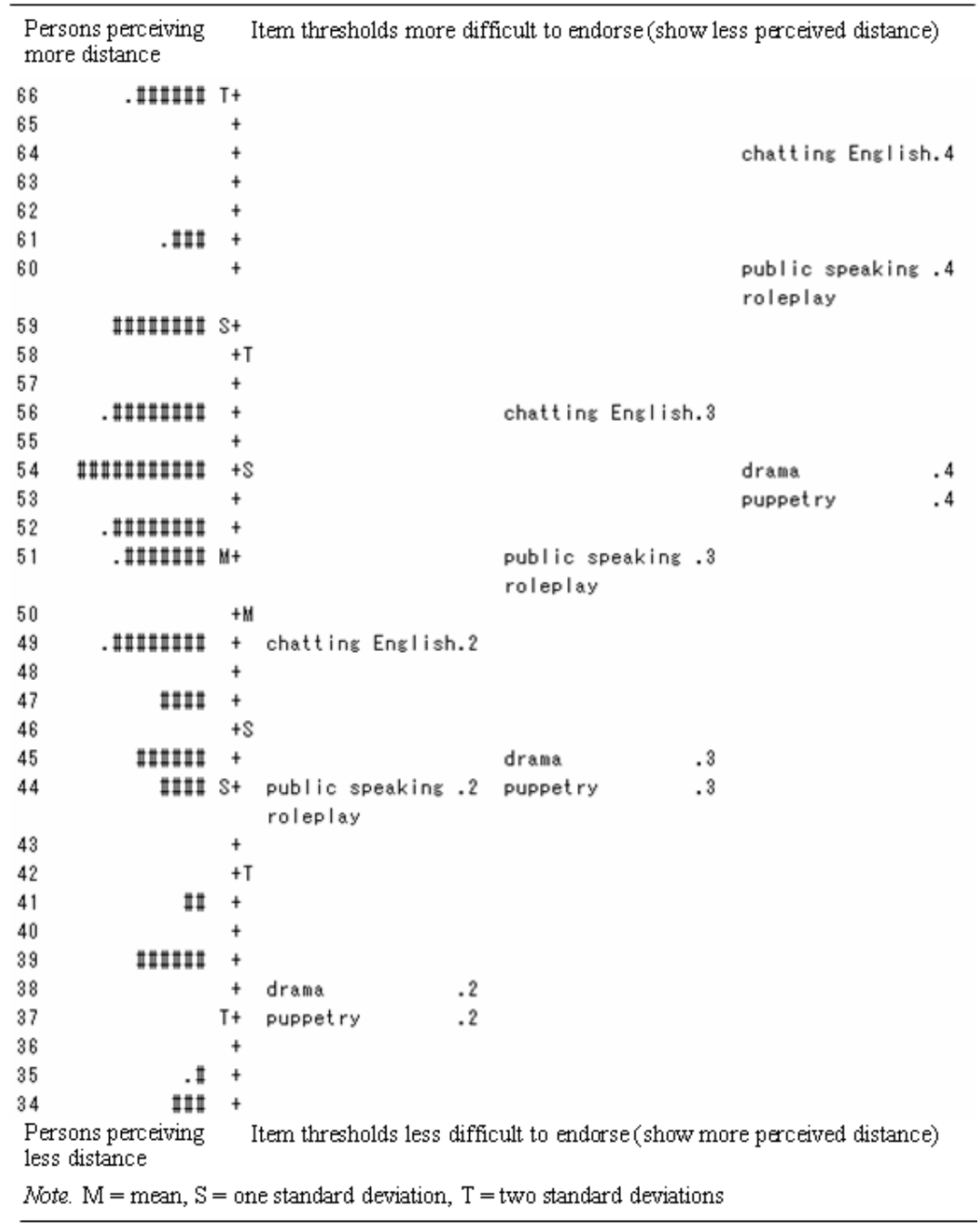
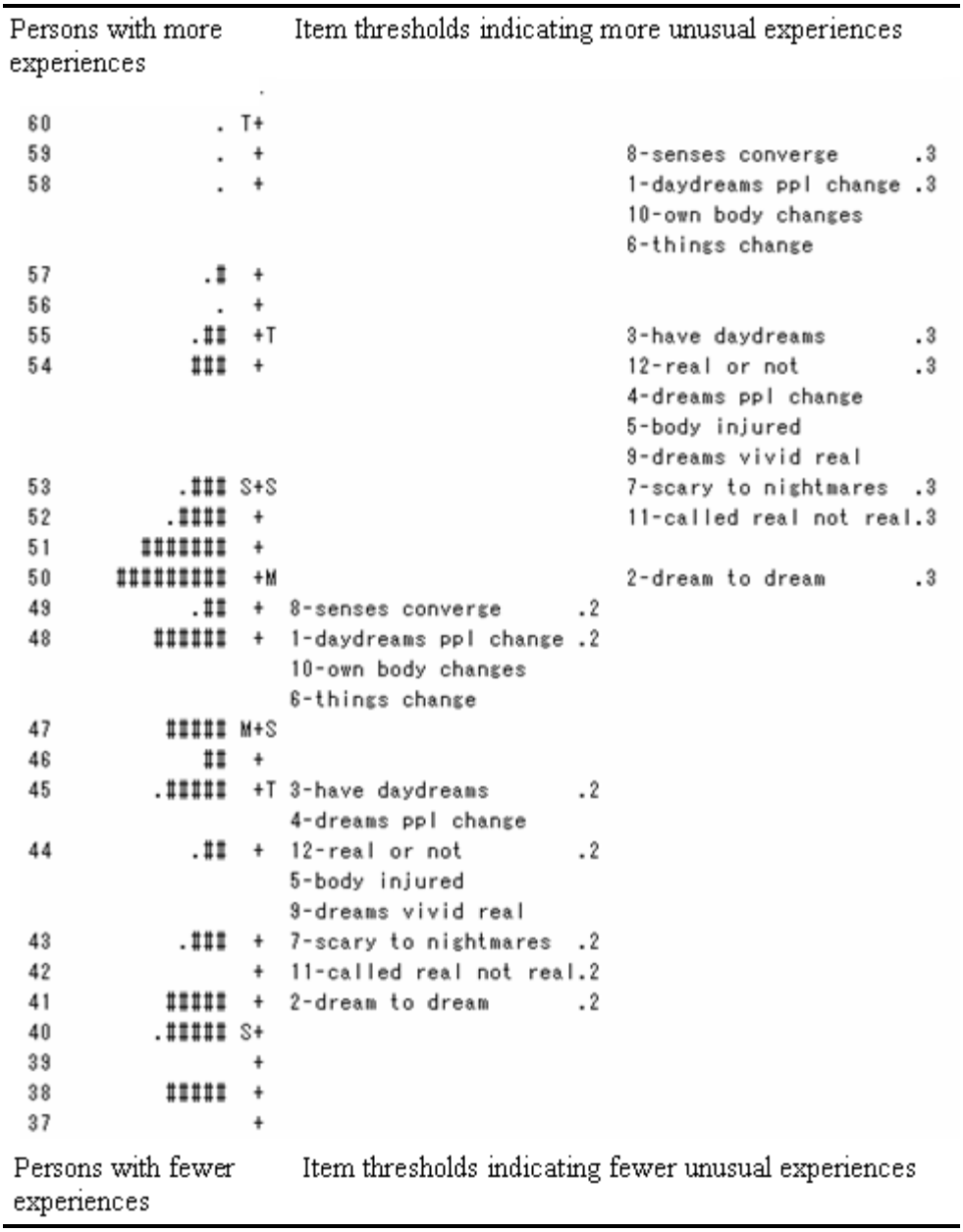


Figure 28. Item-person Rasch-Thurstone threshold map of the Perceived Distance instrument.

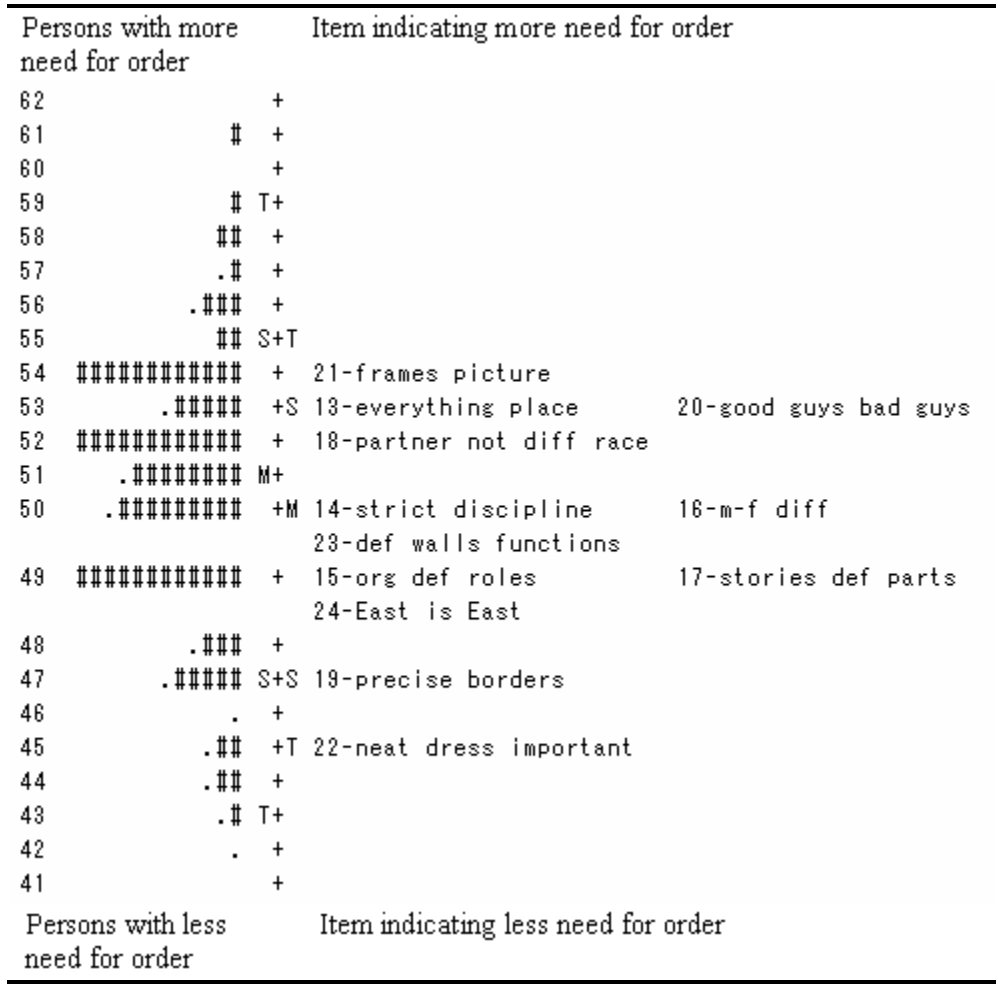


Note. M = mean, S = one standard deviation, T = two standard deviations.
Figure 29. Item-person map with Rasch-Thurstone thresholds for the Unusual Experiences subscale.

Need for Order. On the *Need for Order* subscale (Items 13-24),

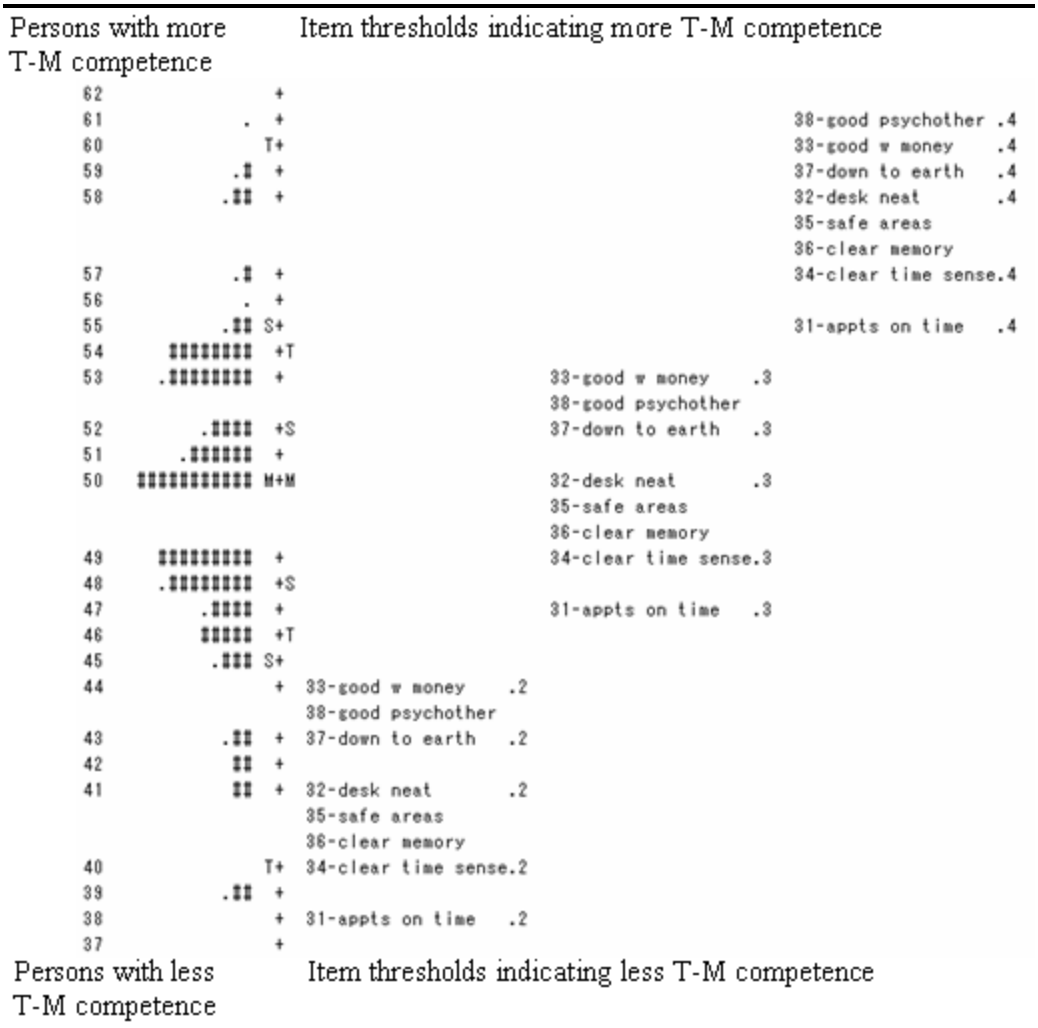
WINSTEPS initially yielded disordered thresholds and inadequate separation of

for a picture or a painting) and Item 19 (*I like clear, precise borders*) being difficult and easy to endorse, respectively. At first glance this seemed to be contradictory, but it might reflect a specific example (the picture frame in the world



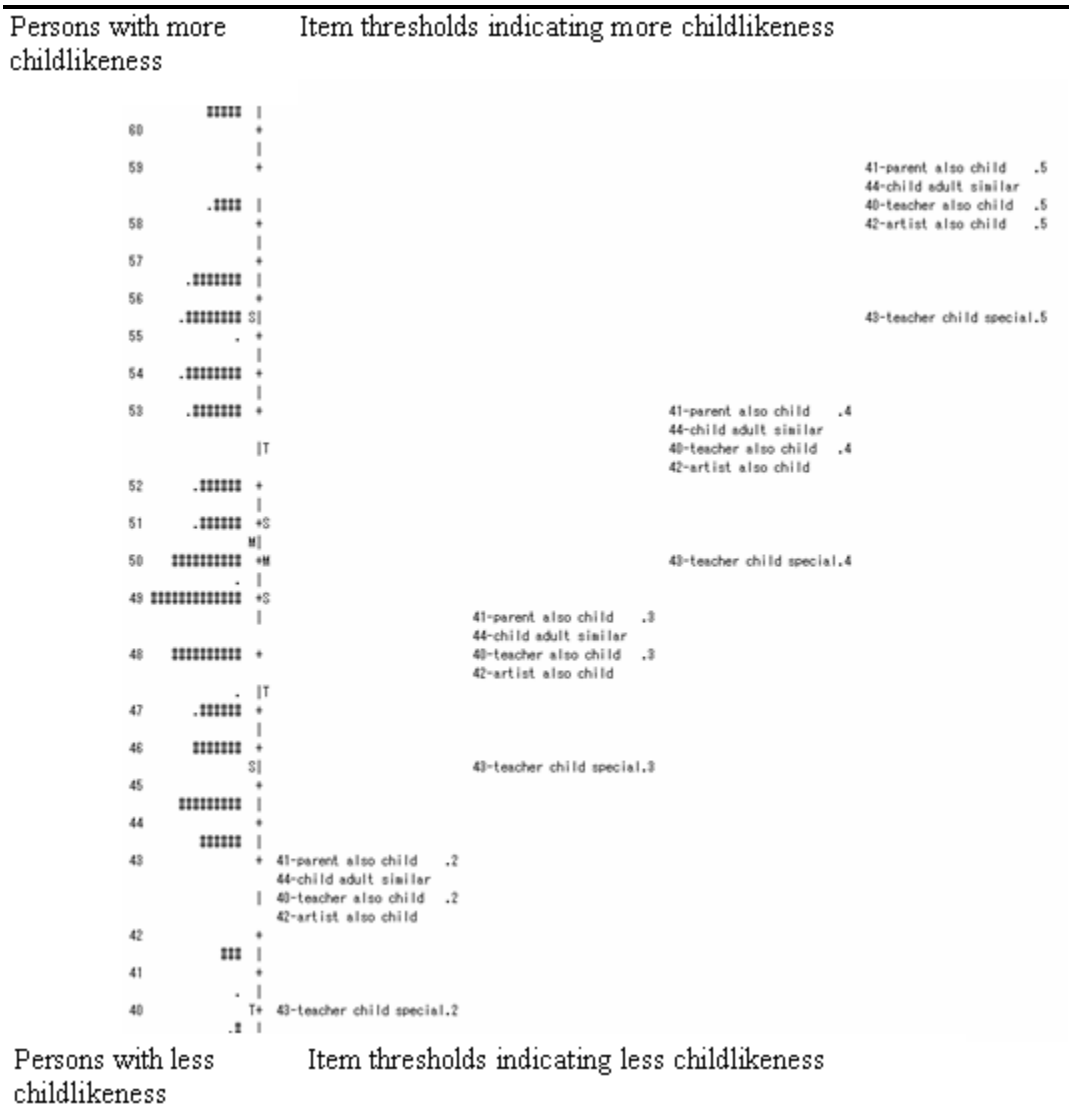
Note. M = mean, S = one standard deviation, T = two standard deviations.
Figure 30. Item-person map for the Need for Order subscale.

of art, about which people might have no particular opinion) and a general tendency toward careful, detailed organization.



Note. M = mean, S = one standard deviation, T = two standard deviations.
Figure 31. Item-person map with Rasch-Thurstone thresholds for the Perceived Money-Time Competence instrument.

Childlikeness. On the revised Childlikeness subscale (Items 39-44), WINSTEPS initially yielded disordered thresholds and inadequate separation of the thresholds. The data were negatively skewed, but combining the three disagree categories yielded a 5-category alignment with proper ordering, good fit, and good separation (Table 62).



Note. M = mean, S = one standard deviation, T = two standard deviations.
Figure 32. Item-person map with Rasch-Thurstone thresholds for the Childlikeness subscale.

Sensitiveness. Finally, on the Sensitiveness subscale (Items 45 and 46), WINSTEPS initially yielded disordered thresholds and inadequate separation of thresholds. Combining categories yielded a 4-category alignment with proper ordering, good fit, and good separation (Table 64).

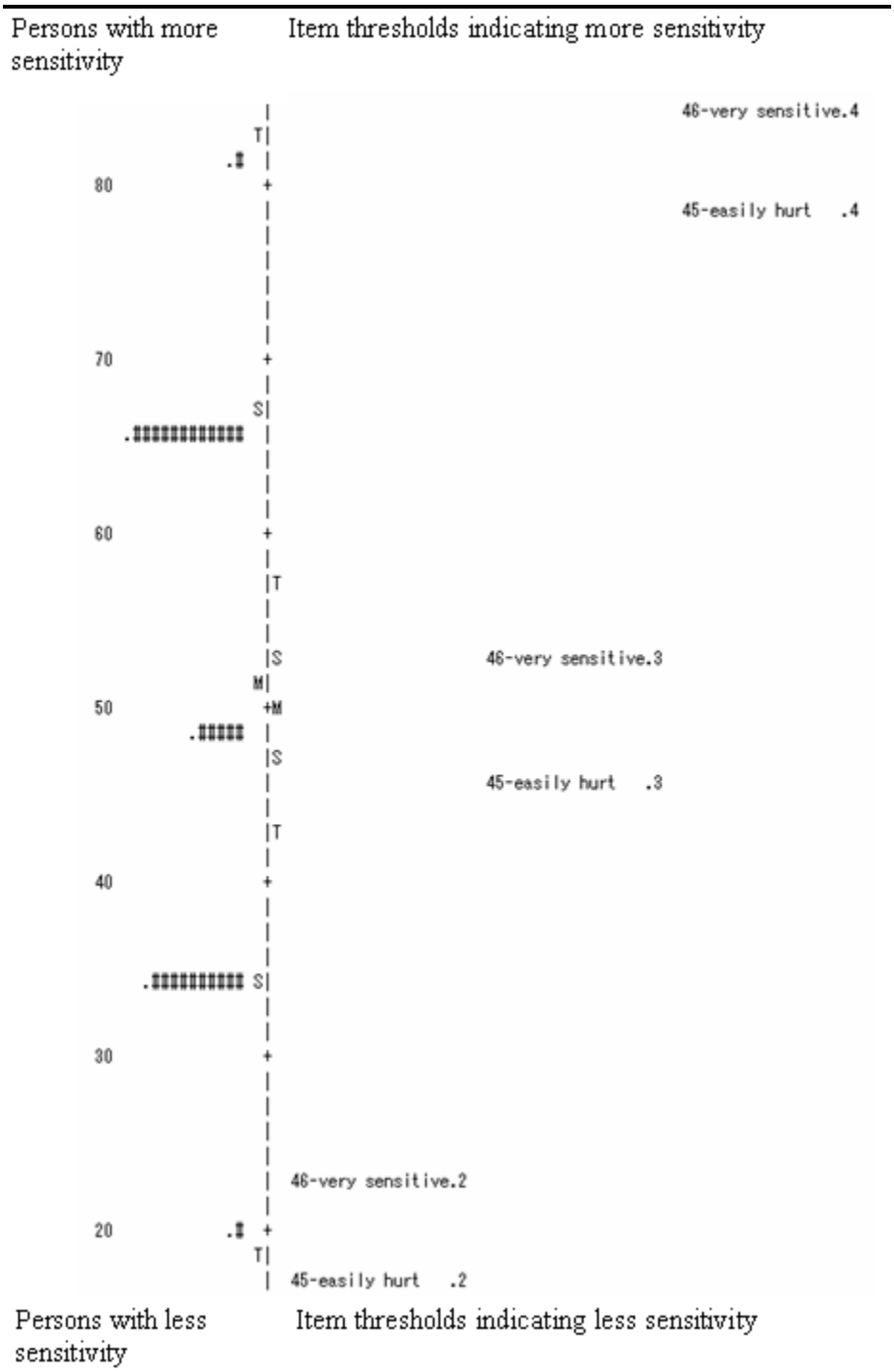


Figure 33. Item-person map with Rasch-Thurstone thresholds for the Sensitiveness subscale.

Perceived Time-Money Competence subscale (e.g., Item 32, *I keep my desk and worktable neat and well organized*) is concerned with how capably one imposes order on the world. As such, conceptualizing this latent factor as Imposition of Order would better represent the underlying concept.[12]

To further confirm that omitting the three subscales was prudent, a second confirmatory factor analysis using SEM was conducted (Figure 34). Because the three omitted subscales deal with cognitive, internally-perceived constructs, they

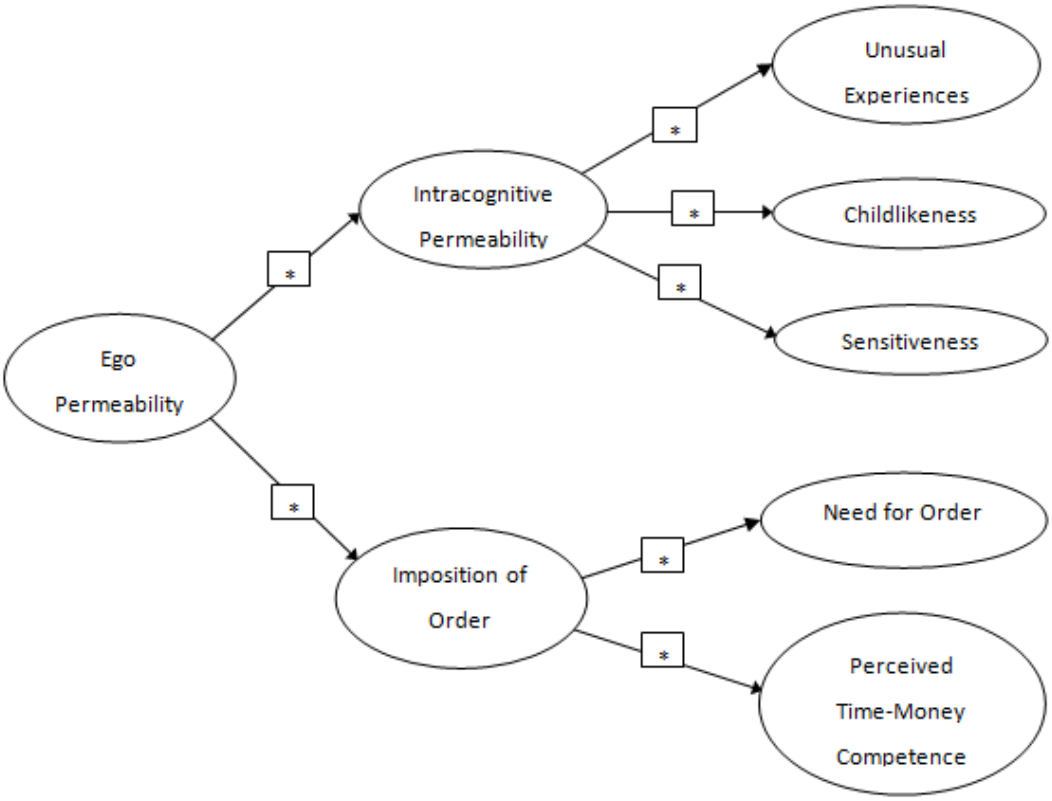


Figure 34. Hypothesized 2-factor model of Ego Permeability with Imposition of Order and Intracognitive Permeability.

[12] This could also be conceptualized as 'tolerance of ambiguity' (Budner, 1962; Ely, 1989; Furnham & Ribchester, 1995), but here I opt for Imposition of Order as it more transparently reflects the content of the items.

Table 70
Attitudes about the Learning Situation Scale Measure: Rasch Item Fit Statistics

Item	Measure	*SE*	Infit MNSQ	Infit *t*	Outfit MNSQ	Outfit *t*	Pt-M Corr
4-comfy with NS	52.81	.51	.74	-3.4	.74	-3.4	.74
3-not nervous NS	52.37	.51	.80	-2.7	.84	-2.0	.72
2-OK more Eng	50.42	.51	1.10	1.2	1.07	.9	.64
1-absolutely Eng	44.40	.54	1.31	3.4	1.61	4.9	.48
M	50.00	.52	.98	-.4	1.07	-.3	
SD	3.36	.01	.23	2.8	.01	.1	

Note. $N = 252$, $k = 4$; Pt-M Corr = point-measure correlation.

As shown in Figure 35, the two items dealing with interacting with native speakers of English (Items 3 and 4) were predictably difficult to endorse, likely reflecting the participants' anxiety about engaging in English conversation.

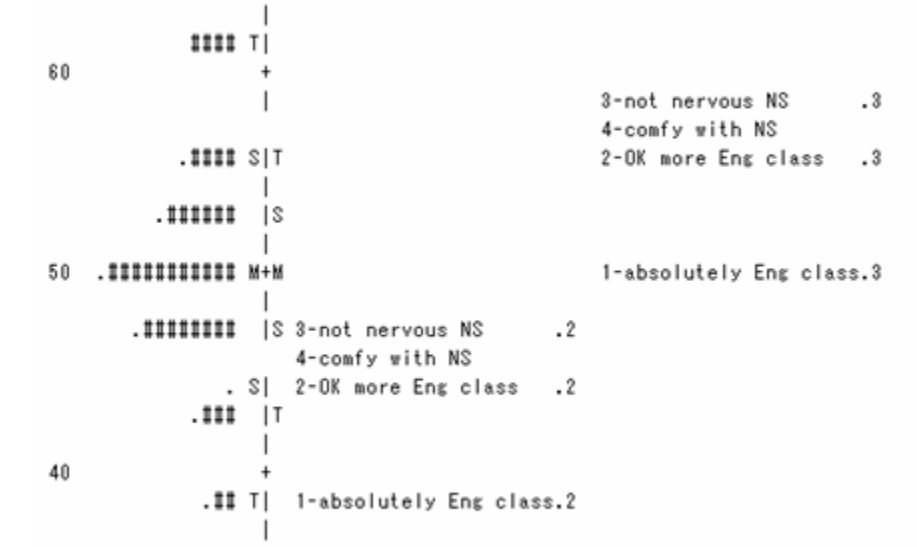


Figure 35. Item-person map with Rasch-Thurstone thresholds for the Attitudes about the Learning Situation instrument.

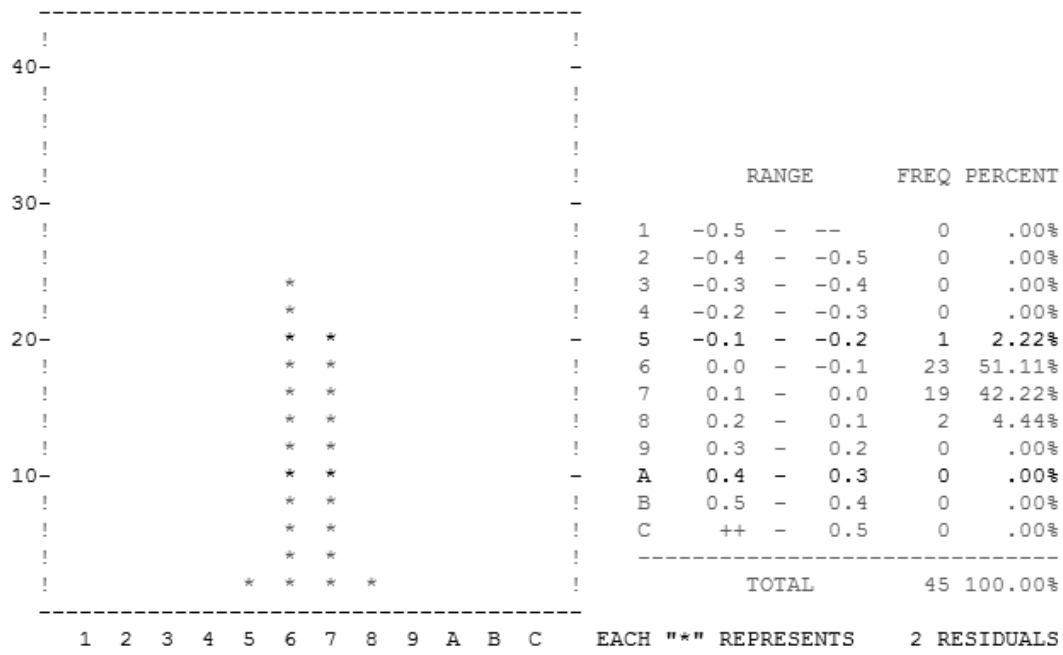


Figure 36. Distribution of standardized residuals for the Intercultural Friendship Orientation variable.

Measurement Models

As Byrne (2006) noted, an important first step in the analysis of full latent variable models is to test the validity of the measurement model(s). Three measurement models were treated in the previous chapter in the discussions of dimensionality of the respective scales; those models included Motivation, International Posture, and Ego Permeability. Posited to consist of two, four, and five subscales, respectively, they were instead found to be best represented as one, two, and two subscales. Furthermore, the two subscales in the Ego Permeability scale constituted a construct more akin to and thus labeled Imposition of Order. In the following section I treat the L2 Communicative Confidence instrument that appeared in the Yashima (2002) and the Yashima et al. (204) model.

consisted of L2 Perceived Competence, L2 Communicative Anxiety, and Distance (Figure 37). Results for the 3-factor model yielded fit statistics very similar to the Baseline Model, but the path coefficient for the Perceived Distance–L2 Communicative Confidence path was not significant. Perceived Distance was thus deleted from further analyses.

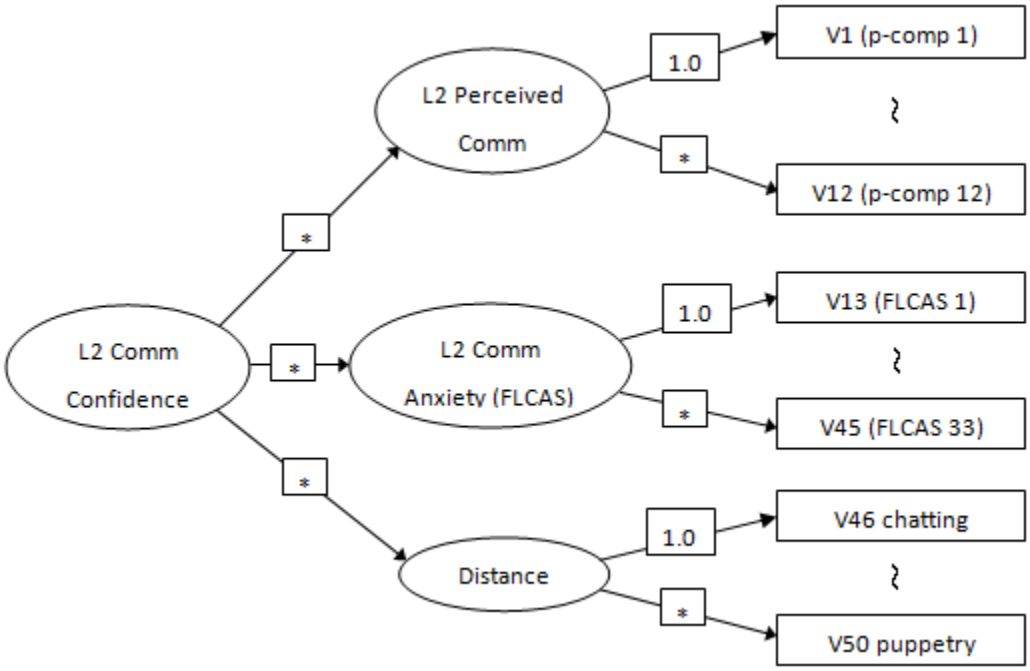


Figure 37. L2 Communicative Communication configuration with the addition of Perceived Distance. The three factors consisted of 12, 30, and 5 items, respectively, but only the first and last items are shown. Disturbances and error terms are not shown for the sake of clarity.

L2 Communicative Confidence with Extroversion

In the second model investigated, Extroversion was added to the Baseline Model so that L2 Communicative Confidence consisted of Perceived Competence, L2 Communicative Anxiety, and Extroversion (Figure 38).

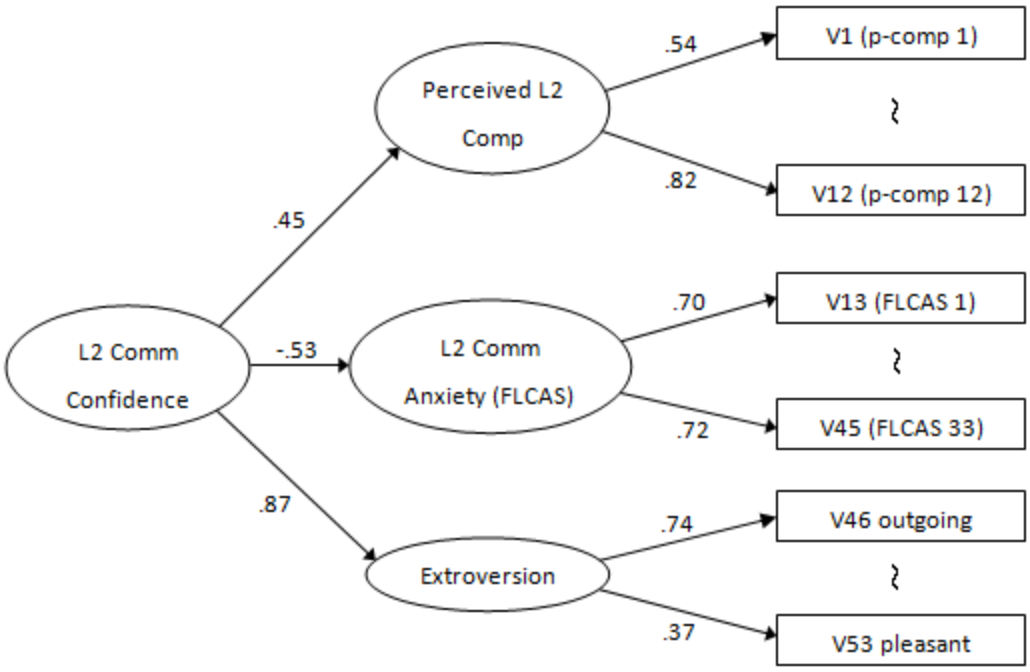


Figure 38. Standardized solution of the L2 Communicative Communication configuration with the addition of Extroversion. The three factors consisted of 12, 30, and 8 items, respectively, but only the first and last items are shown. Disturbances and error terms are also not shown for the sake of clarity. Numerical values indicate that path coefficients were significant at $p < .01$. Satorra-Bentler scaled χ^2 (1171) = 1920.356 ($p < .01$), CFI = .867, RMSEA = .051, C.I. = .046-.055.

The results for the 3-factor model indicated better fit than for the Baseline Model, which indicates that Extroversion is a significant addition. Again, although CFI and IFI were suggestive of poor fit, RMSEA values were indicative of adequate fit. Of particular note is the strength of the path regression coefficient (.87) from L2 Communicative Confidence to Extroversion, which is considerably larger than for either Perceived L2 Competence (.45) or L2 Communicative Anxiety (-.53). This offers further support that Extroversion is a prudent addition to the construct. Detailed statistics for the Baseline Model and the Baseline Plus

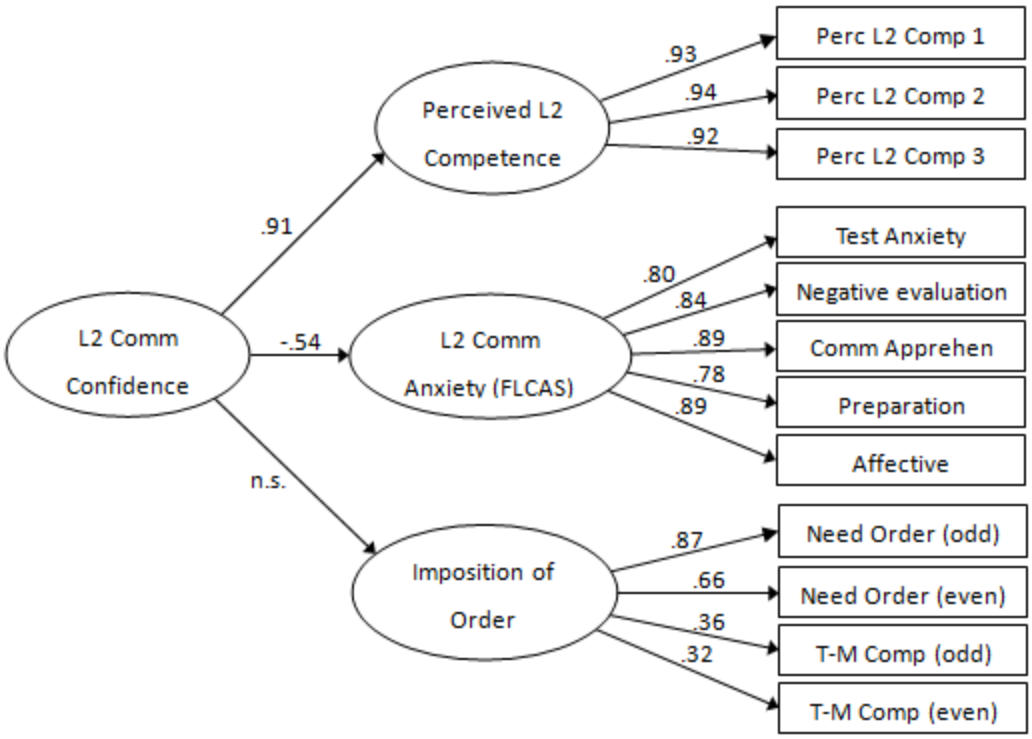


Figure 39. Standardized solution for the L2 Communicative Confidence configuration with the addition of Imposition of Order (Ego Permeability). Disturbances and error terms are not shown for the sake of clarity. Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2 = 112.980$, $p < .01$, CFI = .954, RMSEA = .069, 90% C.I. = .051-.086.

Path Analysis of Models Based on MacIntyre and Charos (1996)

The first two research questions dealt with the assessment of (a) the replication of the two original L2 communication models, and of (b) the hypothesized modifications of the two models. The first research question dealt with replication of two earlier WTC models: "Will the WTC models of MacIntyre and Charos (1996), Yashima (2002), and Yashima et al. (2004) be replicated in this context?" The second research question concerned modifications of those same models: "Do the above L2 communication models benefit from the addition of personality variables such as distancing, ego perm, and introversion-extroversion?"

The initial path analysis yielded χ^2 (49, N = 252) = 175.911, p < .000, with a total of six non-significant paths; this result was significantly better than the result

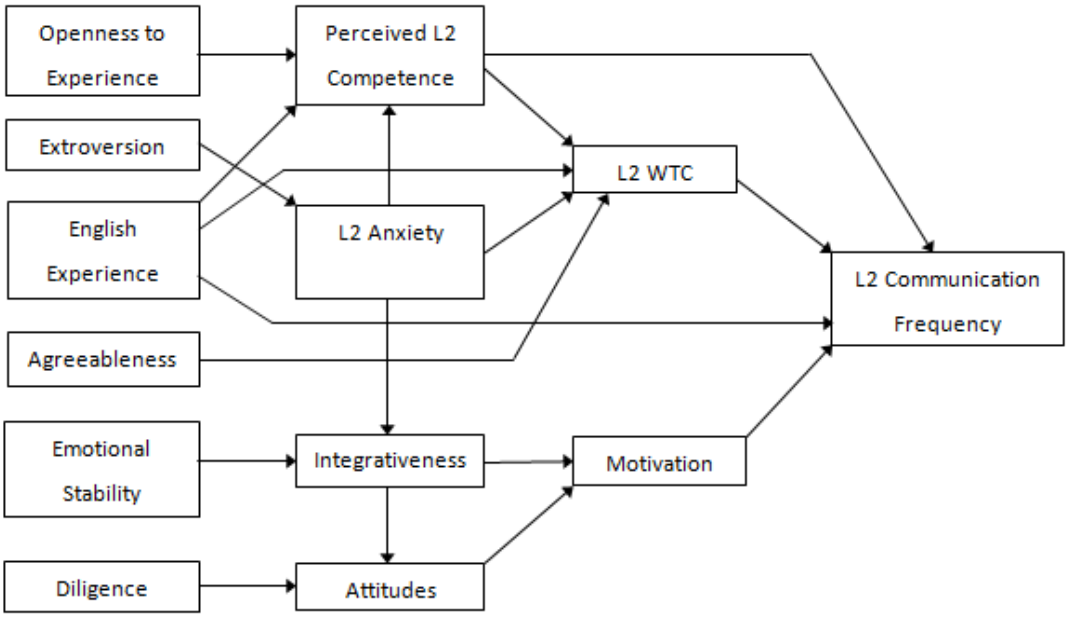


Figure 40. Revised MacIntyre and Charos (1996) model of L2 Willingness to Communicate. Adapted from "Personality, Attitudes, and Affect as Predictors of Second Language Communication," by P. D. MacIntyre, and C. Charos, 1996, *Journal of Language and Social Psychology, 15*(1), p. 12. Copyright 1996 by *Journal of Language and Social Psychology.* Reprinted with permission.

for the independence model, χ^2 (78, N = 252) = 843.700, p < .000. Skewness was adequately small for all the variables; some degree of kurtosis was present (Mardia's standardized coefficient = 17.967), and two cases with large contributions to kurtosis were deleted, but with the large degree of kurtosis, robust maximum likelihood estimation was requested. The standardized residuals reflected a substantial degree of non-normality with just 56.04% in the ±.1 interval. As noted,

revised model and the final, respecified model are shown in Table 76. An unexpected result was that that the path from L2 anxiety to WTC was not significant (although there was an indirect influence with a path weight of -.15 via Perceived L2 Competence). The absence of a direct path is counterintuitive, and

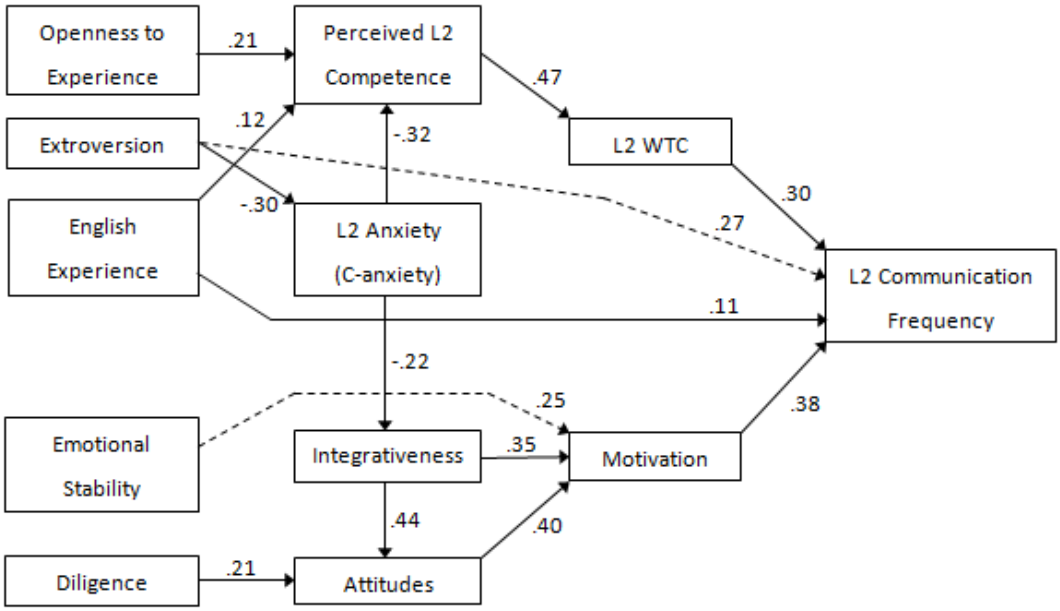


Figure 41. Standardized solution of the revised path-analytic model using communicative anxiety: Personality, attitudes, and affect as predictors of foreign language communication. Adapted from "Personality, Attitudes, and Affect as Predictors of Second Language Communication," by P. D. MacIntyre and C. Charos, 1996, *Journal of Language and Social Psychology, 15*(1), p. 12. Copyright 1996 by *Journal of Language and Social Psychology.* Adapted and reprinted with permission. Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2 = 76.396$, $p < .01$, CFI = .926, RMSEA = .075, 90% C.I. = .053-.095.

given the satisfactory Rasch analysis results for the L2 Communicative Anxiety instrument, the use of the L2 Communicative Anxiety instrument in this context appears to be questionable. The lack of statistical significance might be due to a mismatch, inasmuch as the participants' L2 communication is primarily in

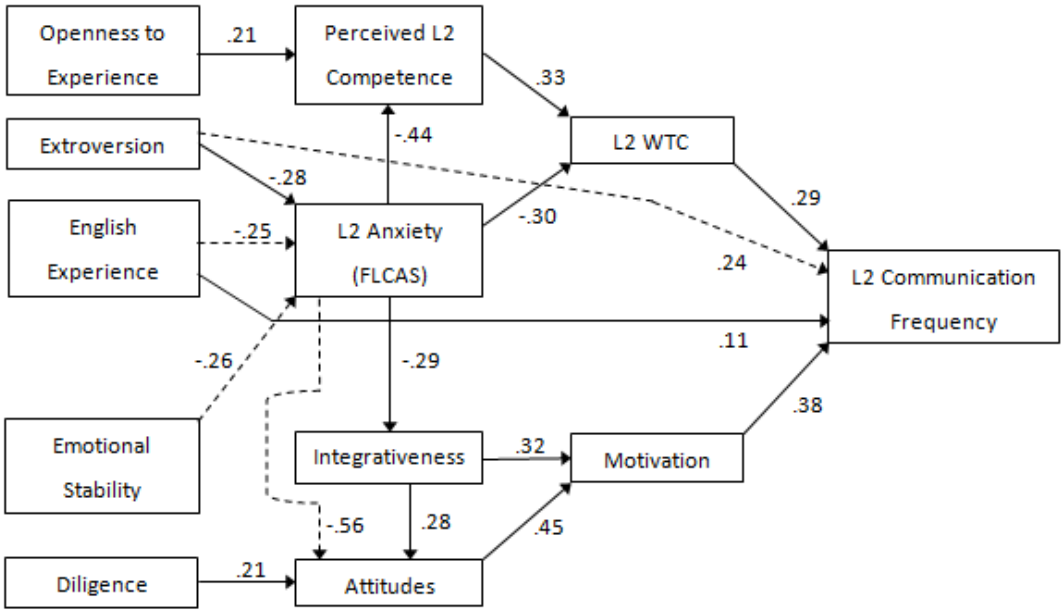


Figure 42. Revised path-analytic model using FLCAS: Personality, attitudes, and affect as predictors of foreign language communication. Data-driven additions to the model are shown as dashed lines. Adapted and reprinted with permission. Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2(47) = 105.006$ ($p < .01$), CFI = .914, RMSEA = .070, 90% C.I. = .054-.089.

again deleted. The RMSEA of .072 indicates adequate fit, and both CFI and IFI (.907 and .911, respectively) are closer to reasonable fit than in the above model that used L2 Communication Anxiety rather than FLCAS data. The χ^2/df ratio is also just slightly greater than 2, which is suggestive of good fit. Moreover, this model includes the logical path from L2 anxiety to WTC.

The results for the two models are shown in Table 79, and the standardized structural equations, standard errors, and squared multiple correlations (R^2) are shown in Appendix Y. As indicated, the modified MacIntyre and Charos model had better fit when anxiety was operationalized using the FLCAS instead of the L2

flexibility likely predicts greater ability to perceive distance. Distancing was posited to (a) negatively affect L2 Communicative Anxiety, as greater distance might act as a safe haven, and (b) positively affect L2 WTC because the ability to perceive distance from one's core self should provide greater freedom to communicate. In Figure 43, the hypothesized variables and paths are shown in bold.

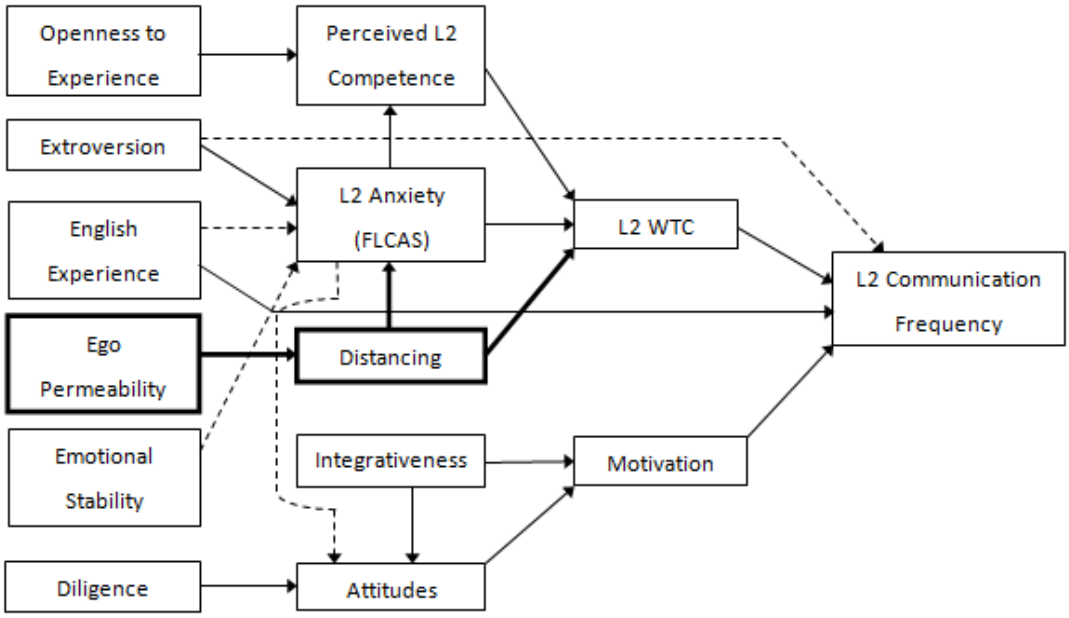


Figure 43. Hypothesized model of L2 communication with ego permeability and distancing added. Dashed lines represent data-driven additions. Bold lines show the hypothesized additions. Adapted from "Personality, Attitudes, and Affect as Predictors of Second Language Communication," by P. D. MacIntyre, and C. Charos, 1996, *Journal of Language and Social Psychology, 15*(1), p. 12. Copyright 1996 by *Journal of Language and Social Psychology.* Reprinted with permission.

The overall fit of the hypothesized model to the data was marginally acceptable with $\chi^2(71) = 228.307$ ($p < .01$), CFI = .846, RMSEA = .094, and 90% C.I. = .080-.107. However, the path analysis result for this model showed that all hypothesized paths associated with Ego Permeability and Distance were not

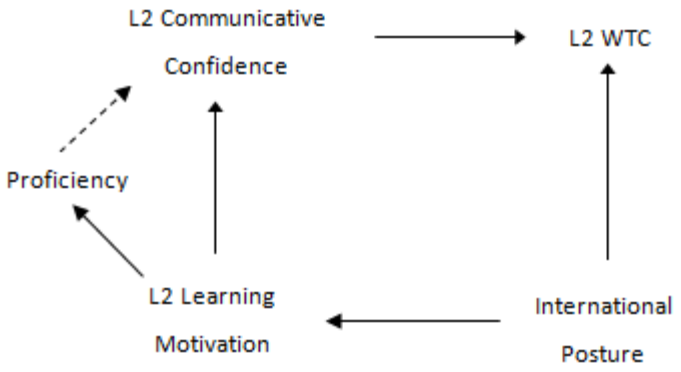


Figure 44. Core of the Yashima (2002) L2 communication model. From "Willingness to Communicate in a Second Language: The Japanese EFL Context," by T. Yashima, 2002, *The Modern Language Journal, 86*(1), 61. Copyright 2002 by *The Modern Language Journal.* Reprinted by permission. Note that the dashed path was hypothesized but found to be non-significant.

Interest in International Vocation/Activities were deleted and the Intercultural Friendship Orientation subscale was added based on the results of a confirmatory factor analysis. Thus, in the modified model International Posture consisted of Approach-Avoidance Tendency and Intercultural Friendship Orientation. Second, the 2-factor Motivation instrument was demonstrated to consist of a single dimension, so it entered the model as a measured variable instead of a latent variable. Third, L2 WTC was rendered as a measured variable rather than latent variables; in the original study L2 WTC was divided into two parcels that were used as indicators.

As shown in Figure 45, many of the path coefficients in the original configuration were similar (the lefthand value is from the current study, and the righthand parenthetical value is from Yashima, 2002). Two, however, differed in terms of statistical significance. In the original study, the path from Proficiency to

L2 Communicative Confidence was not significant at .14, but in the current study it was significant with a beta-weight of .34. This is a logical change, for increased proficiency generally corresponds with higher confidence levels. On the other hand, in the original study the path from International Posture to L2 WTC was significant albeit weak at .22, yet in the current study it was not significant at .06. This is an odd finding, for in the presence of a higher degree of international posture, in

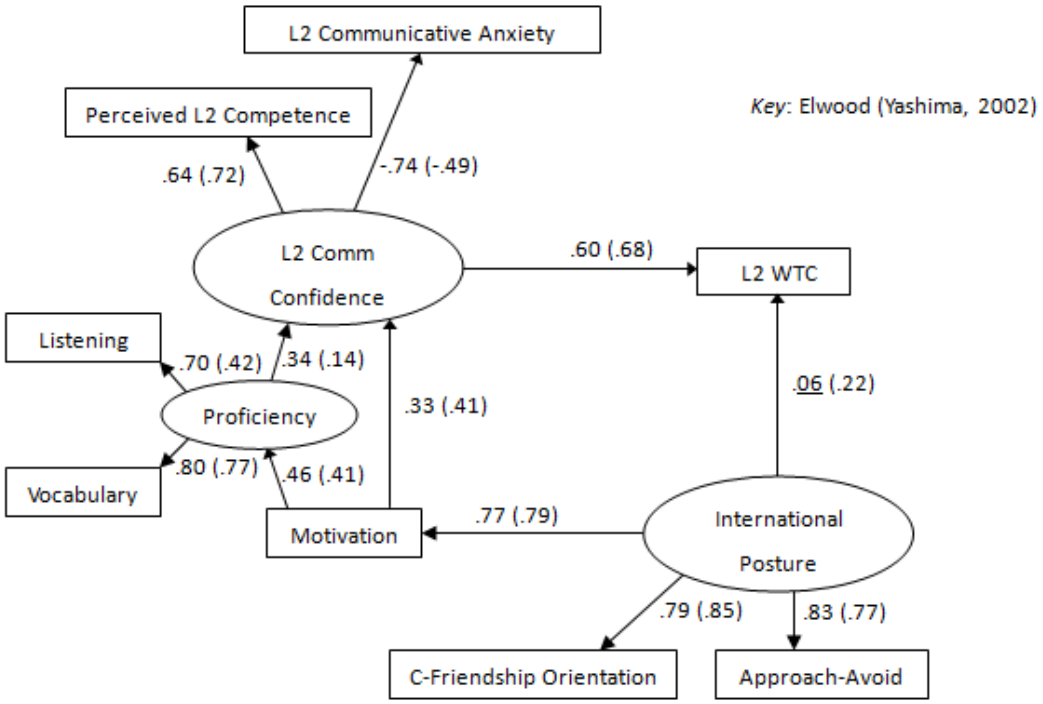


Figure 45. Standardized solution of the original Yashima (2002) model of L2 communication with standardized estimates. Numerical values list the value from the current first and the value from Yashima (2002) parenthetically. Path coefficients were significant at $p < .01$ with the exception of the underlined value (.06) for the path from International Posture to L2 WTC. χ^2 (16) = 43.941, $p < .01$, CFI = .957, RMSEA = .084, 90% C.I. = .055-.114.

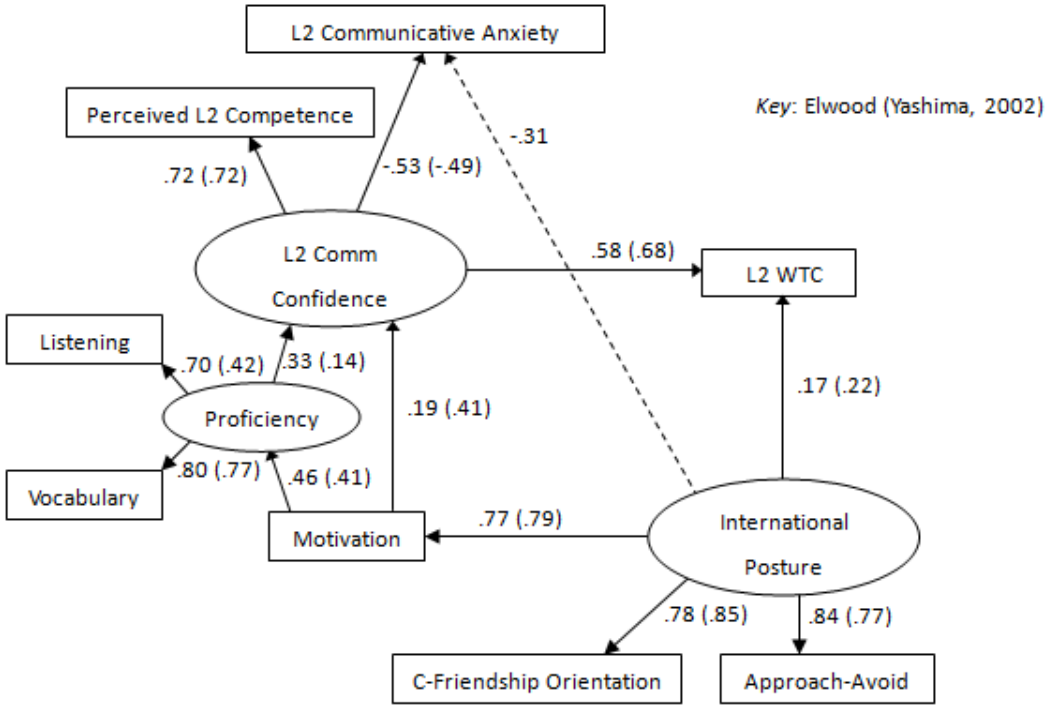


Figure 46. Respecified original model of L2 communication with standardized estimates. Numerical values list the value from the current first and the value from Yashima (2002) parenthetically. Path coefficients were significant at $p < .01$. χ^2 (15) = 27.759, p = .023, CFI = .980, RMSEA = .058, 90% C.I. = .021-.092.

In addition, most of the path coefficients in the current study were similar to those of the original study, differing with two exceptions by .10 at most. The first exception was the Proficiency–L2 Communicative Confidence path, with a value of .33 in the current study compared to .14 in the original study. The stronger coefficient in the current study is appealing because a higher level of proficiency logically correlates with a higher level of confidence. The second difference in path coefficients was that the path from Motivation to L2 Communicative Confidence was just .19 after the addition of the International Posture–L2 Anxiety path, whereas it was a much stronger .41 in the Yashima (2002) study.

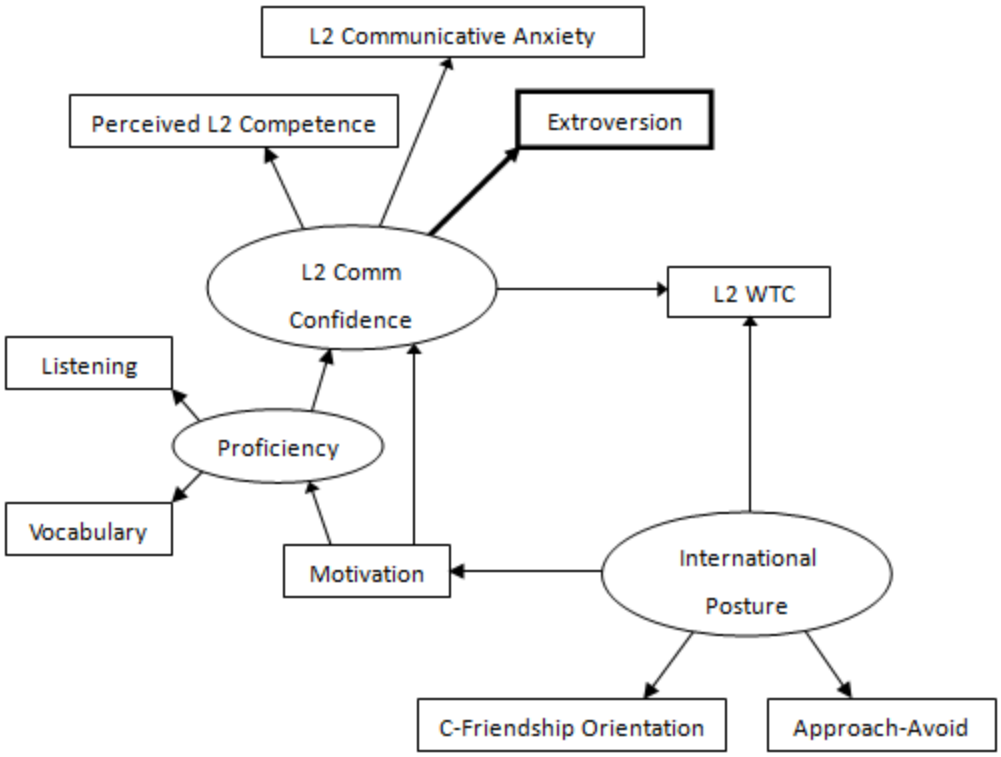


Figure 47. Revised Yashima (2002) L2 communication model. From "Willingness to Communicate in a Second Language: The Japanese EFL Context," by T. Yashima, 2002, *The Modern Language Journal*, *86*(1), 61. Copyright 2002 by *The Modern Language Journal.* Reprinted by permission.

The standardized solution is shown in Figure 48. The hypothesized path from L2 Communicative Confidence to Extroversion was statistically significant (β = .36). The two data-driven additions from International Posture to Anxiety and Extroversion were fairly strong at -.33 and .43, respectively. With three exceptions, the original path coefficients are similar to the original Yashima (2002) model (Figure 47), differing by a maximum of .06. In this model, the fragile International Posture–L2 WTC path was again slightly weaker than in the original Yashima (2002) results.

Table 82
Step-by-Step Procedure for Respecifying the Revised Yashima et al. Model with Data-Driven Paths

Model	χ^2	*df*	CFI	IFI	RMSEA
Original model	75.907	23	.927	.928	.096
Add *Extroversion – International Posture*	62.440	22	.944	.945	.086
Add *International Posture– Anxiety* path	44.309	21	.968	.968	.067

Detailed statistics of the initial and final solutions are shown in Table 83, and the standardized structural equations, standard errors, and squared multiple correlations (R^2) are shown in Appendix AJ.

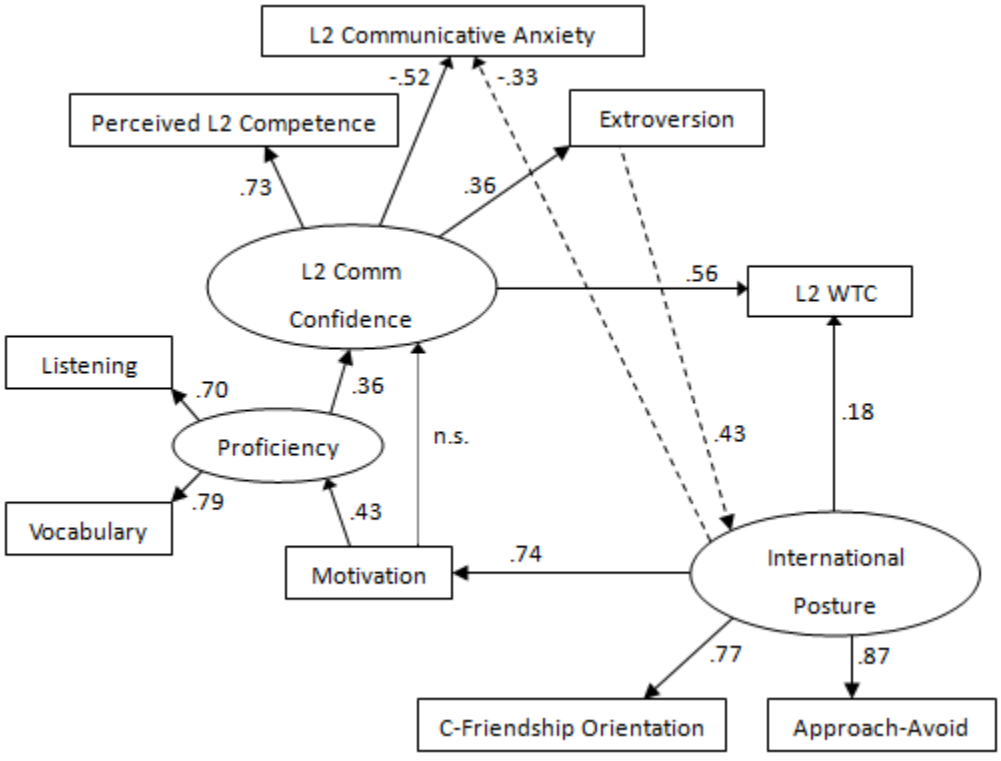


Figure 48. Standardized solution of the revised Yashima (2002) model. Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2(21) = 44.31$ ($p < .01$), CFI = .968, RMSEA = .067, 90% C.I. = .039-.094.

Friendship Orientation. Second, the original 2-factor Motivation instrument was demonstrated to consist of a single dimension, so it entered the model as a measured variable instead of a latent variable. Third, L2 WTC and L2 Communication Frequency were rendered as measured variables rather than latent variables; in the original study L2 WTC was divided into two parcels that were used as indicators, and Frequency of L2 Communication was defined by three items.

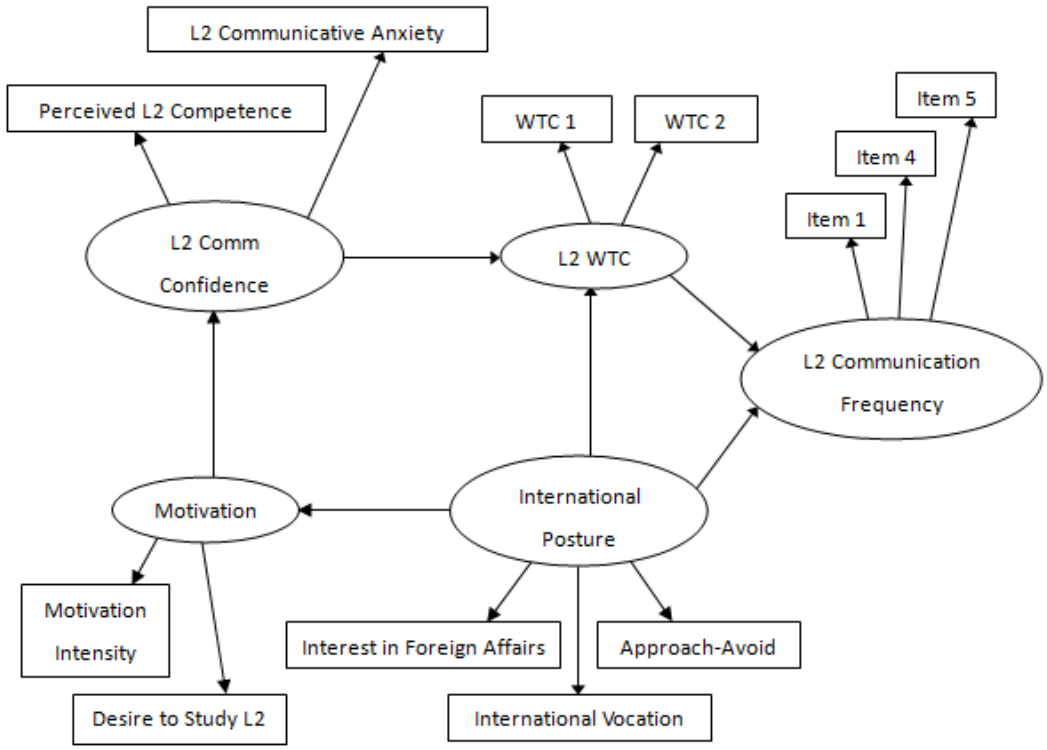


Figure 49. Model of L2 communication. Reprinted from "The Influence of Attitudes and Affect on Willingness to Communicate and Second Language Communication," by T. Yashima, L. Zenuk-Nishide, and K. Shimizu, 2004, *Language Learning, 54*(1), p. 134. Copyright 2004 by *Language Learning.* Reprinted with permission.

Detailed statistics for both the original model and the modified model are shown in Table 86, and the standardized structural equations, standard errors, and squared multiple correlations (R^2) appear in Appendix AK. In both cases, the model fit the data well, offering strong support for the robustness of the Yashima et al. (2004) model.

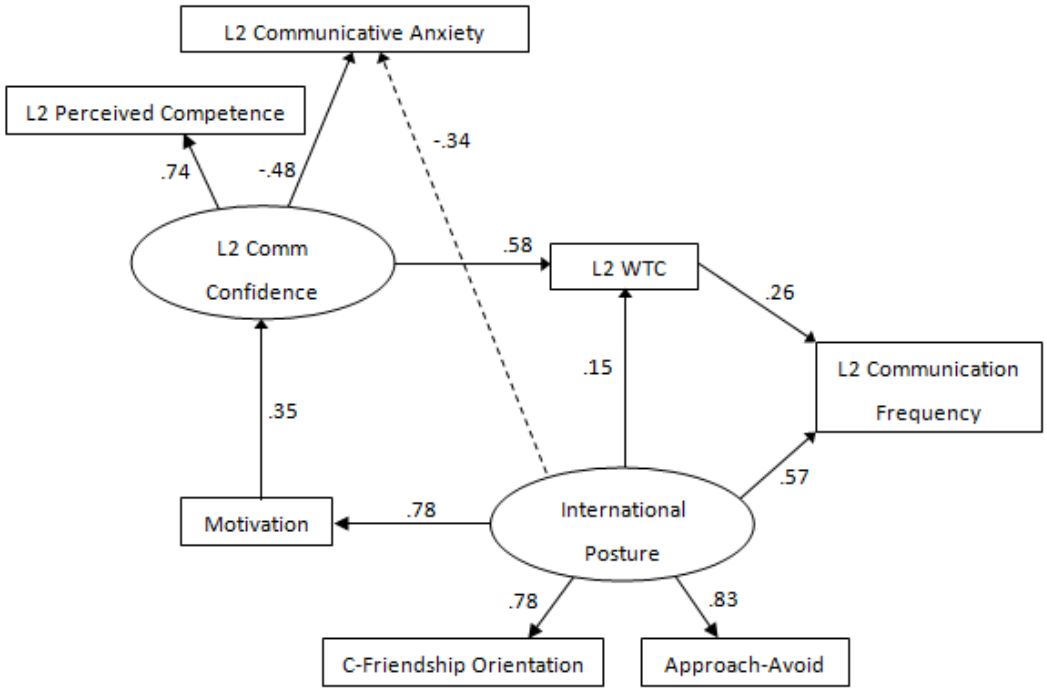


Figure 50. Results of SEM: Respecified revised model of L2 communication with standardized estimates. Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2 = 29.754$, $p < .01$, CFI = .970, RMSEA = .089, 90% C.I. = .053-.126.

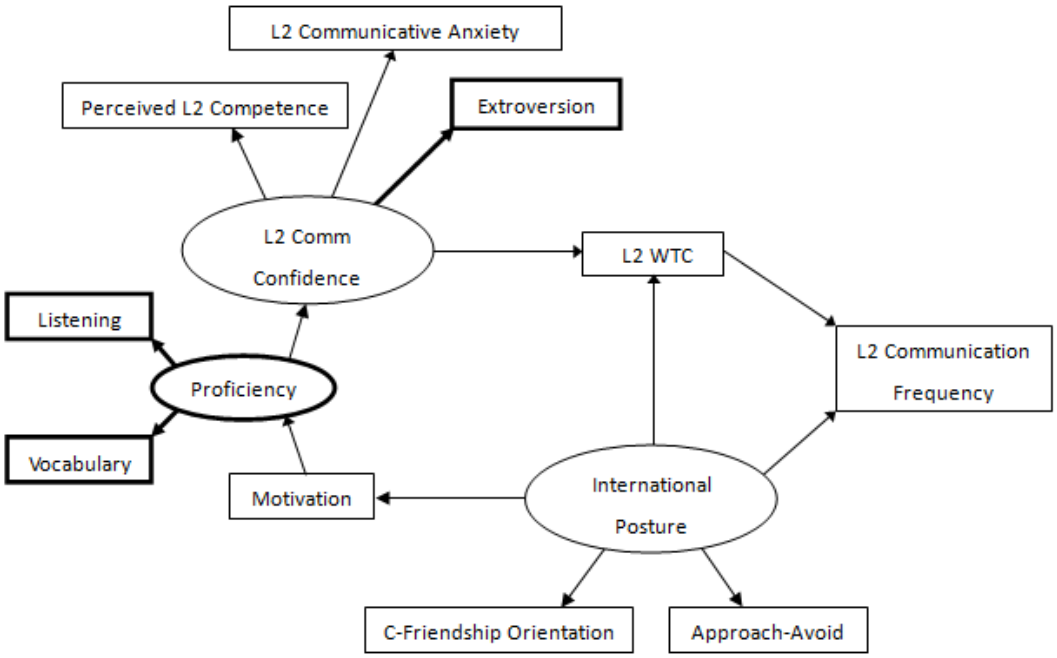


Figure 51. Revised model of L2 communication based on Yashima et al. (2004). Adapted from "The Influence of Attitudes and Affect on Willingness to Communicate and Second Language Communication," by T. Yashima, L. Zenuk-Nishide, and K. Shimizu, 2004, *Language Learning*, *54*(1), p. 134. Copyright 2004 by *Language Learning.* Reprinted with permission.

time and non-significant paths then deleted en masse. First, a path was added from International Posture to L2 Anxiety (as was done above in the Yashima [2002] model). Second, a path was added from Extroversion to International Posture inasmuch as a more extroverted person likely has a stronger propensity toward things international (Figure 50). Detailed in Table 87, this model resulted in substantially better fit: $\chi^2(29) = 68.175$ ($p < .01$), CFI = .955, RMSEA = .074, 90% C.I. = .051-.096.

Table 87
Step-by-Step Procedure for Respecifying the Revised Yashima et al. 2004 Model with Data-Driven Paths

Model	χ^2	*df*	CFI	IFI	RMSEA
Original model	121.136	31	.897	.899	.108
Add *International Posture – L2 Anxiety* path	101.173	30	.919	.920	.098
Add *Extroversion – International Posture* path	68.175	29	.955	.956	.074

The standardized solution is shown in Figure 52. The path coeffieients are similar to the original Yashima et al. model, with the co-occurring paths differing by a maximum of .06. In this model, the fragile International Posture–L2 WTC

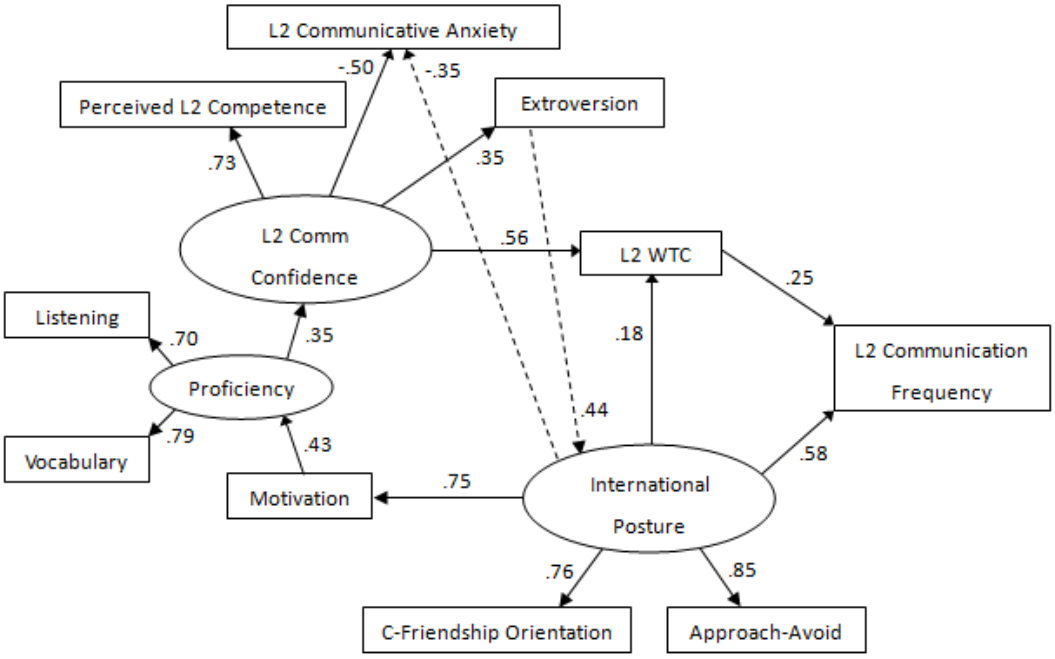


Figure 52. Standardized solution of the revised model of Yashima et al. (2004). Numerical values indicate that path coefficients were significant at $p < .01$. $\chi^2(29) = 59.656$ ($p < .01$), CFI = .965, RMSEA = .065, 90% C.I. = .041-.088.