

Inference-Making and Linguistic Skills in Listening Comprehension: An Observation of French Students Learning Chinese

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Abstract

Inference is an important strategy that could be applied in listening activities. It could help one to grasp the meanings of an oral message by analysing textual and contextual information. When the listener has difficulties in activities because of his poor linguistic skills, it is strongly recommended that he apply the inference strategy efficiently. But how and to what degree does this strategy influence a listener's performance? What is the relationship between one's inference capacity and one's linguistic skills in listening? In this article, we present two studies conducted with 16 French-speaking learners of Chinese. In the first study, we observed, by applying listening tests and a think-aloud protocol, how eight learners (at A2 level and B1 level of the Common European Framework of Reference for Languages) carried out listening tasks with audio-visual texts. In the second one, we observed the difficulties of another eight learners (at A2 level) who listened only to audio texts (i.e. not the same tasks as in the first study). The results show that when visual clues are available, a listener's performance is influenced to a certain extent by his capacity to apply the inference strategy. This capacity seems to be independent of his linguistic skills. Those who obtained high scores in the listening test could not always infer successfully when faced with an audio-visual presentation, while some of those who obtained low scores in the listening test showed a very strong capacity to make inferences with visual clues. Both of our studies demonstrate that a minimal linguistic level is required for successful listening comprehension, but the second study showed in particular that a low linguistic level handicaps listeners much more when they have only audio data available to them.

1 Introduction

Listening strategies can be defined as techniques or methods contributing directly or indirectly to the accomplishment of a listening task. Among the numerous listening strategies, inference-making is a very important one that is applied in all types of listening activities. It allows the listener to grasp the meaning of a message by analysing textual and contextual information. When the listener suffers with a task because of his poor linguistic skills, it is strongly recommended that he apply an inferencing strategy efficiently. But how and to what degree does this strategy influence the listener's performance? What is the relationship between one's inference-making ability and one's linguistic skills in listening? It seems that very little research about these questions exists, and that is why in this article, we present two studies that we conducted with 16 French-speaking learners of Chinese. Originally, neither of the studies was designed to directly observe the inference-making strategy, but the results of the two studies appeared to be very interesting and

might help to understand the relationship between inference-making strategy application and the listener's linguistic skills during a task.

2 Literature review

2.1 Inference-making in listening

According to the learning strategies taxonomy proposed by O'Malley and Chamot (1990), we can classify listening strategies into three categories: cognitive, metacognitive and socio/affective strategies. In listening activities, cognitive strategies refer to actions permitting the manipulation and transformation of the listening material, such as repetition, using one's available sources, translation, inference-making, the gathering of information and note-taking. Metacognitive strategies involve regulation or managing listening process; this includes planning, attention, control and self-evaluation. With regard to socio/affective strategies, they involve social-mediating activities and permit the listener to interact with his partners in a group task. They can also be used to reduce one's stress during a task.

But what is inference-making? According to Bailly (1998), it is an operation of logical reasoning during which one draws a consequence from a fact or a suggestion. In this article, we define inference-making as a strategy through which the listener uses acoustic, vocal, lexical or contextual information relevant to the listening material, and also his previous knowledge to guess the meaning of the message or to compensate for missing information. By this definition, we consider inferencing as a strategy that reflects the listener's ability to extract what is not explicated by the material but also to extract the meaning of an utterance that is unfamiliar to him.

2.2 Inference-making ability and linguistic skills in listening

Much of the past research has focused on the link between inference-making, vocabulary acquisition and reading comprehension (Bengeleil & Paribakht, 2004; Cain, Oakhill, & Lemmon, 2004; Laufer, 2003). However, few studies have addressed the relationship between the use of inference-making strategy and listening comprehension. We know that when the listener encounters a difficulty, he can rely on textual or contextual clues to get the meaning. He puts together the elements that he has recognised and realises what he has understood and what remains to be understood. However, very often, inferring while listening is very difficult and problematic (Wilson, 2003), because unlike readers who have the opportunity to return back to the passage they do not understand and take time to make inferences of the meaning, listeners have to follow the flow of the messages, trying to retain as much information as possible using their short term memory and infer meaning only by what is stored in their memory.

Some researchers emphasise the role of strategy training to strengthen listeners' inference-making ability. By offering a conscious and extensive work of using inference strategy, Poussard (2003) tried to help listeners automatise their inference-making ability when they listened to audio documents. Ridgway (2000), on the other hand, was not at all optimistic about the use of the inferencing strategy while listening. For him, listening comprehension and inference-making are both conscious cognitive operations and cannot occur at the same time because of the lack of time and the listeners' limited cognitive ability.

In listening we do not have the option of focusing our attention on something aside from the main argument of the text, and then returning to the spoken text, there is no time or mental capacity for other conscious operations. (Ridgway, 2000, p. 181).

Thus, Ridgway concluded that "teaching listening strategies such as making inferences is a waste of time" (2000, p. 184). Field (2000) did not agree with Ridgway, and reported that Ridgway's ideas were not consistent with the "interactive-compensatory theory," which was originally established for reading comprehension. According to this theory, there is a strong link between the

amount of information obtained through words presented in a document and that must be grasped via the contextual clues. When decoding is hard, readers rely on the context to get the meaning. Field (2000) believed that this assumption is much more relevant to understanding the aural message because of “the greater likelihood of gaps in what is understood” and noted that “[...] the listener relies heavily upon strategic techniques to supply missing pieces of text” (p. 190).

In our own view, when the learner encounters a difficulty, it is certainly very difficult to make inferences and listen at the same time. But making inferences while listening does not pose the same problem for everyone. Some listeners seem more able to apply this strategy than others. Field (2000) distinguished two types of listeners with two different learning styles: the first group consists *risk-takers* who are willing to make assumptions to guess meaning, even when they can identify only very little information of the message. The second group includes *risk-avoiders* who require a large amount of low-level information before interpreting the meaning.

Moreover, the ability to infer the meaning of unrecognised elements is not the same for all learners. This is largely justified in the area of reading comprehension. According to Hulstijn, Hollander and Greidanus (1996), inferential responses are influenced by at least two factors: possibility to access to contextual cues and learner’s verbal and nonverbal performance. Besides, the learner’s previous experiences can affect his inferencing performance. It seems that only learners with a problem-solving aptitude are able to integrate different available information, while others appear to struggle with this (Tréville, 2000).

As for the linguistic aspects, it appears that very competent learners show better flexibility in various inference-making processes. They can simultaneously implement contextual knowledge and use their language skills effectively (Coirier, Gaonac’h, & Passerault, 1996). Ellis (1997) also wrote that “learners need to have built up a sufficient L2 vocabulary to enable them to make use of the contextual clues available in the linguistic input” (p. 37).

By studying lexical inferencing in reading activities, Laufer (2003) reported that the ability to infer the meaning of unfamiliar words in a given context is not the same between native readers and L2 readers. Native readers may well take advantage of clues to infer meaning in an otherwise comprehensible context. However, L2 readers whose lexical repertoire covers less than 98% of the words presented in the text will have great difficulty with inferring the meaning of an unknown word by relying on the contextual clues:

The ability to infer unfamiliar words from context is not the same for L1 and L2 readers. L1 readers, who do not understand a small number of words in an otherwise comprehensible context, can make a good use of available clues. On the other hand, L2 learners, whose lexical coverage, i.e., the number of known words in the text, is below 98%, will have a considerable difficulty if they try to infer the meaning of an unknown word from context. (Laufer, 2003, p. 571)

Based on the results of extensive research, Pulido (2007) indicated that all learners depend on their prior knowledge to infer the meaning of unknown words when reading, but that advanced learners tend to make inferences more frequently than others. Pulido also stressed the importance of vocabulary knowledge and the familiarity of the topic before using the inference-making strategy. Regarding vocabulary, he explained that when learners possess more vocabulary, they also have more contextual clues from which they can interpret the specific relationships between the various elements:

When lexical access is laborious and/or inaccurate this strains the processing resources also needed for syntactic parsing, propositional generation, retention of information in working memory, and access to information in long-term memory. When learners know more vocabulary in a passage, they also have more available context and clues from which to interpret specific relationships among ideas, and any new vocabulary contained therein” (Pulido, 2007, p. 81).

In addition to the learner’s personal factors, the characteristics of the words presented and the nature of the activity may also determine the effectiveness of inference-making. For example, the morphology of a word may present a misleading transparency and induce the learner to make er-

rors (Laufer, 2003), as in the case of false friends. There is a risk of false inference when the word seems wrongly decomposable with sub-lexical units carrying meaning (Tréville, 2000, p. 70–72). That is why by inferencing, the learner could go in the correct direction but also get a derived meaning.

Given that the above studies are mostly in the field of reading comprehension activity, we would like to find out how the listener makes inferences. What factors affect his inference-making application? What is the link between one's inference-making ability and linguistic skills in listening? We will now present our two studies whose results might help to answer these questions.

3 Methodology for two studies

In listening activities, besides statistic scores obtained in different tests, it is very difficult to get detailed data describing listeners' way of processing the listening passages. To get more information about how they perform a task, we set up various listening situations, such as working with video and audio documents, listening to live presentations reported by a native speaker, listening alone, listening together in pairs, with the help of a teacher or a native speaker. We asked the participants to do listening tests, to do tasks with a think-aloud protocol, to interact in pairs or with the native speaker. We combined quantitative and qualitative methods to analyse the data. The quantitative data allowed us to evaluate listeners' linguistic skills in test situations and the qualitative analysis allowed us to observe their listening processes and strategy applications in detail.

As mentioned at the beginning of this article, the two studies carried out originally had different objectives. By comparing their results, we found that there might be a relationship between one's inference-making ability and listening performance. We also observed that linguistics skills might be crucial for listeners' inference-making and listening performance when listeners did not have visual clues. In the following parts, we will present the objectives, subjects and data collection methods of these two studies, before presenting their results in Section 4.

3.1 Study 1

In the first study, we aimed to observe how listeners' vocabulary recognition capacity affected their listening comprehension performance and how they carried out a listening task in different ways (working alone, in pair and with a native speaker).

3.1.1 Subjects

Four learners at the A2 level (2 boys and 2 girls) and four at the B1 level (1 boy and 3 girls) of the Common European Framework of Reference for Languages (CEFR), from Stendhal University in France, were randomly selected to participate in this experiment. They were all students who had chosen Chinese as an optional course and were all French native speakers. As we had designed some interactive listening tasks between learners and native speakers, we included two Chinese native speakers in our study. One of them was a girl learning Japanese and English at the bachelor's degree level, while the other was a boy learning French literature at the master's degree level. They had been in France for four years and both spoke fluent French.

3.1.2 Materials and data collection

The data were collected in three steps (see Table 1). In the first step, we wanted the learners to do two tests. Test 1 consisted in vocabulary recognition questions. The listeners were asked to listen to 50 isolated phrases and to fill in the missing words in those phrases. In Test 2, learners were asked to watch three short video dialogues and then to respond to questions or to do a written recall task in French.

In the second step, we wanted the learners to do two tasks by using a think-aloud protocol with a teacher: the listener was to report to the researcher everything he was thinking while he was performing the tasks. One task consisted in an 82-second video, taken from a Chinese television series named “Struggling”. Its level corresponded to the B2 level as defined by CEFR. It was a conversation between a girl called Linlin and her father. The father, separated from Linlin’s mother, was running a small shop to survive and did not see his daughter often. One day, Linlin went to the store with her boyfriend to visit her father. As it was soon Linlin’s birthday, the father gave his daughter money to buy a cake. Linlin refused but her father insisted. On her way back home, Linlin started crying saying that her father still thought of her birthday even though he was living so poorly. She then put the notes of money on a whiteboard in the living room, promising to work hard and give her father a better life one day. The learners were asked to explain why Linlin had cried on her way home. The second task was a 75-second audio interview between two Chinese native speakers. The listeners were asked to find out about the personal situation of the interviewee throughout the dialogue.

During the think-aloud tasks, in order to avoid cognitive overload, we paused a few seconds after each sentence which consisted in less than seven elements. An element could be a word or a small group of words. Most of the time, one element itself was a unit carrying a meaning. To make the test situation more natural, we allowed the learners to negotiate meanings with the teacher sitting nearby in French and to ask for repetitions (Berne, 1995). The teacher gave clarifications in Chinese.

In the third step, we asked the two native Chinese speakers to orally present their personal schedule of the week in front of each learner. The learners were then asked to fill in an information sheet. During this task, the learners could ask the native speakers to repeat or to modify their input by providing verbal and nonverbal feedback. Verbal feedback could be phrases like 再说一遍 (*zài shuō yíbiàn*) [Repeat once again]. Nonverbal feedback could be gestures such as nodding. The learners could only interact with the native speaker in Chinese and the native Chinese speakers, in turn, would exclusively communicate with the learners in Chinese. All tasks in step 2 and 3 were recorded by a video camera.

Table 1. Data collection procedure for Study 1

	Step 1		Step 2	Step 3
	Test 1	Test 2		
Types of questions or tasks	Filling in missing words in phrases	Answering questions and doing a written recall report	Think-aloud task	Think-aloud task
Types of documents	50 isolated audio phrases	3 short video dialogues (less than 1 minute)	1 video conversation (82 seconds); 1 audio interview (75 seconds)	1 oral live presentation by a NS (Native Speaker) (about 1 minute)
Issues concerned	Asking for directions; at a hotel, etc.	Asking for directions; at a hotel, etc.	Emotion; Personal situation	Personal schedule
Level	A2 and B1	A2 and B1	B1 and B2	B1
Working way	Individual	Individual	Individual with 1 teacher	Individual with 1 NS
Main aspects to observe	Word recognition capacity	Listening comprehension skill	Listening comprehension procedure	Listening comprehension procedure with interactive tasks

3.2 Study 2

The second study was originally conceived to observe issues that cause difficulties for learner's listening comprehension when they perform a pair task with the help of a native speaker. Study 2 was conducted one year after Study 1.

3.2.1 Subjects

In this study, another 8 learners at A2 level from Stendhal University were chosen randomly. They had chosen Chinese as an optional course. There were 3 boys and 5 girls, all aged from 19 to 25 years old. Two other native Chinese speakers were invited to join in the tests. They were students in French literature at the master's degree level, both aged 22, speaking fluent French and English. One native speaker had been in France for 2 years and the other just arrived from China.

3.2.2 Materials and data collection

Three observation sessions were set up over a period of six months. In each session, the learners were asked to work in pairs. They were required to listen to audio documents and to answer questions with the help of the two native speakers, the first of whom through face-to-face meeting, and the other one over the Internet. For each mode of working, the learners had to listen to two audio files. They were given about ten to fifteen minutes of interaction time to finish their task.

All the listening materials used were audio documents (see Table 2), recorded at a natural speed. For some documents, we asked the listeners to write down everything they understood in French, so as to perform a written recall. For other documents, we asked them to fill in information sheets or to answer specific questions.

During the pair work, one of them controlled the audio documents on a computer, and was free to pause and repeat the document as many times as they wished. They were also allowed to ask for help from the native speaker. After tasks in pairs, we asked them to explain some of their strategies used during the test. All the work in pairs was filmed with a video camera.

Table 2. Documents used for Study 2

No	Topic	Time (in seconds)	Type of documents	Gender of voice (Male / Female)	Type of activity
1	Mobile calling	13	Dialogue	F + F	Written recall
2	Mobile phone message	9	Monologue	F	Written recall
3	Presentation	20	Monologue	M	Filling in information sheet
4	Directions	26	Monologue	F	Mapping out itineraries
5	At the restaurant	19	Dialogue	F + M	Answering questions
6	Mobile phone message	7	Monologue	F	Written recall
7	At a hotel reception	17	Dialogue	F + M	Answering questions
8	Calling	13	Dialogue	F + F	Written recall
9	At a hotel reception	15	Dialogue	F + M	Answering questions
10	Presentation	19	Monologue	M	Filling in information sheet
11	Directions	33	Monologue	F	Mapping out itineraries
12	Invitation to the restaurant	15	Dialogue	F + M	Written recall

4 Results

4.1 *Different reactions to the same indices*

It had been assumed that learners who scored well in the vocabulary recognition test would also get a good score in the video comprehension test and vice versa. However, the results showed that this was not always the case. While our data was not statistically significant for us to compare the learners and their scores in the different tests, it was noted that learners who ranked at the top (or the bottom) of the list were not the same in the vocabulary test and the comprehension test. Some who did quite well in the vocabulary test ranked behind in the comprehension test (E7), whereas others scored higher in the comprehension test and lower in vocabulary (E8).

Besides, we noticed that most learners (seven out of eight) recognised fewer words in the vocabulary test. For example, in the case of learner E3, although he recognised six words in the video comprehension test, only two of the same words were recognised in the vocabulary test. For E8, the results were almost identical: only two out of seven words were recognised.

As we mentioned above, the vocabulary test and the comprehension test took place in two different sessions. Corrective feedback was not provided for the vocabulary test before the dialogue comprehension test. Thus, the repetition effect and the learning effect from one test to another should be rather insignificant. We think that compared to the vocabulary test, the video comprehension test provided a visual context where the learners could observe the actors, the places where the conversations took place, the facial expressions, gestures and so on, whereas in the vocabulary test, learners had to rely solely on what they heard and what they understood of the document. This difference between the two tests might suggest that the vocabulary test was more difficult than the video comprehension test.

Nonetheless, given the same contextual and visual cues, why did some learners with better vocabulary test scores not understand better or as well as others with lower scores? During the think-aloud task in which we asked the learners to describe their thinking processes while listening to dialogues, and the interactive test in which we observed how the listeners performed a certain task by negotiating meaning with a native speaker, we found that, in fact, there was a large difference in terms of the inference-making ability among different learners. Some could quickly grasp the meaning of a statement or the intention of the speaker by just seeing images and gestures and sometimes even understanding very few words; contrary to them, others having understood most or all of the words of the statement, took much longer to find the meaning.

More specifically, the test results of two learners E1 and E2 (at the A2 level) and two learners E5 and E8 (at the B1 level) showed a fairly large discrepancy between their scores in the vocabulary and comprehension tests. E1 and E5 had high scores in vocabulary recognition (60 and 68 respectively, see Table 3), but their comprehension scores were all below average (54.5 and 60.6, see Table 4). Conversely, E2 and E8 had relatively lower scores in vocabulary recognition (52 and 60 respectively), while they obtained better scores in the comprehension test (66.7 and 69.7 for E2 and E8). How is that possible?

Table 3. Vocabulary test scores in Study 1

Rank	Learner	Test scores (%)
1	E5	68
2	E7	67
3	E6	63
4	E8	60
4	E1	60
6	E3	57
7	E2	52
8	E4	48
Mean		59.4

Table 4. Video comprehension test scores in Study 1

Rank	Learner	Test scores (%)
1	E6	78.8
2	E8	69.7
3	E2	66.7
4	E7	62.1
5	E5	60.6
6	E1	54.5
6	E3	54.5
8	E4	51.5
Mean		62.3

During the think-aloud and the interactive tasks, we found that on many occasions, E1 and E5 made fewer inferences as compared to the other learners. For example, during the think-aloud task, E1 expressed several times that he understood all the words, but that he could not grasp the general meaning:

Extract 1

E1: (...) I recognised a lot of words/ but once again I have difficulties in understanding the meaning of the sentence

It was the same case for E5. During the interactive task, the native speaker explained the word 香蕉 (*xiāngjiāo*) [banana], using the same gestures and explanation individually to E5, E6 and E8. E6 and E8 were able to correctly derive the meaning after 10 seconds and 13 seconds, while E5 took three times as long (40 seconds) to guess it. Similarly, during the free conversation time of this test, the native speaker explained the word 橄榄油 (*gǎnlǎn yóu*) [olive oil]. After 3 minutes, E5 confirmed that he still had not understood the meaning. We informally repeated the same explanation to another learner whose language level was much lower. This second learner grasped the meaning of the word in less than one minute.

Contrary to E1 and E5, E2 and E8 proved that they were more capable of making inferences. E2 had a lower score in the vocabulary test than E1, but in the think-aloud task, E2 managed to combine his limited linguistic information with the contextual clues to infer the correct meaning. Referring to the video think-aloud task where we asked the learners to watch a Chinese television series, in the video, the girl Lin Lin refuses her father's money. Back home, she cries and tries to attach the bank notes her father had given her to a white board, saying to herself: 早晚有一天我要让您过上好日子 (*zǎowǎn yǒu yītiān wǒ yào ràng nín guòshang hǎo rìzi*) [Sooner or later, I will let you live a better life].

In the following three excerpts (Extracts 2, 3, 4), the teacher (T) repeated Lin Lin's phrase individually to three learners E2, E5 and E8. They, in turn, explained to T what they understood about the situation that they were watching in this passage.

In Extract 2, E5, who had obtained the best score in vocabulary among all the 8 learners recog-

nised a majority of the words of this sentence (lines 2, 4, 6, 10 & 12). Moreover, the teacher also translated a word that he had not clearly understood before (line 7). In spite of this, E5 was unable to grasp the correct sense of the sentence once again (line 14).

Extract 2

- (1) **T:** 早晚 / 有 / 一天 / 早晚 / 有 / 一天
(*zǎowǎn / yǒu / yītiān / zǎowǎn / zǎowǎn / yǒu / yītiān*)
[sooner or later / have / one-day / sooner or later / sooner or later / have / one-day]
- (2) **E5:** she said “one day I want”
- (3) **T:** yeah good 早晚 / 有 / 一天 / 我要 / 让 / 您 / 过上好日子
(*zǎowǎn / yǒu / yītiān / wǒ yào / ràng / nín / guòshang hǎo rìzi*)
[sooner or later / have / one-day / I want / to let / you / live a better daily-life]
- (4) **E5:** she wants
- (5) **T:** well 让 / 您 / 过上好日子 / 让 / 您 / 过上好日子
(*ràng / nín / guòshang hǎo rìzi / ràng / nín / guòshang hǎo rìzi*)
[let / you / live a much better life / let / you / live a better daily-life]
- (6) **E5:** I think *ràng* is “to invite”
- (7) **T:** 过上 (*guòshang*) is “to live”
- (8) **E5:** yeah
- (9) **T:** 过上好日子 (*guòshang hǎo rìzi*) [to live a better daily-life]
- (10) **E5:** *hǎo* must be “good”
- (11) **T:** huh 日子 / 好日子 / 日 (*rìzi / hǎo rìzi / rì*) [daily-life / better daily-life / day] what do you think of 日子 (*rìzi*) [daily-life]
- (12) **E5:** I think of “the day”
- (13) **T:** it is
- (14) **E5:** I cannot see / in the whole phrase I cannot see what that means

Contrary to E5, E2 recognised the word 日 (*rì*) [day] in Extract 3 (line 2) and immediately made an assumption on the general meaning of the sentence (lines 2 & 6). Even if his interpretation was unclear, the direction he took to infer the meaning was quite consistent with the meaning.

Extract 3

- (1) **T:** 早晚 / 有 / 一天 / 我要 / 让 / 您 / 过上好日子
(*zǎowǎn / yǒu / yītiān / wǒ yào / ràng / nín / guòshang hǎo rìzi*)
[sooner or later / have / one-day / I want / to let / you / live a better daily-life]
- (2) **E2:** *yitian* that could be “one day”
- (3) **T:** yeah
- (4) **E2:** and after that?
- (5) **T:** 早晚 / 有一天 (*zǎowǎn / yǒu yītiān*) [sooner or later / have one-day] *silence*
- (6) **E2:** I would say since the statement ends by the words “a day” / it might be a sort of assumption or projection about something that she made for the future
- (7) **T:** that’s it!

In Extract 4, E8 who had also recognised the single word 一天 (*yītiān*) [someday] (line 4), seemed much more sensitive to images and this aptitude helped him to infer meaning with more success (lines 2, 10, 13).

Extract 4

- (1) **T:** 早晚有一天我要让您过上好日子
(*zǎowǎn yǒu yītiān wǒ yào ràng nín guòshang hǎo rìzi*)
[sooner or later, someday, I want to let you live a better life]
- (2) **E8:** so without understanding what / what she said / I guess that in fact / perhaps / well / she put the bank notes / she won’t spend them / she thanked her father and then she said “well, maybe” / I have not / not grasped
- (3) **T:** 早晚有一天我要让您过上好日子
(*zǎowǎn yǒu yītiān wǒ yào ràng nín guòshang hǎo rìzi*)
[sooner or later, someday, I want to let you live a better life]

- (4) **E8:** so *yitian* “someday” / well I think I have the impression she wants / as a daughter / a daughter / she wants to help her father / so she made a promise apparently hanging symbolically the bank notes on the whiteboard
- (5) **T:** yeah?
- (6) **E8:** and uh: it is a promise that she made to her father to change his poor life
- (7) **T:** very good
- (8) **E8:** but I’m not sure / these are only the assumptions
- (9) **T:** but you know / how did you guess these? what did you rely on?
- (10) **E8:** the pictures *laughs*
- (11) **T:** pictures?
- (12) **E8:** finally what I said / what I guessed before *silence*
- (13) **E8:** I figured with images there because I did not understand anything about what she said except the word *yitian* which went towards someday or promise / she wanted to get his father out of the [...]
- (14) **T:** very good very good!

We found other similar cases: for example, in the same think-aloud task, upon hearing 礼物 *lǐwù* [gift], some thought it was a first name, because its pronunciation sounded like 刘 (*Líu*), a Chinese surname. Before listening, the learners knew that the girl went to see her father with her boyfriend, thus they mistakenly inferred that *lǐwù* was the name of the boy. Another example can also be observed in this task: after having watched the scene at the store between the daughter and the father, some learners assumed that the girl did not have enough money to enjoy life, that the girl was angry with her father, that she became angry with her boyfriend, or that the father did not allow her daughter to go out with her boyfriend.

Our results showed that when visual cues are available in listening activities, listeners’ ability to apply the inference strategy varies from one student to another. All listeners are not sensitive to the same images and gestures. Although the context information and images in video documents provide many clues, the information does not ensure that all listeners follow the right direction in establishing meaning. Different individuals might have very different interpretations by seeing the same scene and this does not necessarily depend on the level of linguistic skills. Sometimes the ability to make inferences can compensate for linguistic failure and can help the listener to detect the correct meaning of the message. This might perhaps explain the weak link between the scores of the vocabulary recognition test and the video comprehension test in our first study. This demonstrates also that applying the strategy of inference in video and interactive tasks is too difficult to be measured and controlled.

4.2 Inference is further limited by weak lexical recognition skills

The think-aloud task allowed us to see that even if the listener is able to recognise one or more elements, the small amounts of information obtained may not always allow him to infer the general meaning. Many learners have encountered this situation (See E1, E2, E4, E6, E8 in Table 5 below). Table 5 shows the number of times that recognised items were not sufficient to infer the overall meanings.

Table 5. Non-inference of overall meanings based on recognised items

Learner	Number of times that recognised items were not sufficient to infer the overall meanings
E1	1
E2	1
E3	0
E4	3
E5	0
E6	1
E7	0
E8	1

When few linguistic data were available, or when there was failure to obtain linguistic information, inference was inoperative or ineffective for the majority of learners. In the extract below, the teacher repeated the exact same phrases as in the television series, while participant E4 explained what he was thinking:

Extract 5

- (1) T: 早晚有一天我要让您过上好日子
(*zǎowǎn yǒu yītiān wǒ yào ràng nín guòshang hǎo rìzi*)
[sooner or later, someday, I want to let you live a better life]
- (2) E4: so *yǒu yī / yī* is / having *tiān* is / *yī* is the number / once / so *yǒu* uh: for me they speak of the past / of what happened before / but **shaking his head** sorry I cannot understand

Out of 14 syllables, the learner recognised 3 (*yǒu*, *yī*, *tiān*). For two of these, he attributed a distinct meaning (“have” for 有 (*yǒu*) and the number “one” for 一 (*yī*)). However, the two syllables *yǒu* [have] and *yī* [one] together do not give a significant meaning in that sentence. We also have to combine them with *tiān* [day] to form the phrase [(there will be) one day], or *yī* [one] with *tiān* [day] to give the same meaning. However, E4 was unable to recognise the meaning of *tiān* [day], and with the little information obtained, he was not able to infer the overall meaning, which then led him to give up the task (see line 2).

In a separate example, the teacher asked the learner E1 during the interview about where the interviewee lived, to which the expected answer was “St-Martin d’Heres”. The teacher continued the recording and repeated both the question and the answer of the following statement (see Extract 6, line 1).

Extract 6

- (1) T: 是学生公寓还是什么? (*shì xuéshēng gōngyù háishì shénme?*) [is it a student residence or what?] my question is 是学生公寓还是什么? 不是, 自己租的房子 (*shì xuéshēng gōngyù háishì shénme? bú shì, zìjǐ zū de fángzi*) [is it a student residence or what? no, I rent an apartment]
- (2) E4: um: “what kind of public transportation do you use? I do not use public transportation I ride my bike” **looking at the teacher** am I wrong?
- (3) T: Did you understand this?
- (4) E4: yeah because I / I actually used a single word to understand the sentence / it is 公 (*gōng*) / which means “public” / right?
- (5) T: 是学生公寓还是什么? (*shì xuéshēng gōngyù háishì shénme?*) [is it a student residence or what?]
- (6) E4: it is / what I understood / 公 (*gōng*) / I thought it means “public” / “what do you use as public transportation” / then I heard in response 不 (*bù*) [no] + so that means “no I do not use” / then I understood 骑车 (*qíchē*) “bike”

In this excerpt, E4 did not understand the question, but recognised a word 不 (*bù*) [adverb of negation] (line 6). He had also identified the sound 公 (*gōng*) and translated it as “public” (lines 4 & 6). Based on this, he inferred the meaning of the whole message (lines 2 & 6). But the problem was that in this statement the syllable 公 (*gōng*) was not a lexical item; it has to be attached to the

syllable 寓 (yù) [house] to form the single bisyllabic lexical item 公寓 (gōngyù) [residence]. E4, then, being sure of the meaning “public,” inferred that it was perhaps public transportation. Then he thought he heard 骑车 (qíchē) [cycling] (line 6), which increased his confidence in his hypothesis.

In both Extracts 5 and 6, we see that if the listener encounters a difficulty in the target language, the quality of inference is far from satisfactory. When the number of words recognised is very small, it is almost impossible for the learner to make the connection between information from different sources. This result seems to be consistent with Ellis’s hypothesis (1999) and that of Laufer (2003), according to which a very limited vocabulary can damage the quality of inference.

We observed the same situation in Study 2. We mentioned that study 2 was originally designed to observe listeners’ difficulties during a task. For this purpose, we noted and analysed the moments in which learners showed signs of difficulties. This could be detected by observing interaction between pairs of learners and between learners and the native speakers when they asked for help. Unlike the first study in which we used a think-aloud protocol to collect data, in the second study, we asked the participants to interact with each other. Consequently, the learners could not perform the think-aloud protocol at the same time as the interaction. That was why we had access to very limited data in this second study. But the results obtained in Study 2 are nonetheless very helpful in revealing the relationship between the application of the inference strategy and linguistic skills in listening activities.

Table 6 shows that when learners asked their peers or native speakers for help, most of their difficulties were related to insufficient vocabulary knowledge (45.58%). This was either because they did not know the meaning of identified sounds or because they failed to recognise words already learned. The difficulties associated with weak auditory decoding skills came second (35.35%). In this category, we grouped all difficulties related to decoding, such as false perception, inability to discriminate or to segment. In the third place were the difficulties associated with the inference-making ability (14.88%). In this category, listening difficulties were caused either because the listeners were unable to make inferences or because the meaning that they had inferred was wrong. Apart from these three aspects, we have also listed difficulties in understanding the consistency of elements within the documents, and their cultural and methodological aspects.

Table 6. Categories of causes leading to listeners’ difficulties

Causes leading to listeners’ difficulties	Percentage of total number of difficulties (n=215)
Vocabulary	45.58 %
Decoding	35.35 %
Inference-making	14.88 %
Other aspects (Consistency of meaning in the texts, culture or instructions)	4.19 %

Let us examine the difficulties concerning inference-making ability. In the first study, we found that inference-making ability greatly influenced the quality of listening comprehension. When there are visual cues, different learners had a very different understanding of the context. And when learners had language difficulties, they were not able to infer, or the result of their inference was poor. In the second study, in the absence of visual cues, learners needed to focus more on their listening to make inferences. Therefore, when they had a large linguistic gap, their ability to make inferences suffered more.

In the second study, we noticed that when learners were not able to infer meaning or when the meaning inferred was incorrect, it was often because of a failure in decoding. Although sometimes they were able to identify a few isolated sound forms, as we mentioned before, the information obtained was insufficient in quantity for meaning to be inferred. For example, in the restaurant task, the learners were asked to find out whether the customer had ordered drinks. Learner E4

heard a sound *jiu* in a group of words 就这些 (*jiù zhèxiē*) [just these]. The syllable *jiu* can have several meanings if the tone is not specified. These include 酒 “alcohol” in the third tone (*jiǔ*) and 就 “just” in the fourth tone (*jiù*). E4 thought that word meant alcohol and tried in this manner to understand if the customer had ordered drinks.

Extract 7

E4: If *jiu* is “beer” / ok not sure / if he asks for a bottle of / I cannot even grasp the meaning /

Of course, there were also cases where learners were able to infer meaning despite their difficulty in decoding. Sometimes they failed to identify sound forms, or could identify only partially audible forms, while they were still able to deduce the correct meaning of the statement. However, compared to the case where they were not able to infer meaning because of linguistic gaps, these successful cases were far fewer: 29% (See Table 7 below).

Table 7. Learners’ difficulties related to inference-making

Failure and success of inferring	Description	Number of cases	Percentage of total number of cases (n=45)
Comprehension problems related to difficulties in inferring the meaning	Unable to identify the sound forms, false inference	14	71%
	Unable to identify the sound patterns and unable to infer meaning	10	
	Able to identify isolated sounds but that is not enough to get a sense or to infer	8	
The learner was able to compensate for his language gap and was able to find meaning through inference	Able to identify the sound forms or able to identify some of the sound forms of a statement, and able to infer and find a correct meaning	13	29%

5 Conclusion

If we summarise the results of our two studies, we believe that the inference-making ability can greatly influence listening comprehension. When there are visual clues, learners implement this strategy differently. Some manage to infer meaning more easily and efficiently with fewer visual cues, while others do not. The effectiveness in implementing this strategy does not necessarily depend on the linguistic level of the individual. However, we assume that there is a threshold below which inference-making becomes inoperative or ineffective; this is what we observed in our second study. When visual cues are not available, the listener is more dependent on what he can grasp from the audio document to infer meaning. And when there are greater language difficulties, he is unable to identify the sound forms and cannot therefore infer meaning or only makes rather random inferences. In both cases, the quality of his inferential comprehension is very low. The second study has clearly shown that when learners listen to audio documents, the efficiency of the use of inference is supported by minimum language proficiency.

Our research provided some empirical data supporting the importance of the linguistic threshold in referencing. However, as Renandya (2012) has shown, the exact level of this threshold is not yet defined and the understanding the nature of the threshold for listening activities is an important area of research.

At the same time, our results implied that in elementary and intermediate listening teaching, the priority should be to reinforce listeners’ linguistic skills. As showed by results in the second study, the two main aspects that cause comprehension difficulties are related to the listener’s knowledge of vocabulary and his auditory decoding skills. These two aspects represent over 80% of all identi-

fied problems. The vocabulary knowledge seems to be the most influential factor for listening. Learners should not only broaden their vocabulary, but also strengthen their skill in recognising familiar words in a message.

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