Assessing the Watson-Barker Listening Test (WBLT)-Form C in Measuring Listening Comprehension of Post-Secondary Hispanic-American Students

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Abstract

The Watson-Barker Listening Test (WBLT) is one of the most popular measures of listening comprehension. However, participants in studies utilizing this scale have been almost exclusively Anglo-American. At the same time, previous research questions the psychometric properties of the test. This study addressed both of these issues by testing the psychometric properties of the scale with Hispanic-American postsecondary students. Results suggest that the measure does not meet the proposed five-factor structure and that the items hold little relationship to one another. Thus we recommend researchers and educators choose alternative means of measuring listening comprehension.

Almost from its inception as a distinct field, listening researchers focused on identifying components of "good" listening (Bostrom, 2011). One of the primary components believed to constitute good listening is comprehension. In response to this belief, numerous measures of listening comprehension have been proposed (e.g., Brown-Carlsen Listening Comprehension Test, Communication Competency Assessment Instrument, Kentucky Comprehensive Listening Test; Watson-Barker Listening Test) (Bostrom & Waldhart, 1983; Brown & Carlsen, 1955; Rubin, 1982a, 1982b, Watson & Barker, 1988). The Watson-Barker Listening Test (WBLT) has emerged as the most utilized measure of listening comprehension by listening scholars, consultants, and teachers.

Given the close connection between ethnicity and communication (Gudykunst, 2002), and the rapidly changing ethnic composition of the United States, understanding the impact of cultural and ethnic differences on communication has become increasingly important. Nonetheless, our understanding of how ethnic differences may affect listening skills and attitudes is woefully underdeveloped. Studies utilizing the WBLT (as well as other listening measures) have relied

almost exclusively on Anglo-American participants. As Little (1997) and Keaton and Bodie (2013) note, scales properties may change across different populations. Thus, it behooves listening scholars to continuously evaluate the validity and reliability of listening measures, including what populations and contexts are appropriate for them.

In addition to the general lack of research with other populations, several studies have questioned the psychometric properties of the current version of the WBLT, especially given that significant changes have been made across the various versions since the test was developed (see, for example, Worthington, Fitch-Hauser, Cook, & Powers, 2009; Bodie, Worthington, & Fitch-Hauser, 2011). Psychometrically sound instruments are a necessity if listening scholars are accurately to describe and explain listening processes (Keaton & Bodie, 2013).

We address both of the above issues in this study. First, our study provides an additional test of the psychometric properties of the WBLT. Second, because Hispanic-Americans are one of the fastest growing ethnic groups in the US, composing approximately 16.3% of the US population (Humes, Jones & Ramirez, 2011), we chose to use Hispanic-American postsecondary students as participants in our study.

Watson-Barker Listening Test

The Watson-Barker Listening Test was developed in 1982 as a means to measure adult listening behavior (Watson & Barker, 1984, 1988; Watson, Barker, Roberts & Roberts, 2001). Presented via video, the WBLT tests for five different listening abilities – interpretation of meaning, interpretation of emotion, understanding, recall, and the ability to follow instructions. In addition, each section is designed to test a listener's ability in both short-term and long-term listening contexts (e.g., conversations, lectures, etc.). Watson et al. (2001) contend that the test focuses on the types of listening adults may face in professional settings.

The scale has been used in a variety of contexts (e.g., education and business) and studies (Applegate & Campbell, 1985; Bommelje, Houston, & Smither, 2003; Clark, 1989; Fitch-Hauser, Powers, O'Brien, & Hanson, 2007; Roach & Fitch-Hauser, 1984; Vierthaler & Barker, 1985; Villaume & Brown, 1999; Watson & Rhodes, 1988; see also, Watson et al., 2001, for a review). It is one of the most utilized classroom and workshop measurements, with students taking it before and after exposure to listening instruction. This type of usage often occurs in classes and workshops dedicated to improving listening competency.

The developers of the WBLT, recognizing the complexity of the listening process, acknowledge that the test accounts for only a relatively small amount of variance. However, this complexity also likely explains why a number of studies have found the WBLT lacking in overall convergent and discriminate validity (cf. Applegate & Campbell, 1985; Bodie, Worthington, & Fitch-Hauser, 2011; Fitch-Hauser & Hughes, 1986, 1992; Roberts, 1985; Rubin & Roberts, 1987; Villaume & Weaver, 1996). However, the measure continues to be used in research, classroom, and professional settings despite these problems.

The most serious questions of the psychometric properties of the scale were raised by Bodie et al. (2011). Reporting the results of a confirmatory test of Form C of the WBLT, they found that their test of those data did not match the model originally proposed by Watson and Barker. They also tested a second-order model and an unidimensional model. They concluded that the models tested were essentially no better than the independence model. Thus, with their student population, they found little association across the 40 items of the WBLT-C. The Bodie et al. study consisted of 208 participants: 181 Caucasian students, 23 African-American students, and the remaining participants self-identified as a variety of other ethnic groups (e.g., Asian, Hispanic, multiethnic, etc.).

However, as noted earlier, researchers suggest that scale properties may change with different populations (Keaton & Bodie, 2013; Little, 1997). Therefore, the goal of this study is to further test the psychometric properties of the WBLT-C with Hispanic-American postsecondary student participants.

Method

Participants

Participants attended a Southwestern US university. Only participants who self-identified as Hispanic were included in this analysis (n = 214). Hispanic participants self-identified by a question that asked the person's origin or descent. More specifically, Hispanic respondents, no matter their race, "were defined as persons of Hispanic origin, in particular, those who indicated that their origin was Mexican, Puerto Rican, Cuban, Central or South American, or some other Hispanic origin," reflecting the definition provided by the US Census Bureau ("Hispanic Population," 2011).

Of the 214 participants, 147 were male (64%) and 82% were full time students. Participants ranged in age from 19 to 43 years, with an average age of 22.11 (SD = 3.6); 62% were first-year students and 30% sophomores. Approximately 67% of participants indicated they were bilingual (English/Spanish).

Procedures

Data was collected as part of larger study investigating listening comprehension and additional listening and communication variables in a single hour-long session. At this session, the participants first reviewed an informed consent statement. Next, they viewed a video recording of the Watson-Barker Listening Test (Form C). After viewing the video, they completed the WBLT scoring sheet as well as a short survey consisting of additional attitudinal, listening, and demographic items.

Instruments

The Watson Barker Listening Test (Form C) (Watson et al., 2001) consists of 40 items and is designed to measure five aspects of listening comprehension: Interpreting message content, understanding meaning in conversations, remembering lecture information, interpreting

emotional meaning, and following directions and instructions. The test is administered in English via a video recording. Following the presentation of the stimulus materials, participants complete a 40-item questionnaire (eight questions for each of the five areas). Participants are instructed to mark the correct answer on a written scoring sheet. Participant answers are scored as either correct or incorrect. An overall score is also computed. Table 1 reports general descriptive statistics as well as the number of correct and incorrect items for each subscale and for the comprehensive score.

Internal consistency was estimated using Cronbach's α for the original five-factor structure (Part I, Evaluating Interpreting Message Content, α = .39; Part II, Understanding Meaning in Conversation, α = .29; Part III, Understanding and Remembering Lecture Information, α = .44; Part IV, Evaluating Interpreting Emotional Meaning in Messages, α = .44; Part V, Following Instructions and Directions, α = .39) and a unidimensional structure (α = .70) as previously tested by Bodie, et al., 2011). Additional analysis revealed that the items within the original proposed factors are not highly correlated (see Table 2). Therefore, results concerning the five-factor structure should be interpreted conservatively.

Results

Preliminary Analyses

Prior to running the primary analyses, data were inspected for adherence to statistical assumptions (Tabachnick & Fidell, 2007). With N = 214 and alpha set to .05, statistical power was .43 to detect small correlational effects (r = .10) and exceeded .99 for medium (r = .30) and large (r = .50) effects. Furthermore, the data set was sufficiently powered to assess model fit and parameter estimates (based upon recommendations from Hu, Bentler, & Kano, 1992).

Confirmatory factor analytic procedures (using maximum likelihood estimation) were employed to estimate the WBLT-Form C's ability to represent these data for both its proposed five-factor structure and a unidimensional structure (as outlined in Bodie, et al., 2011). Commonly used fit indexes and comparison thresholds were utilized: The comparative fit index (CFI) above .90, the standardized root mean square residual (SRMR) below .10, and the root mean square error of approximation (RMSEA) below .08 (Byrne, 2010; Kline, 2005).

Tests of Model Dimensionality

Five-factor structure. Inspection of fit statistics for the five-factor structure across participants indicated poor representation of these data, $\chi^2(734) = 870.94$, p < .001, CFI = .68, SRMR = .07, RMSEA = .03.

Unidimensional structure. Inspection of fit statistics for the unidimensional structure across all participants indicated poor representation of these data, $\chi^2(740) = 915.75$, p < .001, CFI = .59, SRMR = .07, RMSEA = .03.

The results of the tests of model dimensionality for the WBLT precluded further analysis of listening comprehension.

Discussion

Prior studies utilizing the WBLT (Form C or D) as a measure of listening comprehension primarily used Anglo-American participants. As previously noted, scale properties may change with different populations (Little, 1997; Keaton & Bodie, 2013). Thus, this study had two goals: To test the psychometric properties of the WBLT- Form C, and to do so with a Hispanic-American student population.

As seen above, results of the tests of model dimensionality provide further empirical evidence that the WBLT-C should not be used as an assessment instrument for listening comprehension. While internal consistency estimates for our Hispanic-American participants improved over those reported by Bodie et al. (2011), the five factor structure originally proposed by Watson and Barker was not supported with these participants. Confirming the findings of Bodie et al. (2011), the 40 items of the WBLT-C are, at best, a loosely associated group of measurement items. DeVellis (2003) argues that in scale construction, items should be at minimum moderately correlated with one another. Such is not the case with this measure.

Educators and trainers often use listening comprehension tests such as the WBLT-C as a means of pretesting and post-testing student listening in classes and in communication training workshops. Despite our findings, some instructors may still wish to utilize the WBLT-C as a means of stimulating classroom discussion. However, it is very likely that students will see their scores as an objective measure of their listening skills. Unfortunately, their scores may give them the false impression that their listening is better or worse than it is in actuality, even when educators stress to them that the test is only being used to illustrate potential problems in common listening contexts. Given this, it is our strong suggestion that educators avoid using the Watson-Barker Listening Test. Unfortunately, we cannot suggest a good alternative.

Bodie et al. (2011) offer several considerations for developing future listening measures. For example, they suggest the use of dichotomous measures (i.e., correct/incorrect) is problematic. Meaning is often derived from the context and individuals who are interacting. Thus, the "one-size-fits-all" approach taken by the WBLT may not accurately reflect the interactive nature of a listening context, particularly when deriving meaning from a message.

This argument may be particularly true for individuals who are bilingual. A rich literature focuses on the effects of being bilingual (see Marian & Shook, 2012 for an overview). For example, previous research indicates that bilingual persons do not use one language at a time. Both languages are active simultaneously. When individuals listen, word activation cues up corresponding words regardless of the language to which the word may belong (Marian & Spivey, 2003). As a result, bilingual listeners have the potential to map words into either language. The cognitive load that results from linguistic competition such as this is known to

result in some language difficulties (Marian & Shook, 2012). For example, speakers of two or more languages may name pictures more slowly (Gollan, Montoya, Fennema-Notestine, & Morris, 2005). They are also more likely to experience moments where they have difficulty recalling a term, but may be able to remember attributes associated with it (Gollan & Acenas, 2004).

When responding to questions of the WBLT-C, participants use information beyond that in the verbal message. Two subscales of the WBLT are designed to measure meaning–understanding conversational meaning and understanding emotional meaning. However, meaning cannot be separated from the larger context of an interaction, so it may not be viable to attempt to measure it as a separate component/subscale as done by the WBLT. As Wagner's (2008) research on listening comprehension suggests, second language speakers vary in how they use and process nonverbal elements of spoken text. Consequently, second-language learners may have greater difficulties decoding nonverbal communication. These findings provide further support for claims that attempts to measure listening comprehension should revisit the question of what constitutes the basic elements of comprehension (see for example, Bodie, Worthington, Imhof, and Cooper, 2008; Bostrom, 2011).

Listening scholars only recently began testing the psychometric properties of many early, established listening measures, such as the WBLT-C. Not only is it important for scholars to test the psychometric properties of listening measures to ensure the soundness of the research they conduct: it is also important to test their viability with other ethnic and cultural groups.

Because the WBLT-C has, so far, been shown to be psychometrically problematic, we were unable to fully realize the second goal of our study. However, some listening researchers have begun addressing the role of culture (primarily defined by national origin) on differences in listening conceptualizations and behaviors. For example, Imhof & Janusik (2006) developed the Listening Concepts Inventory (LCI) as a means of identifying cognitive constructs that drive listening behavior. Their factor analysis identified four major dimensions associated with participants' subjective perceptions of listening: listening as organizing information, listening as relationship building, listening as learning and integrating information, and critical listening. Their follow-up study of these dimensions suggests that individual conceptualizations of the listening process varies. For example, they found that US participants conceptualized listening as a sustained activity, while German participants viewed listening more as an interactive situation that focuses on the individual and requires greater monitoring of the conversation. Imhof and Janusik note that individual concepts of listening can be described as a composition of multiple and independent elements that form a belief system. They go on to conclude that these differing belief systems are likely the source of the differences in how German and US young adults conceptualize listening.

More recently, Zohoori (2013) compared US and Iranian students' perceptions of personal listening competence using the Brownell HURIER Listening Profile. At its most basic level, listening competency addresses an individual's proficiency in literal comprehension (e.g., identification of main ideas, support material, etc.) and critical comprehension (e.g., recognition of personal biases, intended meanings, etc.) ("Speaking & Listening," 1998). While both groups

perceive their personal listening competence quite similarly, US students rated themselves as somewhat better listeners than did their Iranian counterparts in the areas of hearing, remembering, and responding.

Importantly, however, none of these studies addressed "cultures within cultures." That is, they assume that these nations are culturally homogenous. A review of listening literature found only one study addressing differences between groups within a nation. Dillon and McKenzie (1998) examined four US groups: African-, Anglo-, Asian-, and Hispanic-American students. Their study explored the influence of ethnicity on listening as well as communication competence, approach, and avoidance. They found that "approaching" behaviors, but not avoidance behaviors, appear to differ by ethnicity. In general, significant differences were identified across the four groups. For example, Anglo-American students averaged higher scores on willingness to communicate than did African-Americans, and this finding held true for willingness to communicate with either friends or strangers. In contrast, Hispanic-American students reported a greater willingness to communicate with strangers than did their Asian-American counterparts. Unfortunately, one of the weaknesses of the study, its relatively few minority participants, was a factor acknowledged by the authors, and was one which led them to inflate their significance test probability level to p < .10. While Dillion and McKenzie identify important communicative differences, they focus more on the impact of these differences on individual interactions and less on the possible origins of these differences.

These studies suggest that Hispanic listeners may have unique belief systems that inform their conceptualization of listening, and subsequently affect their listening behaviors.

Conclusion

To conclude, results of this and the previous Bodie et al. (2011) study have supported the notion that the WBLT is not psychometrically sound and strongly suggest that the scale should not be used as a measure of listening comprehension. The reality is that cultural differences impact how we listen (Beall, 2010). However, despite evidence to the contrary, many listening scholars continue to treat nations as if they are composed of a single, homogeneous group. While Hispanic-Americans as a group are diverse (Sonderup, 2004), they do share a number of cultural commonalities that may inform their listening belief system: A dominant Roman Catholic tradition, a strong family structure, and a significant community commitment (Jandt, 2013). Hispanic cultures tend to be collectivistic and thus emphasize group activities and shared responsibility (Gudykunst, 1998). Hispanic social norms generally stress good manners, cooperation, courtesy, harmony, and positive interactions, while discouraging offensive behaviors and direct criticisms of others (Guarnero, 2005; Gudykunst, 1998; Klopf & McCroskey, 2007; Salimbene, 2000; Smith, 2000). We encourage researchers to focus greater attention on the effect of ethnic and cultural factors on listening behavior with Hispanic-Americans and other ethnic groups and to address the limitations of this study (e.g., differences in English speaking ability, impact of country of origin, individual level of acculturation).

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Table 1 Descriptive Statistics for the WBLT subscales and WBLT Total Score (n = 214)

Subscale	Mode	Mean (SD)	Range	Minimum Correct	Maximum Correct
Evaluating Message Content	4	4.26 (1.59)	6	1	7
Understanding Meaning in Conversations	5	5.33 (1.38)	7	1	8
Understanding/ Remembering Lectures	4	3.64 (1.77)	8	0	8
Evaluating Emotional Meaning	4	3.95 (1.63)	7	0	7
Following Instructions & Directions	5	4.61 (1.62)	8	0	8
Total Score	22	21.8 (4.99)	25	8	33

Table 2

Average Inter-Item Correlations for the Watson-Barker Listening Test—Form C Factors

Factors	Average r	α
Evaluating message content	.07	.39
Understanding meaning in conversations	.04	.29
Understanding and remembering lectures	.09	.44
Evaluating emotional meaning in messages	.06	.44
Following instructions and directions	.07	.39

Endnotes

¹ Since data collection for this study was conducted, a newly revised version of the Watson-Barker Listening Test (Forms E & F) has been released by Innolect. Clothing and technological references have been updated. However, the delivery and testing format, and many of the questions are virtually the same.