

Age and Sex Differences in Willingness to Communicate, Communication Apprehension, and Self-Perceived Competence

Leslie A. Donovan
University College of Cape Breton

Peter D. MacIntyre
University College of Cape Breton

Age and sex differences in willingness to communicate (WTC), communication apprehension, and self-perceived communication competence were examined using three age cohorts of participants drawn from junior high, high school, and university student populations. Results indicate that junior high females are higher in WTC than their male counterparts and females at the university level are higher in communication apprehension and lower in self-perceived competence than are male university students. Communication apprehension and self-perceived competence show a consistent negative relationship that does not vary with age or sex in the present sample. The degree to which communication apprehension and self-perceived competence predict WTC varies with age and sex. In all three age cohorts, communication apprehension is a significant predictor of WTC among women. Among men, self-perceived competence emerges as a significant predictor of WTC in all three age groups.

Willingness to communicate (WTC) has been defined as the probability that an individual will choose to communicate, specifically to talk, when free to do so (McCroskey & Baer, 1985). Although WTC has been conceptualized as stable and trait-like, with individuals showing consistency in the degree to which they choose to talk or not to talk across contexts and receivers (McCroskey & Baer, 1985), a person's level of WTC is influenced by the situation (McCroskey & Richmond, 1991). Intuitively, a high level of WTC seems beneficial under most conditions: to be unwilling to talk is to relinquish a key process for relationship building and interpersonal influence. Indeed,

Leslie Donovan is now at POLY Returnee Education Institute in Bucheon, South Korea. This work was supported by a grant from the Social Sciences and Humanities Research Council awarded to the second author. The authors thank Patricia Babin and Susan Baker for assistance in data collection. Send correspondence to: Peter MacIntyre, Department of Psychology, University College of Cape Breton, P. O. Box 5300, Sydney, N. S., Canada, B1P 6L2, email: peter_macintyre@ucbb.ca

Richmond and Roach (1992) affirm, "willingness to communicate is the one, overwhelming communication personality construct which permeates every facet of an individual's life and contributes significantly to the social, educational, and organizational achievements of the individual" (p. 104).

Considering the importance of WTC for both individuals and organizations (Richmond & Roach, 1992), it is reasonable to ask whether WTC shows significant sex differences and whether differences between male and female persons vary across age groups. Describing sex differences in WTC at various ages might provide insights into how a willingness to talk could be fostered across the life span.

Underlying WTC are two key antecedents, communication apprehension and self-perceived competence (MacIntyre, 1994). Communication apprehension is anxiety associated with real or anticipated communication events (McCroskey & Richmond, 1987) and self-perceived competence is a person's evaluation of their ability to communicate (McCroskey & McCroskey, 1988). Given that communication apprehension and self-perceived competence are important in supporting a person's willingness to speak, our understanding of WTC is incomplete without consideration of how communication apprehension and self-perceived competence also might change over time. In the present research, we will examine sex and age differences in WTC, communication apprehension, and perceived competence in the relations among them.

Prior research suggests the possibility that age and sex might interact to affect WTC. Tannen (1990) notes that, despite stereotypes of women as being talkative, adult men talk more in meetings, in the classroom, and in mixed-group discussions than do adult women. At earlier ages, however, the pattern appears to be reversed. In a sample of Canadian adolescents, MacIntyre, Baker, Clément, and Donovan (2002) found combined English and French WTC to be higher among girls than among boys. Smith (1997) found that adolescent girls engage in conversation more frequently than do adolescent boys, suggesting that the girls may be higher in WTC than the boys.

Overall, the evidence suggests that patterns of WTC across different age groups are likely to be different in men and women. Specifically, males appear to increase in WTC as they grow toward adulthood, and females may show a parallel decrease in WTC. In the present study, we sought to examine this hypothesis by testing WTC among three age groups in a cohort design.

H1: Males will increase in WTC from junior high, to high school, to university, while females will decrease in WTC across these three age groups.

Given the importance of communication apprehension and self-perceived competence as predictors of WTC (MacIntyre, 1994), age and sex differences in communication apprehension and self-perceived competence are expected to mirror changes in WTC.

H2: Communication apprehension will decrease in males but increase in females across the three age groups.

H3: Perceived communication competence will increase in males with age, and show a corresponding decrease among females.

Bandura (1988) notes that the perception of low competence to perform a task can cause a person to be anxious while performing that task. Conversely, high communication apprehension can lead to lower evaluations of one's competence. MacIntyre, Noels, and Clément (1997), in a study of WTC in the second language, found that communication apprehension tends to bias people's self-perceived competence such that those who are more anxious about speaking will rate themselves as less competent communicators, even when assessments by observers indicate no objective differences in proficiency. We sought to examine the relationship between communication apprehension and self-perceived competence in the native language and whether this relationship differed between males and females in the three age groups.

RQ1: Does the degree of correlation between self-perceived competence and communication apprehension differ between males and females at various ages?

McCroskey and Richmond (1987, 1991) note that communication apprehension is generally the best predictor of WTC. However, self-perceived competence may exert an important influence on WTC and the effects of a person's perceptions of competence can override the impact of their actual ability on WTC (see Phillips 1968, 1977, 1984; McCroskey & Richmond, 1990). It is possible that the relationships between WTC, self-perceived competence, and communication apprehension might vary by age and sex so that in some cases communication apprehension emerges as the best predictor of WTC, and in other cases, WTC is better predicted by self-perceived competence.

RQ2: To what degree do communication apprehension and self-perceived competence predict WTC in the age and sex groups in this study?

METHOD

Participants

The three age groups in this study consisted of students drawn from junior high, high school, and university classes. The data were available from previous investigations conducted among junior high (MacIntyre et al., 2002), high school (Baker & MacIntyre, 2000), and university (MacIntyre, Babin, & Clément, 1999; MacIntyre, Baker, Clément, & Donovan, 2003) students. The data were reanalyzed in this study to answer questions not previously contemplated. The junior high sample (90 males, 177 females, mean age = 13.0 years, range = 11 to 16 years) consisted of students in a French immersion program. The high school sample (85 males, 106 females, mean age = 16.2 years, range = 14 to 18 years) was composed of French immersion students and core French students. Data from the junior high and high school students were collected at the same time as data for studies on second language acquisition, hence the reason for the sample consisting entirely of students enrolled in French courses. The university sample (68 males, 215 females, mean age = 21.1 years, range = 17 to 47 years) was drawn from students enrolled in university courses in interpersonal communication, conversational French, introductory psychology, personality psychology, and introductory English courses. Psychology students were compensated with bonus points. Although some overlap in the age ranges of these samples may be noted, the clear differences in mean

age ($F(2, 735) = 509.21, p < .001$) between the samples suggest that they may be treated as separate age cohorts for the purpose of data analysis.

Materials

Three scales, all self-report instruments originally developed by McCroskey and associates, were employed to measure WTC, perceived competence, and communication apprehension.

Willingness to Communicate Scale. This 20-item scale asks participants to indicate how willing, on a scale of 0-100%, they would be to talk in various contexts such as in meetings, public, groups, and dyads, and with various receivers, such as friends, acquaintances, and strangers (McCroskey & Baer, 1985). Data from the eight filler items were not analyzed (McCroskey, 1992). Reliability analysis yielded a Cronbach's alpha of 0.86.

Self-Perceived Competence Scale. This 12-item scale, similar in structure to the WTC scale, measures self-perceived competence (McCroskey & McCroskey, 1988). Cronbach's alpha was 0.92.

Communication Apprehension Scale. Similar in structure to the two preceding scales, this 12-item scale measures participants' nervousness about communicating in various situations and with various interlocutors (McCroskey, Richmond, & McCroskey, 1987). Cronbach's alpha was 0.87.

Procedure

Free and informed consent was obtained from all participants. Students in junior high and high schools were tested with permission of parents, teachers, and school administrators. In all cases, questionnaires were group-administered during scheduled class time. All questionnaires were completed in the students' regular classrooms, except among the grade seven students in the junior high sample, who completed the study in the school gymnasium by request of school administrators.

RESULTS

As reflected in hypothesis one (H1), WTC was expected to increase with age in males and decrease with age in females. Perceived competence was expected to show a similar pattern (H2) but communication apprehension was expected to show the reverse trend (H3). To test these three hypotheses while minimizing Type I error, a 2 (male, female) by 3 (junior high, high school, university) multivariate analysis of variance (MANOVA) was conducted with WTC, communication apprehension, and self-perceived competence as the dependent variables. The results show that at the multivariate level, the main effect of age group is significant (Hotelling's $F(6, 1464) = 12.66$) = 0.104, $p < .01$) but the main effect of sex is not (Hotelling's $F(3, 733) = 1.36$) = 0.006, $p > .05$). The main effect of age group is qualified by a significant interaction between sex and age group (Hotelling's $F(6, 1464) = 3.40$) = 0.028, $p < .01$).

At the univariate level, the main effect of age group and the interaction between sex and group have significant effects on all three dependent variables. Univariate results are summarized in Table 1 and means are displayed in Table 2. Post-hoc Tukey's HSD tests (see Table 2) show that females are more willing to communicate than males in the junior high group, but there are no significant differences in WTC between men

and women in either the high school or university group. Among the junior high and high school students, no significant sex differences in communication apprehension or self-perceived competence are observed, but in the university group, women report higher communication apprehension and lower self-perceived competence than men.

TABLE 1
Univariate ANOVA Results for the Effects of Sex and Age Cohort on Willingness to Communicate (WTC), Communication Apprehension, and Self-Perceived Competence

	Willingness to Communicate (WTC)		Communication Apprehension		Self-Perceived Competence	
	<i>F</i>	η^2	<i>F</i>	η^2	<i>F</i>	η^2
Sex	1.95	0.003	0.46	0.001	0.04	0.000
Age Cohort	7.24**	0.019	18.07**	0.047	20.54**	0.053
Sex x Age Cohort	6.36**	0.017	6.93**	0.019	3.82*	0.010
<i>df</i> (error)	735		735		735	

p* < .05; *p* < .01

TABLE 2
Means for Willingness to Communicate (WTC), Communication Apprehension, and Self-Perceived Competence

	Junior High			High School			University		
	Males	Females	<i>Q</i>	Males	Females	<i>Q</i>	Males	Females	<i>Q</i>
Willingness to Communicate	733.30	834.34	4.95**	850.66	873.85	1.01	820.78	771.04	2.27
Communication Apprehension	273.03	225.71	2.51	234.18	220.69	0.64	295.79	390.18	4.65**
Self-Perceived Competence	810.44	870.70	2.57	992.20	993.73	0.06	902.53	828.11	2.95*

p* < .05; *p* < .01

The preceding analysis tested for expected differences among the means but does not show the degree of correlation between perceived competence and communication apprehension (RQ1). To address this question, the correlation between communication apprehension and self-perceived competence was computed for males and females separately in the three age groups (see Table 3). Tests for difference between independent correlations (Ferguson, 1981; McNemar, 1969) were conducted to determine whether the strength of the relationship between communication apprehension and self-perceived competence differed between males and females in any of the age groups. No evidence of such differences was detected. Instead, the data indicate a weak to moderate negative relationship between communication apprehension and self-perceived competence for both sexes and across age groups.

The consistent correlations between perceived competence and communication apprehension appear to be at odds with their complex relationship to WTC in the various groups (see RQ2). In order to examine this research question, multiple regression analyses were performed. Using the 'Enter' method, communication apprehension and self-perceived competence were used to predict WTC for each sex in each age group. Regression results are summarized in Table 4. Among junior high school males, self-perceived competence, but not communication apprehension, predicts WTC, but

TABLE 3
Correlations Between Communication Apprehension and Self-Perceived Competence

	Males	Females	<i>z</i>
Junior High	-.220*	-.362**	-1.18
High School	-.440**	-.429**	0.09
University	-.303*	-.421**	-0.96
All Cohorts	-.304**	-.414**	1.61

* $p < .05$; ** $p < .001$

both self-perceived competence and communication apprehension predict WTC among junior high females. Among the high school students, self-perceived competence predicts WTC for males, but only communication apprehension emerges as a significant predictor of WTC for females. Among adults of both sexes, both communication apprehension and self-perceived competence emerge as significant predictors of WTC. Thus, among males, self-perceived competence is the most consistent predictor of WTC across age groups, but for females, communication apprehension is the most consistent predictor of WTC across the cohorts studied.

TABLE 4
Results of Regression Analyses Predicting Willingness to Communicate (WTC)

		<i>F</i>	Communication Apprehension Beta	Self-Perceived Competence Beta
Junior High	Males	8.22**	-.190	.311**
	Females	33.42***	-.344***	.293***
High School	Males	13.45***	-.102	.444***
	Females	6.68**	-.252*	.143
University	Males	30.77***	-.322**	.529***
	Females	75.09***	-.164**	.558***
All Cohorts	Males	43.34***	-.199**	.419***
	Females	105.10***	-.279***	.367***

* $p < .05$; ** $p < .01$; *** $p < .001$

DISCUSSION

The research hypotheses were partially, but not completely supported. Females show higher WTC than males among the junior high students and the predicted differences in WTC occur for males and females (see H1), but not to such a degree as to produce significant sex differences in WTC past the junior high level in our samples. Hypotheses H2 and H3 also received only partial support. No sex differences in communication apprehension or self-perceived competence are evident between the junior high and high school students, but the female university students show higher communication apprehension and lower self-perceived competence than their male counterparts.

It may be that junior high girls having higher WTC than boys of the same age reflects norms of sustained, intimate conversation among girls, which contrast with norms of shared physical activities among boys (see Tannen, 1990). As females move toward an adult world where women continue to seek equality of opportunities in

many domains, social factors might impact on their WTC to produce the differences observed across cohorts of women in this study.

The effect sizes shown in Table 1 are small. This is consistent with Canary and Hause's (1993) observation that sex differences in communication tend to be small. Despite the downward trend in WTC among females in this sample, this study did not produce any compelling evidence, in terms of WTC, of the pervasive silencing of women suggested by Gilligan (1982), a notion that others have argued lacks empirical support (Sommers, 2000). The elevated communication apprehension and lower self-perceived competence observed in the university women might, over time, produce sex differences in WTC that disadvantage women. This might be investigated in future research and suggests that communication educators may need to be especially concerned with these variables among their female university students.

The negative correlation between communication apprehension and self-perceived competence did not differ between men and women in any of the three age groups (RQ1). Whether this negative relationship is due to low self-efficacy causing anxiety (Bandura, 1988), results from the biasing effect of communication apprehension on self-perceived competence (MacIntyre et al., 1997), or is a product of both of these processes cannot be determined from the present data. Future research could examine in greater detail the processes by which communication apprehension and self-perceived competence influence one another.

The regression analyses generated to test RQ2 demonstrate that the relationship between WTC and its antecedents is not straightforward, and may vary with age and sex. The fact that communication apprehension predicted WTC in females across all three age cohorts and self-perceived competence was the most consistent predictor of WTC among males suggests that these two communication variables support WTC differently in the two sexes. Sex differences in these underlying processes should be investigated in future research.

Limitations of this study include the possibility that differences observed are cohort and not age effects (see Sigelman, 1999), the narrow population sampled among the junior high school students (i.e. French immersion students only), and the lack of age cohorts older than our university student sample. Future studies can address these limitations, and given the pattern of results observed here, a longitudinal study might be expected to yield interesting results. A developmental perspective in the study of WTC and its correlates offers exciting possibilities for both basic and applied communication research.

REFERENCES

- Baker, S. C., & MacIntyre, P. D. (2000). The effects of gender and immersion on communication and second language orientations. *Language Learning*, 50, 311-347.
- Bandura, A. (1988). Self-efficacy conception of anxiety. *Anxiety Research*, 1, 77-98.
- Canary, D. J., & Hause, K. S. (1993). Is there any reason to research sex differences in communication? *Communication Quarterly*, 41, 129-144.
- Ferguson, G. A. (1981). *Statistical analysis in psychology and education*, 5th ed. New York: McGraw Hill.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.

- MacIntyre, P. D. (1994). Variables underlying willingness to communicate: A causal analysis. *Communication Research Reports*, 12, 241-247.
- MacIntyre, P. D., Babin, P. A., & Clément, R. (1999). Willingness to communicate: Antecedents and consequences. *Communication Quarterly*, 47, 215-229.
- MacIntyre, P. D., Baker, S. C., Clément, R., & Donovan, L. A. (2002). Sex and age effects on willingness to communicate, anxiety, perceived competence, and L2 motivation among junior high school French immersion students. *Language Learning*, 52, 537-564.
- MacIntyre, P. D., Baker, S. C., Clément, R., & Donovan, L. A. (2003). Talking in order to learn: Willingness to communicate and intensive language programs. *Canadian Modern Language Review*, 59, 589-607.
- MacIntyre, P. D., Noels, K., & Clément, R. (1997). Biases in self-ratings of second language proficiency: The role of language anxiety. *Language Learning*, 47, 265-287.
- McCroskey, J. C. (1992). Reliability and validity of the willingness to communicate scale. *Communication Quarterly*, 40, 16-25.
- McCroskey, J. C., & Baer, J. E. (1985, November). *Willingness to communicate: The construct and its measurement*. Paper presented at the annual convention of the Speech Communication Association, Denver, CO.
- McCroskey, J. C., & McCroskey, L. (1988). Self-report as an approach to measuring communication competence. *Communication Research Reports*, 5, 106-113.
- McCroskey, J. C., & Richmond, V. P. (1987). Willingness to communicate. In J. C. McCroskey & J. A. Daly (Eds.), *Personality and interpersonal communication* (pp. 129-156). Beverly Hills: CA: Sage.
- McCroskey, J. C., & Richmond, V. P. (1990). Willingness to communicate: Differing cultural perspectives. *Southern Communication Journal*, 56, 72-77.
- McCroskey, J. C., & Richmond, V. P. (1991). Willingness to Communicate: A cognitive view. In M. Booth-Butterfield (Ed.), *Communication, cognition, and anxiety* (pp. 19-37). Newbury Park, CA: Sage.
- McCroskey, J. C., Richmond, V. P., & McCroskey, L.L. (1987). *Correlates of self-perceived communication competence*. Paper presented at the annual convention of the International Communication Association, Montreal.
- McNemar, Q. (1969). *Psychological statistics, 4th ed.* New York: John Wiley.
- Phillips, G. M. (1968). Reticence: Pathology of the normal speaker. *Speech Monographs*, 35, 39-49.
- Phillips, G. M. (1977). Rhetoritherapy versus the medical model: Dealing with reticence. *Communication Education*, 26, 34-43.
- Phillips, G. M. (1984). Reticence: A perspective on social withdrawal. In J. A. Daly & J. C. McCroskey (Eds.), *Avoiding communication: Shyness, reticence and communication apprehension*. Beverly Hills: CA: Sage Publications.
- Richmond, V.P., & Roach, K.D. (1992). Willingness to communicate and employee success in U.S. organizations. *Journal of Applied Communication Research*, 20, 95-115.
- Sigelman, C. K. (1999). *Life-span human development, 3rd ed.* Pacific Grove, CA: Brooks/Cole.
- Sommers, C. H. (2000). *The war against boys: How misguided feminism is harming our young men*. New York: Simon & Schuster.
- Smith, T. E. (1997). Adolescent gender differences in time alone and time devoted to conversation. *Adolescence*, 32, 483-496.
- Tannen, D. (1990). *You just don't understand: Women and men in conversation*. New York: Ballentine Books.