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# Teaching L2 Learners How to Listen Does Make a Difference: An Empirical Study

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This study investigated the effects of a metacognitive, process-based approach to teaching second language (L2) listening over a semester. Participants ($N = 106$) came from six intact sections of French as a second language (FSL) courses. The experimental group ($n = 59$) listened to texts using a methodology that led learners through the metacognitive processes (prediction/planning, monitoring, evaluating, and problem solving) underlying successful L2 listening. The control group ($n = 47$), taught by the same teacher, listened to the same texts the same number of times but without any guided attention to process. Development of metacognition about L2 listening, tracked using the Metacognitive Awareness Listening Questionnaire (MALQ), was measured at the beginning, middle, and end points of the study. As hypothesized, the experimental group significantly outperformed the control group on the final comprehension measure, after we controlled for initial differences. The hypothesis that the less skilled listeners in the experimental group would make greater gains than their more skilled peers was also verified. Transcript data from stimulated-recall sessions provide further evidence of a growing learner awareness of the metacognitive processes underlying successful L2 listening, as MALQ student responses changed over the duration of the study.

**Keywords** classroom research; L2 French; listening comprehension; listening strategies; metacognition; metacognitive awareness; teaching L2 listening

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Listening comprehension may seem relatively straightforward to native language (L1) speakers but it is often a source of frustration for second and foreign language (L2) learners (e.g., Graham, 2006). Can L2 listeners, who acquired this complex skill so seemingly effortlessly in L1, be taught how to listen in L2? Would attention to the processes of listening lead to better comprehension outcomes? Questions such as these have received little attention in the research literature on listening comprehension. In fact, research on comprehension instruction has been largely confined to reading (Block & Pressley, 2002). For reading in L1 settings, the current approach to comprehension instruction is the development of overall strategic readers (Grabe, 2004). For reading in L2 settings, however, the focus has been the teaching of individual comprehension strategies, instead of the development of the overall strategic L2 reader (Grabe, 2009). The situation is much the same in L2 listening comprehension research. Little attention has been focused on systematic practice in L2 listening (see DeKeyser, 2007)—that is, on the integrated instruction of a sequential repertoire of strategies to help L2 learners develop comprehension skills for real-life listening (Berne, 2004; Mendelsohn, 1994; Vandergrift, 2004). This article reports on a study that investigated a process-based approach to listening that aimed to develop overall strategic L2 listeners. Rather than being taught strategies one at a time, listeners were guided through the metacognitive processes of listening through the coordinated use of multiple strategies to interpret oral texts.

## Research on Facilitating L2 Listening

Research on improving the listening performance of L2 learners has focused mostly on the product of listening (i.e., manipulating certain variables related to listening) in order to improve the results on a measure of listening comprehension (Goh, 2002). Activation of prior knowledge has been shown to have salutary effects on L2 listening success (Long, 1990; Schmidt-Rinehart, 1994). Research into prelistening activities has documented positive effects on listening performance for visuals (Ginther, 2002; Seo, 2002), video clips (Wilberschied & Berman, 2004), advance organizers (e.g., Chung, 2002; Herron, Cole, York, & Linden, 1998), question type (Flowerdew & Miller, 2005), and question preview (Elkhafaifi, 2005). These studies have demonstrated that it is helpful to contextualize listeners before they begin to listen. The potential of technology has also been exploited to improve L2 listening comprehension success. L2 captions can be useful (e.g., Markham, Peter, & McCarthy, 2001) as well as pictorial support and written annotations (Jones &

Plass, 2002) and digital stories (Verdugo & Belmonte, 2007). Methods fostering bottom-up processing such as adjusting the speech rate (Zhao, 1997), repeating the oral text (e.g., Elkafaifi, 2005; Jensen & Vinther, 2003; Zhao, 1997), providing L2 subtitles (Stewart & Pertusa, 2004), and attending to prosodic features (Harley, 2000) have also met with success. This body of research has demonstrated that L2 learners can be taught to use a number of cues to facilitate their comprehension of oral texts.

A range of teaching strategies are now recognized as essential for teaching L2 listening; these include helping learners to listen for gist, to activate schema in prelistening, and to make predictions and inferences (Hinkel, 2006). L2 listeners have successfully been taught to use these strategies to help compensate for what they are not able to understand. In these studies, however, listening strategy instruction tended to report positive results for the use of only one or two strategies immediately following the instruction period (Carrier, 2003; Thompson & Rubin, 1996). Research evidence for the long-term benefits of this kind of strategy instruction remains inconclusive (Chamot, 1995; Field, 2001). Furthermore, given that skilled listeners appear to use strategies in an interconnected fashion (e.g., Murphy, 1985, Vandergrift, 2003a), instruction in individual strategies may not necessarily lead to overall listening improvement (Field, 2001). This observation has already been documented in the reading research, where there is general consensus that instruction in a repertoire of strategies, or metacognition about strategies (Sternberg, 1998), is more effective than individual strategy instruction for teaching comprehension skills (Grabe, 2004).

There is some evidence that skilled L2 listeners do use a repertoire of strategies to regulate listening processes. Not only do they use more metacognitive strategies than their less skilled counterparts (Goh, 2000; O'Malley & Chamot, 1990; Rost, 2002; Vandergrift, 2003a), but skilled listeners also appear to orchestrate these strategies in a continuous metacognitive cycle (Vandergrift, 2003a). Two recent studies in strategy instruction also support this contention. Graham and Macaro (2008) demonstrated considerable success in the explicit "awareness raising" of multiple strategies over a period of 6 months, with salutary effects on learner self-efficacy. Both a high- and a low-scaffolded group outperformed a control group at the end of the study and 6 months later. The researchers attribute improved listening performance to the "clustering" of cognitive strategies with metacognitive strategies and the task-specific and learner-centered characteristics of the intervention. Finally, using a pedagogical cycle based on Field (2001) and Vandergrift (2004), Cross (2009a) found no difference for the group receiving the additional explicit strategy instruction.

Cross suggested that the significant improvement of both groups might be attributed to the use of a task-based pedagogical cycle reflecting real-life listening (the cycle used in the present study). Regulating the cognitive and metacognitive processes underlying listening appears to be crucial to L2 listening success.

## Metacognition and Learning

Metacognition involves both knowledge of cognitive processes and the capacity to monitor, regulate, and orchestrate these processes (Flavell, 1976). Metacognitive knowledge consists primarily of knowledge and beliefs about the factors (task, person, and strategic) that interact during any cognitive activity (Flavell, 1979); however, the ability to apply this knowledge is as important as the knowledge itself (Nelson, 1996; Sternberg, 1998). Application of metacognitive knowledge is a mental characteristic shared by successful learners; in fact, metacognition accounts for a relatively high percentage of variance in learning performance (e.g., Veenman & Spaans, 2005; Veenman, Van Hout-Walters, & Afflerbach, 2006). There is extensive evidence that learners' metacognition can directly affect the process and the outcome of their learning (Goh, 2008; Victori & Lockhart, 1995; Wenden, 1998; Zimmerman & Schunk, 2001), that it is positively linked to motivation and self-efficacy (Dörnyei & Skehan, 2003; Paris & Winograd, 1990; Vandergrift, 2005) and that it can help learners regulate their comprehension (Pressley, 2002). In fact, Vandergrift, Goh, Mareschal, and Tafaghodtari (2006), in their validation of the Metacognitive Awareness Listening Questionnaire (MALQ), observed that about 13% of variance in listening achievement could be explained by metacognition. In sum, learners with a high degree of metacognitive knowledge and the facility to apply that knowledge are better at processing and storing new information, finding the best ways to practice, and reinforcing what they have learned.

Although raising learners' metacognitive awareness about listening has been advocated for some time (e.g., Mendelsohn, 1994), research that elicits language learners' metacognitive knowledge in a systematic manner is a relatively recent development. Diaries (Goh, 1997), questionnaires (Goh, 2000; Zhang & Goh, 2006), and process-based discussions (Goh & Taib, 2006; Vandergrift, 2002; 2003b) can provide learners and instructors with important information concerning the degree of awareness of listening problems. Listening tasks that guide learners in the use of prediction, monitoring, evaluating, and problem solving can help develop the metacognitive knowledge critical to the development of self-regulated listening. Both primary-level

and university-level learners of French (Vandergrift, 2002, 2003b) as well as Chinese English as a second language (ESL) learners (Goh & Taib, 2006) exposed to such tasks reported increased motivation, confidence, and strategy knowledge. This proved to be particularly true for the less skilled listeners in the Goh and Taib (2006) study. Mareschal (2007) found that a low-proficiency and a high-proficiency group of learners of French exposed to this listening pedagogy during 8 weeks of intensive language training were better able to regulate listening processes. Analyzing data from a listening questionnaire (MALQ), stimulated-recall protocols, diaries, think-aloud protocols, and a final summative open-ended questionnaire, she was able to document how the listening training beneficially influenced the listeners' self-regulatory ability, strategy use, metacognitive knowledge, and listening success, particularly for the low-proficiency group. Finally, using the same pedagogical cycle, Cross (2009b) investigated the development of metacognition with more advanced Japanese learners of English, through the lens of sociocultural theory. An analysis of the emerging collaborative dialogue, diary entries, and interview protocols demonstrated how these listeners used collaborative dialogue for mediating metacognitive development—in particular, strategy awareness, comprehension awareness, and text awareness. It appears that systematically leading language learners through the process of listening as part of regular listening activities encourages these learners to develop greater awareness of the metacognitive processes involved in listening. However, although the effects of this approach on student development of metacognitive knowledge about L2 listening and motivation have been demonstrated, the effects on listening achievement still need to be empirically demonstrated (Berne, 2004; Vandergrift, 2004). This article reports on an empirical investigation of a pedagogical approach to L2 listening that focused on the long-term development of strategic listening. Rather than being taught individual listening strategies once, learners were taught the coordinated use of multiple strategies during listening practice over a period of a semester. Underlying this pedagogical approach was the development of applied metacognitive knowledge about L2 listening. An overview of the metacognitive processes and the corresponding pedagogical stages underlying this approach is presented in Figure 1. Three hypotheses guided this study:

1. The group receiving the experimental treatment (following Field, 2001, and Vandergrift, 2003b) will outperform the control group on the final test of listening comprehension.

| Pedagogical stages | Metacognitive processes |
|---|---|
| *Prelistening*: *Planning/predicting stage* | |
| 1. After students have been informed of the topic and text type, they predict the types of information and possible words they may hear. | 1. Planning and directed attention |
| *First listen: First verification stage* | |
| 2. Students verify their initial hypotheses, correct as required, and note additional information understood. | 2. Selective attention, monitoring and evaluation |
| 3. Students compare what they have understood/written with peers, modify as required, establish what still needs resolution, and decide on the important details that still require special attention. | 3. Monitoring, evaluation, planning, and selective attention |
| *Second listen: Second verification stage* | |
| 4. Students verify points of earlier disagreement, make corrections, and write down additional details understood. | 4. Selective attention, monitoring, evaluation, 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, evaluation, and problem solving |
| *Third listen: Final verification stage* | |
| 6. Students listen specifically for the information revealed in the class discussion which they were not able to decipher earlier. | 6. Selective attention, monitoring, and problem solving |
| *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. | 7. Evaluation, planning |

(from Vandergrift, 2004)

**Figure 1** Stages of listening instruction and underlying metacognitive processes.

2. The less skilled listeners in the experimental group (following Goh and Taib, 2006, and Vandergrift, 1997) will show the greatest improvement in listening comprehension achievement. More specifically, the less skilled listeners in the experimental group will demonstrate a greater improvement

in listening comprehension achievement than the three other groups (i.e., greater than their more skilled counterparts and greater than both the more skilled and the less skilled learners in the control group).

3. The less skilled listeners in the experimental group will demonstrate the greatest growth in metacognitive awareness of listening, as measured by the MALQ (Vandergrift et al., 2006).

## Methodology

### Participants

The participants were university-level students ($N = 106$) of French as a second language (FSL) drawn from six intact classes (two high-beginner classes and four low-intermediate classes). Out of the total enrollment ($N = 131$) in these six classes, 7 students declined to participate in the study and 18 students either withdrew from the course or were absent for one of the data collection sessions. Classes were randomly assigned to either the control ($n = 47$) or experimental ($n = 59$) group. Participants did not know in which group they were placed; they only knew they were participating in a study about learning how to listen in French. Participants were identified as less or more skilled listeners on the basis of their performance on the listening pretest. Those scoring above the mean (14) were classified as skilled listeners, and those scoring below the mean were classified as less skilled.

Two instructors participated in the study; one taught four different classes of low-intermediate FSL during the Fall session, and the other taught two different classes of high-beginner FSL during the Winter session. The same instructor taught both the control and the experimental groups, and although the teaching methodology for listening differed (see below), both groups listened to the same texts. Of course, both instructors were aware that the experimental method was under investigation; however, they were not aware of the hypotheses regarding the potential of the treatment to help the less skilled listeners in the experimental group to improve more than the other groups. To ensure that the instructors respected the designated treatment for each group, all teaching sessions for both groups were observed on a continuous basis by a research assistant. Notes from these observation sessions suggest that there was no "drift" in pedagogy from the experimental treatment to the control groups. Early in the study, subsequent to the research assistant's report, one of the instructors had to be reminded once to respect all of the steps in the experimental treatment.

**Instruments**

Listening achievement was measured using Version A (pencil-and-paper version) of the listening section of the university's FSL Placement Test. The reported internal consistency of this test is high: $\alpha = .94$ (Weinberg, 1995). Subtests include (a) questions followed by potential multiple choice (MC) responses (7 points, beginner level); (b) a short telephone conversation followed by two MC questions (novice-low); (c) a dialogue between two students followed by three MC questions (novice-low); (d) an advertisement followed by four MC questions (novice-high); and (e) a radio interview followed by five MC responses (intermediate level). Listeners heard the stimulus in the first two subtests only once; the texts for the last three subtests were heard twice. The types of listening tested involved (a) choosing contextually appropriate responses (first part) and (b) processing texts of realistic spoken language to understand linguistic information unequivocally included in the text and to make inferences implicated by the content of the text (parts 2–5) (Buck, 2001). The test took approximately 20 minutes to complete.

Change in metacognitive knowledge about listening was measured using the MALQ (Vandergrift et al., 2006, see Appendix A). This questionnaire consists of 21 randomly ordered items related to L2 listening comprehension. The items measure the perceived use of the strategies and processes underlying five factors related to the regulation of L2 listening comprehension. These five factors include Planning and Evaluation (how listeners prepare themselves for listening and evaluate the results of their listening efforts), Problem Solving (inferencing on what is not understood and monitoring those inferences), Directed Attention (how listeners concentrate, stay on task, and focus their listening efforts), Mental Translation (the ability to use mental translation parsimoniously), and Person Knowledge (learner perceptions concerning how they learn best, the difficulty presented by L2 listening, and their self-efficacy in L2 listening). The MALQ has robust psychometric properties, is significantly related to L2 listening comprehension success, and can explain up to 13% of the variance in listening performance (Vandergrift et al., 2006).

**Procedure**

The listening test was administered at the beginning and the end of the study. The MALQ was administered at the beginning, middle, and end points of the study, immediately after a listening activity. Administration of all instruments was carried out by a research assistant. In addition, six students from the experimental group were randomly selected for participation in a stimulated-recall session on their MALQ responses. These participants met with a research

assistant twice: after the middle point and at the end of the study. At the first stimulated-recall session, the research assistant presented the participants with their beginning and middle point MALQ responses and then discussed major discrepancies (2 point differences) in responses with these students. During the second recall session, the participants were asked to discuss possible reasons for further discrepancies in their responses based on their final completion of the MALQ. All stimulated-recall sessions were audio-recorded, transcribed verbatim, coded, and analyzed using the QSR-N*Vivo7 software program.

**Experimental Group Treatment**

Once each week throughout the 13-week term, participants listened to a different authentic-type text that related to the topic of the unit under study. The procedure, which was the same each time for the experimental group, included the following steps:

- Students entered the date and the topic (e.g., an advertisement for an Italian restaurant) of the text on a new page in their "Carnet d'écoute." Each page of the carnet consisted of three columns (Anticipations, Première écoute, Deuxième écoute) and a small section for reflection at the bottom of the page (Pour améliorer).
- Based on their knowledge of the topic and the type of text, students brainstormed the kinds of information they might hear, as well as any related French vocabulary, and entered this information (in French or in English) in the "Anticipations" column. Students were reminded that they should consider all logical possibilities. This prediction phase was first done together as a class (2 weeks), then with a partner (3 weeks), and, eventually, students on their own.
- After completing their predictions, students listened to the text for the first time. As they listened, students placed a check mark beside the predicted information and words, if and when they heard these elements. In addition, they noted any other information that they may have understood under the "Première écoute" column.
- At this point, students worked in pairs to compare predictions and information understood thus far. They were encouraged to discuss points of confusion and disagreement, to consider other logical possibilities, and to identify parts of the text that would require careful attention during the second listen.
- Students listened to the text a second time. They attempted to resolve points of difficulty raised after the first listen, and they also entered newly comprehended information in the column "Deuxième écoute." When students

finished entering this information, the instructor engaged the class in a discussion, to confirm their comprehension of the text and to enable the students to share how they succeeded in comprehending.
- A third listen allowed students to verify their perception and comprehension of what they may have missed earlier.
- Finally, each student completed a personal reflection on the activity, noting in the "Pour améliorer" section any strategies that they would try to use the following time.

**Control Group Treatment**

The control group listened to the same texts three times. The procedure, which was the same each time, included the following steps:

- Before beginning to listen, similarly to the experimental group, students in the control group were given the topic of the text and they made a similar entry on a new page in their "Carnet d'écoute." Their "Carnet" differed in that it had only three columns for notes, one column for each of the three listens to the text.
- The students in the control group did not engage in any formal prediction activity, nor were they given an opportunity to discuss, predict, or monitor their comprehension with a classmate.
- After the third listen, the instructor engaged the class in a discussion in order to confirm comprehension of the text. No discussion of strategy use took place, nor did students engage in any formal reflection on their approach to listening.

## Results

Our first and second hypotheses concerned the degree to which metacognitive instruction might result in variance in L2 listening performance. We hypothesized that the group receiving the experimental treatment would outperform the control group on the posttest of listening comprehension. In addition, we hypothesized that the less skilled listeners in the experimental group would show a greater improvement in achievement than their more skilled counterparts. In order to examine these two hypotheses, a two-factor ANCOVA was performed, using SPSS GLM. The independent variables consisted of the group (treatment and control) and the level of listening ability (less and more skilled), factorially combined. In order to control for any initial differences in the participants' listening ability, L2 prestudy test scores were used as the covariate in the analysis.

**Table 1** Means and standard deviations for listening achievement as a function of Treatment and Listening Level

| | | Unadjusted | | Adjusted | |
|---|---|---|---|---|---|
| Source | *N* | *M* | *SD* | *M* | *SE* |
| Group Experimental | | | | | |
| Low | 27 | 17.5 | 2.4 | 18.9 | 0.37 |
| High | 32 | 21.20 | 1.7 | 19.4 | 0.38 |
| Total | 59 | 19.53 | 2.7 | 19.11 | 0.23 |
| Control | | | | | |
| Low | 24 | 15.90 | 2.7 | 17.8 | 0.45 |
| High | 23 | 20.80 | 1.7 | 18.9 | 0.44 |
| Total | 47 | 17.82 | 3.2 | 18.4 | 0.26 |

To meaningfully interpret the univariate $F$ tests for the different groups, we determined whether any statistical assumptions underlying the use of ANCOVA were violated in the dataset. An examination of Levene's test of equality of error variance demonstrated that the data had homogeneity of variance; therefore, the error variance of postlistening was equal across groups ($F = 1.62; p = .14$). Moreover, the results of the tests of between-participants effects (i.e., the test of the interaction between the independent variable Group and the covariate L2 Prelistening) demonstrated that the assumption of homogeneity of regression slopes was successfully met, $F(1, 102) = 1.6, p = .52$. The results of tests of the between-participants effects were further examined for statistical significance of the main effects of the independent variables, Group and L2 Listening Level.

Table 1 shows the number of participants, in addition to the mean and standard deviation of L2 listening achievement for treatment and control group participants at each listening ability level (more and less skilled). As can be seen, the estimated marginal means on the final listening test scores for the experimental and the control groups were 19.11 and 18.4, respectively, suggesting that our first hypothesis was confirmed. Indeed, as evidenced in Table 2, these differences were statistically significant ($F = 3.39$, $\eta^2 = .30$, $p < .05$), suggesting that metacognitive instruction resulted in the variance in L2 listening achievement between the two groups, with $\eta^2$ of .30 indicating a fairly strong effect (Cohen, 1988).[1] The results of the main effects, however, might be quite misleading when there is a significant interaction between the independent variables (Leech, Barrett, & Morgan, 2005). To determine whether this was the case, we examined the results of the interaction between Group

**Table 2** L2 listening success as a function of Group and Listening Level with Prelistening as a covariate

| Source | *df* | *M* | *F* | $\eta^2$ |
|---|---|---|---|---|
| Group | 1 | 6.27 | 3.39* | .30 |
| Listening Ability Level | 1 | 136.24 | 73.71** | .44 |
| Group × Level | 1 | 1.85 | 7.72* | .01 |
| Prelistening | 1 | 164.89 | 52.94* | .34 |
| Error | 101 | 1.85 | | |

*$p < .05$.
**$p < .001$.

and L2 Listening. The results of this interaction suggest that both Group and Listening Level were responsible for the statistically significant difference in L2 listening performance ($F = 7.72$, $\eta^2 = .87$, $p < .05$), an $\eta^2$ of .87 indicating a very strong effect.

As can be seen in Table 1, the main effects were qualified by a Group × Listening Level interaction; that is, the effect of treatment on L2 listening performance depended on the participants' level of listening ability. Therefore, the next step was to examine the simple effects. Using pairwise comparisons, the L2 listening performance of the treatment and control groups was compared at both levels of L2 listening ability (less and more skilled). The results of the analyses revealed that the less skilled listeners in the experimental group (i.e., those who had received metacognitive instruction) outperformed the less skilled listeners in the control group ($p = .00$). In addition, the less skilled listeners in the experimental group showed greater improvement in listening achievement than the more skilled listeners in the experimental group ($p = .00$). The results were different for the more skilled listeners in the experimental group (who received metacognitive instruction), however. Although the final adjusted mean for the more skilled listeners in the experimental group ($M = 19.4$) was slightly higher than that of the more skilled listeners in the control group ($M = 18.9$), results of the pairwise comparisons did not show any significant differences ($p = .07$).

In sum, the results of the analyses related to the first two hypotheses demonstrate that although the group receiving the metacognitive instruction outperformed the control group on the final test of listening comprehension, it was the less skilled listeners in the experimental group who significantly improved when compared to their counterparts in the control group. In addition, although the more skilled listeners in the experimental group slightly outperformed their peers in the control group, that difference was not statistically significant.

Our third hypothesis concerned group differences with regard to growth in metacognitive knowledge about listening over time. We hypothesized that the less skilled listeners in the experimental group would demonstrate greater growth in the five factors related to metacognitive knowledge measured by the MALQ (i.e., Problem Solving, Planning and Evaluation, Directed Attention, Mental Translation, and Person Knowledge) than their more skilled counterparts and both the more and less skilled participants in the control group. To test this hypothesis, we used a 4 (less skilled experimental, more skilled experimental, less skilled control, more skilled control) $\times$ 2 (mid study metacognitive knowledge, poststudy metacognitive knowledge) repeated-measure MANOVA. When significant between-subject differences were detected, post hoc tests were conducted to better understand the differences among the four participant groups. Within-subject effects comparisons represent a test of how treatment affects changes in metacognitive knowledge over time. The univariate approach is more powerful than the multivariate approach and therefore preferable, although it requires the meeting of more restrictive assumptions regarding the sphericity of the variance/covariance matrix (Von Ende, 1993). However, both Mauchly's test of sphericity and Box's M test of differences between covariance matrices justified the use of the univariate approach (Box's M = 270.65, $p = .103$).

Using Wilk's lambda, we found a main effect for Time ($F = 2.86$, $p = .02$) and for Group ($F = 2.99$, $p = .01$). This implied that participants in all four groups demonstrated some change in performance on the five components of metacognitive knowledge, considered as a set, over time. However, an examination of the interaction between Time and Group indicated a significant effect ($F = 2.43$, $p = .017$), suggesting that participant performance over time followed different patterns. In order to further explore these group differences in the growth of metacognitive knowledge over time, we examined the univariate tests for each of the components of metacognitive knowledge individually. Follow-up ANOVAs revealed significant effects for Time, in the case of Planning and Evaluation ($F = 6.022$, $p = .016$) and Person Knowledge ($F = 7.29$, $p = .008$). However, Time was qualified by a significant interaction with Group for only two of the dependent variables: Problem Solving ($F = 2.937$, $p = .042$) and Mental Translation ($F = 3.21$, $p = .02$).

As can be seen in Table 3, results of the interaction of Time and Group indicate that the differences in the growth of metacognitive knowledge among the different listening levels of the experimental and control groups appear to hold only for Problem Solving and Mental Translation. First, the estimated marginal means suggest that although there seems to be an increase in the

**Table 3** Univariate tests on components of metacognition

| Source | Measure | Type III sums of squares | *df* | *M* | *F* | *p* |
|---|---|---|---|---|---|---|
| Time | Problem Solving | 0.344 | 1 | 0.344 | 1.262 | .260 |
| | Planning and Evaluation | 2.837 | 1 | 2.837 | 6.022 | .016 |
| | Attention | 0.163 | 1 | 0.163 | 0.460 | .499 |
| | Translation | 0.065 | 1 | 0.065 | 0.146 | .703 |
| | Person Knowledge | 5.393 | 1 | 5.393 | 7.290 | .008 |
| Time × Group | Problem Solving | 3.993 | 3 | 0.994 | 2.937 | .042 |
| | Planning and Evaluation | 1.109 | 3 | 0.370 | 0.784 | .505 |
| | Attention | 0.153 | 3 | 0.051 | 0.143 | .934 |
| | Translation | 4.319 | 3 | 1.440 | 3.212 | .026 |
| | Person Knowledge | 1.452 | 3 | 0.484 | 0.654 | .582 |

development of Problem Solving for participants in both the less and more skilled listeners in the experimental group over time, there was a decrease in the development of Problem Solving for the less and more skilled listeners in the control group. We then examined the group means for any significant differences. Tukey post hoc tests revealed that the less skilled listeners in the experimental group significantly outperformed their more skilled counterparts in the experimental group ($p = .00$), as well as the less and more skilled listeners in the control group ($p = .042$; $p = .00$) in Problem Solving. Second, the marginal means for Mental Translation suggested an increase for all listeners in the experimental group, but a decrease for all listeners in the control group. Tukey post hoc tests revealed, however, that the difference in performance was only significant when performance on Mental Translation for the less skilled listeners in the control group was compared to that of the more skilled listeners in the experimental group ($p = .03$). Table 4 presents the results of the estimated marginal means for the four groups for Problem Solving and Mental Translation.

In sum, regarding our third hypothesis, the results provide further empirical evidence for the benefits of raising learners' metacognitive awareness by guiding students through the process of listening. Furthermore, the results reveal that this type of listening instruction can be particularly useful for less skilled listeners. In terms of growth in metacognitive knowledge of listening over the course of the study, listeners in the experimental group demonstrated growth in Problem Solving and Mental Translation compared to their counterparts in the control group. The surprising result for Mental Translation will be considered

**Table 4** Estimated marginal means comparing Problem Solving and Mental Translation for the four groups

| Measure | Group | Time | *M* | *SE* |
|---|---|---|---|---|
| Problem Solving | Experimental Low | 1 | 4.29 | 0.13 |
| | | 2 | 4.97 | 0.14 |
| | Experimental High | 1 | 4.49 | 0.11 |
| | | 2 | 4.75 | 0.12 |
| | Control Low | 1 | 4.62 | 0.11 |
| | | 2 | 4.46 | 0.12 |
| | Control High | 1 | 4.70 | 0.15 |
| | | 2 | 4.65 | 0.15 |
| Mental Translation | Experimental Low | 1 | 3.75 | 0.20 |
| | | 2 | 4.01 | 0.22 |
| | Experimental High | 1 | 3.39 | 0.16 |
| | | 2 | 3.62 | 0.18 |
| | Control Low | 1 | 4.20 | 0.16 |
| | | 2 | 3.85 | 0.18 |
| | Control High | 1 | 4.00 | 0.20 |
| | | 2 | 3.70 | 0.23 |

later. Data from participant stimulated-recall protocols on MALQ responses, conducted with a random sample from the experimental group over the duration of the study, provided further insights into the development of metacognitive awareness in listening. Participants were asked to comment on any changes in their MALQ responses from the beginning, through the middle point, and the end of the study. Analysis of the transcribed interviews yielded further evidence of reported growth in metacognitive knowledge and self-regulation of listening comprehension, using the words of the participants themselves.

First, the participants (pseudonyms) acknowledged the role of this process approach to listening in their conscious metacognitive strategy use. The first excerpt illustrates this, as well as need for flexibility in strategy use.

> I think because of the exercises we're doing in the class, I'm realizing that I need to have a strategy. I do listen with the three listening steps . . . and I think that's kind of reinforcing my, my personal way of doing it. So I need to think about what I missed, um, how I can, hear it, and kind of keep trying again. So I do, I think I interchange my strategy, each time we listen, because we share the ideas of what we've gotten from listening. And if I go: "Oh! I didn't get that!", then I have to listen more carefully for that next time, and I might change my strategy . . . . . (Allan I p.1)

The second excerpt underlines the value of the approach for improving attention and goal setting.

> The first time you listen to it, you'll be off guard a little bit, like you won't pay as much attention, especially at the beginning, when we had just started with our, our labs, it's pretty fast, but then after, it's like, you kind of expect yourself to be more focused and just to, to pay more attention to it, so you want it, you expect yourself to have that, and so you do, pay closer attention. (Janna II p. 4)

Notable in the narratives was an increased awareness of preparation for listening and evaluation of their listening efforts, as illustrated in the following excerpt:

> "O.K., next time, I have to figure this out", like more, like focus more that way, and maybe that will help me understand more. (Janna II p. 2)

Increased awareness of overall comprehension goal setting, as well as online appraisal of those goals while listening, is illustrated by Lance:

> Definitely, I ask myself more and more: "Is this, am I at the level that I wanna be, that I should be?" (I, p. 4)

Being given the opportunity to interact with peers and share interpretations assisted listeners with their planning and evaluation strategies, as illustrated in the following excerpt:

> It just allows you to compare, just compare each other's notes, and um, discuss, why they, what they, "O.K., so that's what you got out of it, O.K.!", and then, you can kind of connect the two, and "O.K., so, that's what's been going on there!", and that allows you to go back to the next listening and to say: "O.K., yeah, I got it here, this is the part I'd missed, and that's why!" (Lance II p. 9)

Participants also acknowledged that the listening tasks over the course of 4 months had a significant influence on their level of attention and concentration, as illustrated by Janna:

> Yeah, before, if I didn't really understand something, I'd say: "O.K., just wait for next time to start," but now, I say: "O.K. Just listen every time and try and get something." (I, p. 3)

Some participants, such as Mia, became more aware of the importance of problem solving, through inferencing what they did not understand and monitoring these inferences:

> Like now, to test your own self, you wanna be able to go back, to see like: "Was I right or was I wrong?", and I think that aspect, that's how it changed . . . cause, that's the way, like you see your own progress, I think, like testing yourself to be able to really understand. (II p. 6)

Increased ability to regulate their comprehension allowed participants to better concentrate and stay on task, as suggested by Allan:

> I don't just like start thinking: "Oh my god, I'm not getting it!" and then kind of give up. I'm able to, now I'm able to focus a bit easier, and then recover now when I lose my concentration, I'm able to recover it a little bit faster. (II, p. 4)

In sum, participants attest to a growing awareness of the processes underlying L2 listening and how they were able to use this increased metacognitive knowledge to regulate their comprehension. As such, the think-aloud protocols illustrate and reinforce the results of the quantitative component of this study.

As noted earlier, the increase in reported use of translation by participants in the experimental group is perplexing, given that the compulsion to translate word for word is something language learners need to overcome in order to become successful L2 listeners. Protocols from the stimulated-recall data provide some insight into how participants were interpreting the three questionnaire items related to translation. Translation of key words appeared to be closely associated with inferencing and, therefore, perceived as helpful, as suggested by Mia:

> Yeah, I just tried to translate every single word, and like, sometimes, it just doesn't work, because you just can't translate from French to English, you just have to select the key words and then, get the general idea. (I, p. 2)

These same sentiments were reinforced by Sam, who seems to imply that recognizing a word he has predicted (or inferenced) is evidence of translating.

> Um, translating, um . . . , from the text itself, I could predict, like the words following it, and also the words before it, for example, when someone says that I was sick, or he's sick, then, you could say: "O.K., from the other words that follow in the text, he was feeling sick, or he is sick." (Sam, II, p. 3)

Finally, Allan, who indicated on his questionnaire that he partly agreed with the statement "'I translate in my head as I listen," described his approach to unfamiliar words as follows:

> I guess . . . I don't translate word for word obviously, there's some vocabulary that I just have, but then, you do pick up key words, but obviously, I don't translate in my head as I listen, I kind of listen to the sentences. (II p.1–2)

In sum, the sample protocols suggest that these participants do not engage in word-for-word translation but often appear to confound word recognition and inferencing with translation.

## Discussion

This study investigated the effects of instruction using a pedagogical cycle of guided practice, over time, leading learners through the metacognitive processes of listening. With regard to the first hypothesis—that the group receiving the experimental treatment would outperform the control group on the final test of listening comprehension—the answer is an unequivocal "yes." The results demonstrate that this approach, which sensitizes language learners to the processes underlying listening, can improve L2 listening success. This finding provides empirical support for earlier anecdotal evidence that listening practice focusing on the process, not just the product of listening, has merit (e.g., Goh, 2002; Goh & Taib, 2006; Mareschal, 2007; Vandergrift, 2002, 2003a; White, 2006). This key finding also responds to earlier critiques (Berne, 2004; Vandergrift, 2004) that carefully controlled studies of this approach are needed to clarify the effects of this approach to teaching listening over time. Although elements of this approach are found in some listening skills texts (e.g., schemata activation and prediction), this process approach to teaching listening as an inclusive pedagogical cycle for systematic listening practice offers language learners a promising avenue for developing L2 listening skills.

The results of this pedagogical approach are reliable and promising for the teaching of L2 listening. However, this approach is not congruent with what is advocated in most of the L2 literature on the teaching of L2 learning strategies (e.g., O'Malley & Chamot, 1990), or L2 listening strategies in particular (e.g., Mendelsohn, 1994, 2006; Thompson & Rubin, 1996). Much of the learning strategy literature advocates informed strategy training—that is, making learners aware of specific strategies, demonstrating how these might be useful, and then providing conscious practice in using these strategies. That approach to listening instruction, however, focused on only one or two strategies at a time, for only a short period of instruction. On the other hand, the focus of the approach in the present study was on guided practice in the listening process as

a whole, through extensive exposure to and practice with the naturalistic oral texts. Listeners were engaged in processing language as they would in real-life listening, where there is no specific purpose for listening other than to understand the main idea and as much supporting detail as possible. Without being told what to listen for, learners were given repeated occasions to listen to a text with opportunities to anticipate and selectively attend, monitor for congruency, solve difficulties, and evaluate their success. By engaging in these metacognitive processes over time, independently and with a peer, learners presumably acquired implicit knowledge about L2 listening through task performance.[2]

Acquisition of implicit knowledge through task performance takes place incrementally over time as listeners engage in actual task performance (Johnston & Doughty, 2006). Learners who engage in a complex task (such as listening) over time, and with very limited knowledge, acquire implicit skills as they make the decisions necessary to perform the task by exploiting newly acquired information as they work (Sun, Merrill, & Peterson, 2001). This involves the development of cognitive fluency as listeners associate connected words and expressions with meaning (access fluidity) and focus and refocus their attention in real time to the unfolding message (attention control) (Segalowitz, 2007). Performance improves over time as listeners carry out the task, and improvement is significantly enhanced when this listening practice includes opportunities to explain or reflect on the decisions required during the listening task as these are made (Pressley, 2002; Sun et al., 2001). In implicit learning during task performance, listeners are not told what to listen for, only that they need to reconstruct the meaning of the text to the best of their ability. As such, listeners in this study systematically orchestrated a continuous cycle of cognitive strategies (matching linguistic cues with word knowledge and co-text) and metacognitive strategies (making decisions and using real-world problem-solving strategies) to arrive at a coherent mental representation of the text in memory, similar to the participants in the Graham and Macaro (2008) and the Cross (2009a) studies. In sum, the guided listening practice used in the present study fostered the automatization of a cycle of cognitive and metacognitive processes (Sternberg, 1998), thereby fostering the acquisition of processing routines resembling those of an experienced listener (Field, 2008). This is similar to practice associated with skill acquisition theory, developing procedural knowledge through repeated practice until the behavior becomes automatic—that is, relatively fluent, spontaneous, and effortless processing (DeKeyser, 2007).

With regard to the second hypothesis—that the less skilled listeners in the experimental group would show greater improvement in listening comprehension achievement than their more skilled counterparts—the result is also an

unequivocal "yes." Presumably, the less skilled listeners do not transfer the natural approaches to listening from the L1 to the L2 and, therefore, benefit more from this kind of metacognitive instruction (Goh & Taib, 2006). An important difference between more skilled and less skilled listeners appears to be related to metacognition (i.e., the skillful orchestration of metacognitive processes to regulate learning and achieve comprehension; Vandergrift, 2003a). Therefore, a possible explanation for the success of the pedagogical cycle with the less skilled listeners is that they were led to uncover these listening processes through guidance from the teacher and their more skilled peers (Goh, 2008). Their growing metacognitive awareness of the listening process helped them to better regulate their comprehension (Pressley, 2002), which affected the outcome of their learning (Goh, 2008; Veenman & Spaans, 2005; Wenden, 1998).

With regard to the third hypothesis—that the less skilled listeners in the experimental group would report greater growth in metacognitive awareness of listening as measured by the MALQ—the results are mixed. Although the results do provide further empirical evidence for the benefits of raising learner metacognitive awareness about listening through instruction, particularly for less skilled listeners, any differences in reported growth of metacognitive knowledge about listening appear to hold only for Problem Solving and Mental Translation. The results for Problem Solving can be explained by the model of implicit learning through task performance described earlier; however, the results for Mental Translation appear to be counterintuitive. Progress at the beginning stages of L2 listening is often hindered by a compulsion to translate (Eastman, 1991; Osada, 2001). An important characteristic of skilled listening, particularly at early levels of language learning, is the ability to overcome a compulsion to attempt to process what one hears word by word. When listeners overcome the urge to systematically translate, they can allocate more attentional resources to metacognitive processes such as monitoring and problem solving (Goh, 2000; Vandergrift, 2003a). Data from the stimulated-recall protocols provided some insight into how participants may have been interpreting the MALQ statements related to translation. Based on the insights provided by these protocols, it is reasonable to surmise that the reported increased use of mental translation on the MALQ responses actually reflects an increased ability to identify the meaning of words. Presumably, participants had acquired greater lexical knowledge or they were able to inference more and could do so more accurately. This explanation would be commensurate with the increase in reported use of problem solving as listeners learned to use all information at their disposal to inference what was not understood.

The effects of exposure to and reflection on the MALQ statements by the control group also need to be noted. Although they did not experience the experimental pedagogical cycle, participants in the control group did complete the MALQ at three different points during the study. Each time that they considered and selected their degree of agreement with a MALQ statement, these participants were reflecting on the metacognitive and cognitive processes underlying L2 listening. The potential effect of this consciousness-raising in the control group cannot be minimized.

This study makes a number of important methodological contributions. Similar to the Graham and Macaro (2008) study, the listening test was very different from the experimental intervention, thereby ensuring that the test did not bias in favor of the experimental group and demonstrating strategy transfer to a different task. Second, using the same teacher to teach the experimental and control groups and ensuring, through observation, that the methodology for each group was respected were crucial to controlling for the very important teacher variable, a methodological principle also respected by Cross (2009a) but not Graham and Macaro (2008). Third, students at different levels of language proficiency (high-beginner and low-intermediate) were involved in and benefited from the intervention.

## Conclusions and Implications

This study provides support for a pedagogy of L2 listening comprehension that helps learners become overall strategic listeners by leading them through the metacognitive processes underlying listening. In particular, the results suggest that less skilled listeners can benefit the most from such an approach. We have argued that the success of the pedagogical intervention might be explained by the implicit knowledge about L2 listening acquired by learners through task performance, using reactive sequential decision making (see Sun et al., 2001). Instruction in the metacognitive processes of listening provides beginner-level learners, in particular, with the knowledge and tools necessary for the meaningful transfer of learning so that they know how to listen to and understand authentic texts inside and outside of the classroom. Using this approach to L2 listening can make authentic texts more accessible at beginning levels of instruction, thereby making language learning more relevant and interesting for these learners. Although the results are promising, replication of this study with learners of other languages and different ages in different learning contexts is desirable. There is also, as suggested by Goh (2008), a need for greater diversity in metacognitive activities

to address a wider range of learner needs. These need to be explored and researched.

The pedagogical cycle under investigation in the current study could be further enriched by adding a "bottom-up" component to the third phase of the cycle. After listeners have reconstructed the main points and most pertinent details of the text (after the second listen), they could be presented with a transcription of the text for consultation during the third or last listen. This would allow listeners to compare concatenated speech with its written form in order to match incomprehensible chunks of language with the visual representation of these sound segments (see Field, 2003, 2008; Hulstijn, 2003; Robin, 2007; Wilson, 2003, for examples). Not only could this stimulate interest in the third listen, but this step would also lead to greater noticing of words, expressions, and syntactic structures. Such a "noticing activity" is also advocated by Richards (2005) for purposes of language awareness leading to acquisition activities. Providing listeners with a transcript of the text during the third listen would likely lead to even more robust results for this pedagogical cycle. In research by Mareschal (2007), who added this component to the same pedagogical cycle under investigation in the current study, the oral-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 perfecting word recognition skills.

It should be noted that this approach to listening could become tedious if always carried out in the same way. In the present study, a rather generic approach was used each week in the same way. This did not go unnoticed by some of the participants who commented on the final questionnaire that they were becoming rather bored with the routine. The experimental approach adopted for this study can, however, be integrated with a specific text in different and more interesting ways. For example, chronological sequencing of events in a text, or prediction of specific information (see Vandergrift, 2002 and 2003b, for examples), can be structured so that listeners are still engaged in the same cycle of cognitive and metacognitive processes. When the cycle is incorporated into a specific listening text, the activity is much more contextualized and "bottom-up" oriented than the "top-down" orientation of the generic task used in this study. What is important is that learners be required to make predictions, evaluate and justify their predictions, monitor for congruency with predictions, and discuss discrepancies in order to establish specific objectives for selective attention during any subsequent listening to the text.

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## Notes

1 According to Cohen (1988), .24 is considered a medium effect and .37 is considered a large effect size.
2 We are grateful to Johnston and Doughty for pointing out the "tight parallels" between the pedagogical cycle under investigation in the current study and the acquisition of implicit knowledge during task performance.

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## Appendix A

### Metacognitive Awareness Listening Questionnaire (MALQ)

The statements below describe some strategies for listening comprehension and how you feel about listening in the language you are learning. Do you agree with them?

This is not a test, so there are no "right" or "wrong" answers. By responding to these statements, you can help yourself and your teacher understand your progress in learning to listen.

Please indicate your opinion after each statement. Circle the number which best shows your level of agreement with the statement. For example:

| | **Strongly disagree** | **Disagree** | **Slightly disagree** | **Partly agree** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|---|
| I like learning another language | **1** | **2** | **3** | **4** | **5** | **6** |

Please circle only **ONE** number for each statement

| | | | | | | |
|---|---|---|---|---|---|---|
| **1.** Before I start to listen, I have a plan in my head for how I am going to listen. | 1 | 2 | 3 | 4 | 5 | 6 |
| **2.** I focus harder on the text when I have trouble understanding. | 1 | 2 | 3 | 4 | 5 | 6 |
| **3.** I find that listening in French is more difficult than reading, speaking, or writing in French. | 1 | 2 | 3 | 4 | 5 | 6 |
| **4.** I translate in my head as I listen. | 1 | 2 | 3 | 4 | 5 | 6 |
| **5.** I use the words I understand to guess the meaning of the words I don't understand. | 1 | 2 | 3 | 4 | 5 | 6 |
| **6.** When my mind wanders, I recover my concentration right away. | 1 | 2 | 3 | 4 | 5 | 6 |
| **7.** As I listen, I compare what I understand with what I know about the topic. | 1 | 2 | 3 | 4 | 5 | 6 |
| **8.** I feel that listening comprehension in French is a challenge for me. | 1 | 2 | 3 | 4 | 5 | 6 |
| **9.** I use my experience and knowledge to help me understand. | 1 | 2 | 3 | 4 | 5 | 6 |
| **10.** Before listening, I think of similar texts that I may have listened to. | 1 | 2 | 3 | 4 | 5 | 6 |
| **11.** I translate key words as I listen. | 1 | 2 | 3 | 4 | 5 | 6 |
| **12.** I try to get back on track when I lose concentration. | 1 | 2 | 3 | 4 | 5 | 6 |
| **13.** As I listen, I quickly adjust my interpretation if I realize that it is not correct. | 1 | 2 | 3 | 4 | 5 | 6 |
| **14.** After listening, I think back to how I listened, and about what I might do differently next time. | 1 | 2 | 3 | 4 | 5 | 6 |
| **15.** I don't feel nervous when I listen to French. | 1 | 2 | 3 | 4 | 5 | 6 |
| **16.** When I have difficulty understanding what I hear, I give up and stop listening. | 1 | 2 | 3 | 4 | 5 | 6 |
| **17.** I use the general idea of the text to help me guess the meaning of the words that I don't understand. | 1 | 2 | 3 | 4 | 5 | 6 |
| **18.** I translate word by word, as I listen. | 1 | 2 | 3 | 4 | 5 | 6 |
| **19.** When I guess the meaning of a word, I think back to everything else that I have heard, to see if my guess makes sense. | 1 | 2 | 3 | 4 | 5 | 6 |
| **20.** As I listen, I periodically ask myself if I am satisfied with my level of comprehension. | 1 | 2 | 3 | 4 | 5 | 6 |
| **21.** I have a goal in mind as I listen. | 1 | 2 | 3 | 4 | 5 | 6 |