

An Integrated Approach to Acquiring L2 Listening Comprehension

第2 言語聴解力習得のための統合アプローチ

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Abstract

For learners of a second language, listening comprehension is as challenging as it is complex. Generally, there are two approaches to acquiring listening skills in a second language: bottom-up and top-down. This paper provides a short, but comprehensive picture of what is involved in the process of listening comprehension from both a bottom-up and a top-down perspective. Furthermore, this paper provides a model for an integrated approach to acquiring listening comprehension skills that favors a mostly bottom-up approach for lower proficiency learners that gradually moves toward integrating more top-down approaches as learners become more proficient.

Key words : Second Language Acquisition, Listening Comprehension, English Education

I Introduction:

Listening is a combination of neurological processing, linguistic processing, semantic processing, and pragmatic processing. These processes overlap and intertwine in a way that appears as a somewhat effortless process for native speakers, but requires a great deal of attention, effort and practice for second and foreign language learners. Unlike reading and writing, listening is an online process where incoming natural speech stream cannot be controlled by the listener in naturalistic conditions. Therefore, it is imperative that L2 learners are equipped with the ability to rapidly and fluently decode the speech stream and interpret those codes into meaningful information.

Listening comprehension involves a combination of bottom-up and top-down processing involving linguistic as well as non-linguistic knowledge. When teaching and learning listening comprehension skills for foreign languages, there are generally two types of approaches. The first approach is referred to as a bottom-up approach and focuses on the process of decoding the linguistic speech patterns. The second approach is known as a top-down approach and focuses on providing listening strategies to help the listener understand

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and anticipate what is being heard. Both approaches are important to becoming fluent in listening to a foreign language, but there is little discussion regarding the balance of these two approaches at different levels of learner proficiency. Therefore, the aim of this paper is to provide some background and issues to consider regarding each approach and then to provide a recommendation on how to synthesize the two approaches in a way that is appropriate for learners of different proficiency levels.

II The Bottom-up Approach

The listening process begins first and foremost with input. A major aspect of learning a language is the process and development of building a map of a system of sounds and meanings that correspond to different sound combinations. The best way to build this type of cognitive map is to practice bottom-up listening processes. This building of a cognitive map within the learner's mind should be built from the bottom up because speech reaches the listener as a continuous stream, and therefore must be decoded in a rapid and fluent manner. For L2 learners, there are several obstacles to comprehending a stream of sound. Some of the biggest challenges to this decoding process include learning the sound system, recognizing and parsing morphosyntactic structures, and activating the correct lexical representation. As learners progress and automatize the bottom up processes, a shift toward top-down processes can be introduced in order to fill in the gaps of knowledge and increase learner motivation (Vandergrift, 2005). Throughout the whole process, it is necessary for learners to have a high level of motivation to learn the language as well as a commitment to the time investment required in long-term acquisition.

When an L2 listener encounters a stream of speech, one of the major challenges faced by the listener is the rapid decoding and encoding of the input. Although authentic input is the most ecologically valid input, it is not necessarily the most useful when attempting to build a cognitive map of sounds and meanings. This is in part due to the rate of speed of the sound stream. One of the issues addressed in the McBride (2011) study concerned the limitations of working memory (WM). When the input is faster than the learner's ability to process it in WM, then the WM becomes overloaded and comprehension becomes extremely difficult, if not impossible. When comprehension is low, learners are unable to notice aspects of the linguistic features, one of the key tenets of the *noticing hypothesis* proposed by Schmidt (1990). The *noticing hypothesis* postulates that language acquisition is driven by what learners pay attention to in the target language input. Therefore, if learners are unable to notice linguistic features because the rate of speed is too fast, then they will be unable to comprehend and develop bottom-up processing skills. In McBride's study, the learners that were trained with slower input experienced the best results. This also lends support to Krashen's *input hypothesis* (1977), which argues that the availability of comprehensible input is the primary requisite for language learning. Therefore, a

pedagogical approach that permits listeners to consciously notice linguistic form is more effective. This seems intuitively true, as the input children receive from adults, colloquially known as “baby talk”, is often slower and simplified. Although bottom-up processing skills can be acquired through exposure to and fluency practice with input, these skills also need to be explicitly learned by L2 learners. Field’s (2008) study provided evidence that English function words are identified significantly less accurately by L2 listeners than content words, regardless of L1 or level of proficiency. This finding reveals that Krashen’s *input hypothesis* alone is not sufficient for language acquisition. Because learners are primarily focused on units of semantic meaning, they do not notice some of the grammatical and syntactic structures and therefore don’t acquire them. Therefore, explicit learning of these structures is required.

Initially, learners will bypass grammar and focus more on lexis, which holds the meaning of the message. However, in order to take advantage of word knowledge, it is first imperative to become familiar with the prosodic structure of the auditory signal in order to resolve lexical ambiguities. Field (2008) noted that one of the major challenges for L2 listeners is distinguishing between content and functor words based upon the differences in rhythm and stress between the L1 and L2. These differences, traditionally known as *syllable-timed* and *stressed-timed* languages can put learners at a disadvantage in discriminating content from functor words and ultimately affects lexical activation. Moreover, L2 learners must grapple with syntactic ambiguities in the sound stream. Unlike reading, there are few reliable markers in speech to determine the end of one word and the beginning of another. Consequently, L2 learners are faced with problems in speech perceptions and word recognition. Therefore, learners must become adept at lexical segmentation, which involves word recognition, sentence parsing, and syntactic mapping onto a grammatical model. Training in recognizing and understanding pitch and accent can have a significant effect on the speech signal and can be utilized by listeners to make clearer boundaries between words as well as assist in syntactic processing. Yeldham and Gruba’s (2014) study provided a good blueprint for the content of a bottom-up listening skills and strategies course for L2 learners. This course includes a focus on suprasegmental skills, strategies, and segmental skills. It also provided an organized process to teaching these skills and strategies with examples based on previous research.

Another obstacle learners face in processing language input is word recognition through the activation of lexical representations. As Cutler and Clifton (2000) pointed out in their description of the listening process, words are built upon a repertoire of a very limited number of phonemes, which leads to words that resemble each other or contain elements of other words. For L2 learners, this problem is compounded because of differences in L1 and L2 phonemic inventories. As Broersma noted in a 2012 study on phoneme processing, these differences can hinder word recognition in three major ways: minimal pairs, overlapping competitors, and near-words. The results of the study indicated that non-native listening

has more lexical competitors than native listening due to the mismatching of lexical competitors and a less efficient inhibition of competitors in L2 listeners. The study set out to identify some of the processing limitations and difficulties such as inaccurate phoneme processing, as an important first step toward addressing these problems. The results of this kind of research indicate that L2 learners require fluency practice in order to process phonological representations more rapidly and accurately. Because an increase in lexical knowledge can contribute to lexical competitors, it is essential that L2 learners are able to process phonemes accurately and have a lot of exposure to high frequency words in order to efficiently and effectively recognize L2 words.

When comparing L2 listeners to L1 listeners, it is clear that native speakers of a language are significantly faster and more accurate at processing the stream of sound. This is due to the fact that native speakers have automatized the bottom-up processing needed for skilled performance. Andringa, Hulstijn, Olsthoorn, Schoonen, and van Beuning (2012) found that linguistic knowledge, comprising of vocabulary, grammar, and segmentation ability, was the overall most important predictor for success in listening comprehension. Part of the processing problem for L2 listeners has to do with what Clahsen and Felser (2006) termed the *shallow structure hypothesis*, which posits that non-native listeners struggle more to make use of syntactic information than their native listener counterparts. L2 learners struggle to process complex syntactic structures such as non-local dependencies in a native-like manner. Linguistic knowledge combined with processing efficiency is what gives native speakers a huge advantage when it comes to listening comprehension. Therefore, learners require repeated practice with bottom-up listening with particular focus on linguistic knowledge. This can provide the foundation for listening comprehension that is necessary in order for L2 learners to develop the type of automaticity to process such large amounts of information, especially for less proficient listeners.

III The Top-Down Approach

As learners progress to higher levels of proficiency, bottom-up processes can be complemented by top-down strategies. When learners can process sound without much effort, then more attention can be given to higher level processing skills such as cognitive strategies and metacognitive strategies. These include specific listening strategies such as predicting, activating schemata, making inferences, and classifying as well as metacognitive strategies that deal with monitoring and assessing learning (Rost, 2005). These types of top-down processing skills can provide listeners with strategies that can allow them to develop a sense of independence, autonomy, and motivation as L2 learners. Language instructors cannot expect learners to only be exposed to listening that is controlled for speed and content. Instead, there should be a deliberate focus on increasing the listener's ability to deal with input that is not completely comprehensible. This requires a strategy approach. These

strategies are designed to make the brain work more effectively in unison with bottom-up processing skills. A strategy approach equips learners with tools to better handle and make use of more authentic speech in more authentic contexts.

One methodology with a growing body of positive evidence is leading learners through the metacognitive process which involves a cycle of processes including prediction/planning, monitoring, evaluating, and problem solving. Rather than teaching strategies separately, Vandergrift and Tafaghodtari argue in a 2010 article for a process-based approach that leads learners through a coordinated use of multiple strategies. In the article, the researchers point to many studies that document the positive effects of pre-listening activities such as activating prior knowledge, using advance organizers, and question previews for contextualizing learners. In addition, they identify strategies such as listening for gist, activating schema, making predictions, and inferences that they believe should be part of every listening teacher's repertoire. Not only do metacognitive strategies assist in listening comprehension, they lead to a path of learners having more of a sense of control over their own learning. Metacognitive strategies enable learners to self-regulate their own listening development by actively engaging in the process of planning, monitoring, and evaluating their own listening. This becomes important as learners advance to higher levels of proficiency because it shifts the control of learning on to the learner, which ultimately leads to higher levels of confidence and self-efficacy. This in turn, leads to higher motivation, which Vandergrift (2005) argues is one of the keys to speed and success of L2 learning.

Another reason why metacognitive strategies should be taught in the latter stages of listening development is because there is evidence indicating that these strategies have to be taught explicitly. Goh (2008) suggested that explicit teaching is best to facilitate the learning of metacognitive strategies because these strategies are often hidden in the underlying processes of skilled listeners. Therefore, these strategies need to be uncovered and explicitly taught to learners. Moreover, these strategies require a focused effort to learn, practice, and automatize and therefore require a great deal of cognitive effort. If learners are still using most of their cognitive processing on decoding the listening stream, then it will be challenging for them to utilize metacognitive strategies in addition to applying bottom-up processes. Therefore, learners should gradually integrate metacognitive strategies after the fundamental decoding skills have been automatized.

IV An Integrated Approach: Moving from Bottom-up to Top-down

Fortunately, the bottom-up approach and the top-down approach are not mutually exclusive. Ultimately, listening is a parallel process that requires an interactive process of both bottom-up and top-down processing as Yeldham and Gruba concluded in their 2014 study. Therefore, both approaches can be carefully integrated together in a way that

supports L2 listening comprehension at all levels of proficiency. In an ideal learning situation, this gradual movement from bottom-up processing toward integrating top-down strategies would be scaffolded in a careful and deliberate way as to push learners to new levels. This is in line with ideas from the sociocultural theory, and particularly Vygotsky's zone of proximal development (ZPD), which is considered to be the difference between what a learner can do without help and what a learner can do with help from a more skilled expert.

The reality of the situation is that language teachers are faced with large classrooms with students at varying stages of development. Because of this circumstance, it is challenging for instructors to identify the developmental stage of each learner and provide the right kind of scaffolded activities to lead them to higher levels of proficiency. That is where metacognitive strategies can be of great value. A strategy-based approach at higher levels can empower learners to become autonomous learners by enabling them to become aware the gaps in their own knowledge, set realistic goals for achievement, and utilize strategies that work best for them. For a developing L2 listener, the speech stream is most likely not completely comprehensible. Therefore, equipping learners with strategies that allow them to handle the information in an efficient and effective way seems practical and necessary.

Although top-down processes assist in listening comprehension, enable learner autonomy, and increase motivation, learners and instructors should proceed with strategy training with caution. Strategy training is more of an indirect contributor to listening development than a direct contributor. Vandergrift and Tafaghodtari (2010) conceded that the long-term benefits of strategy training are inconclusive as well as noting that many of these strategies are taught, "to help compensate for what they are not able to understand" (p. 472). In this case, the word compensate implies that there is something lacking. What is lacking is the fluent and automatic processing of bottom-up skills. In fact, Vandergrift, Goh, Mareschal, and Tafaghodtari reported in a 2006 study that only 13% of variance in listening achievement was accounted for by metacognitive strategies. This is a pretty small number when compared to Andringa et al. (2012), who reported that knowledge and IQ together accounted for 96% of the variance in their model of L2 listening.

In the end, the results of Vandergrift and Tafaghodtari's (2010) study indicated that low skilled learners made greater gains in listening comprehension than more skilled peers when led through the metacognitive process. However, the reality could be that the more skilled learners already were using the strategies and therefore demonstrated little growth in the study. Still, this study is in line with a growing body of evidence in the field that strategies have a positive impact on learning. Therefore, the question is not whether metacognitive strategies should be taught, but at what point in a learner's development they should be taught and to what degree. A reported 13% of variance in listening achievement perhaps does not merit as much attention as Goh (2008) and Vandergrift and Tafaghodtari (2010) have argued for. With such small experimental effects, it is difficult to conclude that there is

enough pedagogical value to implement strategy instruction on a large scale, especially early in the learner's developmental listening stages.

One of the main arguments given for strategy-based instruction is that many highly proficient L2 listeners use a larger number and demonstrate more frequent use of strategies. Therefore, instructors should impart these strategies onto low proficient learners. The logic of this argument is that low proficient learners should try to imitate what high proficient learners do. However, it is unclear as to whether strategy use influences proficiency or proficiency influences strategy use. Furthermore, strategies may actually be more of a distraction for low proficiency learners. Yeldham and Gruba (2004), citing research by Tsui and Fullilove (1998) and Wu (1998) noted, "L2 listeners who lack perceptual skills can be led astray by these knowledge-based processes" (p. 35). In this case, top-down strategies can actually be somewhat cognitively misleading. Instead of focusing on the basic characteristics and details of the sound stream, learners utilize top-down strategies as a kind of crutch rather than developing automatic lower-level processing. It could be, that as learners reach a certain level of proficiency, they are able to have more cognitive room to focus on strategy use and therefore demonstrate strategies to a much higher degree.

Another argument against strategy-based training is through a cost-benefit analysis. Time spent focused on strategy training is time spent away from actual language learning. The evidence does indicate that some strategy training may be useful, especially for certain types of learners, but ultimately it is something that should be increasingly integrated as the proficiency level of the learner increases and not used as a source of language learning, but as a crutch to lean on in times of need. In the end, strategy training is no substitute for actual basic language learning and it is important to have the building blocks in place before teaching strategies that often tend to compensate for a shaky foundation of basic skills. Once learners have built a solid foundation, then they can begin to integrate strategy learning. Metacognitively oriented listening strategies may be more useful after learners reach a certain threshold of linguistic skills that allow them to fluently decode the listening stream. This is similar to the research in reading in which Clarke (1980) argues for the existence of a threshold of proficiency. Once learners reach this threshold, then they can benefit from strategy instruction. One of the keys would be for researchers to identify this threshold, which would probably lie somewhere within the intermediate level range. This would be useful to guide language teachers and learners as to when to begin strategy-based instruction.

V Conclusion

Ultimately, no amount of top-down skills or strategies will compensate for a lack of linguistic knowledge and processing efficiency. Since the onset of the communicative

language teaching approach, perceptual processing and the ability to map sounds to words has largely been ignored in favor of using contextual clues and top-down strategies as a way to compensate for gaps in bottom-up processing. Without processing enough raw data as a foundation to build meaning, it is incredibly difficult to make sense of the sound stream based mostly on context, prior knowledge, and inferences. Without adequate vocabulary and knowledge of the L2, learners will not be able to decipher the stream of sound into meaningful input. A lack of meaningful aural input can reduce the amount of comprehensible input, a necessary component of second language acquisition (Krashen, 1977; 1982). Language learning institutions, administrators in charge of creating language programs and course curriculum, and language instructors need to reconsider including more focus on bottom-up listening processes, especially for low proficiency learners.

Therefore, an integrated approach to L2 listening comprehension is one in which input and cognition play major roles, explicit intervention is necessary, and strategies can be helpful for learners who have achieved a certain threshold of proficiency. The input should be modified in such a way as to allow the listener to comprehend the sound stream. This often means a slower rate of speed, which enables the learner to consciously recognize the details of the language by allowing them to overcome the limitations of working memory. New web-based technologies and computer software enables users to be able to control the speed of the sound stream. A large amount of comprehensible input also provides learners listening fluency practice, which helps aid the processing of phonemic representations rapidly and accurately. However, comprehensible input is not enough. As Field's 2008 study demonstrates, explicit intervention is required in order for listeners to notice specific features of the input sound stream. This is where the role of instructors in teaching listening is crucial. As learners progress and begin to develop fluency and automatization of bottom-up processing skills, top-down strategies such as metacognitive strategies can be integrated to help learners become independent, achieve a sense of autonomy, and maintain motivation to develop into proficient L2 listeners. The role of the listening instructor in providing comprehensible input and intervention with feedback is especially important in the early stages of development. As learners progress to higher levels of proficiency, instructors can impart strategies that will lay the foundation for learners to become independent learners who are adept at identifying their weaknesses and able to find ways to improve their skills.

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