

Assessing and Overcoming Second Language Semantic Barriers in Health Professionals

Yue Zhao^{1,2}, Norman Segalowitz^{1,2}, Catherine Ouellet-Courtois^{1,2},
Andrew Ryder¹ & Esther Yakobov¹

¹Concordia University & ²Centre for the Study of Learning and Performance,
Montreal, Quebec

A health provider's ability to engage in effective communication with patients involves the ability to handle linguistic nuances effectively, especially in situations such as giving bad news, providing comfort, seeking informed consent and discussing sensitive topics (risk, death, sex, mental health). Inability to do so can be a limiting factor for health providers having to use a second language (L2) to communicate with linguistic minority patients (Jacobs et al., 2006; Segalowitz, 2010; Segalowitz & Kehayia, 2011; Robinson, 2002). The study reported here involved testing people's L2 understanding of subtle nuances of words that could lead to the development of a useful tool in L2 training programs for health professionals. The long-term aim of the project is to develop such a tool.

One interesting category of words that involve subtle meanings are epistemic adverbs such as *possibly*, *probably*, *certainly*, etc. Such adverbs reflect the speaker's perspective regarding the message that is being conveyed, not only about the statistical likelihood of something occurring but also about their own relationship to that knowledge. Wierzbicka (2006) has provided a linguistic analysis of such adverbs. She has proposed that the full meanings of each of these epistemic adverbs can be captured in terms of several dimensions, which we have reduced to the following four:

Dimension 1—the extent to which the speaker seems to base his/her claim upon *personal knowledge*.

Dimension 2—the extent to which the speaker's knowledge appears to result from a *logical conclusion*.

Dimension 3—the degree to which the speaker makes a claim according to information obtained from *hearsay*.

Dimension 4—the degree of *confidence* the speaker has regarding the claim.

The study reported here examined how first (L1) and second (L2) language speakers understand such epistemic adverbs. Epistemic adverbs, such as *possibly* and *probably* as in "*possibly this therapy will help*", reflect a speaker's opinion about the truth and source of a statement. Such adverbs may sometimes be necessary in healthcare communication when communicating about risk and may thus be a locus of misunderstanding where language barriers exist. In paper-and-pencil tests, 12 L1-English/L2-French and 12 L1-French/L2-English speakers rated the meaning of a set of epistemic adverbs in both their L1 and L2 on scales directly addressing four semantic dimensions derived from linguistic theory (Wierzbicka, 2008). The hypothesis for this study was that speakers would understand the meanings of epistemic adverbs along each of the four dimensions, but in different ways in their L1 compared to their L2, with greater inter- and intra individual variability in the L2 compared to the L1.

METHOD

Participants: Twenty-four English and French bilingual university students took part in the study. Twelve had English as their first language and 12 had French, all with the other language as the L2.

Materials: (a) Twelve epistemic adverbs were selected as English targets (e.g., *apparently, certainly, clearly*) and 12 French as targets (e.g., *apparemment, certainement, évidemment*). (b) Paper-and-pencil rating scales (see Fig. 1) were created for participants to use. There were four English and four French questionnaires, one for each dimension, with 72 trials each, with six repetitions of each adverb in different carrier sentences. Also, 36 carrier sentence frames were used, 12 of which were positive, 12 negative and 12 neutral in tone.

Procedure: Participants filled out a Language Background Questionnaire, performed a computer-based language proficiency task in L1 and L2, and then did the questionnaire for the main task. The testing session lasted about 1 hour in all.

RESULTS

The main results were the following:

- (1) Generally, Francophones and Anglophones rated the corresponding stimuli similarly in their L1, in ways supporting the linguistic analyses.
- (2) The meaning ratings were submitted to a Dimension (1-4) by Sentence (Positive, Negative, Neutral) analysis of variance. This yielded a 2-way interaction effect ($F(2.24, 138) = 9.48, p < .01$). Neutral carrier sentences yielded a flat mean of 5.59 whereas for both Positive and Negative sentences Dimension 3 (hearsay) was rated significantly lower than the other Dimensions, with no differences between Positive and Negative sentences.
- (3) The hypothesis that there would be greater variability in the L2 ratings than in the L1 ratings was not supported.

CONCLUSIONS

The behavioural data supported the linguistic analyses of epistemic adverbs, encouraging further investigation. Future research should focus on use of carrier sentences that are perceived to convey important messages (e.g., negative sentences about a medical problem convey more important meaning than do positive or neutral sentences). In retrospect, it seems likely that by focusing participants explicitly on the four dimensions, expected differences in response patterns may have been masked.

In light of these findings, a new study has been launched. This is an on-line investigation in which English-speaking participants judge the similarity of sentence pairs presented as an opinion from one's regular doctor and a second opinion from another doctor. There is no explicit focus on the four dimensions; instead participants simply indicate on a 9-point Likert-type scale how dissimilar the two statements are. The data will be submitted to a multi-dimensional scaling analysis to look for underlying dimensions in how participants process the epistemic adverbs.

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Figure 1: Example from the main task questionnaire

Circle the appropriate number to indicate the degree to which the speaker *personally knows* that the information is true

	Does not personally know					Does personally know	
The doctor explained to the man, "Evidently, this rehabilitation program will help you regain mobility."	1	2	3	4	5	6	7