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# A comparison of the relationship between extraversion and argumentativeness in the United States, Canada, Australia, and New Zealand

Stephen M Croucher , Tommy Yotes, Doug Ashwell , and Shawn M Condon

## ABSTRACT

The association between argumentativeness and extraversion, while well established in the United States, has not been examined cross-culturally. Therefore, this study conducts a cross-cultural comparison of this association with nationally representative samples from Australia, Canada, New Zealand, and the United States. The results confirm previous research in the U.S. and showed U.S. participants scored highest on tendency to approach arguments and extraversion, and lowest on tendency to avoid arguments, while New Zealanders scored the lowest on tendency to approach arguments and extraversion. These results expand our understanding of argumentativeness, illustrating the positive association between argumentativeness and extraversion is not a uniquely U.S. phenomenon, and expanding our understanding of argumentativeness to the Canadian context. The differences found between countries suggest future research explore how other factors might explain these differences.

## KEYWORDS

Argumentativeness;  
extraversion; cross-cultural;  
ANOVA; Fisher's z

## Introduction

Argumentativeness is among the most widely studied constructs in communication. Argumentativeness is a relatively stable trait that “predisposes an individual in communication situation(s) to advocate positions on controversial issues and to attack verbally the positions which other people take on these issues” (Infante & Rancer, 1982, p. 72)., Argumentativeness has been associated with many communication constructs, such as verbal aggression (Infante et al., 2011; Kotowski et al., 2009), organizational dissent (Croucher et al., 2009), communication apprehension (Howe & Cionea, 2021), conflict (Hample & Anagondahalli, 2015), and romantic attachment (Weger, 2006). The volume of literature about argumentativeness suggests it is a critical field of research (Rancer & Avtgis, 2014).

The argumentativeness construct has been largely explored among U.S. based samples. Non-U.S. based research into argumentativeness has

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been conducted in Australia (Avtgis & Rancer, 2002), China (Rapanta & Hample, 2015), France (Croucher et al., 2018), Germany (Croucher et al., 2021), India (Hample & Anagondahalli, 2015), Japan (Suzuki & Rancer, 1994), Kyrgyzstan (Subanaliev et al., 2018), Nicaragua (Croucher et al., 2021), Portugal (Lewiński et al., 2018), New Zealand (Hackman et al., 1995), the Philippines (Croucher et al., 2021), Turkey (Croucher et al., 2013), United Arab Emirates (Rapanta & Hample, 2015), and the United Kingdom (Croucher et al., 2021).

One variable that has consistently shown to predict argumentativeness is extraversion. Extraversion is a trait generally associated with being active, assertive, carefree, dominant, adventurous, sociable, sensation-seeking, and friendly (Eysenck & Eysenck, 1963). Extraversion is one of the primary traits, alongside introversion and psychoticism, often associated with Eysenck and Eysenck's "Big Three" personality traits model. Infante (1987) identified argumentativeness as part of the assertiveness facet of extraversion and Gronostay (2019) explained the active nature of extraverts leads them to be more likely to approach arguments. Research exploring the link between argumentativeness and extraversion has consistently found a positive relationship between extraversion and levels of argumentativeness (Blickle, 1995, 1997; T. R. Levine & McCornack, 1991; McCroskey et al., 2001; Tohver, 2020). While initially explored in a U.S. context, there is an extensive volume of cross-cultural literature exploring extraversion. Researchers have explored extraversion in more than 70 national contexts, including nations in South America, Africa, Europe, Asia, Oceania, the Middle East, and in former Soviet states (see Lucas et al., 2000; Lynn & Martin, 1997; Rojas-Méndez & Hine, 2017).

The relationship between extraversion and argumentativeness has not yet been explored cross-culturally or in a non-U.S. context. Thus, this study investigated the association between argumentativeness in non-U.S. settings and compared those results with findings from studies conducted in the United States. Specifically, three national contexts were chosen to compare with the U.S.: Canada, Australia, and New Zealand. These four nations were chosen for the following reasons: first, it is critical to compare more than two groups to systematically document cultural influences (Ones et al., 2012). Second, these four nations share similar cultural elements that reduce extraneous variables; for example, all four nations are predominantly English-speaking and are economically part of the Global North.

Studies have drawn comparisons among the U.S., Australia, and New Zealand on argumentativeness. Specifically, researchers have found when compared to East-Asian nations, participants from the U.S., Australia, and New Zealand scored higher on argumentativeness (Avtgis & Rancer, 2002), with U.S. participants scoring the highest. When compared to U.S. and

Australian participants, New Zealand participants score lower, as New Zealanders have been found to have a higher tendency for self-monitoring (Hackman et al., 1995). Research has not explored argumentativeness in a Canadian context.

Researchers have extensively explored extraversion and how it differs among the U.S., Australia, Canada, and New Zealand. The consensus has been U.S. participants score higher in levels of extraversion than their Australian, Canadian, and New Zealander counterparts (Lucas et al., 2000; Lynn & Martin, 1997; Vaughan & Cattell, 1976). Previous research linking argumentativeness and extraversion has shown a positive association between tendency to approach argument and extraversion, and a negative relationship between extraversion and tendency to avoid argument (Blickle, 1995, 1997; T. R. Levine & McCornack, 1991; McCroskey et al., 2001; Tohver, 2020). Thus, we propose the following:

**H:** There will be a positive relationship between extraversion and tendency to approach argument and a negative relationship between extraversion and tendency to avoid argument in the United States.

As there is scant research linking argumentativeness and extraversion in a non-U.S. setting, we pose the following research question:

**RQ1:** What will be the relationship between extraversion and argumentativeness in Australia, Canada, and New Zealand?

Finally, we seek to compare the results among these samples, and therefore pose the second research question:

**RQ2:** How will the relationship between argumentativeness and extraversion differ between Australia, Canada, New Zealand, and the United States?

## **Method**

### ***Participants and procedures***

After obtaining ethical approval in 2023, nationally representative samples were collected in Australia ( $n = 212$ ), Canada ( $n = 425$ ), New Zealand ( $n = 453$ ), and the U.S. ( $n = 879$ ) using Qualtrics. Qualtrics provided financial incentive (\$5USD) for participants to complete the survey. All participants

were native English speakers and native-born to their respective nation. Confirmatory factor analysis (CFA) was conducted on all data to determine validity following criteria set by Hu and Bentler (1999). Verifying factor structures of a measure is essential when using it in a context for which it was not developed (Croucher & Kelly, 2019). As both measures were developed in a U.S. context, it is possible some items may not be culturally relevant (Croucher & Kelly, 2019). The AMOS maximum likelihood parameter estimation algorithm was used to create a priori correlation matrices to compare against observed matrices to identify problematic or weak items. Items making up each measure were examined for residual error. Those items causing a significant amount of residual error were systematically removed. Acceptable fit indices were: goodness of fit index (GFI)  $\geq .90$ , a comparative fit index (CFI)  $\geq .90$ , a standard root mean residual (SRMR)  $\leq .08$ , and root mean square error approximation (RMSEA)  $\leq .10$ . Such modification or removal of problematic items is acceptable and recommended (T. Levine et al., 2006). “If the factor structure does not fit a particular data set and modifications are made, then one has enhanced the measurement validity within a particular study” (T. Levine et al., 2006, p. 313)., Table 1 provides demographic information.

## ***Instruments***

### ***Argumentativeness Scale***

The Argumentativeness Scale is a 20-item scale measuring tendency to avoid and approach argument (Infante & Rancer, 1982). A sample item is, “I enjoy defending my point of view on an issue.” Items are rated from 1 (*almost never true*) to 5 (*almost always true*). While some research has argued the argumentativeness construct is unidimensional (Kotowski et al., 2009), we retained the two factors of avoid and approach, recognizing the arguments of Infante et al. (2011) and for cross-national comparability Hample (2018) and Mamberti and Hample (2022).<sup>1</sup>

### ***Eysenck Personality Questionnaire***

The 24-item Revised Eysenck Personality Questionnaire (EPQR) (Francis et al., 1992) was used. This scale measures extraversion, neuroticism, psychoticism, and tendency to lie. In the current study, only extraversion is included. Each item is scored either *yes* (0) or *no* (1). A sample item is, “Are you a worrier?”<sup>2</sup> Means, standard deviations, and correlations for all variables are presented in Table 2.

**Table 1.** Participant demographics.

		Australia ( <i>n</i> = 212)		
Variable		<i>n</i>	<i>M</i>	<i>SD</i>
Sex	Male	101 (47.6%)	33.87	13.03
	Female	111 (52.4%)		
Age				
Highest Educational Level				
	High School	107 (50.5%)		
	2-year Degree	42 (19.8%)		
	4-year Degree	39 (18.4%)		
	Post-Graduate	24 (11.23)		
Race/Ethnicity				
	White	178 (84%)		
	Asian	20 (9.4%)		
	Aboriginal	14 (6.6%)		
Canada ( <i>n</i> = 425)				
Variable		<i>n</i>	<i>M</i>	<i>SD</i>
Sex	Male	195 (45.9%)	33.39	11.76
	Female	230 (54.1%)		
Age				
Highest Educational Level				
	High School	54 (12.7%)		
	2-year Degree	100 (23.5%)		
	4-year Degree	181 (42.6%)		
	Post-Graduate	90 (21.2%)		
Race/Ethnicity				
	White	241 (56.7%)		
	Indian	59 (13.9%)		
	Black	50 (11.8%)		
	Arab	28 (6.6%)		
	Other	28 (6.6%)		
	Asian	20 (4.7%)		
New Zealand ( <i>n</i> = 453)				
Variable		<i>n</i>	<i>M</i>	<i>SD</i>
Sex	Male	215 (47.5%)	39.68	13.59
	Female	238 (52.5%)		
Age				
Highest Educational Level				
	High School	214 (47.2%)		
	2-year Degree	69 (15.2%)		
	4-year Degree	125 (27.6%)		
	Post-Graduate	45 (9.9%)		
Race/Ethnicity				
	White	259 (57.2%)		
	Māori	79 (17.4%)		
	Asian	70 (15.5%)		
	Pacific Islander	29 (6.4%)		
	Other	16 (3.5%)		
United States ( <i>n</i> = 879)				
Variable		<i>n</i>	<i>M</i>	<i>SD</i>
Sex	Male	396 (45.1%)	32.16	14.36
	Female	477 (54.3%)		
	Other	6 (.7%)		
Age				
Highest Educational Level				
	High School	598 (68%)		

*(Continued)*

**Table 1.** (Continued).

Variable	United States ( <i>n</i> = 879)		<i>M</i>	<i>SD</i>
		<i>n</i>		
	2-year Degree	88 (10%)		
	4-year Degree	134 (15.2%)		
	Post-Graduate	59 (6.8%)		
Race/Ethnicity	White	614 (69.9%)		
	Black	120 (13.7%)		
	Asian	53 (6%)		
	Hispanic	45 (5.1%)		
	Other	47 (5.3%)		

**Table 2.** Means, standard deviations, and correlations for study variables.

Australia Variable	(1)	(2)	(3)	<i>M</i>	<i>SD</i>
(1) ApproachARG <sup>bde</sup>	-			3.16	.90
(2) Avoid ARG <sup>gij</sup>	-.41**	-		3.19	.87
(3) Extraversion <sup>mn</sup>	.40**	-.13*	-	3.13	1.04
Canada Variable	(1)	(2)	(3)	<i>M</i>	<i>SD</i>
(1) ApproachARG <sup>ce</sup>	-			3.50	.80
(2) AvoidARG <sup>h</sup>	-.40**	-		2.82	.87
(3) Extraversion <sup>ln</sup>	.06	.02	-	2.76	.90
New Zealand Variable	(1)	(2)	(3)	<i>M</i>	<i>SD</i>
(1) ApproachARG <sup>acd</sup>	-			2.73	.69
(2) AvoidARG <sup>fhij</sup>	-.38**	-		3.45	.66
(3) Extraversion <sup>km</sup>	.27**	-.16**	-	2.67	.92
United States Variable	(1)	(2)	(3)	<i>M</i>	<i>SD</i>
(1) ApproachARG <sup>ab</sup>	-			3.51	.90
(2) AvoidARG <sup>fg</sup>	-.52**	-		2.85	1.00
(3) Extraversion <sup>kl</sup>	.55**	-.29**	-	3.33	1.19

Note: \* $p < .05$ , \*\* $p < .001$ . Superscripts indicate significant mean differences based on Games-Howell post-hoc analysis ( $p < .001$ ). For example, superscript <sup>(b)</sup> indicates a significant mean difference between Australia and the U.S. on tendency to approach an argument.

## Results

Means were compared using analysis of variance (ANOVA) (see Table 2 for full results). Results revealed significant differences between the sample nations on argumentativeness and extraversion. The U.S. and Canada scored the highest on tendency to approach argument; New Zealand scored the lowest,  $F(1965) = 84.21$ ,  $p < .001$ ,  $\eta^2 = .11$ . Inversely, New Zealand scored highest on tendency to avoid argument, while the U.S. and Canada scored the lowest,  $F(1965) = 53.92$ ,  $p < .001$ ,  $\eta^2 = .08$ . The U.S. scored highest on extraversion and New Zealand scored the lowest,  $F(1965) = 51.51$ ,  $p < .001$ ,  $\eta^2 = .07$ .

The hypothesis predicted a positive relationship between extraversion and tendency to approach argument, and a negative relationship between extraversion and tendency to avoid argument in the United States. To test this hypothesis and answer RQ1, Pearson's correlation analysis was conducted. The hypothesis was supported ( $r = .55$ ,  $p < .001$ ,  $r = -.29$ ,  $p < .001$ ). In answering RQ1, correlation analysis revealed tendency to approach

argument and extraversion were significantly positively correlated in Australia ( $r = .40$ ) and New Zealand ( $r = .27$ ). Extraversion and tendency to avoid argument were significantly negatively correlated in New Zealand ( $r = -.16$ ) and Australia ( $r = -.13$ ), but not significantly correlated in Canada ( $r = .02$ ).

RQ2 asked how the relationships between argumentativeness and extraversion differ among the U.S., Australia, Canada, and New Zealand. Fisher's  $z$  comparisons were conducted to establish whether differences in correlations between samples were significant. In terms of extraversion and ApproachARG, correlations between the U.S. and New Zealand ( $z = 12.24$ ,  $p < .01$ ), the U.S. and Canada ( $z = 20.16$ ,  $p < .001$ ), the U.S. and Australia ( $z = 6.43$ ,  $p < .01$ ), Canada and Australia ( $z = 9.17$ ,  $p < .01$ ), New Zealand and Canada ( $z = 6.42$ ,  $p < .01$ ), New Zealand and Australia ( $z = 3.70$ ,  $p < .05$ ) were significantly different. Thus, based on these results, the highest positive correlations are in the U.S. and Australia. In terms of extraversion and AvoidARG, correlations between the U.S. and Australia ( $z = 5.54$ ,  $p < .05$ ), the U.S. and Canada ( $z = 10.06$ ,  $p < .01$ ), and the U.S. and New Zealand ( $z = 5.03$ ,  $p < .05$ ), were significantly different, while correlations between Canada and Australia ( $z = 2.80$ ,  $p = ns$ ), New Zealand and Canada ( $z = 4.17$ ,  $p = ns$ ), New Zealand and Australia ( $z = .76$ ,  $p = ns$ ) were not significantly different. Thus, based on our results, the highest negative correlations are in the U.S. and New Zealand.

## Discussion

Dilbeck et al. (2009) asserted communication in different national contexts should be explored to fully understand the complexity of communication. The current study has done this by expanding our understanding of the link between argumentativeness and extraversion in four national contexts. The following implications can be drawn from this study: first, researchers in communication are increasingly calling for replication studies (Autman & Kelly, 2017). Replication helps remove rival hypotheses and diminish the influence of convenience samples, while serving as validity and reliability checks of measures (Kelly & Westerman, 2020). This study replicates previous work showing a positive association between argumentativeness and extraversion in the U.S., which should increase our confidence in this relationship. This study also adds to the discussion on the dimensionality and validity of the Argumentative Scale (Infante et al., 2011).

Second, this study has cross-culturally expanded understanding of argumentativeness and its relationship with extraversion. Previous research has shown U.S. participants score higher on argumentativeness than Australians and New Zealanders (Avtgis & Rancer, 2002). The results of this study confirm previous results; U.S. participants scored the highest on tendency to approach argument and extraversion, while

New Zealanders scored the lowest on tendency to approach, highest on tendency avoid, and lowest on extraversion. As with the work of Hackman et al. (1995), the lower score from New Zealanders on tendency to approach argument may be attributed to a higher level of self-monitoring in New Zealand, compared to the U.S. and Australia. Moreover, research has yet to explore argumentativeness in the Canadian context; thus, this study adds to our understanding of argumentativeness in this context. Additionally, while research has consistently shown a positive association between tendency to approach argument and extraversion, this research has only been conducted in a U.S. context. The current research demonstrates this relationship is not uniquely found among U.S. samples.

Third, building off recommendations from Ones et al. (2012) and Croucher and Kelly (2019), the current study compared four national groups that are relatively similar in terms of economic and linguistic systems. Based on these methodological reasons for cross-cultural comparison, it is clear there are differences among the nations in terms of argumentativeness and extraversion, which cannot be explained by traditional comparative means, such as Hofstede's dimensions (2001). Based on Hofstede's dimensions, each of these nations score relatively similarly. Thus, future research should explore how other factors might explain these differences, such as regionalism, geography, communication skills training, and use of technology.

This study is not without limitation, which does limit its generalizability. The samples only included native-born individuals in each nation. As each nation has large immigrant populations, generalizability of the findings can only be applied to native-born individuals. Future research should include non-native-born individuals to generate a robust understanding of each nation.

This study is the first to cross-culturally explore the association between argumentativeness and extraversion. The current study not only replicated this association in the U.S., Canada, Australia, and New Zealand, but expanded our understanding of argumentativeness to a Canadian context. This study is a step forward in our overall understanding of argumentativeness and extraversion.

## Notes

1. CFA results for Argumentativeness Scale – Deleted items = 1, 8, 13, and 16.  $\chi^2(103) = 1229.97, p < .0001, CFI = .92, GFI = .94, SRMR .08, RMSEA = .08$ . Approach  $\alpha = .92, \phi = .92$ ; Avoid  $\alpha = .87, \phi = .87$
2. CFA results for EPQR – Deleted items = 1, 9, 11, 15, 16, 20, 22, 23, and 24. -  $\chi^2(59) = 771.19, p < .0001, CFI = .95, GFI = .93, SRMR .08, RMSEA = .08$ . Extraversion  $\alpha = .72, \phi$

= .72; Neuroticism  $\alpha = .84$ ,  $\varphi = .84$ ; Tendency to Lie  $\alpha = .88$ ,  $\varphi = .88$ ; and Psychoticism  $\alpha = .70$ ,  $\varphi = .70$ .

## Disclosure statement

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