Shadowing: an effective training tool?

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LIST OF ABBREVIATIONS

CI – Consecutive interpreting

EMCI – European Masters in Conference Interpreting

FTI – Faculty of Translation and Interpreting (University of Geneva)

MACI – Master of Arts in Conference Interpreting

SI – Simultaneous interpreting

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ABSTRACT

Initially used as an introductory exercise to simultaneous interpreting, shadowing is a monolingual language-processing task known to students and used in interpreter training institutions. Its effectiveness, however, has long been the subject of divergent views amongst professional interpreters and trainers. A mirrored survey was completed by all trainers and students at a top-flight interpreting institution (University of Geneva, Faculty of Translation and Interpreting), and data was gathered on the current prevalence and relevance of shadowing in the training of future highly-skilled interpreters. This survey revealed that shadowing was mainly used as introductory exercise to simultaneous interpreting in order to help students get used to speaking and listening at the same time and thus improve their fluency, but with very limited prevalence and firm restrictions to the first days or weeks of simultaneous classes. Overall, it did not seem to always be considered effective. However, it was also established that shadowing is used in a manner that avoids counterproductivity and provides benefits not directly related to the cognitive processes involved in simultaneous interpreting. Although limited in depth, the survey revealed discrepancies in the understanding of how shadowing can be of use, sometimes leading to mismatching strategies from students and possibly trainers. In order to further explore the effectiveness of shadowing, specific instructions based on existing research would have potential, and empirical data on the impact of shadowing performances on fluency would be essential.

INTRODUCTION

Overview

This MA thesis aims to explore the topic of shadowing more profoundly with a view to understanding if and why it can be an effective training tool in simultaneous interpreting training. Shadowing has been the topic of much discussion in interpreting literature, with trainers holding divergent views, some more nuanced than others. Yet, research on shadowing has been limited, and has thus far failed to provide concrete data on the effectiveness of this language-processing task in the training of simultaneous interpreting. This study will use a survey to collect data on the use of shadowing at a conference interpreting programme, analysing trainers' and students' views and practices, and identifying the extent to which these align with what has been established in specialised literature. Based on the data collected, this study also attempts to extract information on how the use of shadowing can be made most relevant.

Introduction

Widely known in the field of interpreter training and often used at training institutions (Riccardi, 2015), shadowing, i.e. the word-for-word repetition of a message heard through headphones (Cherry, 1953), was initially used in experiments on dichotic listening in the 1950s. The original object of study was the recognition of speech and split attention where two concurrent messages were presented to both ears. Because of the similar nature and setting of simultaneous interpreting (SI), shadowing went on to be included in interpreter training as a simplified variation of SI. It is intended as an exercise for trainees to perform before starting to actually interpret in the booth, helping them to become more comfortable with listening and speaking at the same time (Riccardi, 2015), before moving on to the more complex task of translating the message heard into another language. And yet, the practice of shadowing has given rise to comments such as « il est aux antipodes de tout ce qu'il faut faire » [it is the exact opposite of everything interpreting is] from outstanding interpreters and trainers (Seleskovitch & Lederer 1989, p. 168). This controversy is the basis for investigating why such a controversial exercise would be used in established training institutions.

The aim of this paper is to identify the role that shadowing plays as a training tool at one highly renowned conference interpreting institution, the University of Geneva's Faculty of Translation and Interpreting (FTI). Considering the FTI's status, also the oldest formal conference interpreter training institution (Moser-Mercer, 2015), it can be regarded as an example of an effective interpreting curriculum. The rationale is that the current relevance of shadowing in the training of highly-skilled interpreters will be ascertained more reliably through this systematic approach than through mere anecdotal accounts.

This thesis starts with a review of existing literature on shadowing and related aspects, such as memory and dichotic listening. As shadowing was initially considered as an introductory exercise, the literature review attempts to describe how shadowing is related to and differs from SI, not only in terms of setting, but also as regards cognitive processes. This chapter relies to a large extent on research into the cognitive processes involved in SI by Gile (2009) and Seeber (2011). The many arguments raised both in favour and against the use of shadowing are then presented and classified, with a focus on identifying which data might help settle the debate.

The empirical part of this thesis is designed to gather data and feedback on the actual use of shadowing on an interpreting programme, the Master of Arts in Conference Interpreting (MACI) at the FTI. To this end, all trainers and current first and second-year students at the FTI were invited to take part in a mirrored survey on the LimeSurvey platform. Both groups were asked to respond to similar questions from their perspective, without knowing that the other group was answering the same questions. Results from both surveys were analysed and cross-checked in order to reveal trends on the use of shadowing, potential discrepancies, areas of uncertainty, and finally, which general position and specific arguments the FTI subscribes to.

Research question and hypothesis

The fundamental question for this study is, "how, when and why is shadowing used on today's top-flight conference interpreter training programmes?"

- In response to the question of how, information will be gathered on the prevalence of shadowing in interpreter training: how often it is introduced in classes and which form the exercise takes; which methods are employed to include shadowing exercises in a student's learning process. Contrasting the literature with information on the in situ use of shadowing will provide insight into the current popularity of the exercise in its original form, with its original purpose.

- The question of when shadowing is used focuses on the point in time at which trainers consider the introduction of shadowing most relevant. Data on this point will show whether shadowing is really perceived to be closely linked with the introduction of SI.

- Finally, the question of why will highlight trainers' reasoning, and students' understanding of arguments raised to support either the use or rejection of shadowing. This point should facilitate the exploration of how accurately shadowing is understood, whether misconceptions continue to prevail, and what data would help in consolidating views on the effectiveness of this training tool.

The starting point for this study is the hypothesis that shadowing is currently used to a very limited extent by trainers on a good interpreting programmes. We assume that shadowing is considered to be of little help, if not altogether dispensable, in terms of students becoming more fluent in SI in the long term. We aim to identify the reasons behind such positions. Shadowing is a well-known exercise and is not completely absent on the FTI curriculum, yet it seems it may not be considered an essential part of the curriculum. It is instead used briefly to address specific problems or at particular stages, such as in early SI classes. This study may also reveal that the opinion of students aligns with that of trainers.

OBJECTIVES AND AIMS

Overall Objective

The overall objective of this exploratory research is to gather empirical data on the use of shadowing that would bolster views on its effectiveness, or lack thereof, as a training tool in SI training.

Specific Aims

The specific aims of this study are: first, to summarise existing literature on the topic and related subjects; and second, to devise a meaningful experiment that will help gather relevant data on the current use of shadowing. It is worth mentioning here that this thesis was done during the Covid-19 pandemic, which means that possibilities in terms of experimenting were greatly limited by safety restrictions. Based on the resulting gathered data in the given circumstances, the third aim is to discuss the results, compare them with existing literature, and draw conclusions that will fuel further scientific research on shadowing, hopefully carried out under more convenient circumstances.

BACKGROUND AND SIGNIFICANCE

1. Research on shadowing and what it revealed

1.1. Origins of shadowing

1.1.1. Definitions

Shadowing is an auditory tracking task that consists of repeating a message heard over headphones out loud and verbatim (Cherry, 1953). Norman (1976) defines two types of shadowing: *phonemic* shadowing, and *phrase* shadowing. Phonemic shadowing focuses on sounds, repeated back by the shadower as soon as they hear them. Shadowers do not need to understand the meaning of what is being said in order to repeat and follow the original speaker closely. Phonemic shadowing thus implies a shorter lag. Phrase shadowing, conversely, is about understanding a unit of meaning before repeating it. A shadower follows the speaker at longer intervals, and repeats content once it makes sense to them (Norman, 1976).

1.1.2. Shadowing in experiments on dichotic listening

Shadowing was first used in research in the 1950s in a study on dichotic listening carried out by Cherry (1953). Dichotic listening, later used more systematically by Broadbent (1958), consists of presenting one message to the right ear, while another is presented to the left ear. Cherry's experiment investigated subjects' ability to recognize and select one speech when two competing ones were simultaneously fed into each ear. His experiments showed that subjects had no difficulty in listening to one message while ignoring the other, and that it was easy for them to repeat what they were selectively listening to. However, he observed that they had little control over their production (Cherry, 1953). This was noticeable through the monotony of the subjects' voices, and the fact that they did not notice this monotony themselves. Broadbent's (1958) research in the same field led him to develop his "Filter Theory" that when a subject hears two different messages, certain stimuli are passed on by the nervous system while others remain blocked out. Although dichotic listening is different from shadowing since two tracks are being listened to simultaneously and one track has to be blocked out for the other to be accurately shadowed, it can be connected to shadowing in the fact that it does involves processing several tracks and finding out how to efficiently manage information from both sources. In shadowing, the subject also has to process two

auditory tracks, one of them being the one they produce. That being said, shadowing as referred to in the following paragraphs only involves listening to one track and repeating exactly what is heard over headphones.

1.2. Shadowing and simultaneous interpreting

1.2.1. A definition of simultaneous interpreting

Simultaneous interpreting (SI) is “the mode of interpreting in which the interpreter renders the speech as it is being delivered by the speaker into another language with a minimal time lag of a few seconds.” (Diriker, 2015, p.382).

Like shadowing, SI is a language-processing task that involves monitoring two messages simultaneously: what is being heard over headphones, and what is being said in the microphone. Unlike shadowing however, SI involves bilingual language processing in order to produce a message transformed into the same message in another language. As Seeber (2011) notes, SI is “an instantiation of multitasking that requires the interpreter to engage in a language comprehension task and a (different) language production task at the same time” (p. 187).

This makes the language processing performed in SI more complex, in terms of the sub-processes involved, than the language processing required to perform shadowing. While shadowing involves repeating what is heard, SI demands several levels of analysis in order for an interpreter to extract meaning and produce a coherent message in another language. These levels can be described as phonological, lexical, syntactic, semantic and pragmatic (Seeber, 2011). In the following sections, it will also be explained that SI combines a larger amount of sub-processes than shadowing which, although they are not difficult to perform when taken individually, compete for a subject’s resources when combined. At this stage, it is worth underlining again that shadowing as defined here does not involve listening to two different tracks at the same time while shadowing one of them, which is the case in dichotic listening, but to listen to only one track that is rehearsed verbatim.

1.2.2. Early experiments on shadowing in SI

One of the earliest studies comparing shadowing and SI ("simultaneous translation") was led by Treisman (1965), and aimed to find out to what extent sequential constraints (words chosen at random in comparison to logical units of meaning, but delivered as if they formed coherent discourse) have an impact on shadowing performance. Treisman also hoped to measure the impact of working in a foreign language on performance, and to establish how much the complexity of translation made the speech transmission task harder than shadowing. Based on the percentage of words correctly shadowed or translated, Treisman measured variance between the source and the message produced by subjects. She observed that variance in the translation task was greater than in the shadowing task and identified several factors to explain it. One is subject's decreased familiarity with the source or target language when translating, and the ensuing increased decision load. In shadowing, the decision is easier: identifying the word heard and selecting the appropriate response (repeating the same word). When translating, a harder second decision must be made: after identifying the word or phrase, a different but equally appropriate response must be selected (the right translation) (Treisman, 1965). Treisman's experiment presents simultaneous translation as a variation of the shadowing task, laying the stress on the differing level of difficulty between the two tasks; SI is presented as a more difficult version of shadowing.

Later studies also focused on comparing SI and shadowing: Gerver (1974) assesses retention of prose after each task in order to exploring the underlying cognitive processes involved in SI. Other research aimed to observe which parts of the brain were involved in shadowing as compared to SI, and equally showed that the cognitive effort involved in SI was greater than when shadowing (Lambert, 1989; Darò & Fabbro, 1994).

1.3. Shadowing versus SI

1.3.1. Shadowing is not something the brain is used to

Based on the above, it could be concluded that shadowing is easy, but the literature explains the evidence does not necessarily mean the task is intuitive for the brain. Early research on shadowing led to useful findings on divided attention (when two simultaneous stimuli compete for a subject's resources) (Duncan, 1979) and on selective listening (when one of two simultaneous auditory messages is listened to while other sounds are ignored)

(Broadbent, 1958). Early research also explored the limitations of our ability to process information and our ability to perform several tasks at once. Referring to Miller's work on psychology (Miller, 1963), Lambert writes that it is exceptional for the human brain to both listen and speak (Lambert, 1989). She points out that we are used to listening first, then speaking rather than doing both at the same time. Early research shows that listening and speaking at the same time requires some effort (Broadbent, 1952). So, when it comes to SI, Lambert goes on to suggest that such a skill should be practiced at an early stage in SI training (Lambert, 1989).

1.3.2. The cognitive processes involved in SI

1.3.2.1. Gile's Effort Model

At this stage, it could be helpful to clarify the cognitive processes involved in SI to try and highlight how they may be linked to but also deviate from shadowing. The specific cognitive processes involved in SI have long been the subject of research, but decomposing them remains a difficult task (Diriker, 2015). Several cognitive models, i.e. representations of the mental sub-processes involved in SI (Setton, 2015), have been investigated over time. One of them, Gile's Effort model (2009), focuses on several interpreting efforts that compete for the interpreter's attention or processing capacity:

- Listening and analysis, which includes all comprehension-oriented operations, from basic hearing of the message to understanding what it means. Listeners must be able to relate the sounds heard to knowledge stored in their long-term memory in order to properly analyse it. Gile points out that this effort goes beyond mere speech recognition and must involve some degree of semantic representation such as analysing the plausibility of the speech, as well as some degree of anticipation. To him, there is observable evidence that it must take effort to understand the source speech that goes beyond simply recognizing words.

- Memory: Gile explains that SI also involves a series of successive short-term memory operations; the information to be verbalised is stored for the few seconds it takes to

produce a target message. The concept of short-term memory is only briefly mentioned here, but the following chapter will provide a more detailed definition.

- Production refers to the interpreter's output. This process spans a number of operations from having a semantic, mental representation of the message heard, to planning and delivering speech in a different language, while monitoring and self-correcting if necessary. As Gile explains, young interpreters are encouraged to step away from the original structure of the source message and consider this mental representation, the meaning, as they plan the utterance of the target message. Simply reproducing the source structure entails the risk of delivering an incomprehensible message.

- Finally, coordination consists of combining the three other core efforts Gile identifies.

Gile's Effort model points to one obvious difference between shadowing and SI: the production effort. Shadowing consists of repeating the message, which means that the increased capacity required in interpreting to produce different content but the same message based on a mental representation is absent. The remaining three elements may also apply to shadowing, however. SI requires active use of the semantic representation of the message in order to properly word a different expression of the message in the target language. As is the case with shadowing, subjects must remain temporally close to the speaker to avoid overloading their short-term memory. Additional lexical and syntactic choices are necessary, though, in order to produce a message compliant with target language norms (Gile, 2009) as well as extralinguistic strategies, in order to produce a message equivalent in meaning to the original (Schweda-Nicholson, 1987).

1.3.2.2. Seeber's Cognitive Load Model

Seeber's Cognitive Load Model is inspired by Gile's Effort model but aims to represent the cognitive demands of SI by including an additional language comprehension task and language production task that compete for the interpreter's attention. Seeber departs from Gile's model, however, by accounting for the magnitude of the load of the different interpreting sub-tasks rather than assuming there is one undifferentiated pool of resources

for all tasks. This is based on Wickens' (1984) multiple resource model, a means of predicting multitask workload overload.

1.3.2.2.1. A word on the multiple resource model

Wickens (2008) defines three dichotomies, or dimensions, of information processing: *stages* of processing, *codes* of processing and *modalities* of processing. According to his multiple resource model, perceptual and cognitive tasks, that fall under stages of processing, use different resources as compared to executing an action, and that special activity, part of codes of processing, uses different resources to verbal or linguistic activity. The idea is that resources are more or less difficult to allocate depending on how a task is located in each dimension. According to Wickens, "to the extent that two tasks use different levels along each of the three dimensions, time-sharing will be better" (p. 450). So, when several tasks are performed simultaneously, they demand more processing capacity than if they were performed individually, and they interfere even more with each other if they are similar in the type of resources that they require.

1.3.2.2.2. Seeber's conflict matrix and resulting model

Seeber (2011) created a conflict matrix based on this multiple resource model, breaking down tasks according to their demands vectors, with perceptual and cognitive tasks for listening and comprehension on one side, and production and monitoring tasks on the other, allowing for the calculation of interference scores based on the degree of interaction between tasks. The conflict matrix allowed Seeber to reveal how some tasks have a higher "interference score" than others. As SI is, very basically, the combination of language comprehension and language production, Seeber established the interference score would be higher where two cognitive tasks performed simultaneously were for comprehension and production, but slightly lower if a perceptual task were being performed for comprehension while a cognitive task performed for production, and much lower where a perceptual task were being performed for comprehension while a verbal response (the execution of an action) were taking place for production.

The Cognitive Load Model has the advantage over Gile's Effort Model of reflecting the potential conflicts posed by an overlap of some of the subtasks involved in the SI cognitive process, and successfully quantifying the cognitive load imposed by the different stages of processing both for comprehension and for production, as well as showing how they interfere. Differentiating the resources tapped for each of these sub-tasks could also help more accurately assess the cognitive load involved in shadowing in comparison to SI, depending on the subtasks actually performed in shadowing.

1.3.3. Different areas of the brain are activated

Brain involvement provides further clues as to the difference in the cognitive processes involved in shadowing and SI, with some studies revealing variations in how areas of the brain are involved in each task.

As previously mentioned, Treisman explains the greater lag of subjects who interpreted in his study (rather than shadowed) as a result of the increased complexity of translating vs. shadowing (Treisman, 1964). In a study by Green et al. (1990), the brain activity of professional interpreters and bilinguals was compared in SI and paraphrasing as opposed to shadowing tasks. In the study, the difference was measured by observing subject's tapping with their left and right hands while performing these tasks in order to reveal how much a manual task was disrupted by the cognitive demands of shadowing and SI. The experiment indicated that interpretation was far more demanding of attentional resources than shadowing, and thus led to much greater disruption in tapping than in shadowing (Green et al., 1990). Moreover, analysis of outcomes for each hand offered insights into the involvement of left and right brain hemispheres, which varied depending on whether subjects were interpreting or shadowing: the study showed greater left-hemisphere involvement in the shadowing task, while no significant difference appeared for interpretation tasks. Another study by Tommola et al. (2000) used positron emission tomography, also known as PET, which provides an indirect measure of regional activity in the brain, to compare speech shadowing as a baseline task with professional SI. The study revealed an increased regional blood flow when interpreting into an A language in comparison to shadowing. Besides, "compared to shadowing, interpreting into the native language recruited a region anterior to Broca's area, as well as the left supplementary motor area." (Tommola et. al, 2000). In order

to explain this, Tommola et al. suggest enhanced processing in SI, considering that interpreters do not merely recognize words and translate word-for-word, but provide a completely new semantic representation of equivalent meaning, as explained in chapter 1.3.2. Such studies help demonstrate how the additional demands of interpretation in comparison with shadowing are reflected in the far greater cognitive efforts made by interpreters.

1.3.4. Shadowing sentences is better than random words

Research does not suggest that there is no need for logic or analysis in shadowing. Indeed, an experiment led by Rosenberg and Lambert (1974) showed it is possible to shadow at the phonemic level, where the shadower uses no information other than the word or phoneme heard. However, their experiment also revealed that shadowing of sentences was easier for participants than shadowing of random words, and that logical coherence between sentences affected subjects' performance. Using variably coherent versions of a passage for different groups, they observed that subjects had lower error scores when they were able to rely on "contextual cues", while the performance of subjects shadowing sentences presented in a random order were more disrupted. The relevance of contextual information in shadowing thus shows that comprehension plays a helpful role in the quality of a shadowing performance, bringing it closer to interpreting. Sentences are better shadowed than random words, and research has shown that even though interpreters are good at retrieving lexical information (Padilla & Bajo, 2015), they tend to work with larger units of information rather than with small lexical units, using what is called a segmentation strategy in order to be as efficient as possible (Meuleman & Van Besien, 2009).

1.3.5. Top-down and bottom-up processes in comprehension

In order to better understand the role played by comprehension in interpreting, it is worth taking a moment to look at *top-down* and *bottom-up processes*. Two types of cognitive processes are involved in comprehension and interact dynamically (Padilla & Bajo, 2015):

- bottom-up processes, which begin with the input, then progress towards a representation of the meaning of a message. Though this approach is compatible with the interpreting task, another essential set of processes are

- top-down processes, which begin with a conceptual representation of what is being said, going beyond the lexical features of the message heard and drawing on long-term memory. Top-down processes allow for a better understanding of the context, and underline the role of prior knowledge, which has been empirically proven to play a key role in interpreting performances.

It could be argued shadowing is only partially linked to the cognitive processes needed for comprehension in interpreting as it involves exact repetition of input. It might be expected that proximity to the input in the shadowing task would lead shadowing subjects to spontaneously adopt a bottom-up approach, especially in their native language, since a top-down approach would be of little relevance in making the message clear since the same thing is to be said as in the source message (it could be argued here that in a foreign language, a top-down approach may be more helpful in understanding what was meant to be said should subjects not be comfortable with the words used and have trouble acoustically grasp them). And yet, since both processes are essential to the interpreting performance, this could justify reservations about the relevance of shadowing as a pre-SI exercise.

1.4. The role of memory in shadowing

1.4.1. Definitions

Early studies on shadowing, though they did not focus on SI, explored some of the cognitive processes that underlie SI such as attention-sharing strategies, information processing and memory, as was described in chapter 1.3.2 on the SI process. At this point it is useful to define working memory and sensory memory in greater detail in order to better understand their role in dichotic listening and shadowing.

Working memory is a type of short-term memory used to hold information for short periods of time while it is being manipulated (Baddeley, 1974) and differs from short-term memory more generally in that the information stored is then used in some way. Sensory memory, on the other hand, is on the borderline between perception and remembering. This term refers to “the temporary persistence of information that has struck the senses, which lingers briefly as it is being comprehended” (Roediger, III et al., 2008). Visual persistence is called iconic memory, whereas auditory persistence is termed echoic memory (Roediger, III et al., 2008; Neisser, 1967). Broadbent (1952) also referred to echoic memory as an “S-system”; a very short-term storage system in the brain that comes into action even before perception.

1.4.2. Working memory and echoic memory in shadowing and SI

In an experiment on attentional strategies and short-term memory in dichotic listening, Bryden (1971) compares the use of working memory and echoic memory. His study shows that items processed by the attended ear were encoded and stored in the short-term memory, whereas items presented to the unattended ear were incompletely encoded and retained in the echoic memory. Bryden’s experiment is evidence that the ear has different properties that allow for different levels of retention or decay depending on how material presented to the ear is stored. In addition, neuroimaging taken during SI has shown that SI requires the use of working memory in order for interpreters to retain verbal information while continuously performing language and modality switches (Hervais-Adelman et al., 2011). This can be simplified by saying that working memory is the type of memory that helps interpreters store verbal information while they are doing something else. Storage strategies used in shadowing could thus have an importance in a subject’s shadowing performance, as well as in its relevance as a training tool for SI.

Despite this, past research and observations have led to largely divided views on the relevance of shadowing in interpreter training. The next chapter will provide more detail on the main arguments supporting the use of shadowing in interpreter training, and the main arguments against it.

2. Shadowing in interpreter training (and testing)

Shadowing has been used in various conference interpreting programmes both as a training and a testing method (Pöchhacker, 2015). It remains a source of profound disagreement both as a training and testing tool, however, with views on both sides substantiated by experience and research in the field.

2.1. The long-term use of shadowing in training

Proponents of shadowing tend to favour an atomistic approach to interpreter training; considering the many tasks involved, they see value in students spending time practicing individual subskills, rather than being thrown in at the deep end of an extremely complex cognitive task and having to "sink or swim" (Schweda-Nicholson, 1990, p. 33). In her paper on shadowing, Lambert advocates careful "planning and staging" when introducing trainees to SI, in order to improve students' chances of growing into the profession.

> "There are, in fact, so many ongoing activities involved during simultaneous interpretation that, in order for them to be effectively assimilated, not to mention understood, by prospective interpreters, any pedagogically sound approach should tease these ongoing activities apart, differentiate the component skills, and where possible, provide training experiences in each one." (Lambert, 1992, p. 265)

2.1.1. Training comprehension and recall for simultaneous listening and speaking

One subskill, as discussed earlier, is the ability to listen and speak at the same time. It is considered to be an unnatural activity for the brain that needs to be acquired (Miller, 1963; Lambert, 1989). Miller and Lambert believe that when the skill has not yet been acquired, a shadower tends to wait for a lull in the speaker's discourse before speaking. Novice interpreters could thus develop the unpleasant habit of waiting for a speaker to pause before saying something, and then have trouble breaking this habit over time (Lambert, 1992; Schweda-Nicholson, 1990). Shadowing exercises are suggested as the way to avoid falling into this habit. That being said, the idea that interpreters wait for pauses to speak was quickly debunked, and the simultaneity component is a constraint that is no longer questioned when defining SI (Diriker, 2015). But as an exercise that precedes actual SI from one language to another, shadowing is meant to help students at least become more comfortable with listening and speaking at the same time (Lambert, 1989).

The relevance of this point lies in the essential components of the SI process: as described in Gile's Effort model, comprehension is part of the "listening and analysis" effort, while "memory" is another. Early researchers on SI carried out experiments to investigate comprehension and recall, the retrieval of information from memory without any cue to help ("Recall", 2007) after different types of input processing. Gerver's (1974) study on the retention of prose in relation with simultaneous listening and speaking involved an experiment with nine trainee interpreters. The experiment showed that interpreters had higher scores in comprehension and recall after listening than after SI or shadowing. This suggests that the cognitive load involved in speaking and listening at the same time affects the performance of subjects' working memory (Lambert, 1988), as well as their comprehension. A later study by Christoffels & De Groot (2004) also compares shadowing performances with interpreting performances both simultaneously and with a delay (after the sentence heard had been fully uttered). Recall was assessed as part of the experiment, and results showed that having to listen and speak at the same time led to reduced recall in comparison to just listening.

Training how to better manage cognitive load when both listening and speaking, in order to better perform in the "listening and analysis" as well as "memory" efforts could be considered relevant in this regard. Proponents of the use of shadowing see this kind of practice as a good overall way of developing attention-sharing skills without the complexity of going from one language into another. Schweda-Nicholson (1990) suggests that shadowing with particular attention to retaining meaning helps trainees build the cognitive flexibility and anticipatory skills required in SI. This, however, remains a debatable argument if one considers that research, until now, has failed to show conclusive evidence of interpreters' superior working memory (Seeber, 2015) in comparison with non-interpreters. Besides, the relevance of practicing listening and speaking at the same time as a way to improve levels of comprehension and recall has to be further researched, because it is not yet clear to what extent speaking and listening at the same time affects comprehension (Seeber, 2015).

2.1.2. Learning to wait: the case for phrase shadowing

Schweda-Nicholson (1990) also sees shadowing as a good way to help trainees wait until a unit of meaning has been expressed before they start speaking, referring to phrase

shadowing in particular. As an intermediate step between phonemic shadowing and phrase shadowing, she advocates the introduction of an “adjusted lag” (p. 34), that is a lag that is specifically defined by a trainer and needs to be respected by the trainee so that they are not tempted to phonemically shadow. Trainees would then get used to finding out what an idea or a unit of meaning is before speaking, which is a process closer to SI and can be a relevant transitional form of practice.

2.1.3. Managing phonological interference

Another argument for the use of shadowing has to do with a subject’s ability to tackle phonological interference. A study by Darò & Fabbro (1994) focused on recall during SI, which is affected by the fact that subject had to listen and speak at the same time (Lambert, 1989). It was meant to determine whether phonological interference played a role in the reduced capacity of subjects’ working memory after shadowing and SI. In addition to confirming poorer recall of verbal material during SI, the study also stated that poorer recall was partially due to interference with the subvocal repetition of what is presented to the ear. In other words, having to simultaneously deliver verbal content in another language decreased subjects’ ability to silently repeat and recall the original message, in other terms it led to a less efficient use of working memory. The study observed that the shadowing condition, however, “represents an intermediate level of complexity between articulatory suppression and mere listening” (Lambert, 1994, p. 375), and that recall in this condition was neither significantly better, nor significantly poorer than when subjects were only listening. In this regard, shadowing can be regarded as a first stage in learning how to tackle phonological interference.

2.1.4. Automating the mother tongue

A further use of shadowing was advocated by practitioners such as Guichot de Fortis (2014), who mainly praises shadowing as a way to improve a B language, but also sees its benefits in helping trainees automate some aspects of an A language such as intonation, delivery or emphasis, and over the long term reduce the mental effort made to produce high-quality content in their mother tongue.

> "Shadowing initially involves repeating the words of the speaker without modification. This allows the interpreter's brain, ears and mouth, working as they do in concert, to begin to reproduce the sounds and rhythms of the target language, without conscious mental effort, and begins to create the 'linguistic muscle memory' naturally acquired by children learning their own tongue." (Guichot de Fortis, 2014, p. 14)

2.1.5. Beyond "just" shadowing: adding parameters to make monolingual exercises more effective

Advocates of shadowing suggest enhancing the task with alternatives or additional tasks to be carried out alongside shadowing. Schweda-Nicholson (1990) suggests making students write the days of the week or numbers from one to a hundred while shadowing. Kalina (2000, as cited in Gillies, 2018) has suggested shadowing content that contains mistakes, so that shadowers would be forced to correct them, and so would be forced to continuously pay attention to the source. Guichot de Fortis (2014) proposes conditions under which shadowing could be most efficient, such as varying the time lag to explore different levels of difficulty, writing poems or lyrics while shadowing, and introducing expressions of one's own to create semantic, but not substantive distance with the speaker, thus ensuring high levels of attention for meaning. These suggestions remain to be substantiated with evidence of their efficiency. For opponents of "plain" shadowing, such alternatives are the only way monolingual exercises should be approached. Another example would be Kurz (1992), who proposes Yes/No questions to be answered in the same language after listening to a message in the A language.

2.1.6. Shadowing into a B language

This study mainly focuses on the use of shadowing in a native language, which is in the field of interpreting called an A language. Interpreters' working languages are indeed classified as A, B and C languages depending on how fluent they are in them (AIIC, 2012).

- An A language is the interpreter's mother tongue in which they work from other languages in SI.
- A B language is a language in which the interpreter is fluent, without it being a native language. Like the A language, the B language is an active language, meaning that an interpreter can work from one or several other working languages into this language.

- A C language is one that the interpreter understands perfectly, without being able to speak it fluently. They will be able to interpret from this language into their A (and sometimes B) language.

Beyond shadowing into an A language, some trainers also advocate the use of shadowing for a B language (Gillies, 2013; Guichot de Fortis, 2014; Schweda-Nicholson, 1990; Setton & Dawrant, 2016). Schweda-Nicholson sees it as a good way to work towards near-native intonation and practice stress patterns that are not natural for a trainee speaking a B language. Guichot de Fortis also regards it as an essential exercise to improve a B-language, stating:

> "The prime goal of the exercise is to accustom brain, ears and mouth to the flawless and (eventually) effortless production of the sounds and cadences of what may be (in the case of a 'B') a foreign language. The goal here is to establish a new network of synapses and neuronal pathways, this being an essential stage in the interpreter's acquisition of each new language combination." (Guichot de Fortis, 2014, p. 14)

Even though some trainers are not in favour of verbatim shadowing as a sustained training tool, such as Setton & Dawrant (2016), they see the potential of such an exercise to imprint the forms and rhythms of a B language in a trainee that would need to acquire them through repetition, like a mother tongue. In this regard, trainees with a B language should turn to shadowing at a later stage of their training, and preferably basing themselves on high-quality speeches from eloquent speakers (Setton & Dawrant, 2016).

2.1.7. Shadowing in testing: identifying potential

Shadowing has also been considered useful as an eliminatory task for candidates to perform in entrance tests to interpreting programmes. In that regard, it is a way to determine a candidate's aptitude for this particular training course, and to find out who may not be suitable to the profession and should thus be discouraged at an early stage, (Lambert, 1992; Schweda-Nicholson, 1990).

> "Tests of ability to shadow at short distances, with increasing speed and complexity of the input message, could be valuable to us because they might well be predictive of a person's ability to become an efficient simultaneous interpreter" (Lambert, 1992, p. 266)

> "Other students have extreme difficulty from the start in saying one thing while listening to another. They may, for example, show no improvement after a five-minute shadowing passage on a screening examination. In such a case, these students may simply not be suited for interpretation. One of the great values of shadowing exercises is the ability to quickly identify those candidates who appear to be promising trainees." (Schweda-Nicholson, 1990, p. 33)

2.2. Long-term rejection of shadowing in training

Shadowing, for many trainers, is not regarded as a crucial, or even relevant exercise in learning SI. Some views against the use of shadowing go as far as to suggest that breaking down the learning of SI into several stages cannot be done as is the case with consecutive interpreting (CI) (Déjean le Féal, 1997). Some arguments favour an more holistic overall approach to SI training, while others advocate one that rejects shadowing at all stages. A number of these arguments will be detailed in the following chapters.

2.2.1. "Counterproductive parroting"

Several trainers and researchers in the field consider shadowing to be counterproductive as it fails to teach trainees the right reflexes: rather than learning to listen, trainees would learn to parrot mindlessly, repeating a message they do not even have to understand. Such criticism was famously espoused by Seleskovitch and Lederer (1989):

> "Aujourd'hui on sait que le problème n'est pas d'entendre et de parler en même temps et que l'exercice du "shadowing" est plus nocif qu'autre chose car il est à l'opposé de l'indispensable méthode interprétative. Il fait écouter là où il faut entendre, il se limite à la reconnaissance des mots là où il faut conceptualiser les unités de sens, il fait énoncer la langue de l'orateur au lieu de faire exprimer ses idées. . . il fait faire le perroquet là où il faut apprendre à devenir interprète au meilleur sens du terme, il prépare au calque au lieu de préparer à l'intelligence, bref il se situe à l'antipode de tout ce qu'il faut faire." (Seleskovitch & Lederer, 1989, p. 168)

Seleskovitch and Lederer strongly advise against shadowing as a method that contradicts what trainees should learn from the outset: looking past the words, learning how to convey units of meaning, and expressing the speaker's ideas intelligently rather than calquing and transcoding. Thiéry (1986) holds a similar view, writing that, as a trainer, he regards shadowing as a counterproductive practice that does more harm than good to trainees.

2.2.2. The case against phonemic shadowing

The case against shadowing as mindless and counterproductive parroting particularly targets one type of shadowing defined at the beginning of this section: phonemic shadowing, that only requires repeating phonemes or words, without waiting for units of meaning to be completed by the speaker. Coughlin (1989) stated that phonemic shadowing should be dropped altogether for it does not teach novice interpreters how to deal with units of meaning. Disapproval of phonemic shadowing by trainers who regard it as mindless parroting can be supported by studies showing that recall is either incidental or very limited. An experiment by Chistovitch, Aliarinskii and Abilian (1960) did show that when subjects shadow at a phonemic level and with a very short lag, they were not able to retain the message they shadowed even though the content produced was accurate. In a study on verbal retention when listening and when shadowing, Carey (1971) also observed that the best shadowers were the ones that had a shorter lag, but that they were able to rely more on their echoic memory, the mere sensory memory of sounds, than shadowers with a longer lag, who lost more of the content and syntax of the original content.

It is however interesting to consider whether lacking recall could be directly associated with a lack of comprehension, as defined in a previous chapter. As mentioned in section 2.1.1, recall is defined in psychology as the act of retrieving information from the past while lacking a specific cue to help in retrieving the information (“Recall”, 2007). Considering that SI relies heavily on the retrieval of information from memory, it can be argued that SI must involve better recall than the more mechanical task of shadowing (Gerver, 1974). Yet this view, in particular the idea of training recall as a subskill of SI, has been a topic of debate (Riccardi, 2015). Studies by Gerver (1974) and Lambert (1988) have shown that recall after listening was better than after both shadowing and SI, and that the additional cognitive load involved in SI and shadowing actually reduces recall in comparison with just listening. In other words, it is debatable whether poor recall is proof that phonemic shadowing is a practice that goes against the need for trainees to understand what a speaker is saying.

2.2.3. It is not the hardest part of interpreting

The usefulness of shadowing has also been called into question because of the claim that it is actually easy for trainees to develop the skill of listening and speaking at the same time, and that the transformation of the message is the most problematic part.

An experiment by Christoffels & De Groot (2004) aimed to compare shadowing (repeating sentences) to both paraphrasing (reformulating sentences in the same language) and interpreting (translating into another language) audio content, precisely to find out which elements of the task were most demanding: producing speech while listening and understanding, or transforming the message. Assessing their results both in terms of quality and quantity, they found that listening and speaking at the same time had a negative impact on subjects' performance, but that this impact was relatively small and subjects managed to maintain a relatively short lag. They went on to observe that their subjects' resources were mostly consumed by the need to transform the content presented to them, and that it was the combination of simultaneity with the need to translate that was the most demanding for subjects.

> "we established that both the simultaneity of comprehension and production and the transformation component are sources of cognitive complexity in SI. However, our results also indicate that the role of each of these components separately is limited, and that of the two, transformation is the more demanding component. Especially the combined demands of simultaneity and transformation make SI the complex task that it is." (Christoffels & De Groot, 2004, p. 238)

In a manual on interpreter training, Setton & Dawrant (2016) express a similar view. Based on their experience as trainers, that suggest that verbatim shadowing as a way to train the mechanical coordination of listening and speaking is actually a trivial task that can be mastered almost immediately by trainees. Transforming a message into another language, however, is the part that requires more time and practice. In light of this, it is interesting to note that they do not fully exclude this practice from training programmes. Instead, they recommend that students do it "optionally" for one session to get used to the process of listening and speaking, but no more.

2.2.4. It is irrelevant over the longer term

As mentioned above, the strongest opponents of shadowing tend to see it as a counterproductive practice that teaches trainees the wrong reflexes. Another argument in

the same vein is that professional interpreters have trouble shadowing “well” once they acquire expertise in SI. In her paper on shadowing, Lambert (1992) refers to professional interpreters saying that shadowing goes against the automatic processes developed over time. Schweda-Nicholson (1990) also refers to professional interpreters’ feedback on a task that sought to test their ability to both shadow and retain meaning afterwards. Professionals said that they normally do not try to retain meaning after they have interpreted, but rather during the interpretation. This means that even if they have done a good job in a real-life situation, they may not be able to answer questions about the meaning of what they processed. They considered such an experiment artificial, and not reflective of the way they need to use their resources in real conditions (Schweda-Nicholson, 1990).

These views invalidate the idea that shadowing with good recall can and should be trained, for instance thanks to questionnaires that follow shadowing exercises. But in this case, again, arguments are based on experience and opinions, rather than on empirical data. Besides, the advocates of shadowing mainly see its benefits amongst inexperienced students, as a pre-SI form of practice. Before examining how and why the relevance of shadowing could and should be tested, it is worth looking at why certain assumptions cannot be considered substantiated truths. It will then become clearer that there is room for gathering empirical data.

3. How shadowing could make sense

Some of the views mentioned earlier on shadowing tend to be, if not very radical, rather unfounded.

3.1. They must listen and analyse

Many trainers such as Kurz (1992) reject the use of shadowing in interpreter training if it does not involve any analysis. In a paper on shadowing exercises in interpreter training, Kurz underlines the analysis of content as a sine qua non condition for the understanding a speech. Analysis, however, is hardly required to simply decode and repeat sentences, leading her to state that such a crucial element is missing in shadowing exercises. She

suggests alternative monolingual exercises that she deems more relevant, for instance that involve the deverbalisation of the initial input to then produce active spontaneous speech in the same language. Kurz's views reflect the important argument that analysis should be involved in shadowing exercises, but there seems to be no evidence that it does not. This would leave room for experimentation on how shadowing would help trainees channel and practice this skill.

3.2. They do listen and analyse: evidence of semantic analysis of the input while shadowing

Research on comprehension and recall after shadowing actually showed that there can be some degree of semantic understanding of presented content. As per its definition, phonemic shadowing involves a very short lag, a recognition mainly of phonemes which are processed with no attention paid to meaning. A study by Kraushaar & Lambert (1987), for instance, involved phonemic shadowing as a way to decrease subjects' chances of remembering and analysing the content. However, an experiment carried out by Marslen-Wilson (1973) focused on shadowing at very short latencies, thus phonemic shadowing, and included a series of questions after subjects had performed the shadowing tasks to test their memory. Results showed that some semantic and syntactic information was recalled by participants whatever the lag at which they shadowed. Marslen-Wilson also observed that the types of errors made by shadowers were qualitatively quite similar, had the lag been longer or shorter.

Marslen-Wilson's study provides evidence that close and distant shadowing both involve some degree of semantic analysis, and that disparaging shadowing as a mindless and counterproductive activity is a claim that can be challenged (Seeber & Arbona, 2020). More importantly, it provides evidence that shadowing has potential as long as it involves comprehension, which it does, even when it is mainly phonemic. The fact that shadowing can and does involve some analysis goes against the view that it is a damaging practice (Seleskovitch & Lederer, 1989) and could provide a basis for gathering data on whether it can be relevantly linked to the practice of SI and how.

3.3. Room for experimenting

Based on this reality, training analysis and recall skills in isolation with shadowing exercises could make sense. Several studies showed that comprehension and recall are poorer while shadowing or interpreting compared to just listening (Gerver, 1974; Lambert, 1989). Shadowing could be considered a first stage in learning, honing the subskill of listening and speaking at the same time while making an effort to understand the information, before moving on to transforming the message in actual SI. This argument can also be supported by research on short-term memory. Chapter 1.4 on storage strategies used in shadowing led to the conclusion that these strategies could play a part in a subject's shadowing performance, as well as in determining the relevance of shadowing as a training tool for SI.

4. The current state of the art

External circumstances (Covid-19) prevented the author of this study from gathering empirical data on the effect of shadowing exercises on fluency in SI performance, as was initially planned. However, precious insights can be collected from analysing how shadowing is currently regarded and used in conference interpreter training and pedagogy.

4.1. The pedagogy of conference interpreting

Pedagogy is "the study of teaching methods, including the aims of education and the ways in which such goals may be achieved" (Peel, 2017, para. 1). The pedagogy of interpreting focuses thus on good ways to train conference interpreters, in other terms to "respond to the fundamental question of pedagogy, that is, how to best teach" (Moser-Mercer, 2015, p. 304). In the case of interpreting, pedagogy currently takes the shape of interpreting training programmes, the content and structure of which can vary from one programme to another. According to Moser-Mercer (2015), beyond the concrete components of training programmes, the pedagogy of interpreting adopted by an institution should also, and "ideally", reflect a theoretical view of what needs to be trained, translated into specific learning models to accommodate this view.

Following initial pedagogical reflections and sets of recommendations on interpreter training (Herbert, 1952), more efforts were made to theorize the teaching of interpreters. While Seleskovitch and Lederer's work (1989) was the first systematic treatment of reasoned interpreting pedagogy, based on their *théorie du sens*, but was criticized for being based on "personal theories" lacking systematic analysis and empirical data (Gile, 1990; Pöchhacker, 1995). Cognitive sciences and the evolving cognitive models of interpreting, mentioned in an earlier section, then played an increasing role in shaping empirical research (Pöchhacker, 1995) on the interpreting process and increasingly informed the teaching of interpreting (Moser-Mercer, 2015; Gile, 2009).

> "The underlying premises were that: (i) the interpreting process can be decomposed into different phases; (ii) different component skills contribute to the successful execution of the overall task (Moser-Mercer et al. 1997); (iii) discourse characteristics impact on meaning assembly; and (iv) a variety of external and internal variables determine the amount of cognitive resources available at different stages of task execution. These theoretical insights began to shape didactic choices in interpreter training in many universities." (Moser-Mercer 2015:305)

In this regard, looking in greater detail at the purpose of a good curriculum, and the status of shadowing within one curriculum, can provide some useful insights into the current perception of shadowing in interpreter training.

4.2. The purpose of a good curriculum

The term "curriculum" refers to "a "course", in particular a regular course of study or training, at a school or university" (Sawyer, 2015, p. 97). According to Sawyer, in interpreter training, it is "the progression of skill and knowledge acquisition at the program level, en route to professional levels of competence and expertise" (p. 97). As mentioned in the previous section, the fundamental question in the pedagogy of interpreting is how to best train future interpreters. A curriculum will thus be designed, assessed and honed depending on how it can best achieve the goal of competence and expertise in the profession of interpreting.

4.3. Focus on the FTI

4.3.1. A good curriculum: a "whole" that has been perfected over time

Following the birth of conference interpreting as a profession in 1919 (AIIC, 2019), for a long time there were no schools for the training of conference interpreters. This changed in 1941 with the creation of the *École d'Interprètes* in Geneva (Moser-Mercer, 2015). From there, with the professionalisation of conference interpreting and its established status at academic institutions, various programmes and pedagogical approaches emerged, but the now FTI, where the author is a trainee, remains world-leading.

Initially, instruction at the FTI was in the hands of by self-trained interpreters. Although this is no longer the case, the master-apprentice learning model has endured over time, with classes at the FTI all being taught by professional and highly skilled interpreters with experience in training.

4.3.2. A brief description of the curriculum at the FTI

In order to understand the status of the FTI in interpreter training beyond its seniority, it is relevant to mention that it is part of the European Masters in Conference Interpreting (EMCI), a consortium of universities that comply with a core curriculum and whose mandate includes compliance with quality standards in conference interpreting (EMCI, 2012) defined under the auspices of high-level employers such as the European Union institutions. The aim of the EMCI programme is, among others, to ensure better employability for trainees, and to meet the demand for highly qualified conference interpreters in international organisations such as the EU. Members of the EMCI are committed to pursuing a "common policy on student recruitment and assessment", and to regularly reviewing their programmes in order to adapt them to "changing needs and new developments" (EMCI, 2012, Introduction, para. 2). The EMCI core curriculum is made up of the following constituents: theory of interpretation, practice of interpretation, consecutive interpretation, simultaneous interpretation, and the EU and international organisations (EMCI, 2012, point 3). Moser-Mercer (2015) points out:

> "The launching of the EMCI ushered in an era of harmonized curricula across graduate and postgraduate interpreter training programs, with emphasis on skill progression (moving from consecutive to simultaneous interpreting), the importance of background knowledge, simulated practice and student self-practice to develop expertise." (Moser Mercer, 2015, p. 305)

The main point here is that EMCI universities aim to offer the best possible curricula; to train highly qualified interpreters in the most efficient way, with a commitment to adopting and adapting practices according to their effectiveness in practice. As a member of the consortium, the FTI complies with those requirements and can thus be considered a valid point of reference to examine what use is made of shadowing in good training programmes.

The Geneva curriculum is structured as follows: the first semester is mainly focused on CI classes, alongside seminars on the theory of interpretation and the functioning of international organisations. SI is introduced at the end of the first semester of classes as three-day seminar, followed by regular sessions in the second semester. Consecutive classes continue in the second semester, but the third semester is then mainly focused on SI (FTI, 2017), with some general consecutive classes taking place at greater intervals.

4.3.3. Including a training programme for trainers, the MAS in conference interpreting

In addition to offering interpreter training, the FTI also created a course for interpreter trainers in 1996, now called the Master of Advanced Studies (MAS) in Interpreter Training. It is designed for "professional interpreters wishing to become interpreter trainers at university level" (Moser-Mercer, 2015, p. 306) and adds a level of knowledge and training, to ensure trainers are armed with as much expertise as possible in helping students progress towards acquiring high-level skills in interpreting.

> "The Geneva MAS and the EMCI core curriculum embed the concept of learner progression, the expertise approach to skill acquisition, the concept of self-training to encourage self- regulation of learning and performance, and clearly defined curricular benchmarks to ensure efficiency and efficacy in admission, training and assessment." (Moser Mercer, 2015, p. 306)

This makes the FTI a precious source of data on the relevance of shadowing in practice, and it is why this study will focus on finding out the significance currently attributed to this tool in interpreter training at the FTI, and the position of qualified trainers on this highly renowned programme.

RESEARCH DESIGN AND METHODS

1. Overview & purpose of the survey

The fundamental question this study aims to answer is how, when and why shadowing is used in today's top-flight conference interpreter training programmes.

To that end, a survey was devised and carried out in order to look more closely at how shadowing is used to train future conference interpreters on one renowned interpreting programme, the FTI's MACI.

With a view to seeking answers to the research question, two mirrored questionnaires were devised to compare responses from trainers and students. Each of the two groups was invited to fill out a questionnaire with near identical questions geared to each group's perspective. Neither of the groups knew that the other group was responding to a similar questionnaire – the aim was for responses to remain as neutral as possible. The purposes of the survey are the following:

- to find out what trends are visible amongst both trainers and students on the prevalence of shadowing, the context in which shadowing is performed, the reasoning behind the use (or rejection) of shadowing, methods used to introduce and perform shadowing tasks, and feedback on shadowing performances;
- to compare the responses provided within the two groups, between the two groups and in relation to current literature on shadowing;
- to provide an overview of the FTI's position on shadowing, as a reference for further research

2. Population and Study Sample

For reasons of convenience and consistency, all subjects taking part in the experiment are members of the University of Geneva's FTI. All trainers, regardless of language combination, responsibilities and experience were invited to fill out the survey.

3. Sample Size and Selection of Sample

Of a total population of 33 trainers (professors and lecturers) and 29 students, a total of 23 trainers and 23 students anonymously took part in the survey. This corresponds to a response rate of 70% for trainers and 79% for students

4. Sources of Data

4.1. General information on the survey

Sources of data for this study are the responses given individually and anonymously by all participants to a series of questions related to shadowing. There are 11 questions in the questionnaire for trainers, with 6 sub-questions that depend on the answers to some of the main ones, and 10 questions in the questionnaire for students, with 6 conditional sub-questions as well. Questions were jointly drawn up by the supervisor and author of this study, each targeting one of the categories mentioned in the section on the purpose of the study: prevalence, context, reasoning, method and feedback.

4.2. Structure of the survey

The questions asked to both groups were the following:

Trainers	Students
Preliminary questions	
T01. How long have you been a practising conference interpreter?	
T02. How long have you been a trainer of conference interpreters? Please indicate a number of years.	S01. How long have you been a student of conference interpreting?
PREVALENCE	
T03. Did you do shadowing exercises when you trained as a conference interpreter?	S02. How often had you done shadowing exercises before starting the conference interpreter program at FTI?
T04. Do you generally recommend your students perform shadowing exercises?	S03. Generally speaking, did your trainers at FTI recommend you do shadowing exercises?
T05. Have you ever explicitly advised your students against performing shadowing exercises? • T05a. For what reason(s)?	S04. Were you ever explicitly advised against performing shadowing exercises by a trainer at FTI? • S04a. For what reason(s)?
CONTEXT	
T06. Please indicate the mode (CI/SI/both) for which you recommended shadowing exercises.	S05. Please indicate the mode (CI/SI/both) for which you were recommended shadowing exercises.

T07. If you do recommend shadowing exercises, where are your students expected to do their shadowing exercises? [At home/In class]	S06. If shadowing exercises were recommended to you, where were you expected to do them? [At home/In class]
REASONING	
T08. In my class, I recommend shadowing as: a general exercise (to improve overall skills) • T08a. What problems are these?	S07. Was shadowing recommended to you as: a general exercise (to improve overall skills) • S07a. What skills where you told those are?
T08. In my class, I recommend shadowing as: a specific exercise (to address particular problems) • T08b. What skills are these?	S07. Was shadowing recommended to you as: a specific exercise (to address particular problems) • S07b. What problems were you told those are?
METHOD	
T09. At which stage(s) of the course do you tend to recommend shadowing exercises to your students?	S08. At which stage(s) of the course were shadowing exercises recommended to you?
T10. Do you give students instructions on how they should perform shadowing exercises? • T10a. What are those instructions?	S09. Did you ever receive instructions from your trainers on how you should perform shadowing exercises? • S09a. What were those instructions?
FEEDBACK	
T10b. Based on students' performance (or feedback), do some of these instructions seem particularly difficult to implement?	S09b. Were any of those instructions particularly difficult to implement?
T11. How easy/difficult do your students generally find their first shadowing exercise(s)? • T11a. Do you know what struck them as particularly difficult?	S10. How easy/difficult did you find your first shadowing exercise(s)? • S10a. What struck you as particularly difficult?

Table 1. Survey structure

Both versions of the questionnaires were reviewed and given final approval by the supervisor of this study, Prof. Kilian G. Seeber.

5. Collection of Data (LimeSurvey)

Data was collected on the online survey tool LimeSurvey, which is routinely used at the FTI for research purposes. All questions were included in two online questionnaires: one for trainers, and one for students.

Survey ID	Status	Title	Group	Created	Owner	Anonymized responses	Partial	Full	Total	Closed group
717657		Survey on shadowing (T)	Mary Experiment	02.07.2020	Feutsop.Meli@etu.unige.ch	Yes	8	23	31	No
852271		Survey on shadowing (S)	Mary Experiment	02.07.2020	Feutsop.Meli@etu.unige.ch	Yes	0	23	23	No

Figure 1. LimeSurvey Dashboard

5.1. Procedure

On LimeSurvey, each question has to be assigned a type and potential conditions. Question types were chosen according to what seemed most appropriate to then analyse responses. See Appendix 1 for an overview of the question types chosen, which were the same for both questionnaires).

Once the survey was created on LimeSurvey, an offer to participate anonymously was shared via email sent to all trainers and all students at the FTI's Interpreting Department, respectively by this study's supervisor and this study's author.

5.2. Results

The results of the survey were available for download on LimeSurvey following the deadline for participants to submit responses. They were downloaded in Excel format so that trends could be revealed and analysed and displayed on bar and stacked charts. Responses provided by trainers and by students are presented below: in the same graph whenever the questions were identical, and separately when the questions were slightly different. The order in which they are presented follows the order in which they were presented to participants.

5.2.1. Preliminary questions

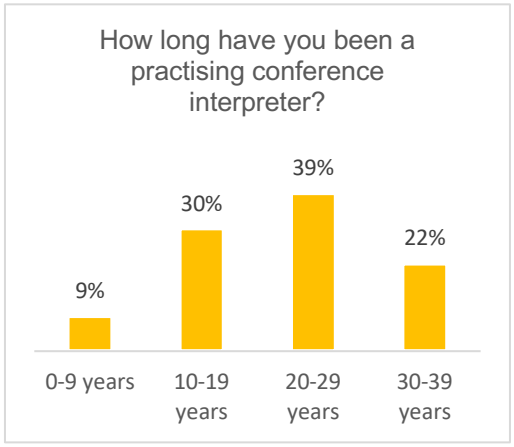

Figure 3. Trainers T01

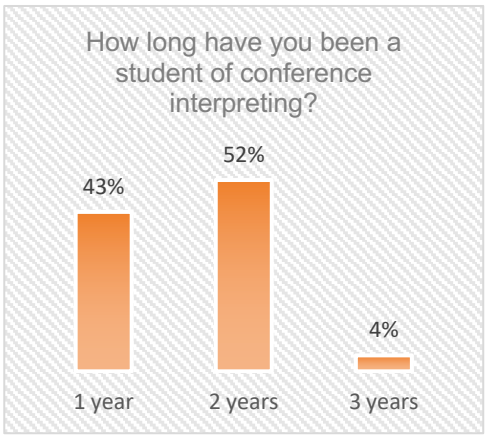

Figure 2. Students S01

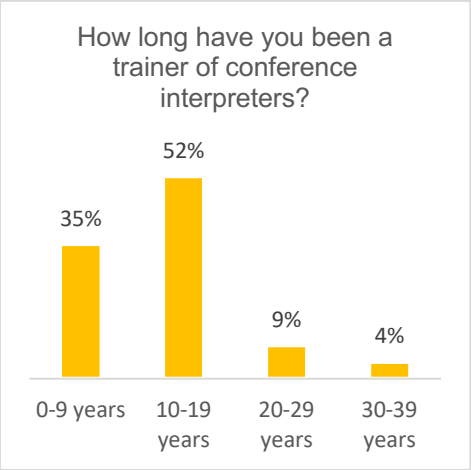

Figure 4. Trainers T02

5.2.2. Prevalence

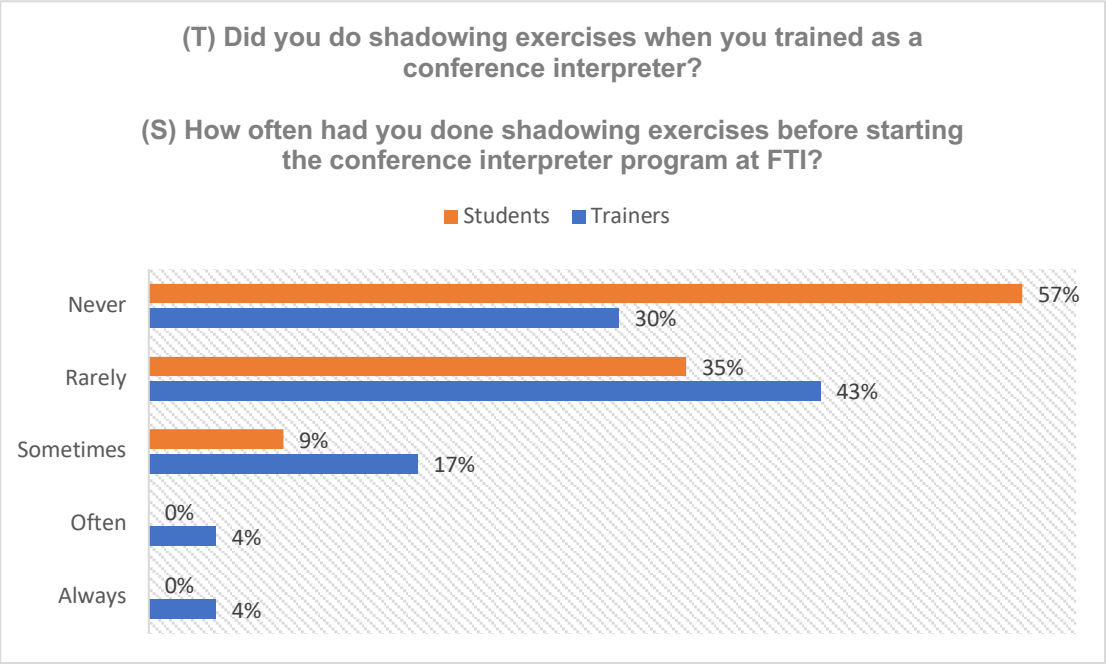

Figure 5. Trainers T03 / Students S02

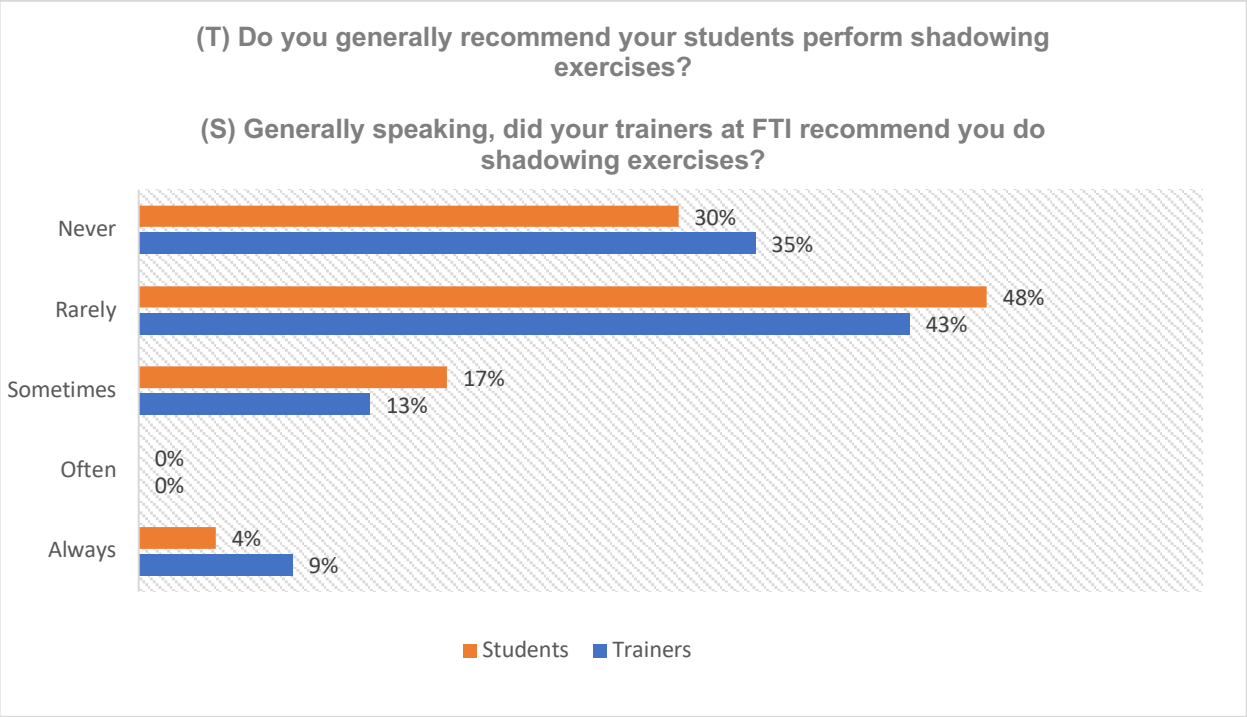

Figure 6. Trainers T04 / Students S03

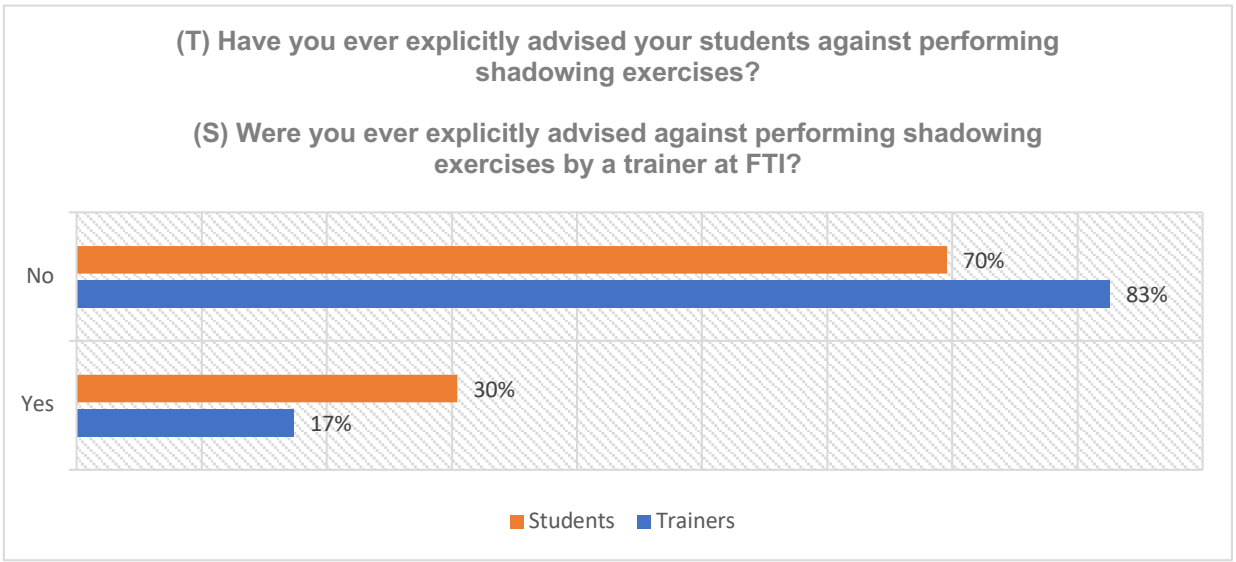

Figure 7. Trainers T05 / Students S04

Follow-up question (Trainers S05a / Students S05a): For what reasons?

Responses from trainers revolve around the limited efficiency of shadowing: it lacks pedagogical value as a stepping stone to SI, and the risk that it could be used mindlessly, in a way that is more a hindrance than a help. According to several trainers, it could be used in the wrong way by students, as a way to achieve an aim that is not connected to SI. Responses from students also include the limited helpfulness of shadowing as a way to

improve SI skills, as well as it being a risky exercise that could lead students to develop the wrong habits (see Appendix 2 for full comments).

5.2.3. Context

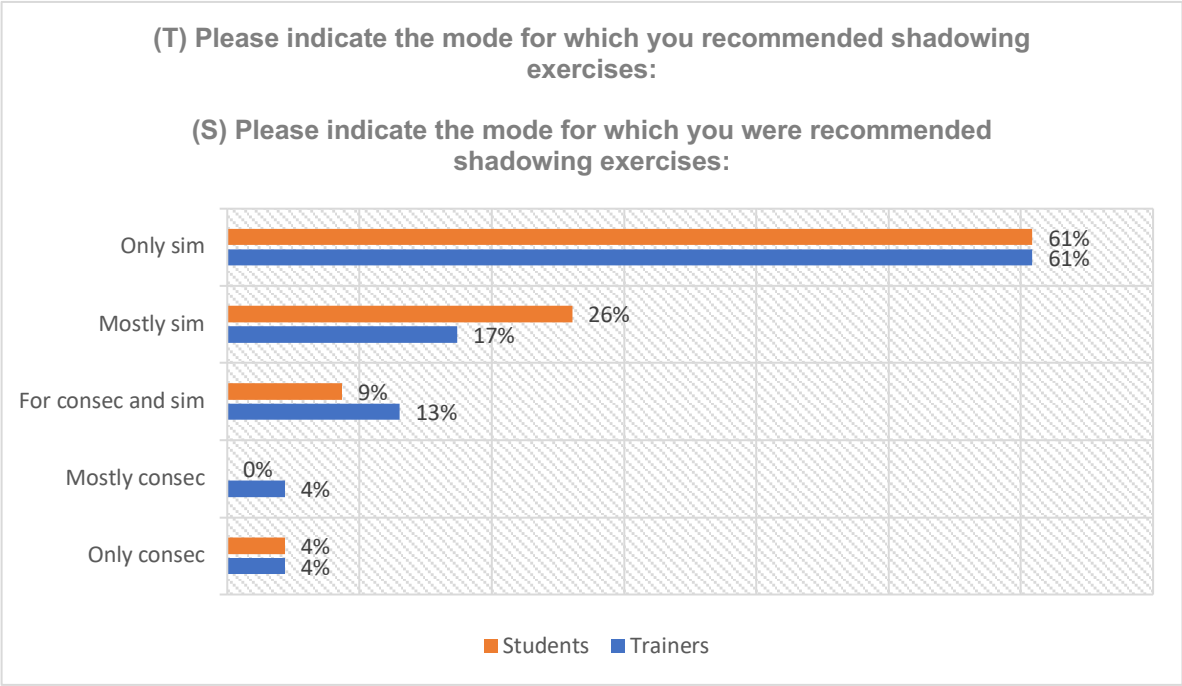

Figure 8. Trainers T06 / Students S05

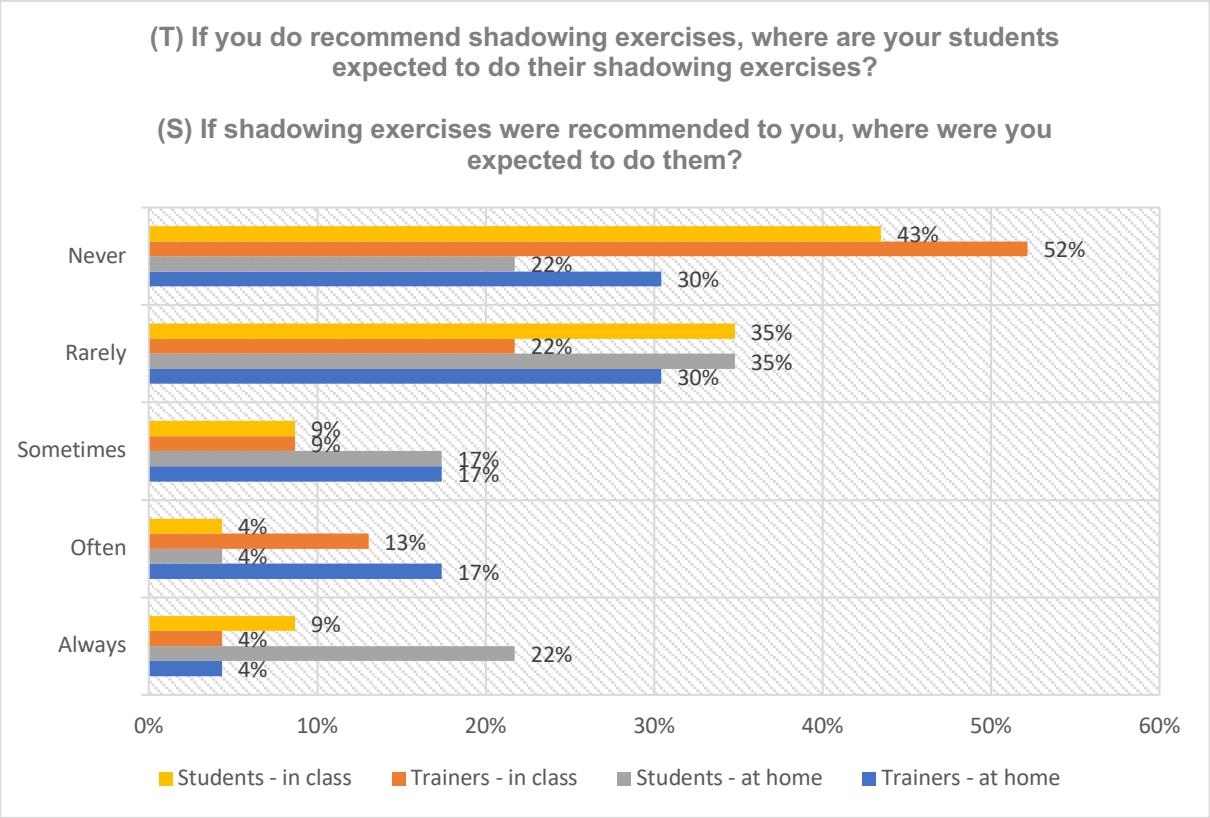

Figure 9. Trainers T07 / Students S06

5.2.4. Reasoning

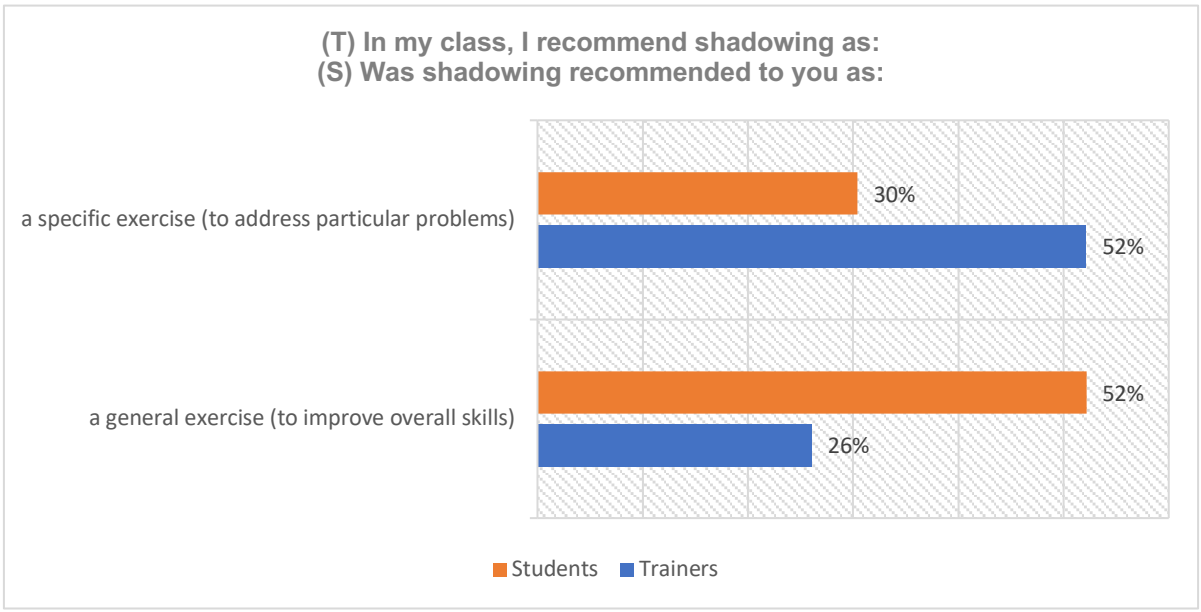

Figure 10. Trainers T08 / Students S07

Follow-up question (Trainers T08a / Students T07a): You checked "a general exercise" to improve overall skills. What skills are these? / What skills where you told those are?

The overall skills trainers aim to improve with shadowing are: fluency and accent in the B language, familiarity with the booth situation, listening and speaking at the same time, concentration, overall fluency (articulation, intonation), lag adjustment, and vocabulary. Amongst overall skills, students mainly mentioned: listening and speaking at the same time, overall fluency (articulation, flow and voice projection) in the A or the B language, lag, and concentration. (See Appendix 3 for full comments)

Follow-up question (Trainers T08b / Students T07b): You checked "a specific exercise" to address particular problems. What problems are these? / What problems were you told those are?

Specific skills mentioned by trainers mainly include: listening and speaking at the same time, fluency (rhythm, intonation, articulation) in the A or B language, accent, ability to predict what a speaker will say, richness of vocabulary and confidence. Students' mainly mention: specific fluency issues (intonation, articulation, fluidity) in A or B languages, and speed and richness of vocabulary, including through rephrasing exercises (see Appendix 4 for full comments).

5.2.5. Method

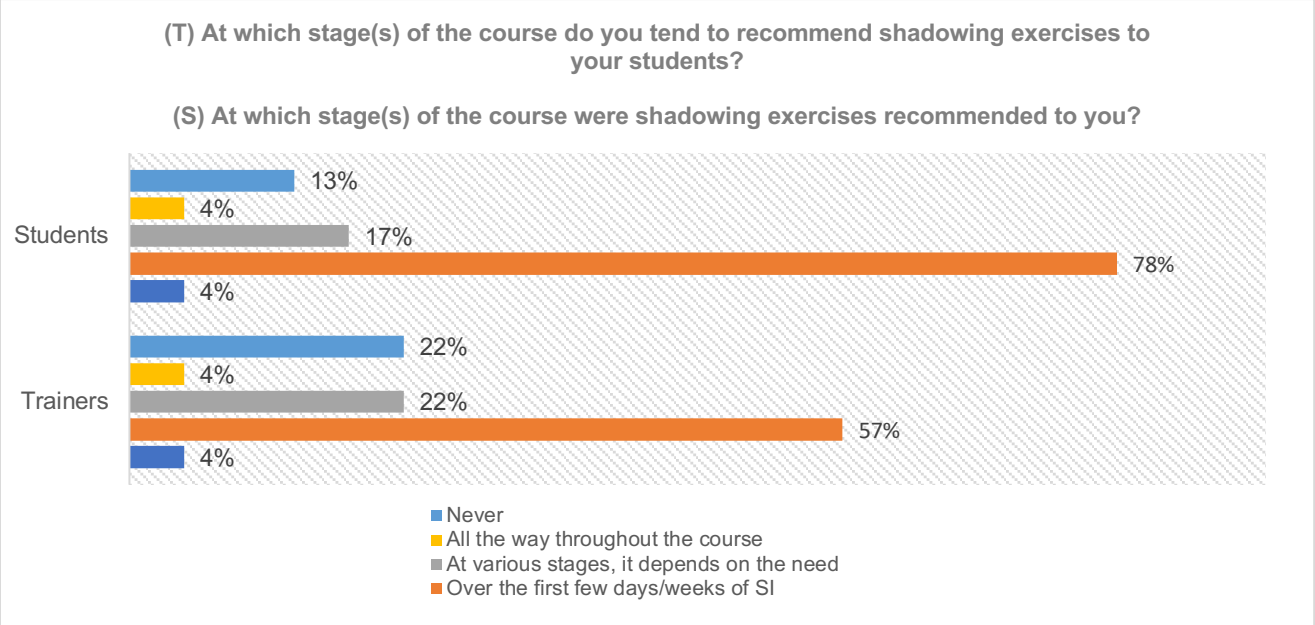

Figure 11. Trainers T09 / Students S08

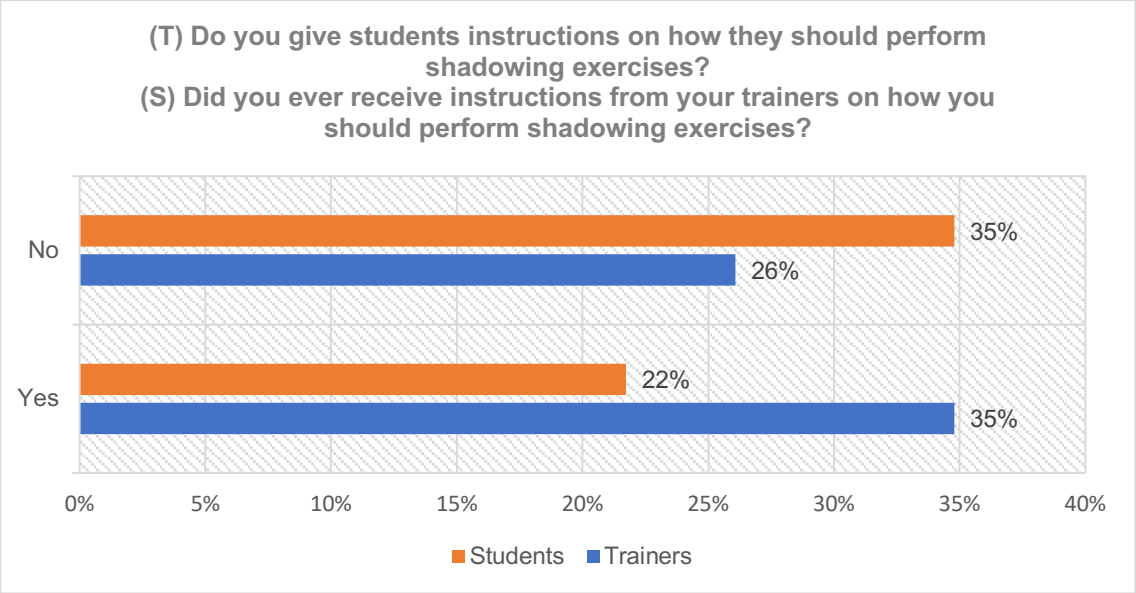

Figure 12. Trainers T10 / Students S09

Follow-up question (Trainers T10a / Students S09a): What were those instructions?

Instructions given by trainers vary and include mainly: matching or exaggerating the delivery of the speaker being shadowed (flow, intonation, speed), listening back to the shadowing performance, reformulating, changing the lag or solving problems while shadowing. In a small number of comments, trainers emphasised that instructions depended on the student or specific need. Students recall being told to pay attention to and adjust their lag, as well as listening back to their performance to check their fluency (see Appendix 5 for full comments).

5.2.6. Feedback

Follow-up questions (Trainers T10b / Students S09b): Based on students' performance (or feedback), do some of these instructions seem particularly difficult

to implement? / Were any of those instructions particularly difficult to implement? Most trainers do not report any specific instruction that was difficult to implement, except those in close relation to a difficulty a specific student was addressing as part of the exercise. In addition to that, solving problems in addition to shadowing was reported as being particularly challenging to a student shadowing in a B language. Students also had little to report as a response to this question, besides one student mentioning a difficulty to remain as clear as the speaker, and lengthening lag (see Appendix 6 for full comments).

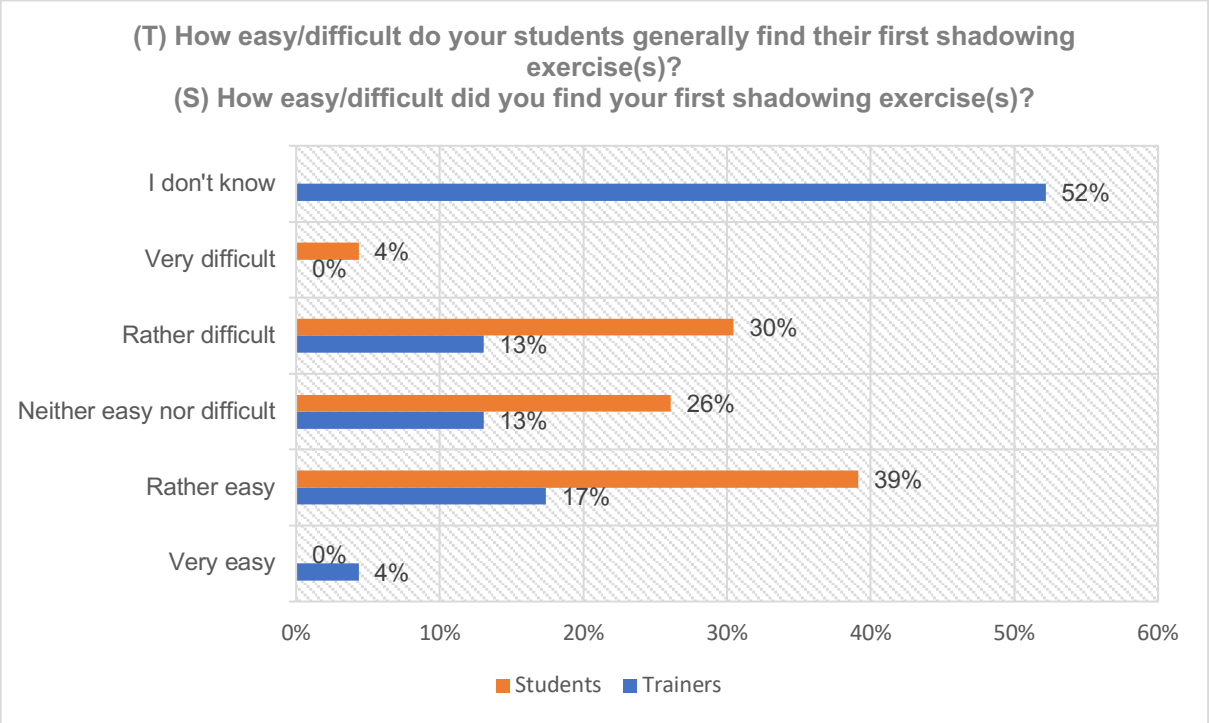

Figure 13. Trainers T11 / Students S10

Follow-up questions (Trainers T11a / Students S10a): Do you know what struck them as particularly difficult / What struck you as particularly difficult?

Trainers in a position to comment mentioned the surprise and confusion students experience when they attempt to shadow for the first time, and the quickly ensuing tiredness. They also referred to the difficulty to keep up the pace when listening and speaking simultaneously for the first time. Students mainly referred to their initial confusion when listening and speaking at the same time, and the ensuing difficulty to pronounce all the words properly, match the intonation and keep up the pace (see Appendix 7 for full comments).

6. Data Analysis Strategies

Data were analysed using basic descriptive statistics: quantitative results from students and trainers were extracted separately from LimeSurvey, reported as percentages and collated in bar charts in order to highlight similitudes and/or differences in the responses provided by both groups. Qualitative data were reported as summaries highlighting the main points raised by each group.

7. Challenges

Because this study focuses on the MACI at the FTI, it cannot comprehensively reflect the state of knowledge and mindset in all interpreter training programmes. Another issue is related to the fact that this study is based on trainers' and students' long-term experience and memories of their early classes. This means that students' recollection of what was said by a trainer, for instance, may differ from one student to another, even though they had a similar experience and heard similar comments from certain trainers.

8. Timeframes

Trials performed by the author of this study showed that it could take between 5 and 10 minutes to complete the survey, depending on the length of the comments made. This was made clear to all participants in the introduction to the study. Considering the short time necessary to complete the survey, participants were given 11 days to complete it, from 5 to 16 July 2020. After the deadline, the links to both surveys expired.

DATA ANALYSIS

1. General comments on the sample

Reviewing the data collected, it can be affirmed that FTI trainers have 20.7 years of experience as interpreters on average; 69% of the group has between 10 and 29 years of experience. Their average amount of years of experience as trainers reaches 11.9 years, with a majority of the group having between 10 and 19 years of experience as trainers.

Students all have been trainees for 1 to 3 years, with an average of 1.6 years and none having been a student for less than a year. Bearing in mind the timeline of the curriculum at the FTI, with simultaneous introduced during the second half of the first year of the programme, all students participating in the study had already been introduced both to consecutive and SI when they completed the survey.

2. Prevalence: shadowing is rare but not inexistent on the curriculum

Responses reveal that shadowing was rarely to never performed by the vast majority of trainers during their own training to become interpreters (75%), as well as by the vast majority of students before entering the FTI's master's programme (81%). Taking a closer look at the 25% of participants in the trainers' group that sometimes, often or always did shadowing exercises while training, it appears that four out of the 6 trainers making up these 25% have 20 years or over of experience. Interestingly, these are virtually the exact same trainers who make up the 22% that sometimes, often or always recommend shadowing to their students.

The rest of the group (78%) rarely or never recommends shadowing, but a larger proportion of the 78% recommends it rarely (43%) than never (35%). This trend appears to be almost identical way in students' responses: 79% of students report having rarely or never been advised to perform shadowing exercises, with a larger percentage of "rarely" (48%). It is worth noting that the ratio of students having never done any shadowing decreases between the period before they entered the interpreting programme at the FTI and during the

programme: having never done any shadowing before entering the FTI (56%), 48% then report being advised, though rarely, to do shadowing at some point. This shows that without being strongly prevalent, shadowing does make an appearance during the programme for a large majority of students.

The final pair of questions in the "Prevalence" section was meant to find out whether any trainers were so strongly opposed to shadowing as to explicitly advise students against performing this exercise. While only 17% of trainers state having warned students against the use of shadowing, 30% of students report having heard (and heeded) such warnings. The reasons stated by both trainers and students often revolved around the limited effectiveness of shadowing in boosting SI skills. Students' comments with regard to simultaneous mirror trainers' views, as shown in the quotes below:

TRAINERS	STUDENTS
"shadowing **is not simultaneous**, and doing shadowing in the hope that it will allow you to acquire speed (…) is **not helpful but even damageable**" "I **don't** see it as a **stepping stone to sim**… I find its use rather limited" "**In sim** it is **not an efficient way** to use their practice time"	« ne serait **pas une bonne méthode d'apprentissage** de l'interprétation (simultanée) » « **déconseillé** au tout début de la formation à la simultanée **afin d'éviter de prendre de mauvaises habitudes** de répétition et de traduction au mot à mot » "**not real interpretation**" "We were told that shadowing is **rather ineffective** as a means to improve one's simultaneous interpreting skills"

Table 2. Comments against the use of shadowing (1)

More general comments highlighted the lack of value and use of this exercise.

TRAINERS	STUDENTS
	"it **didn't tend to be** particularly **helpful**"

“I **don’t see any pedagogical value** in that exercise” “students sometimes **expect too much from it**”	“**not particularly useful** for acquiring interpreting skills” « débat autour de **l’utilité** de cet exercice »

Table 3. Comments against the use of shadowing (2)

Here, it is also worth pointing out that some responses on both sides included nuancing on other potential benefits of shadowing, such as:

TRAINERS	STUDENTS
“I usually recommend it to work on **articulation and voice modulation**, which is important for consec as well. It can be helpful to **get used to listening and speaking at the same time** at the beginning of sim training” “**In consec it can be useful** to work on A language flexibility”	“rather ineffective (…) (even if **it might be beneficial in other ways**)”

Table 4. Comments against the use of shadowing (3)

Those few comments will be mentioned again later, in parallel with similar comments on the reasoning behind the use of shadowing.

3. Context: shadowing is mainly for SI training

The next set of questions aimed at determining when and where shadowing was recommended by trainers to students. The graphs clearly show that shadowing was mostly included in SI training, with 78% of trainers saying they recommend it mostly or only for SI, and 87% of students reporting recommendations mostly or only for the same mode. Interestingly, 22% of trainers as well as a small number of students do place consecutive on an equal footing with, or ahead of, SI as the mode for which they were mostly advised to shadow for. Taking a closer look at the trainers who recommend shadowing, they also mostly or only do so for CI, so there does not seem to be a strong correlation between trainers’ experience and their view of the mode for which shadowing is considered to be most useful.

The following question, on where shadowing is to be performed by students, show that trainers and students report having never recommended or been asked to do shadowing more often in class than at home: 75% of trainers never or rarely have students do it in class, and similarly 78% of students recall having rarely or never been asked to do shadowing in class, with a large majority both of trainers (52%) and students (43%) saying this never happened. In comparison, only 60% of trainers say they never or rarely recommend shadowing at home, and 57% of students say the same from their perspective, so the numbers match.

Taking a look at actual recommendations to do shadowing, it appears that 34% of trainers say they recommend it often or sometimes at home, against only 22% reporting regular or frequent advice to do shadowing in class. The trend is the same with students (though with lower figures), with 21% of students having been recommended shadowing often or sometimes at home, and only 13% often or sometimes in class. The overall trend for this question is thus that shadowing is more often recommended and performed at home, if ever. It should be pointed out here that results do not imply a ratio of always to never, or rarely to often for each participant. A number of participants reported both “never” recommending or being recommended shadowing at home, as well as “never” in class, which simply reflects the absence of shadowing in their training methods.

4. Reasoning: manifold

Questions on the reasoning behind shadowing address the “why” of this study’s research question. The first question in this block was meant to reveal whether shadowing was recommended to help with overall interpreting skills or to target a particular problem. Responses from trainers and students show opposite results: the majority of trainers (67%) state that it is used to address specific problems, while 63% of students say this was a general exercise to improve overall skills.

The follow-up questions provide insights into why these trends appeared as they did and reveal similar points to justify the use of shadowing. These have been classified into several categories, from the most mentioned to the least mentioned, then presented as a chart for

comparison, followed by a graph highlighting the most mentioned items, what type of skill there are considered to be (general or specific), and the overall breakdown.

	Trainers (general)	Trainers (specific)	Students (general)	Students (specific)
Listening and speaking at the same time	1	3	10	
Improving fluency in A language (articulation, intonation, confidence)	1	4	3	3
Improving fluency in B language (rhythm, accent, vocabulary)	1	1	1	3
Rephrasing to improving vocabulary		2	1	2
Learning to find the right lag	1		2	
Improving concentration	1		1	
Learning to predict	1	1		
Managing speed			1	1
Rephrasing to learn to listen	1			
Becoming familiar with the booth	1			
Warming up before an SI exercise			1	
Improving memory			1	
No overall skill mentioned			1	

Table 5. Reasoning (1)

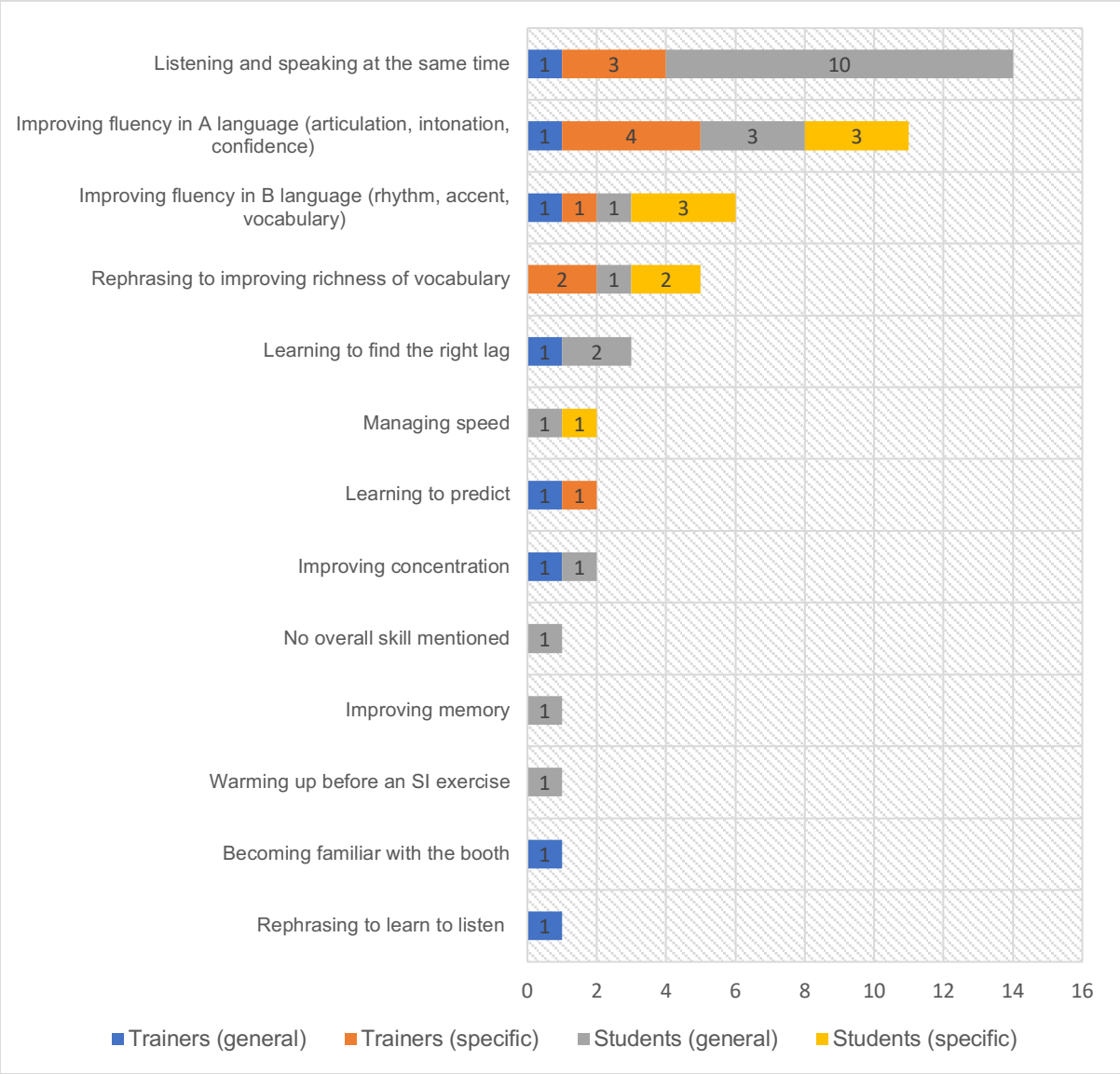

Figure 14. Total amount of mentions (2)

Despite differences in whether shadowing exercises are considered to be used for general purposes or to a specific end, the reasoning behind the exercise shows similar reasons amongst trainers and students. 10 students, over half of the group, understood shadowing as a general exercise to help them learn to listen and speak at the same time. Only 4 responses from trainers included listening and speaking at the same time, this time either as an exercise to improve general skills (1 response) or address a specific problem (3 responses). Fluency in the A language was, however, mentioned 5 times amongst trainers, so slightly more than listening and speaking at the same time, and mainly as a specific exercise to tackle issues such as articulation, intonation and confidence while speaking. Fluency in a B language was mentioned 6 times overall, but mostly by students (4

responses), while 2 trainers included the use of shadowing for a B language. Reasons invoked in the case of fluency in a B language were similar amongst trainers and students (rhythm and intonation, accent, vocabulary).

Students also classified shadowing as an exercise to improve fluency either in their A or their B language, but presented this as separate from the ability to listen and speak at the same time. Another interesting difference is that most students who mentioned listening and speaking at the same time did so as a specific exercise to address particular problems, whereas improving fluency was classified by an equal amount of students as a general and a specific exercise.

The two most-mentioned reasons on the list are vocabulary improvement, i.e. rephrasing while shadowing (in 5 responses, both trainers and students), and learning to find the right lag (in 3 responses, both trainers and students). Finally, it can be highlighted here that two trainers ticked both boxes, saying that they regarded shadowing both as a general and a specific exercise. The overall trend from this question is that the classification of shadowing as either a general or a specific exercise may have been challenging for respondents, possibly due variations as to what is considered to be “general” or “specific”.

5. Method: “free” shadowing during the first weeks of SI

Graphs on when shadowing exercises tend to be recommended to students reveal that the exercise is most often introduced over the first days and weeks of SI classes, as is stated by 57% of trainers and 78% of students. Shadowing has also been recommended at various other stages of the curriculum depending on students’ needs, according to just 22% of trainers and 17% of students, so much less frequently.

Regarding whether instructions were given to students, it is interesting to note that responses differ between trainers and students, with a majority of trainers (57%) saying that they do give instructions to students, and a majority (62%) of students report not receiving any. The following table classifies the responses given in order to identify common threads (see Appendix 8 for full comments).

Instructions	Trainers	Students
Adapting lag and pace	3	4
Emulating or exaggerating the original to adjust expression and intonation	5	
Listening to and assessing performance	2	1
Shadowing in a particular language	2	1
Rephrasing	1	
Becoming familiar with the booth	1	
Correcting errors	1	
Solving problems	1	
Shadowing for a certain duration	1	

Table 6. Categorised instructions

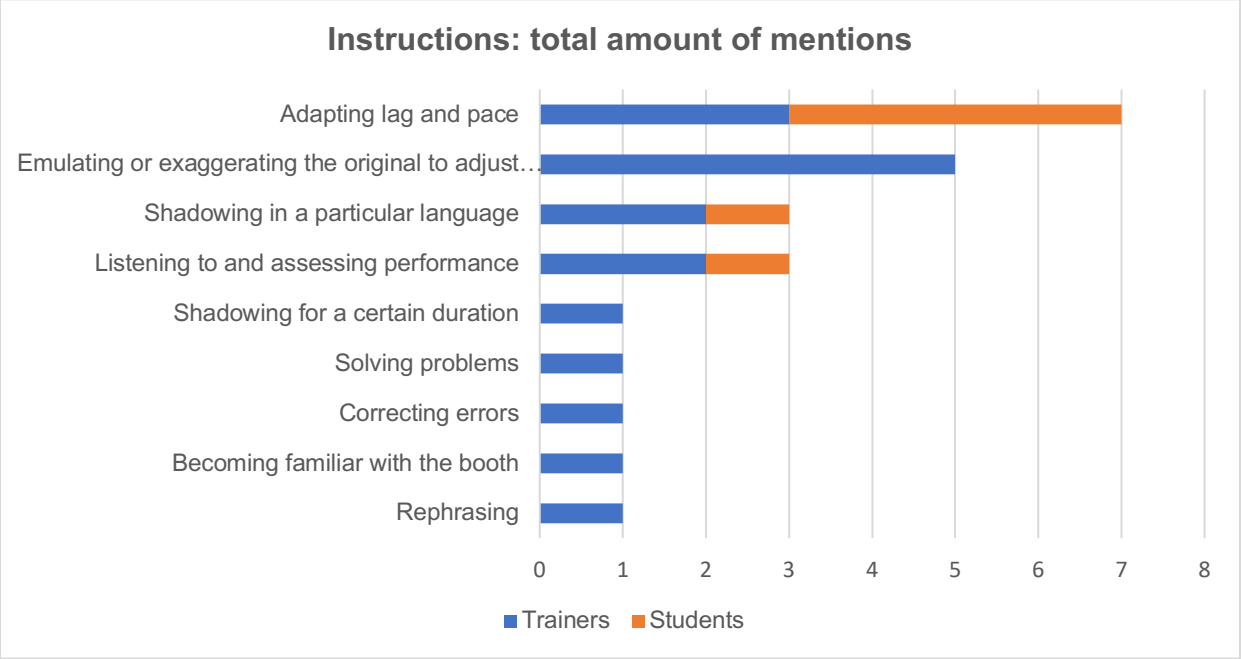

Figure 15. Instructions: total amount of mentions

The responses regarding specific instructions are similar from trainers and students, but a trend is visible related to fluency, defined as “the physical characteristics of the acoustic signal produced by the speaker that go beyond the verbal component of speech” (Macarena Pradas Macías, 2015, p. 165), and present in the following responses: improving intonation and expression, trying to find an appropriate lag and taking time to listen to and assess a shadowing performance while paying attention to delivery.

Noticeably, follow-up questions on what form instructions may take show that, for some trainers, instructions tend to be given when there is a specific need to address with a particular student, and can vary a lot depending on that need. There are several statements highlighting this:

- *"I am not a strong believer of the benefits of shadowing, so I tend to limit its use to very specific cases"*
- *"That depends on the need I intend them to address with the exercise"*
- *"(Instructions) can vary considerably and are specific to each student"*

A closer look at who gives instructions to students reveals some correlation between the specific need and the instructions given. Out of the 5 trainers saying that they recommend shadowing at various stages of the curriculum, depending on the need, 3 trainers give students instructions on how to carry out the exercise. Among students however, individual responses show no correlation between the instructions given or not given by trainers, and the point at which shadowing exercises are recommended. In other words, none of the students who received instructions indicated that shadowing exercises were recommended based on their need for it. For all of them, shadowing appeared over the first days/weeks of SI, and those who remember doing shadowing exercises because of a particular need did not report receiving any specific instructions.

The next question attempts to find out if some of the instructions given were difficult for students to implement. No trend, however, was revealed by trainers' and students' responses, and their replies highlight obvious points such as the difficulty to implement instructions meant to help students with something they "have a hard time" doing, or that push them out of "their comfort zone", as was stated by trainers. This is reflected in the two responses from students that include a comment, as they mention struggling to remain fluent (pronunciation, articulation) when a speaker is fast, or when lag is longer. One trainer also pointed out that the extra task of solving problems on a separate sheet while shadowing is particularly difficult for students working into their B language.

6. Feedback: not (so) easy to be fluent at first

The final part of the survey focused on feedback following students' first shadowing experiences, to find out whether it was mostly experienced as an easy task, or as a tricky exercise to perform. While trainers had to give a general answer, students were able to respond individually, based on their memory of the experience.

The majority of trainers (52%) could not answer this question. 17% of those who could replied that the exercise was easy for students, while 13% of trainers thought students found them "neither easy nor difficult", or "rather difficult". Student responses match this trend. The largest group of students (39%) found the exercise rather easy, but quite large groups found it either "neither easy nor difficult", or "rather difficult" (26% and 30%, respectively), with just one student reporting that they found it "very difficult".

The follow-up question on what was most difficult was also more difficult for trainers than it was for students, hence the imbalance in the number of comments from the two groups. The following table categorizes the responses given (see Appendix 9 for full comments falling into each category).

	Trainers	Students
Listening and speaking at the same time	1	5
Shock & confusion	1	2
Dealing with speed		2
Sounding fluent in a foreign language		2
Staying focused	1	1
Recalling all the details		1

Table 7. Categorised difficulties

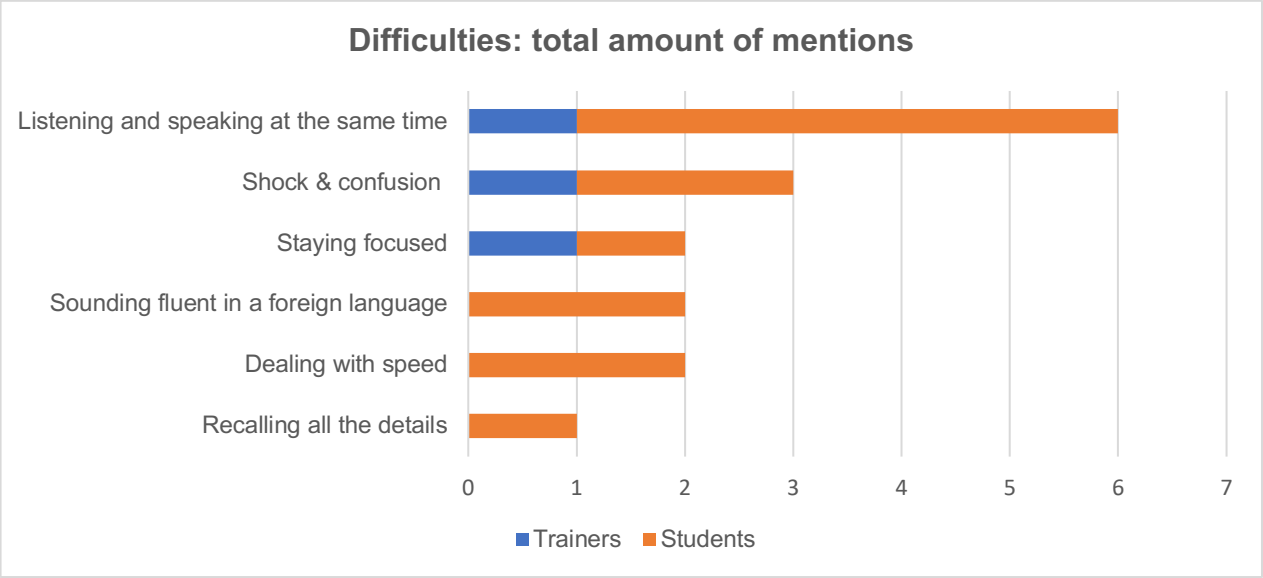

Figure 16. Difficulties: total amount of mentions

The difficulty most often mentioned by students was listening and speaking at the same time, but the survey question did not require participants to develop on how this manifested in their performance. A “shock & confusion” category was included as the second main category in order to reflect responses that mainly stated the surprise and confusion that came with the first attempt to shadow, without highlighting a specific reason. In addition to those categories, a few students mention that their first shadowing experience was not in their A language, making it harder for them to follow the speaker and clearly repeat what they heard.

Another element pointed out both by a trainer and a student was the fatigue that comes with performing the exercise for the first time. Though only one participant in each group referred to this difficulty, the trainer who underlined it mentioned “they” as a reference to students in general, which gives weight to the statement.

Finally, one respondent highlighted the difficulty of recalling the details of the content shadowed, while another said that they were listening to the message rather than the words and thus had trouble focusing on each word to repeat them accurately. From these two statements, it can be observed that students may have had different strategies to perform the same exercise and experienced different difficulties accordingly.

DISCUSSION

The survey carried out aimed to collect views from highly skilled trainers and students on how, why and when shadowing is used on a renowned interpreter training programme. Results from the survey show that shadowing is not prevalent on the programme, but is also not absent from it, and is one of the exercises used by some trainers. The mere fact that the ratio of students who never did any shadowing decreases after the beginning of the programme confirms this. Seeing that shadowing is not entirely rejected, there is room to discuss how, when and why it is used.

1. HOW

1.1. In a more versatile way than the definition suggests

This study focused on the use of shadowing in relation to SI, and it is similar to SI in the way it is performed (listening to an auditory track through headphones while delivering a message that is parallel to what is being heard). Moreover, most of the arguments for and against shadowing focus on SI skills. Even though a large majority of respondents associate shadowing with SI, SI was not unanimously named as the only mode for which shadowing was used as a training tool. This broadens the potential of shadowing beyond what was initially explored in this study, presenting this exercise as more versatile than what could be suggested by its nature.

1.2. “Just” shadowing is not enough

Responses to the survey show that shadowing modalities are very often varied. Beyond the traditional task of repeating a message in an A language, shadowing is practised in a foreign language, even when it is not the students’ B language. Other variations are shadowing with an exaggeration of the original speaker’s tone, while rephrasing, while carrying out extra tasks such as solving mathematical problems, and combined with listening back to the performance afterwards. Even though shadowing was sometimes used in its most basic form, the common variation of the exercise suggest that it often becomes relevant to trainers, and consequently to students, when it is approached in an enhanced, more specific way.

2. WHEN

2.1. The first weeks of SI

The survey confirmed the strong relationship between shadowing and introduction to SI, as most students remember it appearing in their curriculum during the first days or weeks of SI, while trainers provided similar responses. The relevance of shadowing as a “pre-SI” or introductory exercise is confirmed by the responses to the survey: trainers who include it in their classes mostly do so when their trainees start learning to interpret in the booth to help them become familiar with the environment. That being said, the prevalence of the exercise remains quite low overall even in that context, which reveals to what extent its usefulness is perceived to be limited even as a pre-SI exercise.

However, the fact that shadowing also comes into play at other stages of the curriculum, not only during the first weeks of SI, suggests this exercise is versatile and can be put to good use for other purposes as will be discussed in the following section.

2.2. Students do not necessarily remember it

It also says something about the perceived effectiveness of shadowing that a number of students did not remember being told to perform shadowing exercises, although they are included in the FTI’s introductory seminar to SI for all students, as the author is aware as a student on the same programme. Because of this, none of the students should have responded that they were “never” told to perform shadowing exercises in class, but the data show 43% said they were never asked to do a single shadowing exercise in class. This is interesting, as it suggests that shadowing may not have been remembered as relevant or helpful at the time; not as something they could potentially continue to do. Besides, when asked to comment on how they were asked to perform shadowing exercises, a few respondents emphasised they were not invited to do more shadowing than what they did in class.

The following section aims to discuss the reasoning behind the restricted use of shadowing that came through thanks to the survey.

3. WHY (AND WHY NOT)

3.1. Main objective: fluency

The two most-mentioned goals behind the use of shadowing appear to be both sides of the same coin. While students mostly referred to being able to listen and to speak at the same time, trainers referred to different skills, such as fluidity, articulation, intonation, voice output as well as rhythm, all of which fall under the definition of fluency of delivery: “the physical characteristics of the acoustic signal produced by the speaker that go beyond the verbal component of speech” (Macarena Pradas Macías, 2015). These are features that can be disrupted by difficulties to listen and to speak at the same time; according to Macarena Pradas Macías, prosody, speech rate and pauses are all parameters of fluency of delivery. Consequently, the author of this study believes that students and trainers are referring to the same idea. While one group (students) focuses on what is being asked to do, the other (trainers) focuses on what specifically is being tackled.

This may explain why there is a discrepancy between trainers’ and students’ view on whether shadowing was mostly a general or a specific skill; while a majority of trainers rate shadowing as a specific exercise to train certain skills, students referred to it mostly as a general exercise and placed listening and speaking at the same time as the top general skill they were training with shadowing. This may be regarded as a less accurate understanding of fluency on the part of students, who approached shadowing as a task where they had to start doing something unusual, whereas trainers may already more familiar with the resulting effect of having to listen and to speak simultaneously for the first time. This main goal matches Miller (1963), Lambert (1989) and Schweda-Nicholson’s (1990) descriptions, who support the view that listening and speaking at the same is not a natural task for the brain and can be trained with shadowing. This can be confirmed by the fact that no student declared that their first shadowing exercise was very easy: responses go from rather easy to very difficult, which implies some degree of difficulty (sometimes perceived as mere confusion, as was detailed in the data analysis).

Furthermore, the fact that some trainers use shadowing in order to improve fluency of delivery reveals that there is an issue to fix: the conflict generated by two tasks competing

for students' resources, a language comprehension task, and a language production task, as described in Gile's Effort Model (2009) and Seeber's Cognitive Load Model (2011). This is evidence that shadowing may involve cognitive load similar to SI, and that being able to manage it in shadowing is to some extent considered by trainers who recommend the exercise as a first step towards managing it in SI.

Reasons provided by trainers are also relevant when we consider the feedback students shared about their first shadowing exercises: a few students reported finding the exercise more difficult than they initially expected, and were surprised by that fact. One student had trouble listening to the speaker, a comment which links with the phonological interference described by Darò & Fabbro (1994), several students had difficulties pronouncing all the words properly, and a few ended up being late while trying to follow the speaker. One student clearly stated they struggled to assign their cognitive resources efficiently, and another one, interestingly, pointed out not remembering the details of what was shadowed as a difficulty they encountered. This proves that it is relevant on the part of trainers to suggest exercises that can help students better manage these new problems.

3.2. Limited usefulness

3.2.1. As a pre-SI exercise

Responses given as to why shadowing is infrequently or is not used as a training tool clearly reflect the view that it is not considered effective enough as a pre-SI training tool, or is only useful for a very limited time. This is in line with the position of Setton and Dawrant (2016), who regard shadowing as an exercise that could be done optionally and only once to train coordination between listening and speaking, but not more as it is ineffective over the long term. Trainers who report recommending it add reservations as to how it can deviate from its intended purpose, and comments both from trainers and students reflect the fact that it is not always helpful or useful. As a majority of trainers said that they recommend shadowing rarely to never, we could assume that the arguments put forward in the survey are similar for all those who share this view but were not invited to comment on their position.

The idea that shadowing could go as far as being counterproductive, as suggested by Seleskovitch & Lederer (1989) and Thiéry (1986) does come up in some of the responses

from trainers and in what students have heard, although the majority of comments remained more nuanced than those expressed in the literature review. Rather than an inevitable outcome, shadowing as a mindless task was presented by a small number of trainers as a pitfall that students were likely to fall into. But none of the feedback given through the survey shows a strong belief in the need for shadowing exercises as an introduction to SI either.

3.2.2. As a tool to train working memory

The role of working memory in SI was discussed in the literature review, along with the potential of shadowing exercises training working memory, as long as this type of memory is put into practice in the exercise, rather than relying merely on echoic memory, which would be less useful (Bryden, 1971). However, there were almost no mentions of memory as a skill to train with shadowing exercises, except for one student who included it in the general skills they were told shadowing exercises could help with. The near absence of mentions of memory in responses to the survey suggests that shadowing is not considered to be an appropriate exercise in this regard, or that training working memory is included in other skills such as “concentration”, which does come up a few times.

3.3. The benefits of shadowing beyond SI

The survey was very helpful in highlighting other benefits of shadowing that lead the exercise not to be completely rejected, and to sometimes be introduced at stages other than the first days or weeks of SI. In a number of responses, shadowing was used to remedy specific problems that go beyond the main point developed in the review, i.e. the relationship between shadowing and the cognitive processes of SI.

3.3.1. Shadowing in a B language

It appeared through the survey that shadowing was considered a helpful tool for students to improve their B language at the FTI. When asked what general or specific skills shadowing was meant to improve, accent, rhythm and intonation in a B language were mentioned as well as syntax, idiomatic expressions and vocabulary in a B language. These responses

came up in both groups, and align with the arguments presented in the literature review that shadowing in a B language makes sense as a means to achieve near-native rhythm, accent and intonation that are not natural to a trainee working in a foreign language (Gillies, 2013; Guichot de Fortis, 2014; Schweda-Nicholson, 1990; Setton & Dawrant, 2016). Although shadowing in a foreign language was not meant to be the focus of this study, much light was shed on the greater relevance of this exercise in this setting rather than as a pre-SI exercise. Besides, shadowing in a B language appears to be one instance where it remains effective and helpful beyond a specific stage of the curriculum, and beyond a specific mode. Shadowing in a B language can be done at various stages depending on the need, without being regarded as risky for trainees' SI skills.

3.3.2. Shadowing to improve the A language

Similarly to shadowing in a B language, shadowing in an A language was mentioned not as a way not to improve trainees' fluency, but to emulate a good speaker's intonation, rhythm and expressions. This is another variation of "just" shadowing, for the purpose here is not to develop skills associated with SI, but to use the original message as a model with patterns that are useful to integrate. Responses to the survey revealed that for at least one trainer, shadowing could in this regard even have benefits for CI. This is another aspect that this study initially did not intend to touch upon.

In the case where the goal is to improve vocabulary in the A language through paraphrasing what is heard through headphones, shadowing becomes a variation of the original form: students are no longer invited to repeat the original, but to reformulate it and create a new message in the same language. As such, it becomes difficult to consider this variation as shadowing, also taking into account the fact that studies mentioned in the literature review make a clear distinction between shadowing and paraphrasing tasks (Christoffels & De Groot, 2004; Green et al., 1990).

What prevails over the longer term is an avoidance of shadowing as a pre-SI training tool, because it is not believed to be very helpful in the context of SI training. The fact that there are few clear, grounded rejections of shadowing might reflect some shortcomings of the survey, which did not specifically require trainers to state why they rarely to never

recommend shadowing; only those who explicitly told students not to perform the exercise were invited to justify their position. The survey does, in any case, point towards the fact that there is an issue with the effectiveness of shadowing and frequent attempts by the trainers who do recommend it to make the exercise as efficient as possible either by limiting its use to a certain stage or period of time, or by giving students specific instructions on what to add to the exercise. Students, for their part, tend to follow recommendations from their trainers.

4. Discrepancies and shortcomings

The fact that similar arguments were put forward to defend shadowing as a general and as a specific exercise reveals an overall lack of clarity as to what shadowing is meant to train. Although this does not change the fact that trainers are well aware of why they recommend shadowing, it betrays a lack of empirical data on the effectiveness of shadowing, as well as a lack of evidence on what it is to be avoided for.

4.1. Discrepancies related to goals and instructions

This, it is believed, leads to discrepancies in the way instructions are given to students, and the way they may be understood and applied by students. An example would be the use of memory, reflected in the issue of lag. Shadowing as a way to help students train their lag has been mentioned several times as part of the instructions given by trainers to students, which implies that it can be helpful for this purpose: according to responses, trainees were invited to try different lags, lengthen, or shorten lag in order to find out what was more comfortable for them. But besides the instruction to moderate lag, responses provide little clarity on how to identify the right lag in relation to future SI performances, and which strategies students use to achieve the right lag. Literature on shadowing has shown that lag can vary depending on the strategy implemented by the interpreter. While phonemic shadowing involves a shorter lag (Norman, 1976), phrase shadowing, which is closer to SI in terms of cognitive processes, implies a longer one. It seems that SI itself may involve a longer lag than shadowing because of the increased complexity of the exercise (Treisman, 1964). It has also been highlighted that best shadowers tend to have a shorter lag, but rely

more on their echoic memory (Carey, 1971), rather than relying on their working memory; retaining information that is meant to be used.

It is therefore to be questioned to what extent training lag through shadowing is efficient considering that there is little information on the strategies used by students to remain close to, or further away from the original speaker. While one student mentioned not remembering the content shadowed, another respondent struggled to follow and repeat all the words because they were focusing on the meaning. This shows there are different strategies, and having students try and find a lag they are more comfortable with without making sure they apply the right strategy in terms of memory is questionable. Since a good shadowing performance would involve a short lag, there is a risk that the comfortable lag in shadowing would not match what would be comfortable in SI. This explains why Schweda-Nicholson (1990) suggested the introduction of an “adjusted lag”, which would encourage students avoid yielding to the temptation of shadowing phonemically. It can be assumed that it is also why Guichot de Fortis (2014) suggested lengthening lag to make shadowing exercises more difficult. Yet there again, there is a risk that lengthening lag is mechanical, without the introduction of a process that involves working memory, bringing the exercise closer to SI. This is the kind of discrepancy in the current use of shadowing at the FTI that has been revealed by responses provided by trainers and students.

4.2. Discrepancies in students’ recall of their shadowing exercises

As pointed out earlier, the fact that some students did not remember being introduced to SI with a shadowing exercise highlights a discrepancy between the way it is perceived by trainers who include shadowing in their introductory courses, and how much students understand about the purpose of the exercise, in comparison with other more routinely recommended training tools such as sight translation, or devising speeches for peers. The fact that shadowing remains in the background without being fully rejected could also be a symptom of the lack of empirical evidence supporting the effectiveness, or lack thereof, of this training tool.

4.3. Shortcomings: what the survey missed

The survey carried out as part of this study is helpful to a certain extent. It does help shed light on both the general and more individual position of trainers on this exercise, as well as on how it is understood by students. However, it reveals that more data could have been gathered on certain points, and leaves room for further research.

4.3.1. Data on efficiency

Fluency is the main goal of shadowing exercises in relation to SI, but there is still an issue with the lack of data on the efficiency of shadowing. The survey required students to express how easy or difficult they found their first shadowing exercises, but did not ask whether students found it useful after doing it a few times. The survey did not require students to describe how shadowing made a difference in their performance, or what impact it had on the specific problem it was intended to tackle. Therefore, trainers' arguments remain the main source of information, and here again, no feedback on the effectiveness trainers have observed of their choices was gathered.

That being said, it is difficult to imagine students knowing exactly what the impact of shadowing was on their ability to listen and speak at the same time if they only did it once. Moreover, we suspect that recommending only one instance of shadowing as an introductory exercise, in many cases in a foreign language, may have been more about putting students through the shock and confusion of being in the booth for the first time, making them aware of this difficulty before they start doing actual SI, than about thoroughly training this skill in an isolated way. As a consequence, the limited use of shadowing makes it difficult to find out if and how efficient the exercise was.

4.3.2. Data on strategies for shadowing implementation

Finally, it can again be highlighted that there is little data on the strategies implemented by students when they perform shadowing exercise. The survey may have invited students to recall which strategies they employed in terms of memory, for instance, but the reliability of such data could be questioned given that the exercise was carried out several months to over a year ago in many cases. Moreover, trainers are not necessarily aware of which strategies students implement, as was revealed by the majority of "I don't know" responses

to the question of whether students found their first shadowing exercises rather easy of difficult, and the nuance they included in comments when they did rate the level of difficulty experienced by trainees. To this, it can be added that students may also not be aware of the strategies they implement themselves.

CONCLUSION

Based on existing knowledge and divided views on shadowing, the aim of this study was to find out how, when and why shadowing is used in top-flight interpreting programmes. This study focused on the University of Geneva's FTI as a point of reference. Besides being the oldest interpreting programme in the world, the FTI is also part of the EMCI, a consortium of highly renowned universities aiming to deliver the best possible training of interpreting students according to expectations at the highest levels of the profession and adopting similar curricula for this purpose. Using it as a point of reference proved to be an opportunity to collect views from seasoned trainers with an average of around 20 years of experience as professional interpreters at the highest levels, and around 11 years of experience as trainers.

The survey carried out at the FTI helped collect valid data and comments from both trainers and students. It revealed that, overall, use of shadowing is very limited, which mainly reflects the view of Setton & Dawrant (2016): shadowing in relation to SI can be used optionally to help students become more comfortable with listening and speaking at the same time when they begin learning SI, and as a result make sure that they are wary of their fluency once they begin doing actual SI. However, shadowing appears to be generally perceived as a trivial task that can be mastered almost immediately at the FTI, and thus is not recommended much over the long term. Listening and speaking at the same time is not perceived to require time and practice, only an awareness moment. When it comes to learning to manage the sub-processes involved in SI and the associated cognitive load, shadowing does not appear to be regarded as an effective training tool since it is given little room and relevance in simultaneous interpreter training. However, going as far as saying that it is considered counterproductive would not do justice to the fact that most, if not all students have had to perform a shadowing exercise at some point at the FTI. The use of shadowing is simply very cautious. The effectiveness of this exercise as a pre-SI training tool is too questionable to be relied upon repeatedly and over the longer term.

This is made clear by the fact that not all students shadow the same way, despite the research on the topic showing efficient shadowing involves specific strategies, regarding the involvement of memory, for instance. The survey revealed, for example, that some students

had been warned against doing shadowing exercises because they placed too much hope on it with relation to SI, which suggests that they may spontaneously use strategies that were not the right ones. Through the literature review, it became clear that the use of working memory can be trained through shadowing as long as the shadowing exercise is designed to involve the use of working memory. The tendency to rely on echoic memory when shadowing could lead to a better performance at the time, but to less relevance of the exercise in relation to SI. And as was pointed out by Seeber (2011), the interpreter will opt for a strategy that reduces overall cognitive processing demands and so it can be assumed that the same goes for shadowing: trainees will have a tendency to transcode, if not to repeat mindlessly (Déjean le Féal, 1997), so there needs to be a conscious effort for the shadowing task to be as close as possible to SI, both in comprehension and in production, in order to make the exercise effective. In this regard, clear understanding of the shadowing process and clear instructions appear to be essential in making shadowing effective.

Departing from shadowing with relation to SI, the survey also reveals a number of variations of shadowing exercises that underline the shortcomings of the exercise alone and its potential when recommended in a specific way. In individual settings, shadowing is used in ways that go beyond the scope focussed on in this study, the relation of the exercise to SI. The ways in which shadowing is put to good use can be improving a B language, emulating and absorbing the manners of a good speaker in the A language, changing vocabulary and syntax of the original, or getting a feel for the booth situation. These variations, however, are not standardised and are often devised according to a need identified with one trainee. Besides, they are more loosely linked to interpreting skills, since the focus is for some of these variations on language learning.

Discrepancies between how shadowing is used and understood by students show that there is a great deal of room for interpretation of how the exercise is implemented, and that the parameters of a shadowing performance are difficult to control. While this may mean that it would be hard to imagine a way that is both straightforward and efficient to do shadowing exercises, it can be also seen optimistically: as the basis for more research on how shadowing with relation to SI could make sense in practice, and how its effectiveness could be measured. An experiment taking this into account would be helpful in casting light on whether shadowing truly makes a difference as a pre-SI exercise.

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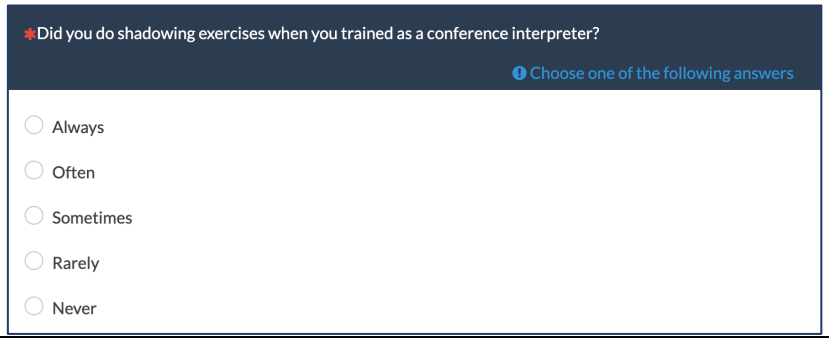
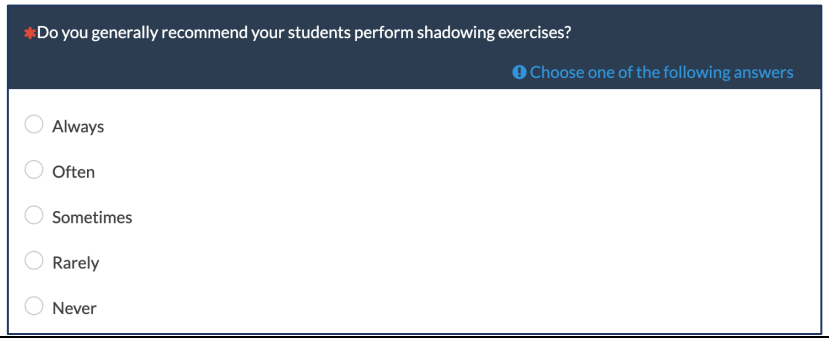
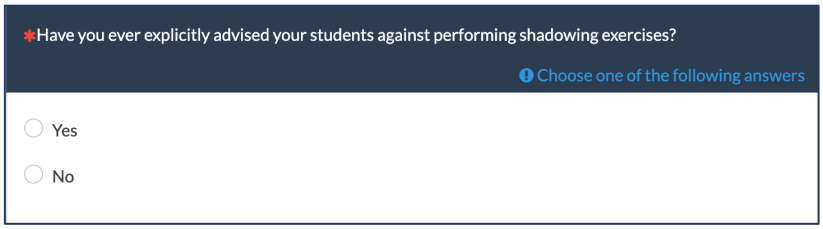
APPENDICES

Appendix 1: Overview of survey question types

Questions	Question type
Preliminary questions	
T01	How long have you been a practising conference interpreter? • **Short free text**
T02	How long have you been a trainer of conference interpreters? Please indicate a number of years. • **Short free text**
PREVALENCE	
T03	Did you do shadowing exercises when you trained as a conference interpreter? • **List (radio): only one possible answer** 
T04	Do you generally recommend your students perform shadowing exercises? • **List (radio): only one possible answer** 
T05	Have you ever explicitly advised your students against performing shadowing exercises? • **List (radio): only one possible answer**  For what reason(s)? • **Conditional** (appears if the answer to the previous question is **Yes**) • **Long free text**

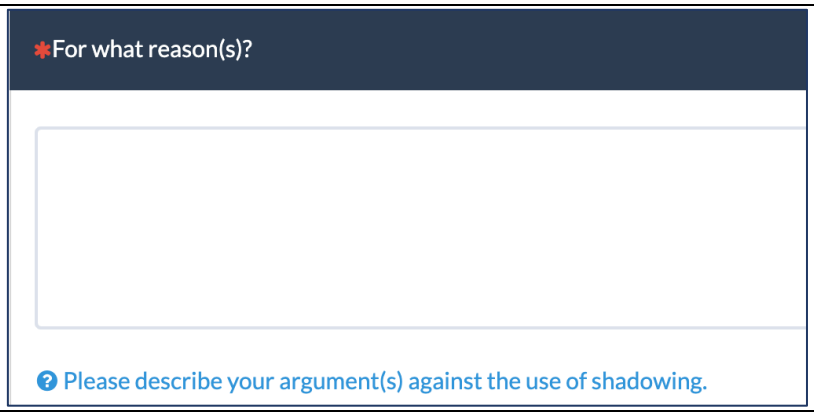
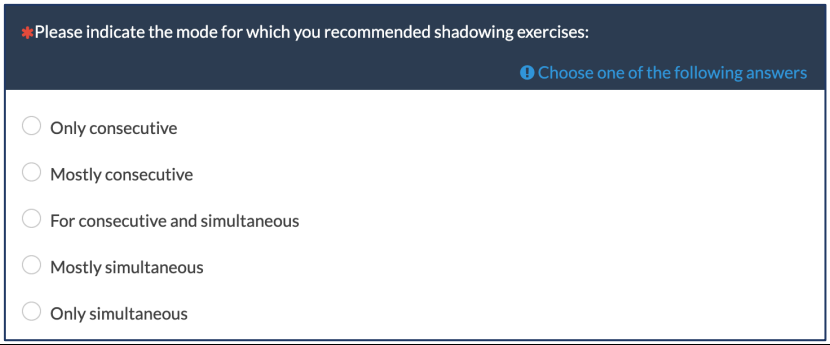
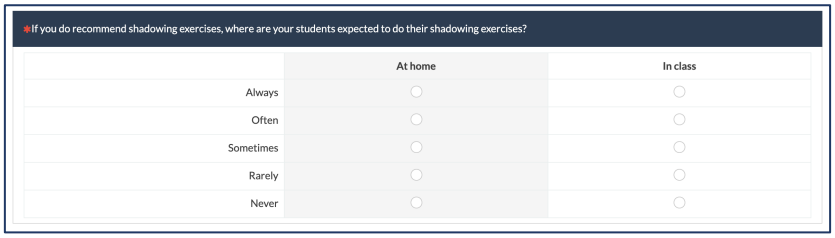
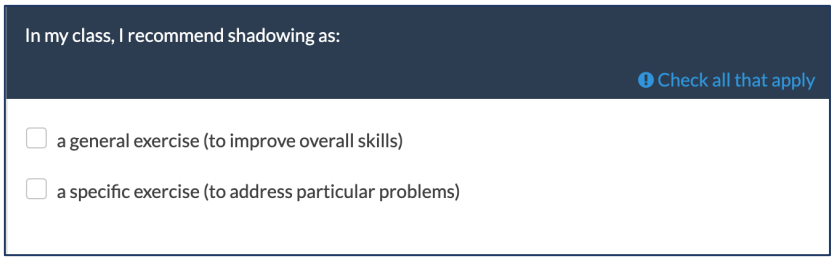
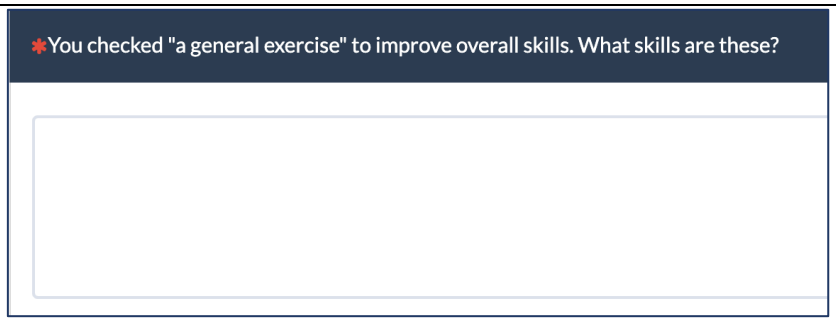
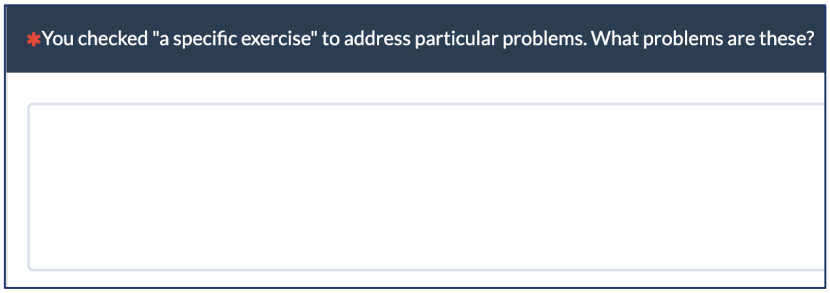
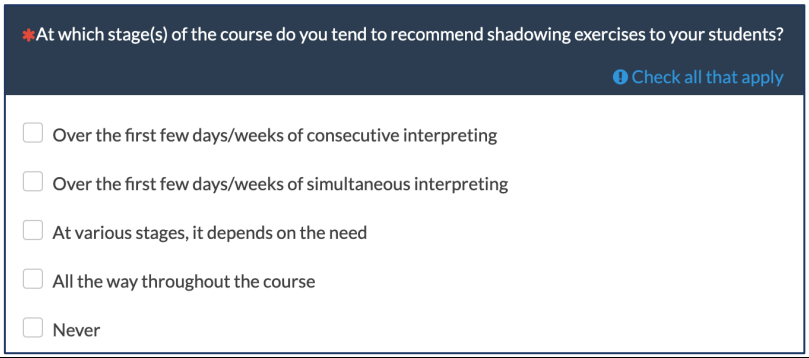
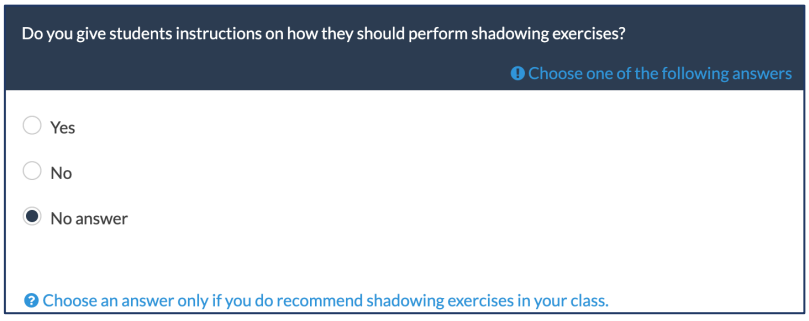
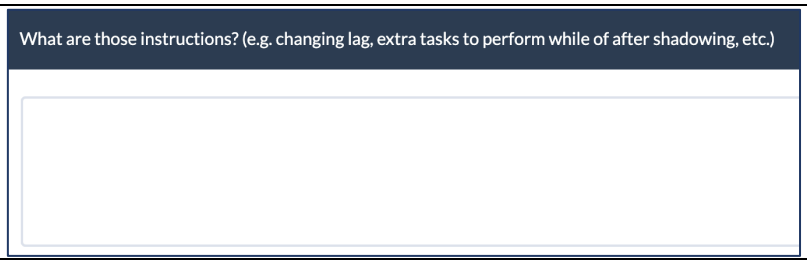
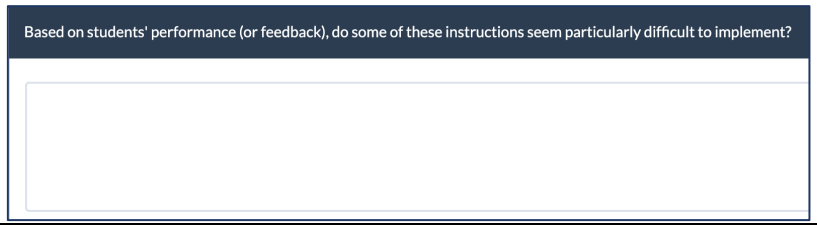
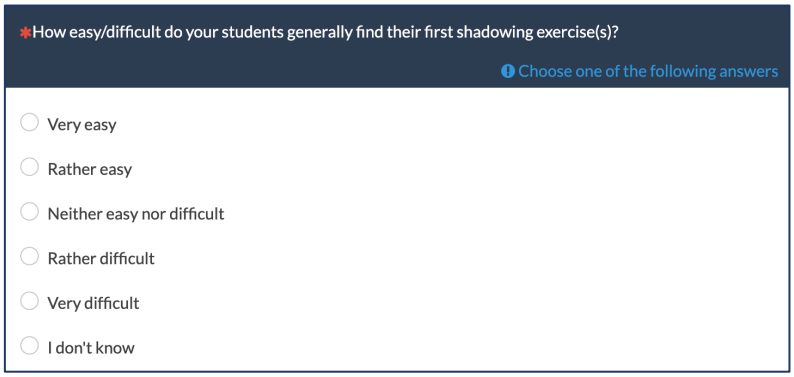
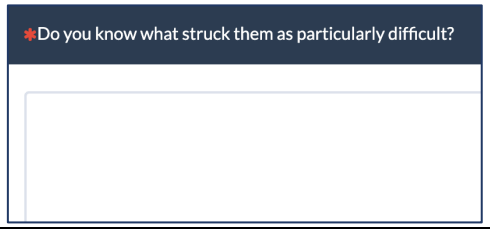
<table>
<tr><td></td><td> 
</td></tr>
<tr><td>CONTEXT</td><td></td></tr>
<tr><td>T06</td><td>Please indicate the mode (CI/SI/both) for which you recommended shadowing exercises.
List (radio): only one possible answer 
</td></tr>
<tr><td>T07</td><td>If you do recommend shadowing exercises, where are your students expected to do their shadowing exercises?
Array by column: only one possible answer for each column 

Figure X. Question T07</td></tr>
<tr><td>REASONING</td><td></td></tr>
<tr><td>T08</td><td>In my class, I recommend shadowing as:
Multiple choice: all that apply can be checked 

What skills are these?
Conditional (if “a general exercise” is checked)
Long free text</td></tr>
</table>

	 What problems are these? • **Conditional** (if **"a specific exercise"** is checked) • **Long free text** 
METHOD	
T09	At which stage(s) of the course do you tend to recommend shadowing exercises to your students? • **Multiple choice: all that apply can be checked** 
T10	Do you give students instructions on how they should perform shadowing exercises? • **List (radio): only one possible answer**  T10a. What are those instructions? • **Conditional** (appears if the answer to the previous question is **Yes**) • **Long free text**

	
FEEDBACK	
T10b	Based on students' performance (or feedback), do some of these instructions seem particularly difficult to implement? • **Conditional** (appears if the answer to the previous question is **Yes**) • **Long free text** 
T11	How easy/difficult do your students generally find their first shadowing exercise(s)? • **List (radio): only one possible answer**  Do you know what struck them as particularly difficult? • **Conditional** (if the previous answer is anything else than **very/rather easy**) • **Long free text** 

Appendix 2: Full comments to survey questions Trainers S05a / Students S05a

For what reason(s)?		For what reason(s)?
"Because the student in questions would use shadowing as **a tool to reach an aim that was entirely unconnected**. Shadowing is not simultaneous, and doing shadowing in the **hope that it will allow you to acquire speed** (as in following the speaker, finding solutions and uttering them) is **not helpful but even damageable**."		« Ne serait **pas une bonne méthode d'apprentissage de l'interprétation**. Nous n'avons fait qu'un exercice et ensuite on nous a demandé de ne pas en refaire. »
"I **don't see any pedagogical value** in that exercise"		"I remember being told not to waste too much time on shadowing because **it didn't tend to be particularly helpful"**
"Shadowing **can become** a bit of a **mindless filler** exercise. I find that students sometimes **expect too much from it** and feel that it will help them improve their sim skill -- given the processes involved, **I don't see it as a stepping stone to sim** though. I usually recommend it to work on articulation and voice modulation, which is important for consec as well. It can be helpful to get used to listening and speaking at the same time at the beginning of sim training, but otherwise, I find **it's use rather limited**."		« On nous l'a déconseillé au tout début de la formation à la simultanée afin **d'éviter de prendre de mauvaises habitudes de répétition** et de **traduction au mot à mot. »**
"In consec it can be useful to work on A language flexibility but I would not call this 'shadowing'. In sim it is **not an efficient way to use their practice time** unless they have a specific problem with pronunciation / intonation."		« Le débat autour de **l'utilité** de cet exercice. » **"not real interpretation"** "The exercise was **not particularly useful** for acquiring interpreting skills" "We were told that shadowing is **rather ineffective as a means to improve one's simultaneous interpreting skills** (even if it might be beneficial in other ways)."

Appendix 3: Full comments to survey questions Trainers T08a / Students T07a

You checked "a general exercise" to improve overall skills. What skills are these?		You checked "a general exercise" to improve overall skills. What skills where you told those are?
"Fluency in a **B language**, in particular. **Accent**, developing **vocabulary** in different registers." **"Familiarity with the booth situation**, e.g. adjusting incoming volume and pitch, keeping an appropriate distance from the microphone. **Voice** skills, e.g.		"It was a way to improve the skills underpinning simultaneous and the idea was that by taking out the complexity of working with 2 languages you could focus on the rest, like **splitting attention** and **analysing as you go"**

volume of production, **pitch**, **fluidity**. Capturing a speaker's **expression** and **tone**.” **“Concentration** **Hearing yourself”** **“Identifying** message and **reformulating** it” “to become aware of the **"decalage" suitable** to each student” **“Listening and speaking at the same time** as an introduction to simultaneous interpretation”		“**- Listening and speaking at the same time** (**early** stage of learning simultaneous); - Improving **articulation** in my active language to produce an even clearer output; - Improve **concentration**; - **Warming up** before tackling a simultaneous exercise.” « Le "shadowing" me semble-t-il nous avait été présenté comme une manière **d'apprendre à parler et à écouter en même temps** (sans la difficulté de reformuler et de travailler avec deux langues différentes). » « Pour **apprendre à écouter et à parler en même temps** au tout **début** de la formation à la simultanée. » **« Simultanéité de l'écoute et de la production »** “Speed **resilience”** “Getting used to **listening to myself**, to **listen and speak at the same time**, speaking faster, improving my **memory** and sometimes play with the **décalage** and **reformulating**.” “for the skill of **listening and speaking at the same time”** **“Voice** projection, **confidence** and general **flow**.” **« écouter et parler en même temps** travailler le **décalage** améliorer la **langue B »** **“Listening”** “There was **no skill mentioned at all**. It was literally "Shadowing **can be a useful exercise**" and that was it.”

Appendix 4: Full comments to survey questions Trainers T08b / Students T07b

You checked "a specific exercise" to address particular problems. What problems are these?		You checked "a specific exercise" to address particular problems. What problems were you told those are?
"Richness of **vocabulary**, lack thereof"		
"Lack of **fluidity** and/or **lack of expression** in delivery."		
"lead time, **speaking and listening**, modulating your own **voice output**, **concentration"**		
"I never really recommend but only instruct students to do some shadowing in the very early stages of simultaneous to acquire the skill **to speak and listen at the same time**, and I recommend they **do not overdo it** (if they get used to shadowing, they might have a harder time at learning simultaneous). Another instance is when students work into a **B language**, to imitate the original speech in their B language and hence acquire /assimilate the **rhythm** of speech and **accent** for instance. The first instance, only the very first day of sim, the second instance same and a bit longer, certainly **not more than one month."**		"To improve the **speaking rate** and the **register** when interpreting simultaneously into the A-language."
"Articulation and better **listening"**		« Améliorer **vocabulaire** et **syntaxe** dans une langue étagère. »
"- **articulation** - **modulation** - **intonation"**		"For improving **accent** and **intonation** in my active languages"
"Finding different words from the original, ie. Avoiding false friends Learning to **listen & talk at the same time** Learn to **predict"**		"Improving **pronunciation** in active languages. Practising idiomatic expressions and improving fluency in **B languages**."
"Fluency, self-**confidence"**		**« articulation** des sons, **fluidité** dans l'allocution » "I was told shadowing could help me learn how to **reformulate and rephrase** better. I was also told it would be good to increase **vocabulary**."

"Becoming accustomed to li**stening and speaking at the same time** as part of an introduction to simultaneous. Slightly more advanced version of shadowing is asking students to **correct** intentional mistakes in the original or **solve problems on a sheet of paper while shadowing**." **« Activer l'écoute de deux pistes** (original et sa voix) » "In sim: useful for **accent** / **intonation** when working into **B**. In consec: **paraphrasing** more than shadowing is useful to improve A lang."		

Appendix 5: Full comments to survey questions Trainers T10a / Students S09a

What are those instructions?		What were those instructions?
"Extra tasks may include **varying vocabulary** in order to develop vocab, synonyms, etc." "In initial exercises, I may recommend **adjusting incoming volume**. adopting appropriate **posture** and **positioning** of headphones. I may also recommend **exaggerating expression and intonation**, listening to your performance afterwards to **assess its flow**." "I am not a strong believer of the benefits of shadowing, so I tend to limit its use to **very specific cases**. I do not recommend students do it while also performing other tasks, but instruct them to **follow the flow** and reproduce what they hear trying to stick as close as possible to the original. I am not against shadowing per se, but for the time being I have **not found any evidence that it is useful** beyond the cases I indicated above." "That **depends on the need** I intend them to address with the exercise. If the objective is to work on intonation for example, I would recommend **they work on the basis of a speaker** they think does that particularly well and I'd recommend they **emulate their way of speaking**, even **exaggerate** it, and **listen** to the recording of their performance to see how close or far		"I was advised to pick any speech in my A language (I mostly chose speeches similar to the ones we did in class) and **record myself, then go back to the recording and check** if I had been able to articulate properly and pronounce all the words." « Je faisais du shadowing dans ma langue A afin de m'entraîner en écouter et parler en même temps. Un prof m'a dit de **ne pas le faire avec une de mes langues C**, car j'avais déjà la tendance de rester trop près de la structure de cette langue en interprétant. » **"Steady lag"** **"Changing lag**, **reformulating**, **speaking faster"** **"changing lag** length"

away they are from the original and how that felt during the performance to kind of **recalibrate their 'intonation compass**'." **"Keep up**, **match intonation**, sometimes **correct errors**, sometimes **solve problems**." "perform shadowing first and then use the **same speech to do simultaneous"** « **Durée** **Langue** **Décalage** (coller ou attendre) » "they **can vary considerably** and are specific to each student"		

Appendix 6: Full comments to survey questions Trainers T10b / Students S09b

Based on students' performance (or feedback), do some of these instructions seem particularly difficult to implement?		**Were any of those instructions particularly difficult to implement?**
"No. I think shadowing can give students confidence in their own delivery." "Well, if students shadow because they have a hard time listening and speaking at the same time, that would be their feedback, and hopefully after a few days they get over it. My instructions are very straightforward, so I rarely have very varied feedback" "I suppose yes -- it often depends on **how willing students are to leave their comfort zone**." **"Solving problems on a separate sheet** is a difficult task to complete and tiring. A lot more challenging for students working into their B.**"** "No" "No"		"One difficulty I would highlight is **pronouncing every single word** and **following** the speaker's train of thought while putting extra effort into **articulating**, especially if the speaker is fast." "Non." "No" "No, but **lengthening the lag** made the exercise, obviously, much harder"

Appendix 7: Full comments to survey questions Trainers T11a / Students S10a

Do you know what struck them as particularly difficult?		What struck you as particularly difficult?
“Dealing with **speed.”** “I answered neither easy nor difficult because in general **after the first attempt they understand how it works** and since I don't do it that much, feedback is limited” “They easily **get tired”** **“Hearing and speaking at the same time”** “I think it's just a clash between **how easy they expected it to be and the difficulty of the actual performance**. There are also confounds such **as the stage at which they are in their sim training** and it's rather hard to identify what exactly they perceive as particular difficulty.” **Split attention**		« La difficulté de **me rappeler tous les détails** » “As we did the exercise in a **foreign language**, it was sometimes difficult to **pronounce the words correctly**, especially when **unknown** words came up.” “No” “No, but **lengthening the lag** made the exercise, obviously, much harder” « **Je pensais que comme je devais répéter exactement la même chose je n'aurais eu aucune difficulté**. En réalité, écouter et parler simultanément m'avait posé beaucoup de problème et j'avais pris du retard. Mais je n'ai fait du shadowing que pendant le cours d'introduction à la simultanée, cela ne m'a jamais été recommandé ensuite et je ne l'ai plus fait. » « **Le fait de répéter exactement tous les mots prononcés par l'orateur m'avait paru plutôt difficile**, car je m'étais rendu compte qu'inconsciemment **j'écoutais le message dans son ensemble sans me concentrer sur le verbe ou la proposition exacte, car je retenais le message**. Le "shadowing" m'avait demandé **beaucoup de concentration pour suivre de très près l'orateur, sans oublier d'y mettre l'intonation**. » « Je devrais le faire **dans ma langue C** la plus faible pour moi. » « La **répartition** des ressources cognitives **entre l'écoute et la production** » “It was hard to articulate all the words properly” “**Keeping up with the speed of the speaker** in my C languages.”

		« **La rapidité de l'orateur** qui ne me permettait pas de bien articuler tous les sons. » **"Listening carefully to the speaker while listening to myself** at the same time" "**Keeping pace**, at times." "I found it difficult to **simply repeat the same thing** in the same language. It felt **confusing**." **« écouter et parler en même temps** ne pas se laisser distancer par l'orateur » "I was speaking in a **foreign language** and it was **fast**."

Appendix 8: Categorised instructions (quoted)

Instructions	Trainers	Students	Total
Adapting lag and pace - "Décalage (coller ou attendre)" - "I do not recommend students do it while also performing other tasks, but instruct them to follow the flow" - "Keep up" - "speaking faster" - "steady lag" - "changing lag" - "changing lag length"	3	4	**7**
Emulating or exaggerating the original to adjust expression and intonation - "exaggerating expression and intonation" - "I'd recommend they emulate their way of speaking, even exaggerate it" - "reproduce what they hear trying to stick as close as possible to the original"	5		**5**

- "work on the basis of a speaker they think does that particularly well and I'd recommend they emulate their way of speaking, even exaggerate it" - "match intonation"			
Listening to and assessing performance - "listening to your performance afterwards to assess its flow" - "listen to the recording of their performance to see how close or far away they are from the original and how that felt during their performance to kind of recalibrate their "intonation compass"" - "I was advised to pick any speech in my A language (…) and record myself, then go back to the recording and check if I had been able to articulate properly and pronounce all the words"	2	1	**3**
Shadowing in a particular language - « Langue » - "perform shadowing first and then use the same speech to do simultaneous" - « Un prof m'a dit de ne pas le faire avec une de mes langues C, car j'avais déjà la tendance de rester trop près de la structure de cette langue en interprétant »	2	1	**3**
Rephrasing - "Extra tasks may include varying vocabulary in order to develop vocab, synonyms, etc." - "reformulating"	1		**1**
Becoming familiar with the booth - "adjusting incoming volume, adopting appropriate posture and positioning of headphones"	1		**1**
Correcting errors	1		**1**
Solving problems	1		**1**
Shadowing for a certain duration - "Durée"	1		**1**

Appendix 9: Categorised difficulties (quoted)

	Trainers	Students	**Total**
Listening and speaking at the same time - « split attention »	1	5	**6**

- "Hearing and speaking at the same time" - « Je pensais que comme je devais répéter exactement la même chose je n'aurais eu aucune difficulté. En réalité, écouter et parler simultanément m'avait posé beaucoup de problème et j'avais pris du retard » - « Listening carefully to the speaker while listening to myself at the same time » - « écouter et parler en même temps » - « La répartition des ressources cognitives entre l'écoute et la production »			
Shock & confusion - "in general after the first attempt they understand how it works" - "I found it difficult to simply repeat the same thing in the same language. It felt confusing" - "I think it's just a clash between how easy they expected it to be and the difficulty of the actual performance"	1	2	**3**
Dealing with speed - « ne pas se laisser distancer par l'orateur » - "I was speaking in a foreign language and it was fast"		2	**2**
Sounding fluent in a foreign language - « Je devais le faire dans ma langue C la plus faible pour moi. » - "As we did the exercise in a foreign language, it was sometimes difficult to pronounce the words correctly"		2	**2**
Staying focused - "They easily get tired" - « Le fait de répéter exactement tous les mots prononcés par l'orateur m'avait paru plutôt difficile, car je m'étais rendu compte qu'inconsciemment j'écoutais le message dans son ensemble sans me concentrer sur le verbe ou la proposition exacte, car je retenais le message » - « Le "shadowing" m'avait demandé beaucoup de concentration pour suivre de très près l'orateur, sans oublier d'y mettre l'intonation. »	1	1	**2**
Recalling all the details - « La difficulté de me rappeler tous les détails »		1	**1**