

“ Compared with monolingual (nonWelsh-speaking) students, bilingual (fluent Welsh-speaking) students were significantly more likely to prefer Extraversion and Sensing. ”

## Psychological Types of Bilingual and Monolingual Female Undergraduate Students in Wales

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### ABSTRACT

The aim of this study was to compare the psychological type profiles of bilingual (fluent Welsh-speakers) and monolingual (nonWelsh-speakers) students in Wales. The Myers-Briggs Type Indicator® instrument was completed by 425 female undergraduate students attending a university-sector college in Wales that exercises a bilingual policy (English and Welsh). From the total sample, 102 subjects identified themselves as fluent Welsh-speakers (bilinguals) and 101 as nonWelsh speakers (monolinguals). The remaining 222 were Welsh learners and were excluded from the analyses of the present study. SRTT analyses revealed that in the study sample, the bilingual students demonstrated significantly more

frequent preferences for Extraversion and for Sensing compared with the monolingual students.

Note: For the Myers-Briggs Type Indicator® (MBTI®) instrument, the eight preference categories are the following: Extraversion (E) versus Introversion (I), Sensing (S) versus Intuition (N), Thinking (T) versus Feeling (F), Judging (J) versus Perceiving (P).

### INTRODUCTION

The psychology of bilingualism is a growing but underdeveloped field of research. Internationally, recent studies have examined the psychological correlates of bilingualism, including concern with verbal abilities in low and highly proficient bilinguals (Andreou & Karapetsas, 2004), cognitive control among different bilingual age groups (Bialystok, Craik, Klein, & Viswanathan, 2004),

and contrasting quality of life among bilinguals and monolinguals (Thumboo, Cheung, Machin, Feng, Boey, Thio, et al., 2005). A potentially fruitful line of psychology inquiry has built on personality theory and measurement, as reflected in two traditions.

The first tradition is concerned primarily with the psychometric assessment of personality, testing among bilinguals the reliability, structure, and validity of translations of personality scales. (See, for example, Benet-Martinez & John, 1998; Butcher, Derksen, Sloore, & Sirigatti, 2003; Piedmont & Chae, 1997) The second tradition is concerned primarily with examining the distinctive personality characteristics of bilinguals. For example, McCrae, Yik, Trapnell, Bond, and Paulhus (1998) explored the personality characteristics of 162 bilingual Hong Kong students using the Revised NEO Personality model. Using the Eysenck Personality Inventory, Dewaele and Furnham (2000) explored personality characteristics of 25 Flemish students who were second-language learners of French. Verhoeven and Vermeer (2002) explored personality characteristics and communicative competence among 144 monolingual and 46 bilingual children in the Netherlands using a new scale based on the NEO Personality model. As yet, however, no published data have been identified concerning the relationship between bilingualism and individual differences in psychological type preferences.

In a related context, a series of studies has begun to explore the relationship between second language acquisition and psychological type. For example, in a study of 491 first- and second-year students of French, German, and Spanish at the University of Hawaii, Moody (1988) found that the Introverts, Intuitive types, Thinking types, and Perceiving types were significantly overrepresented compared to a general sample of 18,592 college students. In a study of 76 students of English at a university in Indonesia, Carrell, Prince, and Astika (1996) found overall preferences for Extraversion, Sensing, Thinking, and Judging. However, when they explored the relationship between psychological type preferences and type-related learning styles, they “did not find any direct, simple relationships between learning styles and language performance measures” (p.95). In a study of 52 first-language English university students of Spanish, Luján-Ortega and Clark-Carter (2000) found that preferences for Extraversion, Intuition, and Judging predicted better performance.

Another relevant line of research has documented the relationship in higher education between students’

learning styles and preferred approaches to teaching (Liu & Reed, 1994; Sadler-Smith & Riding, 1999; Zhang, 2004a, 2004b; Zhang & Sternberg, 1998, 2000). Individual differences in psychological type preferences may play a key role in shaping teaching and learning style preferences and effective and efficient responses to the processes of higher education. Therefore, information about significant differences between the psychological type profiles of bilingual and monolingual undergraduate students may help to promote better understanding of the teaching and learning policy, as well as environment shaped within undergraduate programs designed to accommodate both bilinguals and monolinguals without disadvantage to either community.

Against this background, the goal of the present study was to explore the relationship between bilingualism in Wales and individual differences in psychological type preferences, by profiling a sample of fluent Welsh-English speakers and by comparing this sample with a group of monolingual English speakers. Although the MBTI® instrument has been translated into many different languages, including Chinese, Danish, Dutch, European French, Canadian French, German, Italian, Korean, Norwegian, Portuguese, Spanish, and Swedish (Myers, McCaulley, Quenk, & Hammer, 1998), the copyright holders declined permission for the present research team to develop a Welsh language form of the instrument. As a consequence, the entire study was conducted in English.

This study was based in a university-sector college in Wales, specializing in teacher education and liberal arts subjects. According to its mission statement, the college is a “dynamic and innovative provider of bilingual education” and employs a bilingual policy (English and Welsh). The emphasis on the Welsh language varies greatly from one region in Wales to another, with the consequence that some people growing up in Wales are fully bilingual and others are not. This university-sector college provides in some subject areas parallel classes operating either in English or in Welsh. Students attracted from England to attend this college tend to do so because of the educational standards and not because of its bilingual policy.

## **METHOD**

**Measures.** Psychological type was assessed by Form G of the Myers-Briggs Type Indicator instrument (MBTI®: Myers & McCaulley, 1985). The MBTI instrument is a forced-choice format, pencil and paper questionnaire

that contains 126 items in its standard form. The psychometric properties of this instrument have been found to be highly satisfactory in England and Wales (Francis & Jones, 1999).

Language status was assessed by the question “Do you speak Welsh?” by selecting one of four possible responses: “No,” “Yes, learner,” “Yes, intermediate,” and “Yes, fluently.” These four responses are well-established categories in connection with Welsh language status.

**Participants.** A sample of 425 first-year female undergraduate students participated in the study. Within this sample, 101 respondents reported that they did not speak Welsh, and 102 respondents reported that they spoke Welsh fluently. These two subsamples of students were selected for comparison from within the whole dataset of 425 female first-year undergraduate students. The remaining 222 respondents who reported that they were either Welsh learners or had achieved intermediate proficiency with Welsh language were omitted from the analyses. Among the sample of 102 Welsh-speaking bilinguals, 97% were aged 18 to 21 and 3% were aged 22 or older; 100 reported that they were living in Wales before attending the university-sector college. Among the sample of 101 nonWelsh-speaking monolinguals, 88% were aged 18 to 21 and 12% were aged 22 or older; 53% reported that they were living in Wales before attending the university-sector college, 27% reported that they were living in England, 17% reported that they were living in Ireland, and 1% reported that they were living in Scotland.

## RESULTS

**TABLE 1** presents the type profile of the 101 monolingual female students, and **TABLE 2** presents the type profile of the 102 bilingual female students. The SRTT analyses revealed significantly higher proportions of Extraverts and Sensing types among the bilingual students in comparison to the monolingual ones. Although 62% of the monolingual students preferred Extraversion over Introversion, the proportion rose to 81% among the bilingual students. Although 48% of the monolingual students preferred Sensing, the proportion rose to 74% among the bilingual students. On the other hand, there were no significant differences between the two groups of students in preferences for Thinking or Feeling, nor in preferences for Judging or Perceiving. Considering the 16 discrete psychological types, the major difference between the two groups of students was in terms of the proportions who presented as ESFJ:

although 11% of the monolingual students preferred ESFJ, the proportion rose to 27% among the bilingual students.

## DISCUSSION AND CONCLUSION

Statistically, the conclusion is clear: The two groups of female students (the monolinguals and the bilinguals) were significantly different in psychological type. Theoretically, however, it is not clear how to account for this difference. Type theory would argue that the causal directionality for such differences would proceed from psychological type preference to linguistic status rather than in the opposite direction. This direction of causality would be consistent with three different hypotheses that could account for the observed relationship between psychological type and linguistic status.

The first hypothesis suggests that the two groups of students came from well-defined and different genetic stock. Thus, bilingualism would be rooted within indigenous Welsh families and promoted within the family context. Also, the indigenous Welsh might be seen as a group with more pronounced preferences for Extraversion and for Sensing than the neighboring English population. This hypothesis is consistent with the fact that all the bilinguals were living in Wales before attending the university-sector college, compared with just 53% of the monolingual students. However, this theory is weakened by the observations that the state-maintained educational system in Wales offers bilingual opportunities to all pupils and that the Welsh language receives some of its most enthusiastic support from newcomers who have learned Welsh as a second language and attained fluency.

The second hypothesis suggests that Extraversion and Sensing might offer certain advantages for attaining bilingual status. In support, it could be argued that bilingualism in Wales is largely supported by the educational system through programs of “total immersion.” Extraverts are likely to feel more comfortable than Introverts in this context, learning language through interaction with others. Sensing types are likely to feel more comfortable than Intuitive types in this context, learning first the “facts” of a language before grasping the underlying structure and principles. However, this theory is weakened by the observation that for many bilingual young people, the primary agency of language acquisition may reside within the home rather than within the school.

The third hypothesis suggests that Extraversion

Table 1. Type Distribution of Monolingual Female Students.

The Sixteen Complete Types				Dichotomous Preferences		
ISTJ <i>n</i> = 5 (5.0%) + + + + +	ISFJ <i>n</i> = 9 (8.9%) + + + + + + + + + +	INFJ <i>n</i> = 7 (6.9%) + + + + + + +	INTJ <i>n</i> = 1 (1.0%) +	E	63	(62.4%)
				I	38	(37.6%)
				S	48	(47.5%)
				N	53	(52.5%)
				T	25	(24.8%)
				F	76	(75.2%)
				J	50	(49.5%)
				P	51	(50.5%)
The Sixteen Complete Types				Pairs and Temperaments		
ISTP <i>n</i> = 1 (1.0%) +	ISFP <i>n</i> = 4 (4.0%) + + + + +	INFP <i>n</i> = 10 (9.9%) + + + + + + + + + +	INTP <i>n</i> = 1 (1.0%) +	IJ	22	(21.8%)
				IP	16	(15.8%)
				EP	35	(34.7%)
				EJ	28	(27.7%)
				ST	14	(13.9%)
				SF	34	(33.7%)
				NF	42	(41.6%)
				NT	11	(10.9%)
				SJ	29	(28.7%)
				SP	19	(18.8%)
				NP	32	(31.7%)
				NJ	21	(20.8%)
				TJ	14	(13.9%)
				TP	11	(10.9%)
				FP	40	(39.6%)
				FJ	36	(35.6%)
				IN	19	(18.8%)
				EN	34	(33.7%)
				IS	19	(18.8%)
				ES	29	(28.7%)
				ET	17	(16.8%)
				EF	46	(45.5%)
				IF	30	(29.7%)
				IT	8	(7.9%)
Jungian Types (E)		Jungian Types (I)		Dominant Types		
	<i>n</i> %		<i>n</i> %		<i>n</i> %	
E-TJ	8 7.9	I-TP	2 2.0	Dt. T	10 9.9	
E-FJ	20 19.8	I-FP	14 13.9	Dt. F	34 33.7	
ES-P	14 13.9	IS-J	14 13.9	Dt. S	28 27.7	
EN-P	21 20.8	IN-J	8 7.9	Dt. N	29 28.7	

*N* = 101 + = 1% of *N* \**p* < .05 \*\**p* < .01 \*\*\**p* < .001

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**Table 2. Type Distribution of Bilingual Female Students With SRTT Comparison with Female Monolingual Students.**

The Sixteen Complete Types				Dichotomous Preferences			
ISTJ <i>n</i> = 2 (2.0%) <i>I</i> = 0.40 + +	ISFJ <i>n</i> = 11 (10.8%) <i>I</i> = 1.21 + + + + + + + + + + +	INFJ <i>n</i> = 2 (2.0%) <i>I</i> = 0.28 + +	INTJ <i>n</i> = 0 (0.0%) <i>I</i> = 0.00	E 83 (81.4%) I 19 (18.6%)	<i>**I</i> = 1.30 <i>**I</i> = 0.50	S 75 (73.5%) N 27 (26.5%)	<i>***I</i> = 1.55 <i>***I</i> = 0.50
ISTP <i>n</i> = 1 (1.0%) <i>I</i> = 0.99 +	ISFP <i>n</i> = 2 (2.0%) <i>I</i> = 0.50 + +	INFP <i>n</i> = 1 (1.0%) <i>I</i> = 0.10** +	INTP <i>n</i> = 0 (0.0%) <i>I</i> = 0.00	T 21 (20.6%) F 81 (79.4%)	<i>I</i> = 0.83 <i>I</i> = 1.06	J 56 (54.9%) P 46 (45.1%)	<i>I</i> = 1.11 <i>I</i> = 0.89
ESTP <i>n</i> = 6 (5.9%) <i>I</i> = 1.49 + + + + + +	ESFP <i>n</i> = 18 (17.6%) <i>I</i> = 1.78 + + + + + + + + + + + + + + + + + +	ENFP <i>n</i> = 14 (13.7%) <i>I</i> = 0.87 + + + + + + + + + + + + + + +	ENTP <i>n</i> = 4 (3.9%) <i>I</i> = 0.79 + + + +	EP 42 (41.2%) EJ 41 (40.2%)	<i>I</i> = 1.19 <i>I</i> = 1.45	ST 17 (16.7%) SF 58 (56.9%) NF 23 (22.5%) NT 4 (3.9%)	<i>I</i> = 1.20 <i>**I</i> = 1.69 <i>**I</i> = 0.54 <i>I</i> = 0.36
ESTJ <i>n</i> = 8 (7.8%) <i>I</i> = 1.98 + + + + + + + +	ESFJ <i>n</i> = 27 (26.5%) <i>I</i> = 2.43** +	ENFJ <i>n</i> = 6 (5.9%) <i>I</i> = 0.66 + + + + + +	ENTJ <i>n</i> = 0 (0.0%) <i>I</i> = 0.00*	SJ 48 (47.1%) SP 27 (26.5%) NP 19 (18.6%) NJ 8 (7.8%)	<i>**I</i> = 1.64 <i>I</i> = 1.41 <i>*I</i> = 0.59 <i>**I</i> = 0.38	TJ 10 (9.8%) TP 11 (10.8%) FP 35 (34.3%) FJ 46 (45.1%)	<i>I</i> = 0.71 <i>I</i> = 0.99 <i>I</i> = 0.87 <i>I</i> = 1.27
IN 3 (2.9%) EN 24 (23.5%) IS 16 (15.7%) ES 59 (57.8%)	ET 18 (17.6%) EF 65 (63.7%) IF 16 (15.7%) IT 3 (2.9%)	<i>***I</i> = 0.16 <i>I</i> = 0.70 <i>I</i> = 0.83 <i>***I</i> = 2.01	<i>I</i> = 1.05 <i>**I</i> = 1.40 <i>*I</i> = 0.53 <i>I</i> = 0.37				

Jungian Types (E)				Jungian Types (I)				Dominant Types			
	<i>n</i>	%	<i>Index</i>		<i>n</i>	%	<i>Index</i>		<i>n</i>	%	<i>Index</i>
E-TJ	8	7.8	0.99	I-TP	1	1.0	0.50	Dt. T	9	8.8	0.89
E-FJ	33	32.4	1.63*	I-FP	3	2.9	0.21	Dt. F	36	35.3	1.05
ES-P	24	23.5	1.70	IS-J	13	12.7	0.92	Dt. S	37	36.3	1.31
EN-P	18	17.6	0.85	IN-J	2	2.0	0.25	Dt. N	20	19.6	0.68

*N* = 102 + = 1% of *N* *I* = Selection Ratio Index \**p*<.05 \*\**p*<.01 \*\*\**p*<.001

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and Sensing might offer certain advantages for maintaining bilingual status within higher education. Supporting this view, it could be argued that within Wales, resources for advanced academic study through the Welsh language are relatively restricted. The severe disadvantage of minority languages is that a smaller number of scholars are capable of publishing their innovative research that would push forward the frontiers of knowledge. Welsh-speaking students may find their commitment to the Welsh language eroded by the constant need to inform their scholarship through access to better resources in an international language. Introverts who rely more heavily than Extraverts on solitary modes of learning may be more vulnerable to this tendency. Further, students who prefer Intuition and are more conscious about new ideas and theories than Sensing types may be more vulnerable to this tendency as well. However, this theory is weakened by the observation that the present data were based on first-year undergraduate students who may not yet have been greatly influenced by higher education.

Although the current study suggests that bilingual and monolingual students differ significantly in their psychological type preferences, these findings are limited in three significant ways. The first limitation is that this study only profiles female students. Given that the UK population norms demonstrate that men and women differ in their psychological type preferences (Kendall, 1998), it is appropriate to explore whether male Welsh-speaking bilinguals also demonstrate more frequent preferences for Extraversion and Sensing in comparison with male nonWelsh-speaking monolinguals in Wales.

The second limitation is that both the nonWelsh-speakers and the fluent Welsh speakers completed the MBTI instrument in English. It is possible that fluent Welsh speakers who use English as their less preferred language might have reported different psychological type preferences if they had completed the Indicator in Welsh. Currently no published psychological type indicators are available in Welsh. Thus, future research should be conducted to develop and implement a Welsh operationalization of psychological type theory.

The third limitation concerns the relatively crude

measure of linguistic status. The measurement of bilingualism is itself a complex area of study (Baker, 2001) that deserves more careful differentiation between the four related but distinct areas of understanding, speaking, reading, and writing.

The fourth limitation concerns the other important ways in which the sample of bilinguals differed from the sample of monolinguals, in addition to their linguistic status. A more rigorous comparison would have compared only those students who were under the age of 22 years and who were living in Wales before attending the university-sector college. This would, however, have reduced the sample size below an acceptable threshold for testing differences between the two distributions.

Future research may wish to build on the present study in two ways in addition to addressing the weaknesses identified above. First, psychological type is clearly related to learning styles and to learning preferences (Francis & Robbins, in press). According to the present study, both Introverts and people who prefer Intuition are relatively marginal groups among the bilingual students (19% and 27%, respectively). Taken together, INs accounted for just 3% of the bilingual students, compared with 19% of the monolingual students. Minority groups of this nature may feel particularly disadvantaged in a learning environment more generally dominated by learners who display opposing preferences. For example, the ES preference was displayed by 58% of the bilingual students, compared with 29% of the monolingual students. Further research could, therefore, profitably concentrate on illuminating and comparing the learning preferences and learning experiences of bilingual students compared with monolingual students.

Second, in the present study psychological type theory and measurement were applied within one clearly defined bilingual environment: Wales. From the present study, it is unclear whether the observed differences between bilingual and monolingual students are primarily associated with linguistic status or with national identity. Further research could, therefore, profitably concentrate on replicating the present study in another similar bilingual community (e.g., parts of French-speaking Canada).



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