



## **Introvert and Extrovert EFL Learners' Willingness to Communicate and Ambiguity Tolerance**

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### **Abstract**

The researchers have long been interested to explore the impact of personality traits on second or foreign language learning. The current study is an attempt to investigate whether there exists a statistically significant relationship between introvert and extrovert EFL learners' willingness to communicate and ambiguity tolerance. To this end, a total of 150 EFL learners completed the Introversion/Extroversion Scale developed by McCroskey (1998), the Willingness to Communicate Questionnaire (MacIntyre et al, 2001), and the Tolerance of Ambiguity Scale (Ely, 1995). The findings of Pearson correlation coefficient revealed that there was a significant positive relationship between (a) introvert EFL learners' WTC and ambiguity tolerance, and (b) extrovert EFL learners' WTC and ambiguity tolerance. Furthermore, independent samples t-tests indicated a significant meaningful difference between introvert and extrovert EFL learners' WTC and ambiguity tolerance. Moreover, whereas extrovert EFL learners were positively different from introvert learners in their willingness to communicate (WTC), introvert EFL learners were found to be more tolerant of ambiguity than extrovert EFL learners. The findings imply that EFL teachers, practitioners, and policy makers need to consider psychological aspects and personality types as determining factors for the success of second or foreign language learners and accordingly modify their educational practices.

**Keywords:** Introversion, Extroversion, Tolerance of Ambiguity, Willingness to Communicate, and Personality Traits.

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## **Introduction**

Personality type of language learners is one of the various factors involved in second language acquisition. Cook (1996) believed that some aspects of learners' personality may encourage or discourage second language learning. Even some authors believe that the degree of success or failure of the learners in second language acquisition is determined by personality factors (Gass & Selinker, 1994).

Personality traits are viewed in terms of more or less dominance of the extreme values of each individual trait spectrum among people. For instance, introversion is defined by Papadopoulos (1992) as a personality trait that one prefers to relate to the world through first taking it "inward". It means that introverts are energized from within. On the other side of the spectrum, extroverts' energy comes from immediate interaction with the world. No psychologically healthy person is completely introvert or extrovert at all times. That is a state fluctuating between the two edges, rather than a fixed trait of being (Senechal, 2011). Laney (2002) maintains that we all are introvert and extrovert to some extent. However, we prefer intrinsically one over another.

The desire of a learner to communicate in a second language (L2) when the opportunity is given to him/her is defined as willingness to communicate (WTC) in a second language (MacIntyre, Dörnyei, Clément & Noels, 1998). MacIntyre et al. emphasized that the tendency to speak leads to an increase in the frequency of language use. The concept of WTC is related to communicative language teaching (CLT) in which the fundamental role of communication is highlighted (Brumfit, 1979) as an atmosphere of active engagement of the learners in the second language is emphasized in CLT (Piepho, 1981).

Tolerance of ambiguity as another personality trait deals with how a person encounters with uncertain conditions along with vague and inexact cues (Chu, Lin, Chen, Tsai & Wang, 2014). Budner (1962) categorized ambiguous conditions into three kinds with regard to accessible information in a context or the nature of cues. The first classification was allocated to new situations with no familiar cues, the second was complex situations with too many cues, and the third were the contradictory situations with conflicting cues. Individuals with low degrees of ambiguity tolerance will consider these conditions as roots of danger, insecurity, and discomfort psychologically (Norton, 1975). On the other hand, people with high ambiguity tolerance are prone to risk taking and also are ready to accept changes (McLain, 1993).

Many psychologists believe that ambiguity tolerance is defined as a cognitive style and personality trait kept fairly steady across fields and situations (Chu, Lin, Chen, Tsai & Wang, 2014). Endler (1973), Mischel (1981), and Ely (1986, 1988) were among those who challenged this assumption and claimed that the operationalization of the personality variables takes place considering particular fields and situations. For instance, Ely (1988) illustrated that the more risk taker a student, the more willingness to be involved in activities with free language use, and also more uncomfortable he would be in activities with less ambiguity like highly-structured grammar practices. Durrheim and Foster (1997) confirmed that ambiguity

tolerance is varied from one situation to another. The degrees of tolerance of ambiguity in two different contexts are not necessarily the same.

### **Review of the related literature**

A path model was developed by MacIntyre (1994) to forecast one's willingness to communicate in the first language. As one can see from the model, a compound of perceived competence at communication and the anxiety level at communication determines different levels of willingness to communicate. Introversion is involved in both perceived communicative competence and communication anxiety, but self-esteem is only related to communication anxiety. Drawing on Burgoon's (1976), this model considers the pressures caused by social conditions as an influential factor in creating one's unwillingness to communicate. MacIntyre (1994, p.140) suggested "exploring the interaction between personality and specific situational characteristics in their influence on willingness to communicate" might clarify many facets of WTC.

According to Jungian (1923, as cited in Hampson, 1982), extroversion is correlated with hysterical tendencies while introversion is linked with depression and anxiety. Accordingly, it is believed that levels of anxiety are higher in introverts than extroverts and also information retrieval is more time consuming in introverts than extroverts. Extroverts are less worried about inaccuracy and as a result they are more risk taker than introverts. Both of these tendencies are quite needed when it comes to communication in a foreign language. Moreover, according to MacIntyre (1994) theory, inhibition in communication is more in introverts and they are less risk taker; on the contrary, extroverts are better communicators. On this ground, it seems reasonable to consider a relationship between introversion/extroversion and willingness to communicate and to test this assumption in the context of present study.

### **Ambiguity tolerance's model**

Frenkel-Brunswick (1948) introduced ambiguity tolerance as a personality factor. She recommended that when a person does not generally tolerate ambiguity, the ambiguous situations lead to levels of anxiety and conflict. A good strategy to cope with this problem is adherence to predetermined prejudices or notions.

When such individuals encounter evidence which is contrary to their preconceptions their anxiety and conflict is reduced and they adhere to their primary conception. MacDonald (1970, p.792) asserts that "once having accepted an answer, the former will tenaciously (i.e., rigidly) hold on to it, even in the face of new contradictory evidence; the latter, on the other hand, may easily exchange the held belief for a better one".

Furnham and Ribchester (1995) maintain,

Ambiguity Tolerance (AT) refers to the way an individual (or group) perceives and processes information about ambiguous situations or stimuli when confronted by an array of unfamiliar, complex, or incongruent clues.

AT is a variable that is often conceived on a uni-dimensional scale. The person with low tolerance of ambiguity experiences stress, reacts prematurely, and avoids ambiguous stimuli. At the other extreme of the scale, however, a person with high tolerance for ambiguity perceives ambiguous situations/stimuli as desirable, challenging, and interesting and neither denies nor distorts their complexity or incongruity. (p.179)

### **Previous research findings**

According to McCroskey & Baer (1985), willingness to communicate refers as an individual's willingness to communicate, in particular to talk, when there is a choice. MacIntyre (2007) stated that willingness to communicate (WTC) is to be ready for speaking in the second language at a specific moment with a particular person, and also is the last psychological stage to initiate the communication in L2.

Watanabe (2011) investigated motivation, self-determination, and willingness to communicate of Japanese students learning English in a high school and showed that the students were aware of the need to increase their communicative and practical skills in English in the future. Nevertheless, their awareness did not result in the growth of willingness to communicate.

Hashimoto (2002) studied psychological variables as predictors of second language (L2) use in classrooms of Japanese ESL (English as a Second Language) students. The findings indicated that students with more motivation for language learning and greater willingness to communicate used English more frequently. A path from perceived competence to L2 communication frequency was not found to be significant with these specific students. Perceived competence and L2 anxiety were specified as two causes of WTC. Furthermore, the findings were in line with a strong and direct negative influence of L2 anxiety on perceived competence.

Riasati (2012) in a qualitative study, investigated EFL learners' perception of factors influencing willingness to speak English in language classrooms. The findings of the study indicated that a range of factors influenced willingness to speak in classroom. These factors which were perceived by learners and collected through the interview data were: task type, topic familiarity, topic interest, topic preparation, sex and age of interlocutor, familiarity with interlocutor, degree of interlocutor participation, personality (shyness), teacher's role, class atmosphere, self-confidence, perceived speaking ability, grading of speech, and correctness of speech.

Numerous studies have also been conducted on ambiguity tolerance and its effect on various aspects of second language learning. Naiman et al. (1978) for the first time studied the concept of ambiguity tolerance. They investigated the ambiguity tolerance of French high school learners of a foreign language in Toronto and found that "when a learner was tolerant of ambiguity, he/she also wanted the teacher to use more foreign language (French), and was not ethnocentric" (Naiman et al., 1978, p. 128).

In an attempt to investigate ambiguity tolerance, Yea-Fen (1995) studied the language learning strategies employed by elementary learners of Chinese in a semi-

immersion context. He combined quantitative and qualitative methods to discover the learning strategies of thirteen American college learners who were studying first-year Chinese in a semi-immersion context. The researcher made use of several methods to collect the required data including interviews, case studies, observation, and a survey (Strategy Inventory for Language Learning, the SILL, adapted from Oxford, 1989). The results of the study indicated that development in language learning was ascribed to tolerance of ambiguity, employment of strategies suitable to the specified task, and helpful academic and social fortification.

Moreover, Chapelle (1983) investigated the association between ambiguity tolerance and the success in learning English as a second language in adult learners at the University of Illinois as her doctoral dissertation. The results of her study revealed that the relationships between ambiguity tolerance and the language scores at the beginning of the semester were not statistically significant, but the relationships between ambiguity tolerance and the language scores at the end of the semester were statistically significant; the relationships were positive in dictation, parts of a speaking test, and multiple choice grammar test.

Finally, Kazamia (1999) tried to assess and identify the degree of ambiguity tolerance of Greek civil servants while they were learning English as a foreign language. The participants of his study were all Greek servants who were working in civil service. The sample for this study, 323 participants, were from six language levels from the pre-intermediate level to post-intermediate level, which is equivalent to Cambridge Proficiency in English (CPE). The results of the study indicated that tolerance of ambiguity differs on the basis of skills and language learning contexts.

Jalili and Mall-Amiri (2015) tried to investigate the difference between classroom management of extrovert and introvert EFL teachers. The outcome of this study indicated that extrovert teachers and introvert teachers were significantly different in managing their classes effectively. The analysis of the collected data revealed that extrovert teachers are better classroom managers.

In addition, Kumar Panth, Sahu, and Gupta (2015) explored the impact of introversion and extroversion on emotional intelligence and intelligence quotient. They found no significant difference between EQ and IQ based on gender, so boys and girls are equal in EQ and IQ level. On the other hand, they concluded that there is a significant difference between EQ and IQ based on personality. This means that extrovert students were more emotionally intelligent than introvert students. In addition, extrovert students had more IQ than introvert students. Then a positive relationship was observed between IQ and EQ and extroversion.

In another study, Baradaran and Alavi (2015) examined the difference between extrovert and introvert EFL learners' cooperative writing. The results were in line with the findings of other researches that reported inverse relationship between the degree of extroversion and writing performance. The reason for this difference could be that introverts "use different pathways in the brain," when they do writing. They believed that a reason could be the significant lowering of the anxiety level.

Against this backdrop, the present study attempted to explore the relationship among Introversion, Extroversion, WTC, and Ambiguity Tolerance of EFL learners in Iranian context and the following research questions were raised:

### **Research Questions**

1. Is there any significant relationship between introvert EFL learners WTC and ambiguity tolerance?
2. Is there any significant relationship between extrovert EFL learners WTC and ambiguity tolerance?
3. Is there any significant difference between introvert and extrovert EFL learners concerning their WTC?
4. Is there any significant difference between introvert and extrovert EFL learners concerning their ambiguity tolerance?

### **Methodology**

#### ***Participants***

The participants of the study were 150 (79 introvert and 71 extrovert) EFL learners studying English at private institutes in Hamedan. Gender was not considered as a moderator variable in the present study and the participants' age ranged from 16 to 26 years old. The participants were selected based on convenience sampling procedure.

#### ***Instruments***

- Willingness to communicate

In order to investigate L2 learners WTC, the WTC Scale adapted from MacIntyre, Baker, Clément, and Conrod (2001) was used. The Scale considered L2 WTC in four basic skill areas (listening, speaking, reading, and writing), measuring students' willingness to engage in L2 communication inside and outside the classroom. The "Inside the Classroom Scale" was adapted slightly to include communication tasks more common to the EFL class.

WTC in English inside the classroom ( $\alpha = 0.92$ ): 27 items adapted from MacIntyre, Baker, Clément, and Conrod (2001) assessed the frequency of time that students would choose during which to communicate in English in their classroom. Responses to the items on a 5-point Likert scale were anchored at one end by "Almost never willing" and at the other end by "Almost always willing." Higher scores indicate higher levels of WTC in English.

- Introversion/Extroversion scale

This scale was developed by McCroskey (1998) to be distinct from measures of communication apprehension. The correlation of this measure with the PRCA-24

has been around .30. Alpha reliability estimate was above .80. Items to measure neuroticism are used as filler items and are not scored with the introversion items.

- Ely's (1995) second language Tolerance of Ambiguity Scale

To our knowledge, Ely's (1995) second language tolerance of ambiguity scale is the only questionnaire that is designed to evaluate ESL/EFL learners' tolerance of ambiguity. The Cronbach alpha reliability coefficient for this questionnaire was reported to be .82 (Ely, 1989). The participants' responses were rated on a four-point Likert scale, the scoring of which ranged from 1 indicating strongly disagree to 4 indicating strongly agree. All the items were reversely scored.

### ***Procedure***

The present study was conducted at private language institutes in Hamedan. Participants were intermediate EFL learners. Firstly, Introversion/Extroversion questionnaire was distributed among the participants of the study to distinguish introvert and extrovert learners. They were asked to fill out those two other questionnaires as well in turn. It took about 55 minutes for the learners to fill out the questionnaires. The questions and procedures to take the questionnaires were explained to the participants by the researcher and they were assured they would remain anonymous.

### **Results**

Concerning the first two research questions, two separate Pearson correlations were run. With regard to the last two research questions, two separate Independent Samples t-tests were run. This study intended to examine the relationship and difference between introvert and extrovert EFL learners' WTC and ambiguity tolerance. To this end, four research questions and four null hypotheses were posed and the required data related to each research question were gathered through the above-mentioned instruments.

In order to test the first research question null hypothesis, i.e., there is no significant relationship between introvert EFL learners' WTC and ambiguity tolerance, a Pearson correlation coefficient test was run, the results of which are shown in Tables 1 and 2 below.

**Table 1.** Descriptive Statistics for Introvert EFL Learners' WTC and Ambiguity Tolerance

	Mean	Std. Deviation	N
Ambiguity Tolerance	62.8481	5.74253	79
Willingness to Communicate	83.8354	13.76397	79

As can be observed in Table 1, the mean score and standard deviation for the introvert EFL learners' WTC were 83.83 and 13.76, respectively. Similarly, the

mean and standard deviation of the introvert EFL learners' ambiguity tolerance were 62.84 and 5.74, respectively.

**Table 2.** The Relationship between Introvert EFL Learners' WTC and Ambiguity Tolerance

		Ambiguity Tolerance
WTC	Pearson Correlation	.244*
	Sig. (2-tailed)	.030
	N	79

As is shown in Table 2, there is a statistically significant and positive relationship between introvert EFL learners' WTC and ambiguity tolerance ( $r = 0.244$ ,  $p = 0.000 < 0.05$ ). Thus, the first null hypothesis was rejected.

In order to test the second research question null hypothesis, i.e., there is no significant relationship between extrovert EFL learners' WTC and ambiguity tolerance, a Pearson correlation coefficient test was run, the results of which are summarized in Tables 3 and 4 below.

**Table 3.** Descriptive Statistics for Extrovert EFL Learners' WTC and Ambiguity Tolerance

	Mean	Std. Deviation	N
Ambiguity Tolerance	54.6056	6.90027	71
Willingness to Communicate	99.6056	11.55172	71

As can be observed in Table 3, the mean score and standard deviation for the extrovert EFL learners' WTC were 99.60 and 11.55, respectively. Similarly, the mean and standard deviation of the extrovert EFL learners' ambiguity tolerance were 54.60 and 6.90, respectively.

**Table 4.** The Relationship between Extrovert EFL Learners' WTC and Ambiguity Tolerance

		Ambiguity Tolerance
WTC	Pearson Correlation	.409**
	Sig. (2-tailed)	.000
	N	71

As is shown in Table 4, there is a statistically significant and positive relationship between extrovert EFL learners' WTC and ambiguity tolerance ( $r = 0.409$ ,  $p = 0.000 < 0.05$ ). Thus, the second null hypothesis was rejected.

In order to test the third research hypothesis, i.e., there is no significant difference between introvert and extrovert EFL learners concerning their WTC, an Independent Samples t-test was run. The results are shown in Tables 5 and 6 below.

**Table 5.** Descriptive Statistics for Introvert and Extrovert EFL Learners' WTC

	Personality Type	N	Mean	Std. Deviation	Std. Error Mean
WTC	Introvert	79	83.8354	13.76397	1.54857
	Extrovert	71	99.6056	11.55172	1.37094



As can be observed in Table 5, the mean score and standard deviation for the introvert EFL learners' WTC were 83.83 and 13.76, respectively. Similarly, the mean and standard deviation of the extrovert EFL learners' WTC were 99.60 and 11.55, respectively.

**Table 6.** Independent Samples Test on the Introvert and Extrovert EFL Learners' WTC

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
WTC	Equal variances assumed	1.199	.275	-7.554	148	.000	-15.77	2.08757	-19.895	-11.644
	Equal variances not assumed			-7.625	147.333	.000	-15.77	2.06822	-19.857	-11.682

As is evident in Table 6, the difference between the mean scores turned out to be significant ( $t(148) = -7.554, p = 0.000 < 0.05$ ). Thus, the third null hypothesis was rejected implying that the extrovert EFL learners ( $M = 99.60$ ;  $SD = 11.55$ ) significantly outperformed introvert EFL learners ( $M = 83.83$ ;  $SD = 13.76$ ) concerning their WTC. In other words, extrovert EFL learners had significantly higher levels of willingness to communicate than introvert EFL learners.

In order to test the fourth research hypothesis, i.e., there is no significant difference between introvert and extrovert EFL learners concerning their ambiguity tolerance, an Independent Samples t-test was run, the results of which are shown in Tables 7 and 8 below.

**Table 7.** Descriptive Statistics for Introvert and Extrovert EFL Learners' Ambiguity Tolerance

	Personality Type	N	Mean	Std. Deviation	Std. Error Mean
Ambiguity Tolerance	Introvert	79	62.8481	5.74253	.64608
	Extrovert	71	54.6056	6.90027	.81891

As can be observed in Table 7, the mean score and standard deviation for the introvert EFL learners' ambiguity tolerance were 62.84 and 5.74, respectively. Similarly, the mean and standard deviation of the extrovert EFL learners' ambiguity tolerance were 54.60 and 6.90, respectively.

**Table 8.** Independent Samples Test on the Introvert and Extrovert EFL Learners' Ambiguity Tolerance

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Ambiguity Tolerance	Equal variances assumed	1.063	.304	7.979	148	.000	8.24247	1.03297	6.20120	10.28374
	Equal variances not assumed			7.902	136.724	.000	8.24247	1.04309	6.17979	10.30515

As is evident in Table 8, the difference between the mean scores turned out to be significant ( $t(148) = 7.979, p = 0.000 < 0.05$ ). Thus, the fourth null hypothesis was rejected implying that the introvert EFL learners ( $M = 62.84; SD = 5.74$ ) significantly outperformed extrovert EFL learners ( $M = 54.60; SD = 6.90$ ) concerning their ambiguity tolerance. In other words, introvert EFL learners had significantly higher levels of ambiguity tolerance than extrovert EFL learners.

## Discussion

The main purpose of this study was to explore the relationship and difference between introvert and extrovert EFL learners' WTC and ambiguity tolerance. The first research question sought to see whether there existed any significant relationship between introvert EFL learners' WTC and ambiguity tolerance. The results of a Pearson correlation coefficient showed that there was a significant and positive relationship between introvert EFL students' WTC and ambiguity tolerance. The positive relationship between two variables shows that when introvert EFL learners' WTC increases, their ambiguity tolerance increases as well.

One conceivable reason could be that ambiguity tolerance is regarded as one of the main sources of facilitating factors (Zarfsaz & Takkac, 2014) that encourage the language learners to actively participate in the class activities, consequently those with higher levels of ambiguity tolerance, have higher levels of willingness to communicate. Moreover, as pointed out by Zhou (2014), studies have verified that students' willingness to communicate in EFL classroom situations is affected by different factors one of which is tolerance of ambiguity. The findings of the present study are in line with those of Wen and Clement (2003). They gave an account of the linguistic, communicative, and social psychological variables that might affect students' willingness to communicate in a Chinese setting.

The second research question examined whether there existed any significant relationship between extrovert EFL learners' WTC and ambiguity tolerance. The results of a Pearson correlation coefficient showed that there was a significant and positive relationship between extrovert EFL students' WTC and ambiguity tolerance. The positive relationship between two variables indicates that when

extrovert EFL learners' WTC increases, their ambiguity tolerance increases as well. As pointed out by Zarfsaz and Takkac (2014), the higher level of extroversion in EFL students is equal to the higher level of willingness to communicate.

As pointed out by Wen and Clement (2003), students' willingness to communicate in EFL classroom milieu is positively affected by different factors such as tolerance of ambiguity, risk-taking, task-orientation, teacher support, group cohesiveness, and inhibited monitor. According to Wen and Clement (2003), these aggregated variables contribute to the creation of a positive communication situation and support engagement and the reduction of anxiety.

The third research question examined whether there existed any significant difference between introvert and extrovert EFL learners concerning their WTC. The results of an Independent Samples t-test showed that there was a significant difference between introvert and extrovert EFL learners concerning their WTC. In other words, extrovert EFL learners had significantly higher levels of willingness to communicate than introvert EFL learners.

One possible justifying reason for this piece of finding might be the fact that extroverts are more sociable and their conscious interaction is more often directed toward other people and events. As pointed out by Brown (2000), extroverts are sociable and have many friends and tend to talk to people.

The fourth research question scrutinized whether there existed any significant difference between introvert and extrovert EFL learners concerning their ambiguity tolerance. The results of an Independent Samples t-test showed that there was a significant difference between introvert and extrovert EFL learners concerning their ambiguity tolerance. In other words, introvert EFL learners had significantly higher levels of ambiguity tolerance than extrovert EFL learners.

A plausible explanation for the findings in this respect might be the Thompson's (2012) argument that introverts have positive attributes; they are good at listening, planning, concentration on tasks for a long time, uninterrupted period of time, taking time to think, and focusing, and they can act independently. Similarly, Silverman (2012) pointed that introverts try to be perfect in school, keep all negative feelings inside, and then take them home and talk to the person they trust.

## **Conclusion**

The present study set out to investigate whether there existed a statistically significant relationship and difference between introvert and extrovert EFL learners' WTC and ambiguity tolerance. The findings revealed that there was a significant and positive relationship between (a) introvert EFL learners' WTC and ambiguity tolerance, and (b) extrovert EFL learners' WTC and ambiguity tolerance. Furthermore, the findings also indicated that extrovert EFL learners had significantly higher levels of willingness to communicate than introvert EFL learners, whereas introvert EFL learners had significantly higher levels of ambiguity tolerance than extrovert EFL learners. However, more studies need to be carried out to examine how other personality variables can affect learners' willingness to communicate.

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