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Author	Larry Vandergrift & Christine Chuen Meng Goh
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Teaching and Testing Listening Comprehension

Larry Vandergrift & Christine Goh

For years, the role of listening in language acquisition and communication was undervalued and neglected. Second and foreign language (SL/FL) listening was often developed incidentally through language exercises where oral language was used. It eventually earned its rightful place during the communicative language teaching era. Language was taught for face-to-face communication, and listening was an important skill in this regard. It was also a channel for comprehensible input (Krashen, 1985) and an important aspect of interlanguage communication necessary for language acquisition (Swain, 1985). With these changing perceptions of SL/FL listening, there was a concerted effort to describe its characteristics and how to teach it (e.g., Anderson & Lynch, 1988). These positive developments were sustained by theoretical insights from disciplines such as psychology, education, communication studies, and linguistics. More significantly, theories about human cognition have introduced language teachers to the exciting possibilities of language development through active learner involvement and control. These cognitive theories provided an important framework for describing SL/FL listening (e.g., Goh 2002a, 2005; Vandergrift, 2003a) and instructional methods and techniques (Flowerdew & Miller, 2005; Goh, 2002b; Mendelsohn & Rubin, 1995; Vandergrift, 2003b, 2004).

This review of teaching listening is organized around three main topics: (1) cognitive and social dimensions of listening, (2) approaches to teaching listening, and (3) assessment of listening.

Cognitive and Social Dimensions of Listening

In the process of text comprehension, meaning is not simply extracted from the input; it is constructed by listeners based on their knowledge of the language system, their prior knowledge, and the context of the interaction. This process is constrained by the limitations of memory, as noted by Graesser and Britton (1996): “Text understanding is the dynamic process of constructing coherent representations and inferences at multiple levels of text and context, within the bottleneck of a limited-capacity working memory” (p. 349). Furthermore, in conversational listening, comprehension is an outcome of joint action, where listeners and speakers carry out individual acts of communication in a coordinated manner (Clark, 1996). This pragmatic view of listening is echoed by Rost (2002), who asserts that “listening is an intention to complete a communication,” and high-level inferences during listening require listeners to make assumptions about speakers’ intentions, amongst other things (p. 40).

Cognitive dimensions of listening

One of the first cognitive models to be applied in SL/FL listening research was Anderson’s model of perceptual processing, parsing and utilization (Anderson, 1995). It accounts for the interactive processing that takes place in short-term memory and has been used in the discussion of listening strategies (O’Malley, Chamot & Küpper, 1989; Vandergrift, 1997) and listening problems (Goh, 2000). The connectionist model, which proposes processing through a spreading activation of interconnected or associative neural networks in the brain (Bechtel & Abrahamsen, 1991), has also been applied. Researchers have argued for the need to help learners build these networks, so that fast parallel processing of language is possible (Buck, 1995; Hulstijn, 2003).

Recent discussions on the brain's capacity for processing and temporary storage of information have focussed on working memory. A dominant model of working memory includes

- the phonological loop and the visuo-spatial sketchpad, which are responsible for short-term processing,
- the central executive, which directs attention to the input and coordinates various cognitive processes, and
- the episodic buffer, which integrates information processed through the above mentioned processing systems into a single mental representation (Baddeley, 2000).

This model accounts for the integration of audio and visual information, and the connection between working memory and long-term memory. It can therefore bring a new perspective into the discussion of SL/FL listening comprehension processes where multiple modalities of input are increasingly typical of both in-class and out-of-class listening experiences (e.g., Gruba, 2004).

Although there are different models for the intricate workings of cognitive processing systems, the approaches mentioned above share some fundamental principles concerning cognition and have common implications for SL/FL listening:

(1) For processing of information to take place, attention must be directed at the input and some amount of decoding and analysis of the signals must occur.

Listeners must perceive and recognize words in a stream of speech and at the same time parse it into meaningful units or “chunks”. While these processes are automatized in competent language users, lower-proficiency listeners still depend a

great deal on controlled processing of the linguistic information. One of the key objectives of listening instruction, therefore, is to help learners recognize and parse linguistic input quickly. When visual input (e.g. facial expressions, gestures, illustrations, videos, slides) is present, it is often an integral part of the message, so the information will have to be processed simultaneously with auditory input (Gruba, 2004). For example, gestures and facial cues can facilitate the comprehension of videotaped lectures; however, the degree to which these cues are used will vary as a function of listening proficiency (Sueyoshi & Hardison, 2005).

(2) As new information is being processed, it is acted upon by existing knowledge or schema retrieved from long-term memory.

Known commonly as top-down processing, the use of prior knowledge assists listeners in constructing interpretations that are complete and meaningful. Top-down processing can help SL/FL listeners bridge gaps in comprehension and construct a reasonable interpretation without depending too much on linguistic features (Izumi, 2003). Prior knowledge can be generated from “parallel activities” (e.g. reading, viewing) that accompany a listening event, such as attending a lecture. Flowerdew and Miller (2005, p. 90) refer to this as the “intertextual dimension” of comprehension. Prior knowledge facilitates quicker processing. Tyler (2001) found that when listeners had access to the topic, differences in working memory consumption between native and ‘experienced’ non-native listeners were not statistically significant. Top-down processing is clearly important; however, learners sometimes miss opportunities to apply prior knowledge because their attention is focussed entirely on trying to decode and parse the speech stream.

(3) *The ability to process speech successfully depends on how much linguistic information is processed quickly.*

During listening, information is processed under severe time pressure, so processing that demands fewer attentional resources would clearly be advantageous. This is often referred to as automatic processing. In listening, automatization can occur at the phonological and grammatical level. Automatic lexical recognition can have a significant effect on listeners' understanding and recall (Jefferies, Ralph, & Baddeley, 2004). As Segalowitz (2003) explains, automaticity can vary both quantitatively (e.g. speed of processing) and qualitatively (e.g. restructuring of information). In the case of non-proficient listeners, many comprehension processes are controlled; that is, they take place under the learners' conscious attention. On hearing the input, listeners try to match sounds to the contents in their mental lexicon. This they do by applying top-down and bottom-up strategies, along with metacognitive strategies to direct their attention, monitor their interpretation and problem-solve. In general, skilled SL/FL listeners combine various strategies in an orchestrated and harmonious manner (Goh 2002b; Vandergrift 2003a).

Social dimensions of listening

Listening does not take place in a vacuum; texts and utterances need to be interpreted in their wider communicative context. In face-to-face communication, this may involve the comprehension of gesture and other non-verbal or culturally-bound cues that can add to (or change) the literal meaning of an utterance (Harris, 2003). SL/FL listeners need to be conscious of the status relationships between interlocutors, and of how these relationships can affect comprehension and the freedom to negotiate meaning, particularly in contexts where listeners are in an unequal power relationship

(Carrier, 1999). In order to signal a comprehension problem in communicative interaction, listeners need to use efficient clarification strategies appropriate to the setting and the interlocutor. The social dimension also encompasses pragmatic and psychological aspects of listening comprehension.

Pragmatic comprehension involves the rapid and accurate application of pragmatic knowledge; i.e., knowledge about a speaker's intention in a given context that goes beyond the literal meaning of an utterance (Rose & Kasper, 2001). Listeners use this knowledge, which is often culture-specific, to make inferences and determine implied meaning. The ability to process both contextual and linguistic information successfully appears to be a function of language proficiency. Cook and Liddicoat (2002) found that lower-proficiency SL/FL listeners experienced greater difficulty in interpreting different types of requests because they were not able to free up enough processing capacity to attend to both linguistic and other information sources at the same time. Results of a more recent study by Garcia (2004) corroborate these findings and also provide evidence for better comprehension of conversational implicatures (understanding the attitude and intentions of a speaker) by higher-proficiency listeners. In a similar vein, Taguchi (2005) found a strong proficiency effect for accuracy, but not for speed, in comprehension of implicatures, leading her to conclude that the ability to understand implied information and the ability to process this information rapidly may be two different dimensions of pragmatic comprehension.

The psychological dimension of listening is often related to the language classroom. Learners frequently comment on the anxiety associated with listening and its effect on listening performance. Elkhafaifi (2005) found significant negative correlations

between listening anxiety and the listening comprehension scores of learners of Arabic. As discussed later, this may be due to the emphasis on product rather than process in the teaching of SL/FL listening. Not surprisingly, success in SL/FL listening also appears to be related to motivation. Vandergrift (2005) found a positive relationship among SL/FL listening proficiency, use of metacognitive strategies (integral to self-regulated learning), and reported levels of intrinsic and extrinsic motivation (fundamental to self-determined behaviour). Listeners who scored low on the motivation measure, perhaps because of lack of self-confidence and self-efficacy, reported using fewer effective listening strategies.

Approaches to Teaching SL/FL Listening

For most of its history, the teaching of SL/FL listening emphasized the extraction of meaning from texts and overlooked the need to teach learners how to listen. Instruction focused mainly on verifying the outcomes of listening rather than developing the learning processes integral to successful comprehension. Even when pre-listening activities were used to activate prior knowledge, the focus was limited to prior knowledge about the contents. In light of the importance of learner awareness and control in learning, listening instruction should offer scaffolded learning experiences to help listeners discover and rehearse listening processes. If students are not taught *how to listen*, listening activities become nothing more than disguised forms of testing learners' existing listening abilities, which only serves to increase anxiety about listening.

In this section, we will discuss recent research in teaching SL/FL listening within the broad framework of bottom-up (lexical segmentation and word recognition skills) and

top-down (metacognitive awareness-raising) approaches. We will then present an integrated pedagogical model for developing skilled listeners who can automatically self-regulate comprehension processes. Due to space constraints, this section will not deal with instruction in the social dimension of listening, which involves the use of communication strategies for meaning negotiation.

Bottom-up approaches

Bottom-up processing in listening entails the perception of sounds and words in a speech stream. When there is adequate perception of lexical information, listeners can use their background knowledge to interpret the input. The bottom-up approach to teaching listening acknowledges the primacy of the acoustic signal and focuses on helping learners develop critical perception skills.

A major challenge faced by SL/FL listeners is word segmentation. Listeners, unlike readers, do not have the luxury of regular spaces that signal the beginning or end of words. They must parse the stream of sound into meaningful units, and word boundaries are often hard to determine. Even if they know a word, SL/FL listeners may not always recognize it in concatenated speech. Word-segmentation skills are language-specific and acquired early in life. These procedures are so solidly engrained in the listener's processing system that they are involuntarily applied when listening to a new language, making listening to a rhythmically different language particularly difficult (Cutler, 2001). This problem is particularly heightened for lower-proficiency listeners (Goh, 2000; Graham, 2006). Listening instruction must help learners cope with these difficulties, so that they can identify words in the stream of sound, and there is research evidence that this is possible.

In her review of the literature on speech segmentation, Cutler (2001) concludes that SL/FL listeners can inhibit the natural compulsion to apply native language segmentation procedures when listening to a new language that is rhythmically different. Prosodic features such as stress and intonation are important cues for determining word boundaries, and there is some evidence that calling attention to these features is helpful to SL/FL listeners. Attending to pause-bounded units rather than syntactic cues can be fruitful in comprehending English, regardless of the listeners' age and language background (Harley, 2000). Inserting word boundaries before stressed syllables can help to identify words in a stream of speech (Field, 2005). Use of word-onset (initial phonemes of a word) also proves to be a reliable word-recognition strategy, likely due to the prosodic information accompanying the word (Lindfield, Wingfield & Goodglass, 1999). Finally, Sanders, Neville and Waldorf (2002) found that 'late' learners can use lexical information and stress cues to segment concatenated speech; however, the extent to which these SL/FL listeners can use stress cues will depend on their native language. In sum, knowing that listeners can learn to use segmentation cues different from those of their native language suggests that these processes are amenable to instruction.

Word-segmentation skills can be acquired by giving SL/FL listeners opportunities to "accumulate and categorize acoustic, phonemic, syllabic, morphological and lexical information" (Hulstijn, 2003, p. 422). Hulstijn outlines a six-step procedure: 1) listen to the oral text without reading the written version; 2) determine your level of comprehension; 3) replay the recording as often as necessary; 4) check the written text; 5) recognize what you should have understood; and, finally, 6) replay the recording until you understand it without written support. This procedure can help the

SL/FL listener to note other important phenomena in connected speech, such as reduced forms, assimilation, elision and resyllabification. In order to develop word-segmentation skills, learners need to be made aware of these phenomena, pay attention to them and, during listening practice, replay them so they can puzzle them out for themselves (Field, 2003).

Word-recognition training can take many forms. Some possibilities include: analysis of parts of the text transcription, dictation, and analogy exercises (see Goh, 2002b and Field, 2005). Listening to 'i-1 level' texts, i.e., aural texts where most words are known, can develop automaticity in word recognition when SL/FL listeners note the slight discrepancies between the aural form and written form of the text (Hulstijn, 2001). Approaching bottom-up processing at the prosodic level, Cauldwell (2002) presents activities to help learners perceive 'prominence' (i.e. word stress in the context of discourse). One of his techniques models the way in which words between prominent syllables are 'crushed' so as to enable learners to perceive how words and syllables are weakened in authentic speech. Early research had indicated that phonological modifications (e.g., elision, assimilation, liaison) affected the comprehension of ESL learners of both low and high proficiency (Henrichsen, 1984).

Wilson (2003) proposes the use of the dictogloss technique as a tool. After listening, SL/FL listeners are guided to notice the differences between their reconstructed text and a written transcription of the original. This technique has the potential to improve perceptual processing because it forces learners to focus on their listening problems,

consider the reasons for their errors and evaluate the importance of those errors (Wilson, 2003).

Exact repetition and reduced speech rate have also been examined as techniques for teaching SL/FL listening (Jensen & Vintner, 2003). When exposed to verbatim repetitions of videotaped dialogues in different modes, Fast (F) or Slow (S), all three experimental groups (F-S-S, F-S-F and F-F-F) outperformed a control group in detailed comprehension and acquisition of phonological decoding strategies. Furthermore, the F-F-F group outperformed the other two groups, demonstrating that reduction in speed of a text will not necessarily improve comprehension. The researchers concluded that listening perception training should be integrated with regular listening activities that allow students to “indulge in hypothesis work regarding all the linguistic features” (p. 419), an approach also advocated by others (e.g., Goh, 2002b; Hulstijn, 2001; Wilson, 2003).

The advent of digital technology has further enhanced the use of audio and video texts for individual listening practice and classroom instruction (e.g., Gruba, 2004; Hoeflaak, 2004). Learners can listen to any chunk of text they choose and save texts on the computer for future review (copyright notwithstanding). With the latest podcasting technology, learners can also listen to a wide selection of media broadcasts in and out of class, and save them for future review (Robin, 2007).

Top-down approaches

The top-down dimension of SL/FL listening instruction involves teaching learners to reflect on the nature of listening and to self-regulate their comprehension processes. Its aim is to develop learners' metacognitive knowledge about listening (Goh, 2008).

Metacognitive knowledge refers to an individual's understanding of the ways different factors act and interact to affect the course and outcome of learning (Flavell, 1979). It can contribute to effective self-direction and can have positive effects on the outcome of learning (Boekaerts, Pintrich & Zeidner, 2000; Eilam & Aharon, 2003). This knowledge can be further divided into person knowledge, task knowledge and strategy knowledge (see Figure 1).

Figure 1: Metacognitive knowledge about listening

Person knowledge

Knowledge concerning the personal factors that might support or hinder one's listening, e.g. anxiety or problems during listening.

Task knowledge

Knowledge concerning the purpose of a listening task, its demands, text organization and structure, factors that could hinder the task, and type of listening skills required to achieve the listening purpose (e.g., listening for details, listening for gist).

Strategy knowledge

Strategies useful for enhancing listening comprehension, e.g. strategies for dealing with listening problems and checking one's interpretation.

(Adapted from Goh, 2002b)

Learners' metacognitive knowledge about listening can be developed in several ways. One method that is easy for both teacher and learners to use is listening diaries (Goh, 1997). Diaries with selected prompts can direct learners' reflections on specific listening events so that they can evaluate their performance and take positive steps to improve their listening skills. Teachers can also plan process-oriented activities as

part of their listening lessons (Liu & Goh, 2006; Vandergrift 2002; Zeng 2007), a method which has also proved to be effective, even with young learners (Goh & Taib, 2006). In small groups and teacher-led discussions, learners share personal observations recorded in their listening diaries. They can learn about new listening strategies through these collaborative dialogues.

Metacognitive awareness-raising tasks can also be incorporated into various stages of a listening lesson. Vandergrift (2003b) used several listening tasks to guide French learners in using prediction. Not only did the learners successfully use the strategy, but they also reported increased motivation and heightened metacognitive awareness about the role of strategies in listening comprehension. Liu and Goh (2006) asked learners to use a metacognitive guide when listening on their own. The learners answered prompt questions before and after listening tasks to make pre-listening preparation, evaluate their performance and plan their strategy use for future listening. These studies demonstrated the usefulness of top-down teaching approaches where teachers can promote metacognitive processes and strategy use through scaffolded listening tasks.

Individual metacognitive reflections can be further enhanced through the use of introspective instruments, such as questionnaires. There are indications that the use of such questionnaires may encourage listeners to apply strategies they consider to be useful (Zhang & Goh, 2006). A recently developed instrument, the Metacognitive Awareness Listening Questionnaire (MALQ), is grounded in research and theory about SL/FL listening and scores are significantly related to listening success (Vandergrift et al., 2006). The MALQ can be used by 1) SL/FL listeners to evaluate

their own understanding of the listening process; 2) teachers to diagnose student awareness of those processes; and, 3) researchers to track the development of metacognitive knowledge about listening as a result of instruction in listening processes.

Raising metacognitive awareness through listening diaries, process-oriented discussions and questionnaires are indirect methods for improving listening performance. Learners step back from real-time listening, examine their listening processes and develop their own thinking about what it takes to be an effective listener.

Integrated model for teaching SL/FL listening

An effective listening curriculum recognizes listening comprehension as an active, strategic and constructive process. Although listening is an individual mental operation, the teaching and learning of how to listen need not be so. While it is true that teachers are unable to manipulate learners' mental processes during listening, there are tasks and activities that can strengthen their ability to control those processes for themselves (Buck, 1995; Goh, 2002b; Mendelsohn, 1998; Vandergrift, 2002, 2003a). Individual listening can be supported by collaborative activities where students focus on the nature and demands of a listening task. Activities that include the application of strategies during listening lessons enable learners to experience these processes themselves. One way is to incorporate strategies in a lesson sequence (Field, 2001; Liu & Goh, 2006; Vandergrift 2002, 2003b). Listeners are guided at specific stages to use the metacognitive processes underlying successful listening to regulate their comprehension (see Figure 2).

Figure 2: Stages of Listening Instruction and Related Metacognitive Processes*Planning/predicting stage*

1. Once students know the topic and text type, they predict types of information and possible words they may hear.

1. planning and directed attention

First listen/verification stage

2. Students listen to verify initial hypotheses, correct as required and note additional information understood.

2. monitoring

3. Students compare what they have written with peers, modify as required, establish what needs resolution and decide on the important details that still need special attention.

3. monitoring, planning and selective attention

Second listen/verification stage

4. Students selectively attend to points of disagreement, make corrections and write down additional details understood.

4. monitoring and problem-solving

5. Class discussion in which all class members contribute to the reconstruction of the text's main points and most pertinent details, interspersed with reflections on how students arrived at the meaning of certain words or parts of the text.

5. monitoring and evaluation

Final listen/verification stage

6. Students listen for the information revealed in the class discussion which they were not able to decipher earlier and/or compare all or selected sections of the aural form of the text with a transcription of the text.

6. selective attention and monitoring

Reflection stage

7. Based on the earlier discussion of strategies used to compensate for what was not understood, students write goals for the next listening activity. A discussion of discrepancies between the aural and written forms of the text could also take place at this stage.

7. evaluation

(Adapted from Vandergrift [2004])

This pedagogical cycle develops both top-down and bottom-up dimensions of listening, and metacognitive awareness of the processes underlying successful SL/FL

listening. By orchestrating hypothesis formation and verification, and judiciously applying prior knowledge to compensate for gaps in understanding, the listener acquires implicit knowledge of listening processes. In addition, by matching all or parts of the aural and written forms of the text, the listener becomes aware of form-meaning relationships and gains word-recognition skills. It is important, however, that the exposure to the written form take place only after listeners have engaged in the cognitive processes that underlie real-life listening. If listeners are allowed access to the written form too early in the cycle, they risk developing an inefficient on-line translation approach to listening (Eastman, 1991).

Guiding learners through the process of aural comprehension as part of regular listening activities can help them to improve overall as listeners (Field 2001; Goh 2002a; Vandergrift 2002, 2003a; Wilson, 2003) and to develop ‘playful media literacy’ (Gruba, 2006). Students need repeated and systematic practice with a variety of listening tasks that activate the metacognitive processes used by skilled listeners; however, all tasks should be grounded in the same metacognitive cycle. While the teacher will initially play a greater role, scaffolding should be gradually removed, so that students do the work themselves and the process becomes automatic. Initially, students may be asked to devise a plan for their listening before they embark on the task.

This pedagogical cycle has strong theoretical support, in that it closely parallels the research findings demonstrating implicit learning through task performance (Johnston, 2006). It also has empirical support. In a carefully controlled study conducted over the period of one semester, intermediate-level learners of French who

were guided through this process approach to listening significantly outperformed learners in control classes (Vandergrift, 2007). To control for the mitigating effects of the teacher variable, both groups were taught by the same teacher using the same texts. The hypothesis that the less skilled listeners in the experimental group would make greater gains than their more skilled listeners was also verified, demonstrating that less skilled listeners, in particular, can benefit from this kind of guided listening practice.

Advanced-level SL/FL listeners can also benefit from this kind of listening practice. Mareschal (2007) found that a low-proficiency and a high-proficiency group of learners of French exposed to this listening pedagogy during intensive eight-week language training were better able to regulate listening processes. Analyzing data from a completed listening questionnaire (MALQ), stimulated recalls, diaries and a final summative report, she was able to document how the listening training impacted the listeners' self-regulatory ability, strategy use, metacognitive knowledge and listening success, particularly for the low-proficiency group. The aural-written verification stage proved to be particularly valuable to the low-proficiency group for developing auditory discrimination skills and to the high-proficiency group for more refined word recognition skills.

Listening Assessment

The most comprehensive treatment of the assessment of SL/FL listening is the seminal work by Buck (2001). Since space limitations preclude a full treatment of the issues related to listening assessment, readers are encouraged to consult this excellent resource for an accessible, yet research-based coverage of the topic. We will focus on

what appear to be the major challenges in the assessment of SL/FL listening in the most recent research literature. These include questions related to construct validity, task type, item type and input mode.

Construct validity is important for assessment because it entails defining the construct, operationalizing the behaviours that need to be assessed, and then creating tasks (appropriate texts and response items) to elicit these behaviours. Construct validity is a particular challenge for listening, given its covert nature. Listening processes are difficult to verify empirically and, as noted above, these processes interact in complex ways with different types of knowledge and, in the end, comprehension can only be inferred on the basis of task completion. More introspective studies are required to reveal, admittedly to a limited degree, what motivates listener response to task requirements, and how the listener variables, task-types, knowledge-types and listening processes interact in determining listener response.

Generally, the purpose of the listening test and the context of language use will guide construct definition (Buck, 2001). However, in contexts where the target language use situation is not clearly defined (which is often the case for general proficiency tests and SL/FL classroom assessment), Buck proposes a default listening construct that defines listening as

...the ability to 1) process extended samples of realistic spoken language, automatically and in real time; 2) understand the linguistic information that is unequivocally included in the text; and, 3) make whatever inferences are unambiguously implicated by the content of the passage. (p. 114)

This definition is sufficiently flexible and broad to fit most contexts of language use and allows listeners to demonstrate their comprehension ability.

In an attempt to find empirical evidence for some of the competencies underlying academic listening (from theorized listening taxonomies), Wagner (2002) examined the construct validity of a video-based test, guided by a model of six competencies and two factors (bottom-up and top-down processing). Some evidence for the validity of a two-factor model emerged; however, instead of generating the bottom-up and top-down factors, the two factors that emerged related to the processing of 1) explicitly stated information, and 2) implicit information. Wagner attributes the lack of definitive results to the difficulty of differentiating between listening processes that appear to occur simultaneously. Furthermore, he suggests that the implicit and explicit distinction may be artificial, since listeners need to understand the explicit to infer the implicit. Research by Wagner, important in attempting to define the listening construct empirically, demonstrates the enormous difficulty of the task.

In their investigation of differences in task characteristics and task conditions, Brindley and Slayter (2002) found that speech rate and response mode influenced task and item difficulty. They found that the complex interaction among various components of a task made it hard to identify the difficulty level of an item. Adjusting one task variable did not necessarily make the task easier or more difficult, since task difficulty proved to be a function of the interaction of listener characteristics and task characteristics. The speech rate variable, for example, is difficult to operationalize when rates may vary throughout a text. They also highlight issues related to construct validity and reliable assessment in classroom contexts.

Speaker accent and dialect, for example, can bias tests against ESL listeners (Major et al., 2005).

Notetaking during a computer-based listening test may help SL/FL listeners, depending on the length of the lecture, the topic and listener proficiency (Carrell, Dunkel & Mollaun, 2004). Furthermore, jotting down notes can compensate for memory constraints and enhance face validity of the test.

The issue of item difficulty was investigated by Rupp, Garcia and Jamieson (2001) using multiple regression analysis (MRA) and classification and regression tree (CART). While MRA pointed to text characteristics and text-item interaction as contributors to item difficulty, CART showed how these overlapped in different combinations in easy versus difficult items. Although increased item difficulty was commensurate with increased sentence length, word count and type-token ratio, these variables were influenced by information density, lexical overlap with distracters, item type and type of match. Furthermore, Cheng (2004) determined that response format has a significant effect on listening test performance. Students completing multiple-choice cloze items outperformed students completed traditional multiple-choice items who, in turn, outperformed students completing open-ended questions.

The question of mode of input in assessing listening is receiving more research attention with the increased availability of multimedia and digital technologies. Test developers are interested in determining the relevance and usefulness of visual support in the assessment of SL/FL listening. Coniam (2001) found that students listening to an audio version of an educational discussion obtained higher

comprehension scores than a group listening to the video version. Furthermore, over 80% of the video group felt that the video had not facilitated comprehension and they expressed preference for audio. Ginther (2002) investigated the relative effect of two kinds of visuals on the comprehension of mini-talks in the computerized TOEFL test. Content visuals (pictures related to the actual content of the verbal exchange) slightly enhanced comprehension; however, context visuals (pictures that set the scene for the upcoming verbal exchange) were less useful.

Given that this visual support appears to be only marginally useful, do test-takers actually watch the video monitor? Wagner (2006) found that listeners do pay attention to the video monitor (on average 69 percent of test time) instead of the test materials only, although there was a wide range in duration of listener viewing time. Listener attention did not vary at any point during the test; however, a greater percentage of time was given to watching dialogues than lecturettes. In contrast to the listeners in the Coniam study, these listeners supported the use of videotexts in listening assessment and did not find video distracting. Similar findings were reported by Feak and Salehzadeh (2001) on the development and validation of a listening placement test using video. Multiple speaker interactions, where the visual complemented the spoken element, were judged by both students and instructors to be a valid test of language use in diverse academic environments.

Acknowledging that audio will continue to play a prominent role in SL/FL listening assessment, Read (2002) investigated the effects of different types of audio-taped input for assessment in an academic setting. Students listening to a scripted monologue outperformed those listening to an unscripted discussion of the same

content. These results conflict with earlier findings that oral texts incorporating unscripted dialogue were easier to understand. Read attributes this discrepancy to the complexity of the text variables and concludes that listening tests should include a variety of input reflecting a range of genres. Given the complexity of SL/FL listening, assessment will involve compromises. Therefore, in evaluating listening tests, one must keep in mind the constructs measured and the limitations of what is humanly possible (Alderson, 2005).

Conclusion

The teaching of listening in SL/FL programs has come a long way since the days when listening was developed incidentally or was merely a handmaiden to the learning of other language skills. One positive development has been the use of pre-listening activities to enable learners to apply their prior knowledge during listening. There remains, however, a need to teach learners better perception skills, particularly within the context of listening input and class activities. In addition, teachers should focus more on the listening process, rather than just the outcome of listening activities. A focus on the cognitive and metacognitive aspects of learning to listen can help learners to self-regulate their comprehension. With these two priorities in mind, we have offered a pedagogical model through which teachers can incorporate both bottom-up and top-down dimensions in listening instruction.

In spite of some recent advances, listening remains the least understood of the four language skills, making teaching and assessment complex and challenging. More research on the knowledge, skills and processes involved in listening, and how these interact, will further inform our teaching and assessment of this essential

communication skill. Nevertheless, there is much existing knowledge about language processing and metacognition in learning on which teachers can draw to guide their instructional practices.

REFERENCES

- Alderson, J. C. (2005). *Diagnosing foreign language proficiency: The interface between learning and assessment*. New York: Continuum.
- Anderson, A., & Lynch, T. (1988). *Listening*. Oxford: Oxford University Press.
- Anderson, J. R. (1995). *Cognitive psychology and its implications*. 4th edition. New York: Freeman.
- Baddeley, A. D. (2000). The episodic buffer: a new component of working memory? *Trends in Cognitive Sciences*, 4, 417-423.
- Bechtel, W., & Abrahamsen, A. (1991). *Connectionism and the mind: An introduction to parallel processing in networks*. Oxford: Blackwell.
- Boekaerts, M., Pintrich, P., & Zeidner, M. (2000). *Handbook of self-regulation*. San Diego, CA: Academic Press.
- Brindley, G., & Slayter, H. (2002). Exploring task difficulty in ESL listening assessment. *Language Testing*, 19, 369-394.
- Buck, G. (1995). How to become a good listening teacher. In D. Mendelsohn & Rubin, J. (Eds.), *A guide for the teaching of second language listening* (pp. 113-128). San Diego: Dominie Press.
- Buck, G. (2001). *Assessing listening*. Cambridge, UK: Cambridge University Press.
- Carrell, P., Dunkel, P., & Mollaun, P. (2004). The effects of notetaking, lecture length, and topic on a computer-based test of EFL listening comprehension. *Applied Language Learning*, 14, 83-105.
- Carrier, K. (1999). The social environment of second language listening: Does status play a role in comprehension? *Modern Language Journal*, 83, 65-79.
- Cauldwell, R. (2002). Phonology for listening: relishing the messy. Retrieved August 25, 2006, from [http://www.speechinaction.com/Phonology for listening: relishing the messy](http://www.speechinaction.com/Phonology%20for%20listening%20relishing%20the%20messy).
- Cheng, H. (2004). A comparison of multiple-choice and open-ended response formats for the assessment of listening proficiency in English. *Foreign Language Annals*, 37, 544-555.
- Clark, H. H. (1996). *Using language*. Cambridge: Cambridge University Press.
- Coniam, D. (2001). The use of audio or video comprehension as an assessment instrument in the certification of English language teachers: A case study. *System*, 29, 1-14.
- Cook, M., & Liddicoat, A. J. (2002). The development of comprehension in interlanguage pragmatics: The case of request strategies in English. *Australian Review of Applied Linguistics*, 25, 19-39.
- Cutler, A. (2001). Listening to a second language through the ears of a first. *Interpreting*, 5, 1-23.
- Eastman, J. K. (1991). Learning to listen and comprehend: The beginning stages. *System*, 19, 179-188.
- Eilam, B., & Aharon, I. (2003). Students' planning in the process of self-regulated learning. *Contemporary Educational Psychology*, 28, 304-334.

- Elkhafaifi, H. (2005). Listening comprehension and anxiety in the Arabic language classroom. *Modern Language Journal*, 89, 206-220.
- Feak, C. B., & Salehzadeh, J. (2001). Challenges and issues in developing an EAP video listening placement assessment: A view from one program. *English for Specific Purposes*, 20, 477-493.
- Field, J. (2001). Finding one's way in the fog: listening strategies and second-language learners. *Modern English Teacher*, 9(1), 29-34.
- Field, J. (2003). Promoting perception: lexical segmentation in second language listening. *ELT Journal*, 57, 325-334.
- Field, J. (2005). Intelligibility and the listener: The role of lexical stress. *TESOL Quarterly*, 39(3), 399-423.
- Flavell, J. (1979). Metacognition and cognitive monitoring: A new area of cognitive development enquiry. *American Psychologist*, 34, 906-911.
- Flowerdew, J., & Miller, L. (2005). *Second language listening: Theory and practice*. New York: Cambridge University Press.
- Garcia, P. (2004). Pragmatic comprehension of high and low level language learners. *TESEL-EJ*, 8. Retrieved May 13, 2006 from <http://www-writing.berkeley.edu/TESE-EJ/ej30/a1.html>.
- Ginther, A. (2002). Context and content visuals and performance on listening comprehension stimuli. *Language Testing*, 19, 133-167.
- Goh, C. (1997). Metacognitive awareness and second language listeners. *ELT Journal*, 51, 361-369.
- Goh, C. (2000). A cognitive perspective on language learners' listening comprehension problems. *System*, 28, 55-75.
- Goh, C. (2002a). Exploring listening comprehension tactics and their interaction patterns. *System*, 30, 185-206.
- Goh, C. (2002b). *Teaching listening in the language classroom*. Singapore: SEAMEO Regional Language Centre.
- Goh, C. (2005). Second language listening expertise. In Johnson, K. (Ed.), *Expertise in second language learning and teaching* (pp. 64-84). Palgrave Macmillan, UK.
- Goh, C., & Taib, Y. (2006). Metacognitive instruction in listening for young learners. *ELT Journal*, 60, 222-232.
- Graesser A. C., & Britton, B. K. (1996). Five metaphors for text understanding. In B. K. Britton, & A. C. Graesser (Eds.), *Models of understanding text* (pp. 341-351). NJ: Lawrence Erlbaum Associates.
- Graham, S. (2006). Listening comprehension: The learners' perspective. *System*, 34, 165-182.
- Gruba, P. (2004). Understanding digitized second language videotext. *Computer Assisted Language Learning*, 17, 15-82
- Gruba, P. (2006). Playing the videotext: Media literacy perspectives on L2 listening comprehension. *Language Learning and Technology*, 10, 77-92.
- Harley, B. (2000). Listening strategies in ESL: Do age and L1 make a difference? *TESOL Quarterly*, 34, 769-776.
- Harris, T. (2003). Listening with your eyes: The importance of speech-related gestures in the language classroom. *Foreign Language Annals*, 36, 180-187.
- Hoeflaak, A. (2004). Computer-assisted training in the comprehension of authentic French speech: A closer view. *Computer Assisted Language Learning*, 17, 315-337.

- Hulstijn, J. H. (2001). Intentional and incidental second language vocabulary learning: A reappraisal of elaboration, rehearsal and automaticity. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 258-286). Cambridge: Cambridge University Press.
- Hulstijn, J. H. (2003). Connectionist models of language processing and the training of listening skills with the aid of multimedia software. *Computer Assisted Language Learning*, 16, 413-425.
- Izumi, S. (2003). Comprehension and production processes in second language learning: In search of the psycholinguistic rationale of the output hypothesis. *Applied Linguistics*, 24, 168-196.
- Jefferies, E., Ralph, M., & Baddeley, A. D. (2004). Automatic and controlled processing in sentence recall: The role of long-term and working memory. *Journal of Memory and Language*, 51, 623-643.
- Jensen, E. D., & Vinther, T. (2003). Exact repetition as input enhancement in second language acquisition. *Language Learning*, 53, 373-428.
- Johnston, J. D. (2006). *Technology-mediated language training: Listening sub-skills technical report*. Mimeo.
- Krashen, S. (1985). *The input hypothesis: Issues and implications*. London: Longman.
- Lindfield, K. C., Wingfield, A., & Goodglass, H. (1999). The contribution of prosody to spoken word recognition. *Applied Psycholinguistics*, 20, 395-405.
- Liu, X. L., & Goh, C. (2006). Improving second language listening: Awareness and involvement. In T. S. C. Farrell (Ed.), *Language teacher research in Asia* (pp. 91-106). Alexandria, VA: TESOL.
- Major, R. C., Fitzmaurice, S. F., Bunta, F., & Balasubramanian, C. (2005). Testing the effects of regional, ethnic and international dialects of English on listening comprehension. *Language Learning*, 55, 37-69.
- Mareschal, C. (2007). *Student perceptions of a self-regulatory approach to second language listening comprehension development*. Unpublished doctoral thesis. University of Ottawa.
- Mendelsohn, D. (1998). Teaching listening. *Annual Review of Applied Linguistics*, 18, 81-101.
- Mendelsohn, D., & Rubin, J. (Eds.). (1995). *A guide for the teaching of second language listening*. San Diego: Dominic Press.
- O'Malley, J. M., Chamot, A. U., & Küpper, L. (1989). Listening comprehension strategies in second language acquisition. *Applied Linguistics*, 10(4), 418-437.
- Read, J. (2002). The use of interactive input in EAP listening assessment. *Journal of English for Academic Purposes*, 1, 105-119.
- Robin, R. (2007). Learner-based listening and technological authenticity. *Language Learning & Technology*, 11, 109-115.
- Rose, K. R., & Kasper, G. (Eds.) (2001). *Pragmatics in language teaching*. Cambridge: Cambridge University Press.
- Rost, M. (2002). *Teaching and researching listening*. London, UK: Longman.
- Rupp, A., Garcia, P., & Jamieson, J. (2001). Combining multiple regression and CART to understand difficulty in second language reading and listening comprehension test items. *International Journal of Testing*, 1, 185-216.
- Sanders, L. D., Neville, H. J., & Woldorf, M. G. (2002). Speech segmentation by native and non-native speakers: The use of lexical, syntactic, and stress-pattern cues. *Journal of Speech, Language and Hearing Research*, 45, 519-530.

- Segalowitz, N. (2003). Automaticity and second language. In C. Doughty & M. Long (Eds.), *The handbook of second language acquisition* (pp. 382-408). MA: Blackwell Publishing.
- Sueyoshi, A., & Hardison, D. M. (2005). The role of gestures and facial cues in second-language listening comprehension. *Language Learning*, 55, 661-699.
- Swain, M. (1985). Communicative competence: some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in Second Language Acquisition* (pp. 235-253). Rowley, MA: Newbury House.
- Taguchi, N. (2005). Comprehending implied meaning in English as a foreign language. *Modern Language Journal*, 89, 543-562.
- Tyler, M. (2001). Resource consumption as a function of topic knowledge in nonnative and native comprehension. *Language Learning*, 51, 257-280.
- Vandergrift, L. (1997). The strategies of second language (French) listeners: A descriptive study. *Foreign Language Annals*, 30(1), 387-409.
- Vandergrift, L. (2002). It was nice to see that our predictions were right: Developing metacognition in L2 listening comprehension. *Canadian Modern Language Review*, 58, 555-575.
- Vandergrift, L. (2003a). From prediction through reflection: Guiding students through the process of L2 listening. *Canadian Modern Language Review*, 59(3), 425-440.
- Vandergrift, L. (2003b). Orchestrating strategy use: Toward a model of the skilled second language listener. *Language Learning*, 53, 463-496.
- Vandergrift, L. (2004). Learning to listen or listening to learn? *Annual Review of Applied Linguistics*, 24, 3-25.
- Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied Linguistics*, 26, 70-89.
- Vandergrift, L. (2007). *Teaching students how to listen does make a difference*. Paper presented at the annual meeting of the American Association of Applied Linguistics, Costa Mesa, CA.
- Vandergrift, L., Goh, C., Mareschal, C., & Tafaghodatari, M. H. (2006). The Metacognitive Awareness Listening Questionnaire (MALQ): Development and validation. *Language Learning*, 56, 431-462.
- Wagner, E. (2002). Video listening tests: A pilot study. Working papers in TESOL & applied linguistics, Teachers College, Columbia University, 2/1. Retrieved April 19, 2006 from <http://www.tc.edu/tesolalwebjournal/wagner.pdf>.
- Wagner, E. (2006, June). L2 video listening tests: An investigation of test-taker behavior. Paper presented at the meeting of the American Association of Applied Linguistics, Montreal, QC.
- Wilson, M. (2003). Discovery listening – improving perceptual processing. *ELT Journal*, 57, 335-343.
- Zeng, Y. (2007). Metacognitive Instruction in Listening: A Study of Chinese Non-English Major Undergraduates. Unpublished MA thesis, National Institute of Education, Nanyang Technological University, Singapore.
- Zhang, D., & Goh, C. (2006). Strategy knowledge and perceived strategy use: Singaporean students' awareness of listening and speaking strategies. *Language Awareness*, 15, 199-219.