# 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
3. Final MacIntyre and Charos (1996) model 21
4. Schematic representation of the variables influencing WTC 23
5. L2 communication model
6. L2 communication model (minus proficiency)
7. Proposed Model of L2 Willingness to Communicate
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
12. Item-person map with Rasch-Thurstone thresholds of the Frequency of L2 Communication instrument
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
15. tem-person map for the L2 Communicative Anxiety, Stranger Anxiety subscale
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
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
<ol> <li>Standardized solution for the L2 Communicative Confidence configuration with the addition of Imposition of Order (Ego Permeability)</li> </ol>	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  $\chi^2$  (21) = 13.4, *p* = n.s., GFI = .99, and AGFI = .96.<sup>2</sup>



*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.

<sup>&</sup>lt;sup>2</sup> 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

More proficient listeners	+	More difficult i	items	
58	+	aloe32		
57 ###	+ 			
56	+  S			
55 .###	+	farmer23	ship44	ship45
54	S+	ship/2		0.117.10
53 .#######	+	aloe35		
52 .######	+	baseball13		
51	+	aloe33	ship43	
•############ 50	+M ₩			
49 #########	m   +			
48	+	farmer22		
•######### 47	+			
46	1 +			
•##### 45	0  +			
44	+	baseball12		
43	+	farmer21		
42	+			
41 **	T+	baaaba 1111		
40	1 + 1 T			
39 .	+	aluesi		
Less proficient listeners		Less difficult it	iems	

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

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

Perso vocal	ons with larger oularies		More difficult vocabu	lary words	
62		+	5k13devise		
61		+			
60		+			
59		+T			
58		+			
57		+			
56		+	5k5stool	5k7appliance	
55		+8	3k12whirling	5k11bruises	5k3mess
			uwl14assess		
54	. #	T+	5k17gloom	uwl3project	
53	. #	+	3k9veins	5k15whole	
52	. ##	+	2k11examined	2k7tips	3k11trim
			3k4chill	5k2phase	
51	. # # # # #	+	3k17supreme	5k12hugging	uwl17rational
50	. ####	S+M	2k13connects	uwl11indicates	uwllvision
			uw15democracy	uwl9crisis	
49	. #######	+	2k18brave	3k16normal	uwl18dynamic
48	#####	+	2к9сору	3k18aware	5k6trumpet
			uwl12participate	uwl4sex	
47	.#########	+	3k10assisted		
46	#########	M+	2k5skirts		
45	.########	+S	2k8motor		
44	.#########	+	2k16usual		
43	. # # # #	+	3k6structure		
42	######	S+			
41	#####	+T	3k1apartment		
40	#	+			
39	. ##	+	2k3nurse		
38	. #	+	2k6justice		
37		T+			
36	##	+			
35		+			
34	. #	+			
33	#	+			
Pers) small	ons with ler vocabularies	:	Less difficult vocabu	lary words	

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 3,000word 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.

Persons more willing		Context—less willing to communicate		
to communicate				
60	##	+		
59	. #	+ T		
58	. ##	+	17meeting strangers	
57	. #	+	12line strangers	
56	. #	S+		
55	########	+S		
54	. ##	+	8group strangers	
53	. ##	+	3speech strangers	
52	####	+		
51	.#########	+	11meeting acqnts	
50	#####	+M	14speech friends	6meeting friends
49	####	M+		
48	.#######	+	20speech acqnts	
47	. ##	+	15group acqnts	
46	. ##	+		
45	.#########	+S	4line acqnts	
44	#	+		
43	. #	S+	19group friends	9line friend
42	. #	+		
41	. ##	+T		
40	. ##	+		
Person	ns less willing		Context—more willing to communicate	
to con	nmunicate		-	

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

68	. ########	+		
67		T+		
66		+		5-speak E outside class.3
65	#	+		
64		+T		1-volunteer in class .3
63		+		
62	. ###	+		4-ask Q outside class .3
61		+		
60		S+		
59	. #	+		
58	.#########	+		
57		+S		
56		+		
55		+		
54	.##########	+		2-answer called on .3
53		+		
52		M+		
51		+		
50	. # # # # # # # # # # # # # # #	+M		
49	. #	+	5-speak E outside class.2	
48		+		3-participate pairwork .3
47		+		
46	.########	+	1-volunteer in class .2	
45		S+	4-ask Q outside class .2	
44	•	+		
43	. # # # # #	+S		
42		+		
41		+		
40		+		
39		+		
38	- ##	1+		
37		+	2-answer called on .2	
36		+1		
35		+		
34		+		
33		+		
32	•	+		
31		+		
30		+	3-participate pairwork .2	

*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.

Persons, more perceived competence			Contexts, less perceived o	competence	
66	##	T+			
65		+			
64	. #	+			
63		+			
62	##	+T			
61	##	+			
60	. #	+	1-speech strangers	9-meeting	strangers
59	###	+			
58	######	S+			
57	.#######	+			
56	#####	+S			
55	. # # # #	+	3-group strangers		
54	#####	+	8-line strangers		
53	#####	+			
52	. # # # # # #	+	5-meeting acqnts		
51	#####	+			
50	.#####	M+M	12-speech acgnts	2-meeting	friends
49	. # # # # # #	+			
48	.#######	+	6-speech friends		
47	###	+			
46	####	+			
45	.####	+	7-group acqnts		
44	. ###	+S	4-line acqnts		
43	. ###	+			
42	. #	S+	11-group friends		
41	#####	+	10-line friend		
40	######	+			
39	####	+			
38	###	+T			
37		+			
36	.##	+			
35	. #	+			
34		+			
33	##	T+	-		
Perso	ns, less perceive etence	d	Contexts, more perceived	l competence	e
comp					

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

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

More anxious persons		More difficult	item	S			
70	+						
	τI					10-line friend	.4
	I.					11-group friends	.4
						4-line acqnts	
	1					7-group acqnts	.4
1111	1					12-speech acqnts	.4
	1					8-speech friends	.4
60 .33	+						
	1						
	S						
. 1111	ΙT						
.11	S			10-line friend	.3		
				11-group friends	.3		
				4-line acqnts			
50 .#####	+Ħ			7-group acqnts	.3		
. 11111				12-speech acqnts	.3		
	M∣S			8-speech friends	.3		
1111	ĮΤ						
1111111111							
40 #######	+						
		10-line friend	.2				
111111	1	11-group friends	.2				
	~ 1	4-line acqnts					
	21		~				
		7-group acqnts	.2				
		12-speech acqnts	.2				
30		s-speech friends	.2				
	-						
	T						
Less anyious persons	1	Eggler items					
Less and us hersons		Laster Rettis					

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

*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.

More anxious persons		More difficult iter	ns	
70	+			
	÷			
				Z-meeting friends .4
				5-meeting acqnts
				8-line strangers
1111111	S			3-group strangers .4
60 <b>111111111111</b>	+			
				8-meeting strangers.4
1111111	1			1-speech strangers .4
	T			
1111111	18		8-line strangers .3	
11111111	<b>M</b>		2-meeting friends .3	
			5-meeting acqnts	
50 .1111111	+14		3-group strangers .3	
. 111111	1			
111111	18		1-speech strangers .3	
			9-meeting strangers	
111111	IT			
.1	i			
	si	5-meeting acquits .2		
	- 1	8-line strangers		
40 111	+	2-meeting friends .2		
		3-group strangers		
	1	e group otrongere		
	- i -			
	i	1-speech strangers .2		
		9-meeting strangers		
	τι	a maaring arigingela		
	1			
20	-			
Less anxious persons		Easier items		

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

*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  $\alpha = .95$ ).

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.

More anxious	Items showing more classroom a	anxiety				
persons						
61 . T+						
60 .I +						
53						
• I						
E7 # 4						
57						
56 <b>111</b> 4						
*******	21-study confused					
55 11 +	T					
11 1						
54 .11111111 +	19-afraid correct all mis					
. 111111111	31-others laugh at me					
53 .######## +						
. 11111	S 25-E class pace too fast	26-more nervous in E class				
	3-tremble called on	30-too many E rules				
52 <b>IIIIII</b> M+	16-even prepped, nervous	17-not go to English				
	29-nervous not every word					
. 11111						
51 ####### +	10-conseq failing E	27-confused in E class				
	4-afraid not understand T					
	12-nervous, forget things					
50 #### +	M 2-worry about mistakes	8-not at ease E tests				
	9-panic no prep					
	6-think other things					
49	22-pressure to prep					
	15-upset not catch correction					
48 II +	13-embarrass re volunteer	20-heart pounding called on				
	24-self-conscious speaking E	33-nervous no prep				
.11	S 28-not confident going to E	22 others south bottom 5				
4/ .1 5*	I-unsure in E class	23-others speak better E				
40	/-other students better					
40 . 1	18-not confident in E class					
45 4	T					
** . *						
44 1 +						
** * *						
Less anxious	Items showing less classroom at	nxiety				
persons						

*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

More r persor	More motivated Items indicating less motivation (difficult to endorse) persons				
67	. ##	+			
66		+			
65	. ##	+			
64		+			
63	###	+			
62		+			
61	. ##	+			
60	. ##	S+			
59	###	+			
58		+ T	2-read E outside class		
57	#####	+			
56	. = = = = = = = = = = = = = = = = = = =	+			
55	###	+			
54		+S	7-study E harder than classmates		
53	. #####	M+			
52	. #########	+	10-long hours studying E	4-want more E classes	
			8-think about E learned in class		
51	. ####	+			
50	. #####	+ M			
49	. ###	+	3-concentrate in E class		
48	####	+			
47	. #	+	6-E most interesting subject		
46	##	S+S	11-try hard to learn E	9-self-study if no E class	
45	###	+			
44		+			
43	. #	+	12-after uni continue E		
42		+T			
41		+			
40	#	+			
39	#	T+			
Less n person	Less motivated Items indicating more motivation (easy to endorse) persons				

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

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

Perso	ns more likely	7	Items indicating less likelihood	of approaching
to app	oroach		-	
62	. 11	+		
61		T+		
60	. 111	+		
59		+		
58	.11	+		
57	11	+		
56	. 11	\$+		
55		+T		
54	1111	+	3-talk to intnl ss at school	
53	1111	+		
52	. 1111	+\$	11-intnl vol activities	4-live with intnl ss
51	1111	+	5-volunteer activity w/ forgnr	7-help forgnr in store
50		M+M	2-talk to forgnrs	
49		+		
48		+\$		
47		+	1-friends intnl ss in Japan	12-overseas related to life
			6-comfy forgnr next door	
46	1111	+		
45		+T		
44	1111	S+		
43	.11	+		
42	.1	+		
41	-	+		
40	-	-		
39	- #	1+		
38		+		
Perso	ns less inkely		Items indicating more likelihoo	d of approaching
to app	roach			

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

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

Table 3	32
---------	----

Category Fur	iction Statistics for	the Revised Int	ercultural Frien	dship Orientation
Subscale				
Cultural				

Cultural						
Friendship		Avg	Exp	Outfit	Structure	
Orientation	Count (%)	Measure	Measure	MNSQ	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

Pers frier	ons with more Idship orientatio	n	Items indicating less friendship ori	entation
65	- ##	+		
6.4	• # #	т <u>+</u>		
63	****	+		
62	• * * * * *	+		
61	####	+		
60	1111	+		
59		+		
58	. ######	S+		
57	. ####	+		
56	. ######	+T		
55		+	21-necessary for Net	
54	. #############	+	23-help tests Eiken	
53	###########	M+S		
52	.###########	+	26-necessary future job	
51	.##########	+		
50	. ########	+ M	17-intnl news class content	
49	########	+	24-join cultural activities	
48	#########	+	20-get job in future	25-info in English
47	. ##	S+S	19-meet various people	22-know cultures people
46	######	+		
45	####	+		
44	####	+T		
43	- ##	+		
42	- #	+		
41	#	T+		
Pen	sons with less		Items indicating more friendship of	prientation
frie	ndship orientatio	n		

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

More	interested	Item thresholds showing more interest in international
persor	ns	vocation / activities
60		10-work in UN .4 + 8-not stay in hometown.4
53		1
58		· · · · · · · · · · · · · · · · · · ·
57		+ I
56	.11	+ 9-live abroad .4   13-overseas work OK .4
55		+  T
59		1
00		, I
52		+S 10-work in UN .3   8-not stay in hometown.3
51		
50		+± I
49		1 1
48		+S   13-overseas work OK .3
47		3-live abroad *
40		1
40	•••••	T
45		+   10-work in UN .2
44		8-not stay in hometown +
43	.1111	+
42		1 +
41		1 +
40		3-live abroad .2 + 13-overseas work OK .2
39		+
Less perso	interested ins	Item thresholds showing less interest in international vocation / activities

*Note.* M = mean, S = one standard deviation, <math>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.

More interested Item thresholds showing more interest in international news						
persons						
87 . +						
£6 · ·	16-inthl news more important.4					
£5 +						
84 ÷						
63 +						
62 +						
61 .I T+	15-discuss intnl news .4					
+ 03						
59 +	14-often view inthi news .4					
58 +						
57 1111 +						
56 +1						
55 *	15-inthi news more important.3					
54 57 55 <b>111111</b>						
50						
51 +						
50 +9	15-discuss intol news 3					
49 1111111111 +						
48 +	14-often view intol news .3					
47 +3						
46 #+						
45 +						
44						
43 +						
42 +						
41 +	16-intnl news more important.2					
40 +						
38 .IIIIII S+						
38 +						
37 +	M diama lakel and a					
36 +	15-discuss inthi news .2					
24 4	Madian vian into ann 2					
22	14-OILEN VIEW INCHI DEVS .4					
Less interested	Item thresholds showing less interest in international news					
persons						

*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.

	2-factor	4-factor
Model $\chi^2$		
Model estimation method	ML (Robust)	ML (Robust)
Independence model $\chi^2$ ( <i>df</i> = 136, 276)	1465.847	2288.288
Satorra-Bentler scaled $\chi^2$ ( <i>df</i> = 118, 248)	232.315	528.861
Probability value for the $\chi^2$ statistic	.000	.000
$\chi^2/df$ 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	.050074	.059075

 Table 40 (continued)

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



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:  $\chi^2$  (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.

Persons with more		Item indicating more diligence			
diligence					
63	+				
	i				
62	÷				
	i				
£1 .#	т+				
01	1				
60	+				
***	i				
### 59	-				
55	Ť				
·###					
29	Ť				
5/ ·####	24				
56	+				
	I				
55	+				
	ΙT				
54 .	+				
		19-thorough			
53 .	+				
	M				
52	+S				
	1	15-organized			
51 .############	+	14-generous	29-intelligent		
	1				
50 .####	+M	20-hardworking	30-analytical		
	1	35-sophisticated			
49 #######	+				
	S				
48 .####	+S	31-reflective			
	1				
47 .###	+				
	1				
46 .	+				
	ΙT	16-responsible			
45 .#	+				
	τI				
44	+				
	1				
43 tt	+				
	i				
42	+				
Persons with less		Item indicating les	ss diligence		
diligence					

*Note.* M = mean, S = one standard deviation, T = two standard deviations. *Figure 24.* Item-person map for the Diligence subscale.

Persons	with more		Item thresholds	indi	cating more em	otior	nal stability	
emotion	al stability							
63		+					25-not enviou	s.4
62		+					28-emotional	.4
61		+						
60		+					27-contented	.4
59		+					26-stable	. 4
58		T+					18-practical	.4
							24-at ease	
57		+					22-calm	. 4
							23-relaxed	
56	. #	+						
55	. #	+						
54	-	+T			25-not enviou	s.3		
53		S+			28-emotional	.3		
52		+S						
51		+						
50		+M			26-stable	.3		
					27-contented			
49 .		+			18-practical	.3		
					24-at ease			
48		M+S			22-calm	. 3		
47		+			23-relaxed	.3		
46		+T						
45		+	25-not enviou	s.2				
44	. 1111	+						
43	. 11	S+	28-emotional	.2				
42		+						
41	. ##	+	26-stable	.2				
			27-contented					
40	. 11	+	18-practical	.2				
39		+	22-calm	.2				
			24-at ease					
38		T+	23-relaxed	.2				
37		+						
36		+						
35	t	+						
Persone	with less		Item thresholds	ind	icoting less em:	ntion	al etability	
emotion	al etability		nem an esholus	, шц	icarms iess cilli	Juon	ai staointy	
cinomon	iai staonity							

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

Persons with more		Item thresholds	; ind	icating more ag	ŗreea	ableness	
agreeableness							
•							
65	+					8-warm	.4
64	+					9-kind	.4
63	T+					10-cooperative	.4
						13-trustful	
						17-conscientio	s
62 #1	+						
61	+						
60	+						
59 .##1	: +						
58	+						
57	S+						
56 #########	; +						
55	+						
54	+						
53 11111111	+						
52	+T						
51	+\$						
50 11111111111	M+M			8-warm	.3		
49 .	+S			9-kind	.3		
48	: +T			10-cooperative	.3		
				13-trustful			
				17-conscientiou	S		
47	+						
46 .	. +						
45 #######	+						
44	5+						
43 .#####							
42							
41 ##1							
40	Ţ	9 - ma rm	2				
20	Ţ	o-warm 9-kind	• •				
97 ·	T.	10-cooperative	.2				
57		12-trustful	• 4				
		17-consciention					
36	+	in conscienciou					
Persons with less		Item threshold	s in	dicating less ag	reeal	bleness	
agreeableness							

*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

70	. 11	+									34-creative	.6
69		+										
68		T+										
67		+										
66		+										
65		+									33-imaginati	ve.6
64		+										
63		+										
62		+									32-curious	.6
61		+										
60		S+										
59		+							34-creative	.5		
58		+										
57		+										
56		+T								_		
55		+							33-imaginativ	/e.5		
54		*.										
53		+S					34-creative	.4				
52		H+							32-curious	.5		
51		*										
50		+11										
49		+										
48		*					33-imaginativ	e.4				
47		+5			34-creative	.3						
46							0.0					
40		*					32-curious	.4				
44		541			99-lessiesti							
40					55-imaginati	ve.ə						
92	••••		24- aventive									
40			34-creative	• 2	22-0115-0110	0						
29					32-Currous	.0						
20												
27												
36		т.	22-inerinetiv	. 2								
35			oo magmacre	0.4								
34												
33			32-curious	. 2								
32		+										
-7.6		-										

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.

Persons perceiving more distance	Ι	item thresholds more d	liffi	cult to endorse (show	w les	ss perceived distance)	
66 . <b>#####</b> #	T+						
65	+						
64	+					chatting English.4	
63	+						
62	+						
61 .###	+						
60	+					public speaking .4	
						roleplay	
59 ########	S+						
58	+T						
57	+						
56 .########	+			chatting English	.3		
55	+						
54 ###########	+S					drama .4	
53	+					puppetry .4	
52 .########	+						
51 .#######	M+			public speaking	.3		
				roleplay			
50	+ M						
49 .########	+	chatting English.	2				
48	+						
47 ####	+						
46	+S						
45 ######	+			drama	.3		
44 IIII	S+	public speaking .	2	puppetry	.3		
		roleplay					
43	+						
42	+T						
41 ##	+						
40	+						
39 ######	+						
38	+	drama .:	2				
37	T+	puppetry .:	2				
36	+						
35 .#	+						
34 ###	+						
Persons perceiving less distance	Persons perceiving Item thresholds less difficult to endorse (show more perceived distance) less distance						
Note. M = mean, S	= on	e standard deviation, T	[=1	two standard deviation	ons		

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

Persons wi	th more		Item thresholds indicating n	nore unusual experiences
experience	s			
60		T+		
59		+		8-senses converge .3
58		+		1-daydreams ppl change .3
				10-own body changes
				6-things change
57	.1	+		
56		+		
55	.##	+T		3-have daydreams .3
54	###	+		12-real or not .3
				4-dreams ppl change
				5-body injured
				9-dreams vivid real
53	. ###	S+S		7-scary to nightmares .3
52		+		11-called real not real.3
51	=====	+		
50 ##		+ M		2-dream to dream .3
49	.##	+	8-senses converge .2	
48	*****	+	1-daydreams ppl change .2	
			10-own body changes	
			6-things change	
47	#===	M+S		
46	##	+		
45	. # # # # # #	+T	3-have daydreams .2	
			4-dreams ppl change	
44	. # #	+	12-real or not .2	
			5-body injured	
			9-dreams vivid real	
43	. ###	+	7-scary to nightmares .2	
42		+	11-called real not real.2	
41	#===	+	2-dream to dream .2	
40	.#####	S+		
39		+		
38	#===	+		
37		+		
Persons wi	ith fewer		Item thresholds indicating i	fewer unusual experiences
experience	s			

*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

Persons with more Item indicating more need for order							
need	l for order						
62		+					
61	#	+					
60		+					
59	#	T+					
58	##	+					
57	. #	+					
56	. ###	+					
55	##	S+T					
54	********	+	21-frames picture				
53	.#####	+S	13-everything place	20-good guys bad guys			
52	********	+	18-partner not diff race				
51	.########	M+					
50	.#########	+M	14-strict discipline	16-m-f diff			
			23-def walls functions				
49	********	+	15-org def roles	17-stories def parts			
			24-East is East				
48	. ###	+					
47	. # # # # #	S+S	19-precise borders				
46		+					
45	. ##	+T	22-neat dress important				
44	. ##	+					
43	. #	T+					
42		+					
41		+					
Persons with less			Item indicating less need for order				
need for order							

*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.

Persons v	vith more		Item thresholds i	ndic	ating m	ore T-M	con	npetence
T-M com	petence				-			-
62	1	+						
61		+						38-good psychother .4
60		T+						33-good w money .4
59	.1	+						37-down to earth .4
58	. 11	+						32-desk neat .4
								35-safe areas
								36-clear memory
57	.‡	+						34-clear time sense.4
56		+						
55	. 11	S+						31-appts on time .4
54		+T						
53		+			33- <b>good</b>	w money	.3	
					38-good	psychother		
52		+\$			37-do⊮n	to earth	.3	
51		+						
50		與十國			32-desk	neat	.3	
					35-safe	areas		
					36-clear	r memory		
49	111111111	+			34-clear	r time sens	e.3	
48		+\$						
47	. 1111	+			31-appt:	s on time	.3	
46	11111	+T						
45	.111	\$+						
44		+	33-good w money	.2				
			38-good psychother					
43	- 11	+	37-down to earth	.2				
42		*	AA					
41		+	32-desk neat	.2				
			35-sate areas					
40		τ.	35-clear memory	- 0				
40		17	34-clear time sens	e.2				
20			Oleannia an tina					
20		-	or appea on chie	••				
Demond	with less		Item thresholds	indi	coting 1	ecc T.M.		netence
Feisons v	witti 1688		nem un esnolus i	шц1	caring I	CSS I-IVI (	, UIII	herence
T-M com	npetence							

*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 Pasch-Thurstone thresholds for the Chil

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.<sup>12</sup>

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.

<sup>&</sup>lt;sup>12</sup> 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.

			Infit		Outfit	Outfit	Pt-M
Item	Measure	SE	MNSQ	Infit <i>t</i>	MNSQ	t	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
М	50.00	.52	.98	4	1.07	3	
SD	3.36	.01	.23	2.8	.01	.1	

 Table 70

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

*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.

Persons with more positive attitude	Item thresholds indicating	Item thresholds indicating more positive attitude					
<b>1111</b> T	 r  +						
	I	3-not nervous NS .3 4-comfy with NS					
. <b></b> s	S T 	2-OK more Eng class .3					
. #######	S 						
50 . <b></b> M	К+М 	1-absolutely Eng class.3					
. #########	S 3-not nervous NS .2 4-comfy with NS						
. S .III	S  2-OK more Eng class .2  T   +						
.11	r  1-absolutely Eng class.2 						
Persons with less Item thresholds indicating less positive additude							

positive attitude

*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  $\chi^2$  (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  $\chi^2$  (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,  $\chi^2$  (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  $\chi^2/df$  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.  $\chi^2$  (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.  $\chi^2$  (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 ( $\beta$ = .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.

Duiu-Driven I uns					
Model	$\chi^2$	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

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

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.

with Dulu-Driven I uns					
Model	$\chi^2$	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

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

The standardized solution is shown in Figure 52. The path coefficients 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.