The Efficacy of Silent Shadowing of Audiobooks on Japanese Second Language Acquisition

Michael O. Hora¹

Hoshi University of Pharmaceutical Sciences, Japan

ABSTRACT

This paper presents the findings of a longitudinal pilot study to determine whether an autonomous language program consisting solely of Silent Shadowing Training results in noticeable second language learning gains. To test this hypothesis, the author silently shadowed a Japanese audiobook for 200 hours over six months on his daily commutes to work. Language proficiency was monitored by three videotaped interviews conducted in Japanese: a pre-test taken before beginning shadowing training, an intermediary-test recorded at three months, and a post-test at six months. At the end of the experiment, the author's Japanese language ability was evaluated by ten native Japanese teachers who viewed the videos and completed an online survey. The results provide preliminary evidence that the silent shadowing of audiobooks during daily commutes can be an effective learning strategy in the development of L2 conversational abilities. Implications for classroom and autonomous language learning programs are also discussed.

INTRODUCTION

Background and Motivation of the Study

Shadowing, which began as a core elementary technique for training simultaneous interpreters (Lambert, 1992), has become regular fare in EFL classrooms around the world. Yet the question remains: Does shadowing, at least the way it is traditionally performed, have a justifiable place in language learning programs, or is it just another transitory technique on the new-best-method bandwagon?

The reality is that adults and students lead busy lives with long daily commutes to work and school with little time left over to invest in studying a second language. A worthy question then is how to make the best use of that commute time, time that many spend napping, playing with smart phones, or staring blankly out of train or bus windows.

To answer this question, the author, an avid "audio-bookworm," investigated whether shadowing a Japanese audiobook on his daily commute would lead to noticeable L2 gains. Since shadowing training typically entails speaking out loud—something that is frowned upon on

¹ Michael Hora received his MA in TESOL from Teachers College, Columbia University, Japan, and his Ed.M. in TESOL from Teachers College, Columbia University, New York. He is currently a lecturer at Hoshi University of Pharmaceutical Sciences in Tokyo. Correspondence should be sent to michaelhoraedu@gmail.com

public transportation in Japan--the research question necessarily became: Does an autonomous language program consisting solely of silent shadowing during daily commutes result in noticeable L2 language learning gains?

The term "shadowing" is ambiguous; it means many things to many people. Whereas many linguists are familiar with shadowing as a basic technique used in the initial stages in the training of interpreters, Japanese often equate shadowing training with stressful listening comprehension practices (Hirata & Hirata, 2008). Perhaps the best known and most widely quoted definition of shadowing in the literature comes from Lambert (1992) who calls it "a paced, auditory tracking task which involves the immediate vocalization of auditorily presented stimuli, i.e. word-for-word repetition, in the same language, parrot-style, of a message presented through headphones" (p. 381).

For the purposes of this study, however, the material was "parroted" silently in what Sokolov (1972) originally coined "inner speech," and many contemporary linguists and educators refer to as "inner voice" (Helgesen, Brown, & Wiltshier, 2010; Tomlinson, 2000). To avoid confusion and to distinguish it from the various forms of shadowing in the literature, the shadowing technique performed in this study is referred to as *Silent Shadowing Training*. This study also differentiates between the terms "full shadowing" where the input is repeated in full and verbatim and "part shadowing" where only selected aspects of the text are shadowed. Although the goal of this experiment was to shadow the entire text, the subject shadowed only comprehensible input.

The remainder of the paper is organized as follows: First, there is a literature review describing the various forms of shadowing, how they purportedly work, and a justification for including them in language learning curriculums. This is followed by the method section which explains how the experiment was designed and conducted. Next, the findings of the study are presented, followed by the discussion section. The paper ends with suggestions for future research.

LITERATURE REVIEW

Although there is a lack of specific research on the effectiveness of silent shadowing, a modest and growing body of research tells us that shadowing training, at least in its traditional form, is effective for second language learners (Hirata & Hirata, 2008; Lambert, 1992; Murphey, 2001; Mochizuki, 2007; Wiltshier, 2007). Yet, even this view of shadowing only reveals the tip of the pedagogical iceberg. This section highlights some of the different varieties of shadowing, explains how they are purported to work, and illustrates some of the possible applications.

Besides the widespread observation that it is "weird stuff" (Murphey, 2001, p.128), many people are unaware of what shadowing actually entails and how versatile a tool it can be. Murphey's exploration of conversational shadowing (2001) gives us some practical insights into the array of possible shadowing techniques and how they may aid language acquisition. In total, his experiment revealed three continuums of shadowing: from silent to out loud, from complete to selective, and from non-interactive to active. Expanding on Murphey's shadowing matrix, Wiltshier (2007) identifies seven types of shadowing, including silent shadowing. Whereas Wiltshier's silent shadowing is "a technique that can be used to shadow people without the speaker knowing" (p.105), this study's Silent Shadowing Training enables a learner to shadow material on a portable MP3 player on public transportation without attracting unfavorable

attention from other passengers. Both Wiltshier (2007) and Murphey (2001) comment on the relationship between the style of shadowing performed and the depth of cognitive involvement required by the learner, simple shadowing being the most basic, followed by shadowing interactively, and finally shadowing with the purpose of responding or summarizing. The decision to favor one shadowing method over another can be based on both the language-learning situation and the level of psycholinguistic processing the task is likely to require.

Until recently, one of the major constraints on shadowing research was the unavoidably subjective nature of the enquiries and a lack of "hard science" to support the authors' claims. While research shows that the longer and more meaningfully input is held in working memory the greater processing and retention of language will occur (Craik & Lockhart, 1972; Glenberg, Smith, & Green, 1977), one is still left wondering what underlying psychological and psycholinguistic processes are actually activated during shadowing training. More recent advances in scholarship suggest that the ubiquity of new computer and brain imaging technologies will help put these queries to rest.

One promising PET (positron emission tomography) experiment conducted in 1994 (Tulving et al.) showed that deeply processing material results in far superior recall. This is echoed by a study of Japanese university students (Miyake, 2009) which used a computer software program specifically designed to record the length and latency of their utterances in order to examine the fundamental psycholinguistic processes of shadowing techniques and their effectiveness in second language learning. The data showed that extensive shadowing training leads to an increase in learners' articulation rates, a phenomenon believed to be closely linked to improved short-term memory capacity and language retention. In other words, the faster a learner is able to rehearse chunks of speech in the phonological loop, the more effectively information is retained. The data also showed a correlation between longer shadowing latencies and increased test scores, suggesting that shadowing training may indeed improve phonological short-term memory.

Other studies are helping to dispel some of the negative reputation surrounding shadowing training. For instance, there appears to be an assumption, often from those who have never tried it, that shadowing is necessarily stressful, difficult, and boring. This author's students certainly rolled their eyes and made excuses when he suggested they try shadowing audiobooks between classes. Sadly, some educators share the outlook of their students as well. An evaluation of the shadowing training conducted during Miyazaki University's intensive summer English program (Todaka, 2007) concluded, "Concerning shadowing, it was somewhat time consuming and required learners to have patience and concentration. Thus, it would be extremely difficult for an individual learner to continue shadowing practice alone" (p. 1612). While science may never permit students to learn without an investment of time, patience, and concentration, current research can offer some insights into the divergence between what we assume is happening in the minds of our students and what is actually occurring. Hirata and Hirata's (2008) use of electroencephalography (EGG) to evaluate the psycholinguistic processing underlying various listening activities is one such example. A comparison of the level of alpha waves (alpha amplitude) emitted by students during listening and shadowing practice revealed that shadowing training is no more stressful than traditional listening exercises.

A study by Mochizuki (2007) showed that while EFL junior high school students are often "perceived as lacking in motivation" by educators in Japan, nearly all of the students surveyed reported that they enjoyed the shadowing training (p. 32). Whereas shadowing was once reserved for adults, this study illustrates that it can provide the same positive effects on

listening comprehension, reading pace, fluency, articulation, and intonation for young second language learners.

A review of the literature indicates that there has been considerable investigation into shadowing training in classrooms and language laboratories. Another fruitful area of research might be the effectiveness of Silent Shadowing Training outside of these controlled settings. This is important because even though TESOL scholars (Kumaravadivelu, 2003; Norton, 2003; Sheffner & Dunham, 2001) view autonomy as a vital language learning strategy, it has been this author's experience that few EFL learners are given practical direction in how best to increase L2 usage outside of class.

Not giving students enough time to process class material is also poor pedagogy. Although many textbooks, methods, and schools offer shortcuts to English language proficiency, the reality is that students will need to invest a large number of hours immersed in the language before they will begin to excel in it. As Bransford (2000) comments on "mile wide and an inch deep" curricula:

Attempts to cover too many topics too quickly may hinder learning and subsequent transfer because students (a) learn only isolated sets of facts that are not organized and connected or (b) are introduced to organizing principles that they cannot grasp because they lack enough specific knowledge to make them meaningful. (p. 58)

Subsequently, there is a difference between the language students are exposed to and the language that they actually notice and internalize. This is what Corder (1967) refers to as *input* and *intake*: *input* being the total sum of language the learner is exposed to, while *intake* is the total sum of language incorporated into a student's developing language system. The consequence is that students may appear to have mastered certain aspects of a language when in fact they are in a state of semantic confusion, simply repeating the teacher's words without grasping their actual meaning. In order to produce the target language accurately, consistently, and automatically, new language must be restructured and integrated into the learner's language system. This can only be accomplished when a text is understood at both the syntactic and semantic level. Agreement for this analysis is found in Seleskovitch's *Interpreting for International Conferences* (2001):

The amount of attention of which any one individual is capable is limited and is divided between perception of the form of a message and comprehension of its content. The more attention that is focused on perception the less there is available for comprehension, which means that the intellectual or emotional apprehension of the message depends on the ease with which it is perceived; instant comprehension occurs only if perception is effortless. (p. 113)

Using Silent Shadowing Training during commutes may prove an ideal way for learners to engage in deep and meaningful practice of the L2 without sacrificing any of their free time. The hardware for such a program is ubiquitous in many countries: a smart phone. A study of non-native English-speaking university students in the UK made the following recommendations for the use of such audio files in education:

...they can (i) summarize a concept covered in class and provide examples to help students generalize to other contexts strategies learned in class, (ii) act as a bridge between classes, building on concepts discussed in class but also helping to prepare students for the next class, or (iii) introduce new material that will be referenced in the next class. (O'Bryan, 2007, p. 169)

Rather than passively listening to these audio materials between classes, performing Silent Shadowing Training on commutes would allow students to practice output as well as input. This is important as it appears to be through the actual attempt to produce new language, and failing, that learners are able to test out their language hypotheses. Corder (1967) argues, "...we can regard the making of errors as a device the learner uses in order to learn. It is a way the learner has of testing his hypotheses about the nature of the language he is learning" (p. 167). This is also relates to Swain and Lapkin's (1995) *noticing/triggering function*, which predicts that speakers need to generate the target language in order to identify and overcome their errors and linguistic shortcomings.

When it comes to the actual selection of material to shadow, one important consideration should be the style in which it is written. In *Spoken Grammar: What Is It and How Can We Teach It?*, *McCarthy &* Carter (1995) describe language teaching as something "regularly based on written examples and on a proscriptive approach to 'correct' English" (p. 209). Yet how can educators expect L2 learners to understand, let alone converse naturally when the need arises if they are not even aware that certain aspects of the spoken language even exist? With carefully selected materials, Silent Shadowing Training may prove to be an antidote to the scarcity of authentic material in most ESL textbooks. Support for the use of media in second language learning can also be found in Krashen (2003) who points out, "About 95 percent of the words used in conversation and television are from the most frequent 5,000" (p. 22). Audiobooks are one way to incorporate both shadowing training and authentic content.

One final point of importance concerns the difficulty level of shadowing materials to use. Krashen's 1985 i+1 theory of comprehensible input suggests that if a learner's language ability is "i", then the material should be at a level of "i+1." Clark (1993) makes a similar recommendation, stating: "It [recorded material] should be a bit above your current standard of English. In other words, you should feel that you confront the challenge of having to try to understand what is on the tape" (p. 12). Finally, a study by Hamada (2003) suggests an i-1 approach, where texts are "at a cognitive level which students can realistically achieve" (p. 6).

A review of the literature reveals a range of views on everything from the effectiveness of shadowing training to the ideal difficulty of language input. Yet, since there is no guarantee that what works in the laboratory or classroom will work with autonomous SLA programs "in the real world," the best option is often to go out, try it, and see the results. In the next section the experiment design and the techniques used during data collection for this study are outlined in detail.

METHOD

This pilot study took place in Japan from July to December, 2009. Over the six-month period the subject silently shadowed a Japanese audiobook on his commutes to and from work. His progress was monitored by three videotaped interviews, and evaluated by ten native Japanese educators who viewed the videos and then completed an online survey.

The subject, who is also the author of this paper, was a 38 year-old Canadian native-English-speaker with intermediate Japanese language ability rated a low level 2 of the Japanese-language Proficiency Test at the beginning of this study. The Japanese-language Proficiency Test, or "Nihongo Noryouku Shiken" (日本語能力試験) as it is referred to in Japanese, is a computer-scored criterion-referenced examination used to certify the language competence of non-

Japanese speakers of Japanese. The test consists of five levels, level 5 being the lowest and level 1 being the highest level of Japanese proficiency. Level 2 speakers are considered pre-advanced, with "The ability to understand Japanese used in everyday situations and in a variety of circumstances to a certain degree" (JLPT).

The entire study consisted of 200 hours of silent shadowing, broken down to 8 hours per week. All of the shadowing was performed subvocally. In other words, the subject repeated the text entirely *in his mind* and without mouthing the words or emitting vocal sounds. He repeated the text immediately after hearing it, and only shadowed the portions of the text that he could fully understand.

In order to increase the generalizability of this data to other adult second language learners, the subject limited his use of L2 outside of the shadowing practice. This included refraining as much as possible from speaking Japanese at home or work, reading Japanese texts, or watching Japanese television.

The subject chose *Harry Potter and the Philosopher's Stone*, the first Harry Potter audiobook of the heptalogy, for two main reasons. First, the narrator speaks a style of Japanese that the subject idealized. Second, it was hoped that the vocabulary acquired from a novel set in a school setting would be useful in the subject's daily life when speaking Japanese in the future.

The subject participated in three videotaped interview tests during this time in order to gauge his Japanese language proficiency. The tests were conducted entirely in Japanese by a native Japanese speaking graduate student at the Tokyo Campus of Teachers College, Columbia University. The interviewer asked a series of prepared questions pertaining to the audiobook in order to test the comprehension of, and elicit a wide variety of vocabulary and language from the subject. The subject did not see or prepare for the interview questions before the test. The pretest [Brown Video] was taken before beginning the shadowing program to serve as a baseline, the intermediary test [Pink Video] at three months, and the post-test [Gray Video] at six months.

At the end of the shadowing experiment the middle of each video was uploaded to YouTube. The videos were uploaded randomly to avoid biasing the raters. They were then reviewed and critiqued in an online survey by ten native Japanese speakers, all of whom have prior experience in learning and teaching a second language. The survey had two focuses. First, the evaluators were asked to rank the three videos from worst to best in terms of overall Japanese language skills. Here exact matches between the reviewers' selections and the order the videos were recorded would be considered support for the study's main research question. Next, they compared the "worst" and the "middle" video, the "middle" and the "best", and finally the "worst" and the "best." These questions were asked to determine whether there had been continuous progress throughout the program.

FINDINGS

The data from the surveyors provides three main findings relevant to this study. First, a marked improvement in the subject's Japanese was observed during the study. Second, most of these improvements appear to have occurred during the first half of the study. Third, the areas of improvement during the first three months appear to differ from those in the last. The following section presents a brief summary of the surveyors' reactions to the videos.

Perhaps the most interesting finding was that 7 out of the 10 evaluators identified the exact sequence in which the videos were recorded. Furthermore, eight evaluators identified the

pre-test, the video taken before beginning the shadowing training, as the video displaying the weakest use of Japanese, and none of them selected the post-test video as the worst. A comparison of the pre-test and intermediary-test videos in the first half of the study revealed an improvement in listening comprehension, vocabulary, rhythm, fluency, and confidence. One evaluator felt that the subject was able to comprehend vocabulary in the intermediary-test that he had been unable to deal with in the pre-test. Another wrote that while in the pre-test his "speech mostly consisted of fragments, was short/simple, and incomprehensible in some cases," the intermediary-test appeared "more extensive and was more complex." It was also reported that he spoke more fluently in the second video: in the pre-test "the subject often stuttered and talked in a low voice where he did not seem to be confident of his speech. It occurred less in the middle [intermediary-test] video."

A comparison of the intermediary-test and the post-test also revealed improvements. One evaluator reported that he used longer sentences in the post-test, and also that his answers had become more organized. Another wrote that he was able to answer higher-level questions in the post-test video, and also that he looked comfortable and was able to make jokes in Japanese in both the intermediary-test and post-test videos—something that he did not do in the pre-test video. Another evaluator wrote: "His ways of explanation improved, in terms of the length of each sentence and the choice of vocabulary" and "Improvements in listening comprehension and fluency between the worst and best videos are remarkable considering the experiment had been conducted in 6 months. The subject frequently used "なんと言う?" [How do you say...?] in the worst [pre-test] video but not in the best [post-test] video which may suggest that his overall speaking skills have been improved during the experiment."

DISCUSSION

The primary focus of this case study was to assess whether extended silent shadowing of an audiobook during commutes results in noticeable L2 language gains. The data suggests that it does. This section first explores some of the study's findings. Finally, there is an examination of the pedagogical implications of Silent Shadowing Training, and key areas where it might be best implemented.

Two results from the survey are of particular interest to this discussion. First, seventy percent of the evaluators correctly identified the exact sequence the videos were taken. This suggests that there was a marked improvement in the subject's Japanese over the time of the experiment at a rate in keeping with the order in which the videos were recorded. Second, although there was some discrepancy in the surveys regarding the video rankings, none of the evaluators selected the post-test video as the video containing the weakest use of Japanese. This indicates that the subject's Japanese had noticeably improved by the end of the study.

While the results suggest that silent shadowing of audiobooks during commutes leads to L2 language gains, these findings should be replicated in larger test groups, and supplemented by more quantitative and longitudinal studies. It would also be interesting to assess the effectiveness of using Silent Shadowing Training with other forms of popular multimedia such as serial TV dramas, which can also be played on smartphones and tablets.

Although this experiment was based upon the conditions and constraints faced by a student of Japanese, performing Silent Shadowing Training during commutes promises to be a relevant technique for learners of other second languages in other countries as well. Besides the

obvious relevance to professional adult learners who are eager to broaden their horizons or advance their careers, this technique may hold special promise for people who do not have the opportunity or the resources to attend a language school.

Whether it is a lack of financial resources, a shortage of teachers, or racial or gender inequality, the reality is that in both wealthy and developing societies throughout the world there are people who find themselves without access to second language training. Having spent several years living in Central Europe and South East Asia in the early 1990s, this author has seen firsthand how knowledge of a second language can give otherwise socially disenfranchised members of an emerging underclass access to microcredit and other entrepreneurial business opportunities. Silent Shadowing Training is particularly interesting in these cases as access to a shared smartphone and shadowing material might be all that is needed to improve not only a second language but possibly a livelihood. Seen in this light, Clark's (2003) conviction that "...a tape-recorder can provide almost 80 percent of what a student needs. Teachers and textbooks provide the remaining 20 percent" appears less hyperbolic and more pedagogic, especially for those with few other options (p. 45).

CONCLUSION

Even as educators acknowledge the importance of human interaction in second language acquisition, there needs to be a place for student autonomy and learning strategies such as Silent Shadowing Training. After all, there is nothing comical about teaching practices which claim to promote communicative ability while generating speakers who are unable to function effectively outside of the confines of the classroom. The inclusion of Silent Shadowing Training in the curriculum may lead to programs which focus more on learning outcomes and less on academic rituals. In the end, we as educators must revise our education strategies or become the proverbial old dogs that can't be taught new tricks.

ACKNOWLEDGEMENTS

I would like to say a special thank you to Mayumi Takizawa, Terry Royce, William Snyder, and Marc Helgesen for direction and inspiration. I would also like to thank Jennie Roloff Rothman, Kazuko Unosawa, and Chris Hale from the TC Tokyo Writing Center, and the many Columbia University Teachers College Tokyo colleagues for participation and feedback both during and after completion of this study. It is nice to have smart friends.

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Appendix

Survey

Instructions:

Please watch (at least) two minutes of each video before answering the following questions. While watching each video, please focus on Michael's overall Japanese ability (ex. fluency, vocabulary, grammar, comprehensibility, voice and non-verbal communication).

- 1. Please type your name in the space below.
- 2. In which order did you watch the videos?
- 3. In which video does Michael demonstrate "The Worst" Japanese ability?
- 4. In which video does Michael demonstrate "The Best" Japanese ability?
- 5. In which video does Michael demonstrate "The Middle" Japanese ability?
- 6. On a scale of 1 to 10 (1 = least and 10 = most), how much improvement was there between "The Worst" and "The Middle" videos?
- 7. On a scale of 1 to 10 (1 = least and 10 = most), how much improvement was there between "The Middle" and "The Best" videos?
- 8. On a scale of 1 to 10 (1 = least and 10 = most), how much improvement was there between "The Worst" and "The Best" videos?
- 9. Please give a final comment on the difference in language ability in the three videos. Click "Done" when you have completed the survey.

Assessment Videos

Brown Video [pre-test]: https://youtu.be/GBs0CD2zWZc

Pink Video [intermediary-test]: https://youtu.be/8ZzNV0vyXIw

Gray Video [post-test]: https://youtu.be/nxAOVc_w5Qs