Tolerance of Ambiguity and Use of Second Language Strategies

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ABSTRACT This study developed a scale of tolerance of ambiguity (as an aspect of personality or cognitive style) related to second language learning. The scale was used to discover if tolerance of ambiguity influences students' use of various second language strategies. The research was carried out with students of Spanish at the university level. Multiple regression analysis provided partial confirmation of several specific hypotheses regarding tolerance of ambiguity. Strength of motivation, attitude, and concern for grade were also found to influence use of strategies.

Second language learning is fraught with uncertainty.[1] Seldom do we know the precise meaning of a new lexical item, understand the exact temporal reference of a second language verb form, or feel that we are pronouncing an L2 sound with total accuracy. Given the pervasiveness of uncertainty—or, to use the psychological term, "ambiguity"—in second language learning, we may well be interested in determining: (1) the degree to which students are "intolerant" or "tolerant" of such ambiguity and (2) whether and how students' feelings about this ambiguity influence L2 learning.

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In considering "tolerance of ambiguity," we are faced with the issue of whether to consider personality or cognitive style variables as being relatively stable or as varying according to the situation.[2] Until fairly recently, most psychologists have held that one's characteristics are relatively consistent from one situation to another. In the last several decades, however, a small but influential group of personality researchers (see, e.g., Mischel, 22, 23, 24; Endler, 17) has found that it is not always possible to use "global" (general) personality instruments to predict how an individual will behave in a certain environment.

The need to operationalize personality variables in the specific context of second language learning has been addressed previously by Ely (14, 16). A major purpose of the study reported here is to extend the situation-specific approach to the consideration of tolerance of ambiguity.[3]

In addition, the study deals with a second problem: the need to learn more about the processes through which personality or cognitive style variables influence language learning outcomes. One approach to this question is to measure the impact of these variables on overall classroom participation (see, e.g., Naiman et. al., 25; Ely, 14). Alternatively, one can examine the way in which such variables influence students' specific second

language learning and communication "strategies." Although second language strategies have been the focus of many recent studies, relatively little attention has been paid to possible links between personality or cognitive style characteristics and the use of such strategies.[4]

It is the second purpose of the present research, then, to explore situation-specific tolerance of ambiguity as a possible antecedent of strategy use.

Tolerance of Ambiguity

In second language research, two of the commonly-used tolerance of ambiguity instruments are those developed by Budner (8) and Norton (26).[5] (Neither of these scales is specifically concerned with language learning settings.) Budner defined *in*tolerance of ambiguity as "the tendency to perceive...ambiguous situations as sources of threat" (p. 29). Norton conceived of intolerance of ambiguity as: "a tendency to perceive or interpret information marked by vague, incomplete, fragmented, multiple, probable, unstructured, uncertain, inconsistent, contrary, contradictory, or unclear meanings as actual or potential sources of psychological discomfort or threat" (p. 608).

In their comprehensive study of the predictors of language achievement, Naiman et al. (25) used Budner's global scale with English-speaking Canadian high school students of French. Eighth-grade students who were more tolerant of ambiguity performed better on both receptive and productive language tests. Chapelle (9) (also see Chapelle and Roberts, 10), utilizing Norton's scale, found that global tolerance of ambiguity was a predictor of final TOEFL scores of ESL university students (other independent variables entering the regression were semester-initial TOEFL scores, field independence, and anxiety).

Reiss (34) found a positive relationship between tolerance of ambiguity and university foreign language students' ratings of themselves as language learners. Although Reiss measured tolerance of ambiguity with three situation-specific items, she apparently did not attempt to construct a psychometrically reliable tolerance of ambiguity instrument.

Second Language Strategies

The study of second language "learning strategies" is motivated largely by a desire to identify characteristics of successful language learners. The field was opened by Rubin (35; see also 36) and Stern (37) in their discussion of strategies which they felt characterized the "good" language learner. These included: a willingness and ability to guess, looking for patterns in linguistic meaning and form, experimentation, practicing, supervising one's own language learning, and monitoring one's production.

A second major strand of strategy investigation, that of "communication strategies," focuses on the nonnative speaker as a producer (and receiver) of language. Communication strategy research seeks to identify strategies employed by nonnative speakers in attempting to convey and process information in the second language.

In their investigation of the nature of second language strategies, certain researchers have chosen to carry out their central analysis at the level of individual strategies. Naiman et al. (25), for example, interviewed superior adult language learners to discover their specific strategies, and also found that particular classroom strategies of secondary school learners of French predicted language achievement. Politzer (30) has discovered interesting relationships between university foreign language students' use of a large number of strategies and language learning, as measured by grades and instructor evaluations. Politzer and McGroarty (33) also have found significant associations between use of certain strategies and the improvement of ESL students on standardized tests.

Other researchers have examined strategies within groupings, categories, or typologies. Bialystok (2), for instance, examined four strategy categories: "formal practice," "functional practice," "monitoring," and "inferencing" (each category was further divided into "oral" and "written" sub-categories). With Canadian high school students of French, Bialystok found that the impact of strategy use varied according to the language skill being tested.[6] Reiss (34) assessed university foreign language students' use of strategies in such categories as guessing, attending to form, practicing, monitoring, attending

to meaning, and using mnemonic devices. She found that students who had rated themselves as good language learners reported use of each of the strategy categories.[7] O'Malley and his colleagues (e.g., 28) have divided a large number of strategies into "metacognitive," "cognitive," and "social" categories. Wenden (e.g., 39) has examined ways in which learners consider, plan, and evaluate their language learning and strategy use. Oxford (e.g., 29) has employed factor analysis to isolate five key strategy clusters, namely, those involving: "general study habits," "functional practice," "search for and communication of meaning," "studying or practicing alone" (including practicing rules), and using "mnemonic or memory devices." Studies focusing on communication strategies, such as those of Tarone (e.g., 38), Bialystok (3) and Faerch and Kasper (e.g., 18), have also typically endeavored to place strategies within typologically discrete categories.

Research Questions

The first question addressed in this study was the feasibility of designing a situation-specific tolerance of ambiguity scale. Tolerance/intolerance of ambiguity in second language learning, as operationalized in this study, is the relative degree of discomfort associated with thinking: that one does not know or understand exact meaning; that one is not able to express one's ideas accurately or exactly; that one is dealing with overly-complex language; that there is a lack of correspondence between the L1 and the L2.

The second research question in the study was the relationship between tolerance of ambiguity and strategy use. It was theorized that a student's use of strategies (in addition to being the result of prior experience and of other factors) is influenced by tolerance of ambiguity in the following two ways: 1) relatively lower tolerance of ambiguity leads to relatively greater reliance upon the L1 when using the language, and a relatively stronger tendency to relate L2 items to elements known in the L1; and 2) strategies which focus on specific details are used more by students low in tolerance of ambiguity, while strategies which focus on understanding general meaning are utilized more by students who are high in tolerance of ambiguity. It is thus expected that students who are relatively intolerant of ambiguity will cling to the L1, and also will be uncomfortable if they skip over what appear to be essential bits of information in their study or in their classroom work; students high in tolerance of ambiguity are expected to be more willing to deal with the L2 on its own terms, and concentrate on the overall message being communicated (rather than on the smaller details of the language).

Procedure

Students enrolled in second- and third-year university Spanish classes comprised the sample for this study. There were six classes, with a total of 84 students: two second-year classes (n = 26) and four third-year classes (n = 58).

Students were asked, during class time, to complete the tolerance of ambiguity and strategies instruments. They were told that participation in the study was voluntary, that the questionnaires would be filled out anonymously, and that their teachers would not see the results of the questionnaires.[8]

The tolerance of ambiguity items were written by the investigator, based upon his language learning and teaching experience and upon a review of the literature on tolerance of ambiguity. A major criterion in the design of the tolerance of ambiguity scale was that items should represent a broad spectrum of language activities: listening, speaking, reading, writing, pronunciation, and grammar. Students rated the items using a six point Likert-scale, with possible responses of "strongly disagree," "moderately disagree," "slightly disagree," slightly agree," "moderately agree," and "strongly agree."

Included with the tolerance of ambiguity scale were items representing three other scales (in addition to foil items): strength of motivation, attitude toward studying Spanish (e.g., whether it is considered interesting or boring), and desire for a "good" grade. The decision to include strength of motivation and attitude toward studying Spanish was prompted by a desire to explore possible causal factors not included in the major hypotheses.[9, 10]

The strategy questionnaire presented a list of

individual strategies, arranged under language learning situations (e.g., "When I listen to the teacher speaking Spanish: a. I pay attention to the overall meaning; b. I pay attention to the grammar and vocabulary). Although most of the strategies investigated are traditionally considered to be "learning" strategies, it was decided to include several "communicative" strategies as well. (It should be noted, in fact, that many strategies can be considered to have both learning and communicative functions; no theoretical distinction is made in this study between the two categories of strategies.)[11] Students responded to each strategy on a five-point Likert scale: "never," "rarely," "sometimes," "often," and "almost always."[12]

Results

The first purpose of this study was to investigate the possibility of arriving at a tolerance of ambiguity scale with statisfactory psychometric properties. To create the final tolerance of ambiguity scale, standard item-analysis procedures were followed (including the omission of items with unacceptably low corrected item-total correlations). The final result was an instrument consisting of 12 items (shown in Appendix A) and having a reliability (Cronbach alpha) of .82.

The second stage in the analysis was to regress the strategies on tolerance of ambiguity, strength of motivation, attitude toward learning the language, and concern for grade. The following is a summary of the results for these regressions (with the beta weights or standardized regression coefficients and the amount of variance (R^2)). (For ease of reference, the strategies are listed here, along with the significant ($p < .05$) predictors entering the regression equations.)

1. When I'm learning a new Spanish word:
   a. I try to associate it with a word that sounds similar in Spanish or English:

No significant predictors

   b. I try to associate it with another word that looks similar in Spanish or English:

No sig. pred.

   c. I try to memorize it by repeating it a number of times:

Tol. of ambig.: beta = –.23 $R^2 = .05$

   d. I try to make up a mental picture to help me remember:

Tol. of ambig.: beta = .23
Str. of motiv.: beta = .21 $R^2 = .10$

2. When I listen to the teacher speaking Spanish:
   a. I pay attention to the overall meaning:

Attitude toward learning Spanish: beta = .32 $R^2 = .10$

   b. I pay attention to the grammar or vocabulary:

Str. of motiv.: beta = .27 $R^2 = .07$

3. If the teacher corrects something I've said:
   a. I repeat the correct word or sentence:

Concern for grade: beta = .25 $R^2 = .06$

   b. I make a mental note of the correction:

No sig. pred.

   c. I try to use the correct form the next time I speak:

Conc. for gr.: beta = .24 $R^2 = .06$

4. After I learn a new Spanish word, I try to use it right away:

Str. of motiv.: beta = .29 $R^2 = .08$

5. As I read something in Spanish:
   a. I focus on getting the overall meaning:

Att. toward lng. Sp.: beta = .32
Tol. of ambig.: beta = .21 $R^2 = .12$

   b. I try hard to understand each individual word:

No sig. pred.

6. In speaking Spanish, I plan out exactly what I'm going to say before I say it:

Tol. of ambig.: beta = -.38 $R^2 = .15$

7. In writing Spanish compositions:
   a. I think carefully about grammar as I write each sentence:

Tol. of ambig.: beta = -.25
Str. of motiv.: beta = .23 $R^2 = .11$

   b. I use a word even when I'm not sure it's right:

No sig. pred.

c. I look up words in the dictionary:

Conc. for gr.: beta = .34 R^2 = .12

8. If I'm reading in Spanish and come across an unknown word:

a. The first thing I do is look it up to see what it means in English:

Tol. of ambig.: beta = -.39
Att. toward lng. Sp.: beta = .25 R^2 = .18

b. the first thing I do is try to guess what it means in English:

No sig. pred.

9. Outside the classroom I repeat Spanish words and sentences to myself:

Str. of motiv.: beta = .38 R^2 = .15

10. If I realize I've made a mistake when I'm speaking, I go back and correct it:

Att. toward lng. Sp.: beta = .33 R^2 = .11

11. In reading Spanish, when I'm trying to guess the meaning of a new word:

a. to help me guess, I think about the overall meaning of the sentence or passage:

No sig. pred.

b. to help me guess, I look for the similarity of the word to an English word:

Tol. of ambig.: beta = -.21 R^2 = .05

c. to help me guess, I look at the individual parts of the word:

No. sig. pred.

12. When I'm listening to Spanish in the classroom:

a. I try to understand every word I hear:

No sig. pred.

b. I try to "feel the sound" of Spanish when I listen—"soaking in" the pronunciation, intonation and accent:

Str. of motiv.: beta = .26 R^2 = .07

c. I let the meaning sink in slowly, without really focusing on it:

No sig. pred.

13. If I'm writing something for class:

a. I go back after I'm done and check my grammar:

Att. toward lng. Sp.: beta = .29 R^2 = .08

b. I proofread for spelling and accent marks:

Tol. of ambig.: beta = .33
Conc. for gr.: beta = .29 R^2 = .15

14. When other students are reading aloud in class, I read along with them mentally:

Conc. for gr.: beta = .29 R^2 = .08

15. In speaking, when I don't quite know how to express an idea:

a. I ask the teacher for the right words:

Tol. of ambig.: beta = -.32 R^2 = .10

b. I try to express the idea with Spanish that I *do* know:

Att. toward lng. Sp.: beta = .34
Conc. for gr.: beta = .29 R^2 = .21

c. I change the topic:

No sig. pred.

16. I think about my pronunciation when I speak Spanish:

Str. of motiv.: beta = .30 R^2 = .09

17. When I'm reading Spanish and find some new or difficult grammar, I try to understand the grammar problem right away:

Str. of motiv.: beta = .28 R^2 = .08

18. In listening to Spanish, when I hear a word I don't know:

a. I write it down:

No sig. pred.

b. I make a mental note of it:

Att. toward lng. Sp.: beta = .33 R^2 = .11

c. I ask the teacher about it:

No sig. pred.

d. I try to figure out what it means:

Str. of motiv.: beta = .28 R^2 = .08

19. When I'm speaking and I'm not sure if something will be correct:

a. I say it and then check to see if the teacher corrects me:

Str. of motiv.: beta = .32 R^2 = .10

b. I try to find out if it's correct first before I say it:

Conc. for gr.: beta = .27 R^2 = .07

c. I just say it and don't think too much about it:

Conc. for gr.: beta = -.26
Tol. of ambig.: beta = .29
$R^2 = .17$

Discussion

This study found that it is possible to develop an instrument which can measure the construct of tolerance of ambiguity in the specific context of second language learning. The current scale, consisting of 12 items representing various aspects of language learning and use, was found to have a high internal consistency. Further development and refinement of the instrument are planned.

The predictions regarding tolerance of ambiguity received support from the findings for some, but not all, of the strategies. In the case of strategies involving reliance on the L1, tolerance of ambiguity was indeed a significant negative predictor of: looking for similarities between new words and L1 words (strategy 11b) and looking up words in English right away when reading (8a). There was no predictive relationship between tolerance of ambiguity and guessing the meaning in English right away (8b).

Tolerance of ambiguity, as hypothesized, was found to be a significant negative predictor of various strategies which involve focusing on individual language elements: planning out exactly what to say ahead of time (6), thinking carefully about grammar when writing (7a), looking up words in English right away when reading (8a), and asking teacher for the right words when speaking (15a). Also, students high in tolerance of ambiguity did not mind speaking even when they were unsure of possessing the correct language tools (19c). Level of tolerance of ambiguity was not, however, a predictor of focusing on grammar or vocabulary when listening (2b), focusing on individual words when reading (5b), or trying to understand every word when listening (12a). Curiously, tolerance of ambiguity positively predicted proofreading one's written work for spelling and accent marks (13b).

For strategies involving overall meaning, tolerance of ambiguity did in fact prove to be a significant positive predictor of looking for overall meaning in reading (5a). Tolerance of ambiguity was not found to contribute significantly to variance in looking for overall meaning in listening (2a) and guessing word meaning from context (11a).

In the case of two other strategies not specifically related to the research questions, interesting results regarding tolerance of ambiguity can be noted. When faced with the task of learning new words, students high in tolerance of ambiguity were less likely to simply memorize the words through rote repetition (1c), but favored the more creative technique of constructing mental images to aid later recall (1d).

Although *a priori* hypotheses were not framed regarding attitude toward the learning situation, concern for grade, and strength of motivation, the results involving these variables suggest relationships for future research. A positive attitude toward the learning situation would appear to generally facilitate a balanced approach to language learning, encouraging students to focus on the overall picture (in reading, 5a, speaking, 15b, and listening, 2a, (while remaining alert for new words, 18b)), but at the same time leading them to monitor their production (in writing, 13a, and speaking, 10). A strong positive attitude may, however, (especially in conjunction with a low tolerance of ambiguity), lead to an overly quick attempt to grasp meaning (8a). Students high in concern for grade seem to focus on correctness of production in speaking (3a, 3c, 19b, and 19c—negative prediction) and writing (7c, 13b), but they also appear to have a strong desire to engage actively in learning (14) and to persist in communicative attempts (15b). Strength of language learning motivation may promote a desire to internalize language deeply (in writing, 7a, pronunciation, 12b and 16, and listening, 18d), an interest in encountering, mastering, and using new language items (2b, 4, 9, and 17), a willingness to create associations (1d), and an openness to teacher correctness after an utterance has been completed (19a).

While there are a number of significant predictors evidenced in the data, the amount of variance in the dependent variables is modest, averaging 10 percent. Although this is an important amount of variance, this figure indicates that many other factors are also acting to

influence use of strategies, including, perhaps, prior training and practice in strategy use, as well as other individual differences not measured in the present study. It is hoped that further research will be able to discover some of these variables. In addition, future studies conducted with populations differing in the language situation and level from those of the present research can be expected to produce additional insights into the relationship between individual characteristics and language learning.

Conclusion

Perhaps the central implication of this study for language-teaching/learning theory and pedagogy concerns the way in which teachers view and present second language learning/communication strategies. Although some teachers are now becoming aware of the need to recommend particular strategies to their students (for example, saying "be sure to look for overall meaning when you read"), often little thought is given to individual learning styles and personality characteristics. The present study demonstrates a deeper dimension to the problem of strategy instruction. Teaching language learning behavior is not, apparently, merely to be accomplished by making students aware of a strategy and its potential benefits, encouraging them to use it, and providing opportunities to do so. We also should become aware of (and take into account) underlying personality and other affective variables which might tend to inhibit or promote the acquisition of new ways of approaching language learning tasks. After assessment of these variables, we will be better able to make informed judgments about strategy development. In addition, we may wish to provide activities which might be able to alter the classroom-specific characteristics we have discovered[13] (although a good deal of research is needed in this area). As we become more knowledgeable about the personal characteristics of students that may promote or inhibit the adoption of various learning processes, we will move more quickly toward that desideratum of helping our students become "good language learners."

NOTES

[1]This research was supported by a grant from the Office of Research, Ball State University. This study would not have been possible without the kind and enthusiastic support of Rita Gardiol, Chair of the Department of Foreign Languages at Ball State, and the advice and assistance of the following members of that department: Douglas Barnette, Linda Barnette, James Brown, Robert Fritz, Permilla Jenkins, and Alazne Landa.

[2]Tolerance of ambiguity is considered by various researchers to be either a personality or cognitive style variable (or both).

[3]A situation-specific tolerance of ambiguity instrument was developed by Chapelle (9), but she considered the scale to be "somewhat suspect as a consistent measure of [tolerance of ambiguity]," since the original 13-item scale had to be reduced to 4 items in order to obtain a reliability level of .54 (Cronbach alpha) (p. 47). This scale was not apparently used in Chapelle's subsequent analysis.

[4]Field independence and reflectivity (measured as global constructs) have been found to be significantly correlated with monitoring (Abraham, 1) and working styles on computers (from which learning styles were inferred (Jamieson and Chapelle (21)). Also see related studies by Brown (7) and by Ehrman and Oxford (12, 13). Regarding Ehrman and Oxford (13), Oxford suggests (personal communication) that "[Myers-Briggs] 'perceivers' would seem to have a high tolerance for ambiguity, while 'judgers' would not."

[5]The construct of tolerance of ambiguity was first explored by Frenkel-Brunswik (e.g., 19).

[6]See also Bialystok and Fröhlich (4). Related research has been conducted by Huang and Van Naerssen (20) in China.

[7]Students who rated themselves high as language learners also tended to be tolerant of ambiguity. However, a *causal* investigation of personality and strategy use was not carried out.

[8]The data were gathered several weeks prior to the end of a ten-week term in 1987.

[9]Research by Politzer (31, 32) found integrative motivation and instrumental motivation related to students' use of various language learning strategies.

[10]For a discussion of the development of the strength of motivation and concern for grade scales, see Ely (14, 15). The attitude toward studying Spanish scale employed two items assessing students' interest or lack of interest in learning the language.

[11]For further discussion of this point, see, e.g., Bialystok (3, pp. 100-03).

[12]Although the use of self-report data in the measurement of individual differences and learning strategies is a common research procedure, there is much discussion about the relative merits of this (and other) data-gathering methods. See, e.g., Cohen (11), Ely (14), Politzer (30), and Oxford (29).

[13]Omaggio (27) (see also Birckbichler and Omaggio, 5) presents a number of interesting classroom activities designed to address such characteristics as low tolerance of ambiguity, exessive impulsiveness, lack of flexibility, and lack of organization.

REFERENCES

1. Abraham, Roberta G. "Relationships between Use of the Strategy of Monitoring and Cognitive Style." *Studies in Second Language Acquisition* 6 (1983): 17-32.
2. Bialystok, Ellen. "The Role of Conscious Strategies in Second Language Proficiency." *Modern Language Journal* 65 (1981): 24-35.
3. _____. "Some Factors in the Selection and Implementation of Communication Strategies," in Claus Faerch and Gabriele Kasper, eds., *Strategies in Interlanguage Communication.* New York: Longman, 1983.
4. _____and Maria Fröhlich. "Variables of Classroom Achievement in Second Language Learning." *Modern Language Journal* 62 (1978): 327-36.
5. Birckbichler, Diane W. and Alice C. Omaggio. "Diagnosing and Responding to Individual Learner Needs." *Modern Language Journal* 62 (1978): 336-45.
6. Brown, H. Douglas. *Principles of Language Learning and Teaching.* 2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1987.
7. _____. Presentation at colloquium on Myers-Briggs Personality Types and Second Language Learning Strategies, 1988 Annual TESOL Convention, Chicago.
8. Budner, Stanley. "Intolerance of Ambiguity as a Personality Variable." *Journal of Personality* 30 (1962): 29-50.
9. Chapelle, Carol. "The Relationship between Ambiguity Tolerance and Success in Acquiring English as a Second Language in Adult Learners." Dissertation, University of Illinois, 1983.
10. _____ and Cheryl Roberts. "Ambiguity Tolerance and Field Independence as Predictors of Proficiency in English as a Second Language." *Language Learning* 36 (1986): 27-45.
11. Cohen, Andrew D. "Studying Learner Strategies: How We Get the Information," in Anita Wenden and Joan Rubin, eds., *Learner Strategies in Language Learning.* Englewood Cliffs, N.J.: Prentice-Hall, 1987.
12. Ehrman, Madeleine and Rebecca Oxford. Presentation at colloquium on Myers-Briggs Personality Types and Second Language Learning Strategies, 1988 Annual TESOL Convention, Chicago.
13. _____. "Ants and Grasshoppers, Badgers and Butterflies: Quantitative and Qualitative Exploration of Adult Language Learning Styles and Strategies." Presentation at Conference on Research Perspectives in Adult Language Learning and Acquisition, Ohio State University, 1988.
14. Ely, Christopher M. "An Analysis of Discomfort, Risktaking, Sociability, and Motivation in the L2 Classroom." *Language Learning* 36 (1986): 1-25.
15. _____. "Language Learning Motivation: A Descriptive and Causal Analysis." *Modern Language Journal* 70 (1986): 28-35.
16. _____."Personality: Its Impact on Attitudes toward Classroom Activities." *Foreign Language Annals* 21 (1988): 25-32.
17. Endler, Norman S. "The Person Versus the Situation—a Pseudo Issue? A Response to Alker." *Journal of Personality* 41 (1973): 287-303.
18. Faerch, Claus and Gabriele Kasper. "Plans and Strategies in Foreign Language Communication," in Claus Faerch and Gabriele Kasper, eds., *Strategies in Interlanguage Communication.* New York: Longman, 1983.
19. Frenkel-Brunswik, Else. "Intolerance of Ambiguity as an Emotional and Perceptual Personality Variable." *Journal of Personality* 18 (1949): 108-43.
20. Huang, Xiao-Hua and Margaret Van Naerssen. "Learning Strategies for Oral Communication." *Applied Linguistics* 8 (1987): 287-307.
21. Jamieson, Joan and Carol Chapelle. "Working Styles on Computers as Evidence of Second Language Learning Strategies." *Language Learning* 37 (1987): 523-44.
22. Mischel, Walter. *Personality and Assessment.* New York: Wiley, 1968.
23. _____. "The Interaction of Person and Situation," in David Magnusson and Norman S. Endler, eds., *Personality at the Crossroads: Current Issues in Interactional Psychology.* Hillsdale, NJ.: Erlbaum, 1977.
24. _____. "Personality and Cognition: Something Borrowed, Something New?" in Nancy Cantor and John F. Kihlstrom, eds., *Personality, Cognition and Social Interaction.* Hillsdale, N.J.: Erlbaum, 1981.

25. Naiman, Neil, Maria Fröhlich, H.H. Stern, and Angela Todesco. *The Good Language Learner.* Research in Education Series No. 7. Toronto: The Ontario Institute for Studies in Education, 1978.
26. Norton, Robert W. "Measurement of Ambiguity Tolerance." *Journal of Personality Assessment* 39 (1975): 607-19.
27. Omaggio, Alice C. *Helping Learners Succeed: Activities for the Foreign Language Classroom.* Washington, D.C.: Center for Applied Linguistics, 1981.
28. O'Malley, J. Michael, Anna Uhl Chamot, Gloria Stewner-Manzanares, Lisa Kupper, and Rocco P. Russo. "Learning Strategies Used by Beginning and Intermediate ESL Students." *Language Learning* 35 (1985): 21-46.
29. Oxford, Rebecca L. *Second Language Learning Strategies: Current Research and Implications for Practice.* Los Angeles: Center for Language Education and Research, University of California, Los Angeles, 1986.
30. Politzer, Robert L. "An Exploratory Study of Self Reported Language Learning Behaviors and their Relation to Achievement." *Studies in Second Language Acquisition* 6 (1983): 54-68.
31. _____. "Motivation, Language Learning Behavior and Achievement in an Intensive ESL Course." Undated manuscript.
32. _____. "Linguistic and Communicative Competence Achievement in Relation to Reported Motivation and Learning Behaviors in an Intensive EFL Course." Undated manuscript.
33. _____and Mary McGroarty. "An Exploratory Study of Learning Behaviors and their Relationship to Gains in Linguistic and Communicative Competence." *TESOL Quarterly* 19 (1985): 103-23.
34. Reiss, Mary-Ann. "The Good Language Learner: Another Look." *The Canadian Modern Language Review* 41 (1985): 511-23.
35. Rubin, Joan. "What the 'Good Language Learner' Can Teach Us." *TESOL Quarterly* 9 (1975): 41-51.
36. _____. "Study of Cognitive Processes in Second Language Learning." *Applied Linguistics* 2 (1981): 117-31.
37. Stern, H.H. "What Can We Learn from the Good Language Learner?" *The Canadian Modern Language Review* 31 (1975): 304-18.
38. Tarone, Elaine. "Some Thoughts on the Notion of Communication Strategy." *TESOL Quarterly* 15 (1981): 285-95.
39. Wenden, Anita. "Literature Review: The Process of Intervention." *Language Learning* 33 (1983): 103-21.

APPENDIX A
Tolerance of Ambiguity Scale*

1. When I'm reading in Spanish, I get somewhat impatient when I don't totally understand the meaning. (I)
2. It bothers me that sometimes I don't know exactly what the teacher is saying in Spanish, even though I understand the general idea. (I)
3. When I write Spanish compositions, I don't like the fact that I can't always express my idea exactly. (I)
4. I find it kind of frustrating that it's sometimes hard to pin down the meaning of Spanish grammar. (I)
5. I don't like the feeling that my Spanish pronunciation may not be quite right. (I)
6. I enjoy reading something in Spanish that takes a while to figure out completely. (T)
7. It bothers me that even when I study Spanish grammar, some of it is hard to really understand. (I)
8. When I'm writing in Spanish, I don't like the fact that I can't say just what I want. (I)
9. When I'm speaking in Spanish, I don't really worry about not being able to say what I mean. (T)
10. It bothers me when the teacher uses a Spanish word I don't know. (I)
11. I don't like the fact that it's often impossible to find Spanish words that mean exactly the same as some English words. (I)
12. I wish I could pronounce Spanish words the way they should be pronounced. (I)

*I= intolerance, T=tolerance; "I" items were negative on the scale; items were interspersed in a larger questionnaire.