

Universidade de Lisboa
Faculdade de Letras
Departamento de Linguística Geral e Românica



**THE L2 ACQUISITION OF EUROPEAN PORTUGUESE
SLUICING BY L1 MANDARIN CHINESE SPEAKERS**

KA MAN KOU

Dissertação
Mestrado em Linguística
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Dissertação orientada por:

Prof.^a Doutora Ana Lúcia Santos

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Resumo

Este estudo visa investigar a aquisição de *sluicing* em português europeu (PE) como língua não materna por falantes cuja língua materna é chinês mandarim (CM) e cuja língua segunda é inglês.

A aquisição de *sluicing*, bem como a aquisição de outros tipos de elipse, tem sido tratada no âmbito da aquisição de uma L1. No entanto, a aquisição de *sluicing* numa L2 recebeu muito pouca atenção na área da linguística. Por conseguinte, este estudo visa explorar e examinar a aquisição de *sluicing* por falantes nativos de CM, cuja L2 é inglês e L3 é PE.

Sluicing é uma estrutura elíptica em que a expressão *wh-* é pronunciada e o restante material na interrogativa é omitido (Ross, 1969). Segundo Merchant (2001), *Sluicing* em inglês é um resultado de movimento-*wh* e de elipse, entendida como apagamento do ponto de vista fonético. Tal como em inglês, *sluicing* em PE também resulta das mesmas operações (movimento-*wh* e elipse) (Mascarenhas & Mendes 1994, Matos 2003). No entanto, embora exista uma estrutura semelhante a *sluicing* em CM, a estrutura de *sluicing* em PE e em inglês e a estrutura de *sluicing* aparente em CM não correspondem à mesma estrutura, já que o CM é uma língua *wh-in-situ*, mas o PE e o inglês são línguas que apresentam movimento-*wh*. Isto significa que a estrutura semelhante a *sluicing* em CM não corresponde à derivação de *sluicing* em PE. Assim, designamos neste estudo *sluicing* em CM como “Chinese *sluicing*-like structure (CSLS)”, ou “uma estrutura parecida com *sluicing* em CM”. A CSLS pode ser explicada adotando uma análise que designaremos como a análise “*pro-form*”. Esta análise consiste em assumir que, em CSLS, existe um pronome nulo que precede a expressão *wh-* e este pronome nulo retoma o antecedente na frase anterior.

Em relação à aquisição de língua não materna, Lardiere (2008) propõe que, para adquirir uma língua não materna, um aprendente tem de se desembaraçar dos traços associados a determinados itens lexicais e funcionais na L1 e reconfigurá-los de acordo com a língua-alvo. Na linha de Lardiere (2008), assumimos que, para adquirir *sluicing* em PE, além de adquirir os traços que definem as expressões *wh-*, os falantes nativos de CM teriam também de adquirir os traços que determinam a existência de movimento *wh-*, designadamente um traço [wh] forte em C. Além disso, para obter *sluicing* em PE, um aprendente nativo de CM teria de adquirir os traços que explicam especificamente *sluicing*, ou seja, um traço E que desencadeia a elipse no caso de *sluicing*. Aliás, conforme o Modelo de Primazia Tipológica de Rothman (2011), que assume que um aprendente de L3 escolheria uma língua previamente adquirida e a mais próxima da L3

(quer seja L1 ou L2) como a fonte de transferência durante a aquisição da L3, seria possível considerar a possibilidade de transferência do inglês (L2) para o português (L3). Neste caso, a transferência teria um efeito facilitador.

Portanto, neste estudo temos como objetivo (1) investigar a aquisição do movimento *wh-* e *sluicing* em PE por falantes nativos de CM; (2) investigar a relação entre a aquisição de movimento *wh-* e a aquisição de *sluicing* em PE por falantes nativos de CM, de modo a verificar se os falantes nativos de CM adquirem movimento-*wh* e *sluicing* ao mesmo tempo ou separadamente, sabendo que os falantes nativos de CM em ensino formal são explicitamente ensinados a construir interrogativas, mas não estruturas elípticas, nomeadamente, *sluicing* em PE; (3) testar se os falantes nativos de CM transferirão a estrutura de CSLS, que é superficialmente muito semelhante a uma estrutura *sluicing* com uma semipseudoclivada e a que chamamos “semipseudoclivada parcialmente elidida” em PE; (4) examinar se haverá alguma influência do inglês como L2 durante a aquisição de *sluicing* em PE como L3.

Assim, o trabalho é orientado pelas seguintes perguntas de investigação:

1. A aquisição do movimento *wh-* em PE será condição suficiente para os falantes de CM adquirirem *sluicing* em PE ou há evidência de uma aquisição posterior de *sluicing* (que é associado a um traço E em C), como questão específica e independente na aquisição de *sluicing* de PE?

2. Os falantes de CM transferirão a estrutura de CSLS diretamente para PE, que superficialmente corresponde a uma estrutura que designamos de “semipseudoclivada parcialmente elidida” em PE?

3. Serão os falantes de CM influenciados pelas outras línguas adquiridas previamente, nomeadamente, inglês, levando a uma aceleração da aquisição de *sluicing* em PE?

A fim de responder às perguntas de investigação, realizámos três testes diferentes: uma tarefa de produção e uma tarefa de aceitabilidade em PE e uma tarefa de aceitabilidade em inglês.

A tarefa de produção tem como objetivo testar se os falantes nativos de CM são capazes de produzir *sluicing* em PE; a tarefa de aceitabilidade em PE visa avaliar se os falantes nativos de CM aceitarão os itens que exibem movimento-*wh* e *sluicing* em PE e examinar se eles transferirão a estrutura de CSLS para PE, nomeadamente, se

mapearão a estrutura disponível em CM com uma estrutura que corresponderia em PE a uma estrutura que podemos analisar como uma semipseudoclivada parcialmente elidida; a tarefa de aceitabilidade em inglês procura verificar se a aquisição de inglês como L2 tem influência na aquisição de *sluicing* em PE. Os primeiros dois testes foram aplicados a 60 falantes nativos de CM de diferentes níveis de proficiência de PE (B1: 23 falantes; B2: 20 falantes; C1:17 falantes) e a 21 falantes nativos de PE. O terceiro teste foi aplicado somente a falantes de CM.

Os dados experimentais revelam que os falantes nativos de CM aceitam interrogativas com movimento *wh-*, mas não produzem *sluicing*, nem sequer aceitam *sluicing* em PE e em inglês. Isto significa que os resultados estão de acordo com as previsões que formulámos com base na hipótese de Lardiere (2008): os falantes nativos de CM já adquiriram os traços que explicam movimento *wh-*, em particular já adquiriram um traço [wh] forte em C em PE, mas não adquiriram o traço E que desencadeia elipse do IP em PE, ou seja *sluicing* em PE. Por isso, estes falantes não produzem nem aceitam *sluicing* em PE. Além disso, os dados mostram que os falantes nativos de CM também não adquiriram *sluicing* em inglês, mas já adquiriram movimento-*wh* em inglês. Por outras palavras, os falantes nativos de CM adquirem movimento-*wh* e *sluicing* separadamente. Como a aquisição de *sluicing* quer em PE quer em inglês está em curso, é possível afirmar que não há nenhuma influência do inglês na aquisição de *sluicing* em PE. Além disso, os dados mostram que os falantes nativos de CM não aceitam os itens de *sluicing* com semipseudoclivada parcialmente elidida, o que sugere que não mapeiam superficialmente CSLS para esta estrutura em PE. Além disso, isso será compatível com a ideia de que estes falantes não adquiriram esta estrutura em PE, que é uma estrutura de marcação de foco em PE.

Acima de tudo, descobrimos que os falantes tenderam a fazer correções aos itens de *sluicing* usando estruturas que podemos descrever como “expressões-*wh-* + ser” em PE, que provavelmente são produzidas ou como uma estrutura de elipse de VP em PE ou como uma estrutura não elíptica equivalente a CSLS.

Concluimos que os falantes de CM (1) já adquiriram o movimento-*wh* em PE, mas não a estrutura de *sluicing*; (2) não transferiram CSLS para uma estrutura de (*sluicing* com) semipseudoclivada parcialmente elidida em PE; (3) não mostraram nenhuma influência do inglês na aquisição de *sluicing* em PE. De uma forma mais geral, os resultados permitem sugerir que não só a aquisição de movimento-*wh* e a aquisição de *sluicing* são independentes no processo de aquisição de uma L2, como, ao contrário do que acontece com a aquisição de movimento-*wh*, a aquisição de *sluicing* pode ser mais

tardia (pelo menos, no contexto de aquisição aqui considerado e que corresponde a casos em que a aquisição conta não só com imersão, mas também com instrução formal).

Palavras-chave: Aquisição de L2, Português Europeu, Chinês Mandarim, *sluicing*, interrogativas

Abstract

This study investigates the acquisition of sluicing in European Portuguese by L1 Mandarin Chinese speakers. While other studies mainly focus on the acquisition of other types of ellipsis and the acquisition of sluicing in L1, the acquisition of sluicing in L2 has received very little attention. In this study, we investigate the relation between acquiring wh-movement and sluicing by L1 Mandarin speakers, and test whether Mandarin speakers are able to produce sluicing and accept wh-movement and sluicing at the same time. We also examine whether Mandarin speakers map the Chinese sluicing-like structure to European Portuguese, and we investigate whether English has any influence on the acquisition of sluicing in Portuguese. We developed three tasks to test 60 L1 Mandarin speakers and 21 L1 European Portuguese speakers: an elicited production task was designed to test whether Mandarin speakers are able to produce sluicing in Portuguese; a Portuguese grammaticality judgment task was used to test whether they accept wh-movement and sluicing and to verify whether they transfer the Chinese sluicing-like structure to Portuguese; finally, an English grammaticality judgment task was designed to verify whether English has an influence on the acquisition of sluicing in Portuguese. Our results show that the Mandarin speakers accepted interrogatives with wh-movement, but they neither produced nor accepted sluicing in Portuguese or English. We conclude that these speakers acquired wh-movement but not sluicing. English did not have any influence on the acquisition of sluicing.

Keywords: Second language acquisition, European Portuguese, Mandarin Chinese, sluicing, interrogatives

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Glossary

Abbreviation	Definition
1	First person
2	Second person
3	Third person
ACC	Accusative
ASP	Aspect
COP	Copula
CL	Classifier
CLI	Clitic
DAT	Dative
DE	Chinese marker of nominal modification
FM	Focus marker
GEN	Genitive
NOM	Nominative
pl	Plural
PREP	Preposition
sg	Singular
=	Identical
≠	Not identical

1. Introduction

This study investigates the L2 Acquisition of European Portuguese Sluicing by L1 Mandarin Speakers. For the sake of convenience, Mandarin Chinese is referred to as Chinese in this work.

The concept of sluicing was first introduced by Ross (1969). It is an elliptical construction in an interrogative expression where only the wh-phrase is pronounced and the IP following the wh-phrase is deleted; see (1).

- (1) a. Convidei um amigo para jantar. Adivinha quem?!
invited one friend for dinner guess who
'I invited a friend for dinner. Guess who?!'

(Matos, 2003: 906)

- b. Convidei um amigo para jantar. Adivinha quem ((é que) eu convidei
invited one friend for dinner guess who is that 1sg invited
para jantar)?!
for dinner
'I invited a friend for dinner. Guess who (I invited for dinner)?!'

(Matos, 2003: 906)

Contrary to what is assumed for Portuguese, sluicing in Mandarin Chinese is not real sluicing, as it is in Portuguese; instead, it is a pseudosluicing structure, and this type of structure is referred to as the Chinese sluicing-like structure throughout this study – an example is presented in (2).

- (2) Lisi mai le yiyang dongxi gei mouren, dan wo bu zhidao *(shi)
Lisi buy ASP one-CL thing give someone but 1sg not know COP
shei/sheme.
who/what
'Lisi bought something for someone, but I don't know who/what.'
李四買了一樣東西給某人，但我不知道是誰/什麼。

(Adams & Tomioka, 2012: 219)

As shown in (1) and (2), unlike what is found in sluicing in Portuguese, a copulative verb precedes the wh-phrase in the Chinese sluicing-like structure; this is obligatory in the case of Chinese sluicing-like sentences that comprise the argument wh-phrases such as “shei/who” and “sheme/what” and it is optional with those sentences that comprise D-linked argument wh-phrases, adjunct and PP wh-phrases, in general.

Sluicing in Portuguese differs from the sluicing-like structure in Chinese in that sluicing in Portuguese is formed by wh-movement and ellipsis. Unlike Portuguese, Chinese is a wh-in-situ language that does not have (overt) wh-movement. This indicates that neither wh-movement nor ellipsis are relevant in explaining the sluicing-like structure in Chinese. Therefore, in this study, we adopted the pro-form analysis proposed by Adams (2004) to capture the sluicing-like structure in Chinese. This analysis suggests that there is a silent pronoun before the copula “shi/be” that refers to the antecedent in the preceding clause.

There have been some studies on the acquisition of sluicing in general (Wood, 2009; Lindenbergh, van Hout & Hollebrandse, 2015; Sugisaki 2016, a.o.), and the most relevant work by Liu (2019) examined the syntax and acquisition of the Chinese sluicing-like construction. However, these studies mainly focused on child acquisition of sluicing in different languages, while none explored the acquisition of sluicing in L2 by adult learners. To fill this gap, our study sheds light on the investigation of wh-movement and sluicing in L2 learners of European Portuguese, a topic which has not yet been investigated in this field.

In this study, we aim to: (1) investigate the acquisition of wh-movement and sluicing by Mandarin speakers who are acquiring European Portuguese; (2) investigate the relation between the acquisition of wh-movement and the acquisition of sluicing (taking as a case in point the L2 acquisition of European Portuguese), which means to evaluate whether L1 Mandarin L2 Portuguese speakers acquire wh-movement and sluicing separately or at the same time, which is particularly interesting since they are typically instructed on how to ask questions but not on how to produce different elliptical structures such as sluicing; (3) verify whether Mandarin speakers transfer the Chinese sluicing-like structure to Portuguese during their acquisition of sluicing in Portuguese; and (4) verify whether English, which these speakers typically acquire before Portuguese, plays a role in the acquisition of sluicing in Portuguese.

To achieve the above mentioned objectives, three research questions are addressed: (1) Is acquiring wh-movement already enough for Mandarin speakers to have sluicing - or do they need to acquire IP ellipsis (associated with the E-feature in C) to acquire sluicing? (2) Do Mandarin speakers map the Chinese sluicing-like structure to Portuguese, which seems to superficially correspond to (sluicing with) a partly elided semi-pseudocleft structure in Portuguese? (3) Are Mandarin speakers (positively) influenced by English when acquiring sluicing in Portuguese?

To answer the three research questions, we conducted three tasks, which are: (1) an elicited production task on sluicing; (2) a Portuguese grammaticality judgment task on Portuguese wh-movement and sluicing; (3) an English grammaticality judgment task on English wh-movement and sluicing.

The dissertation is structured as follows. We present the structure and analyses of sluicing in Chapter 2. Section 2.1 discusses the case of English. In section 2.2, we discuss wh-in-situ in Chinese and the analyses of the Chinese sluicing-like structure. In section 2.3, we examine the interrogatives and sluicing structures in European Portuguese, and in section 2.4, we discuss the acquisition problems encountered by Mandarin speakers. In Chapter 3, we present and explain the methodology in this study. We present the experimental data collected in the test in Chapter 4, and in Chapter 5 we discuss the results, including the answers to the research questions. Finally, in Chapter 6 we conclude this study by summarizing its main findings and make recommendations for future research.

2. Sluicing in English and in European Portuguese and the sluicing-like structure in Mandarin Chinese

In this section, we examine and discuss sluicing in English (section 2.1), the sluicing-like structure in Mandarin Chinese (section 2.2), and sluicing in European Portuguese (section 2.3). In section 2.4, we explore the problems encountered by Mandarin speakers when acquiring sluicing in European Portuguese.

2.1 - Sluicing in English

Sluicing was first introduced by Ross (1969). It is an elliptical construction in a *wh*-question where only the *wh*-phrase is pronounced and the constituent following the *wh*-phrase is deleted. (1a) is a canonical example provided by Ross (1969), which corresponds to the unelided counterpart in (1b).

- (1) a. Somebody just left, guess who.
b. Somebody just left, guess who just left.

(Ross, 1969: 252)

The structure of sluicing is subject to debate, with those supporting a non-structural analysis on the one side and those in favor of a structural analysis on the other side.

2.1.1 - Non-structural analysis

One group of scholars is in favor of a non-structural analysis, including van Riemsdijk (1978) and Ginzburg (1992), *apud* Merchant (2001). They argued that sluices are made up of *wh*-fragments that are generated on their own and do not necessarily involve a CP (Merchant, 2001: 40; Merchant, 2006: 272). For instance, the proponents of this analysis assert that the *wh*-phrase “who” in (2) is considered to be a direct argument of “know”.

- (2) Anne invited someone, but I don't know who.

(Merchant, 2001: 40)

However, it was proposed by Ross (1969) that sluices are clausal instead of DP arguments because the Case of a sluice *wh*-phrase is assigned internally to the elided IP. This generalization further implies that sluicing is not a DP object selected by the

embedded predicate, as in (3). In (3a), “wissen/know” in German assigns an accusative Case to its object, but in the sluicing sentence (3b), the sluice wh-phrase receives a dative Case assigned by the verb “schmeicheln/flatter” instead of receiving an accusative Case assigned by “wissen/know” (Merchant, 2001: 42-3).

- (3) a. Sie wissen {*der Antwort/ die Antwort} nicht
 they knew the answer. DAT the answer. ACC not
 ‘They don’t know the answer.’

(Merchant, 2001: 43)

- b. Er will jemandem schmeicheln, aber sie wissen nicht
 he wants someone. DAT flatter but they know not
 {wem / *wen}.
 who. DAT who. ACC
 ‘He wants to flatter someone, but they don’t know who.’

(Merchant, 2001: 42)

Therefore, Merchant (2001: 54) concluded that “sluiced XPs are not simply fragment XPs generated by the grammar and inserted in the place of CPs as proposed by van Riemsdijk (1978)” and proposed that “the wh-remnant is immediately dominated by CP” (Merchant 2001: 54); the situations and problems stated above remain mysterious under the non-structural analysis.

2.1.2 - Structural analysis

Scholars supporting the structural analysis state that ellipsis is structural, i.e. it corresponds to the type of syntactic structures that we find in non-elliptical sentences (Merchant, 2001: 54). According to Merchant (2006: 272), there are two approaches under this analysis, which are the non-movement approach and the movement approach.

Since Ross (1969) noted that sluicing appears to not respect islands, see (4), the non-movement approach, which is supported by Chung, Ladusaw & McCloskey (1995), *apud* Merchant (2006: 276), was put forward to deal with this problem. Under this analysis, the ellipsis corresponds to a null category in overt syntax. In this case, as there is no movement in sluicing, island effects are not expected to occur as well.

- (4) a. They want to hire someone who speaks a Balkan language, but I don't remember which.

(Merchant, 2001: 4)

- b. * They want to hire someone who speaks a Balkan language, but I don't remember which *they want to hire someone who speaks*.

(Merchant, 2001: 5)

However, the biggest problem for the non-movement analysis is the connectivity effects of Case-matching and preposition stranding in sluicing, as claimed by Merchant (2001: 151). These problems can be captured in the movement analysis and we will discuss this matter in turn.

Scholars who support the movement approach, including Ross (1969), Lasnik (2001) (cited in Merchant, 2006: 272), and Merchant (2001), argued that there is movement in sluicing. Their primary arguments include the occurrence of the connectivity effects of Case-matching and preposition stranding in sluicing.¹

Under the movement approach, it is believed that two components derive sluicing sentences, which are “the movement rule that extracts a wh-phrase from an IP in interrogative structures in general, and an operation of deletion of the remaining IP fed by the movement” (Merchant, 2001: 7), which indicates that sluicing is derived through the movement of the wh-phrase to Spec, CP and deletion of the IP following the wh-phrase.

As shown in (5), “he bought” is deleted, and the elided material in (5a) is shown in (5b) before deletion. (5b) shows the counterpart of (5a) before IP deletion and (5c) shows the derivation that results in (5a) – the material between angle brackets is elided.

- (5) a. Jack bought something, but I don't know what.

(Merchant, 2006: 271)

- b. Jack bought something, but I don't know [_{CP} what₁ C⁰ <[_{TP} he bought t₁]>].

(Merchant, 2006: 273)

¹ The island insensitivity of sluicing is indeed accommodated in the movement analysis. According to Ross (1969) and Chomsky (1972), apud Merchant (2006), the island violation that remains at the surface syntax is worse than being deleted, and island violation can be solved by deletion.

c.

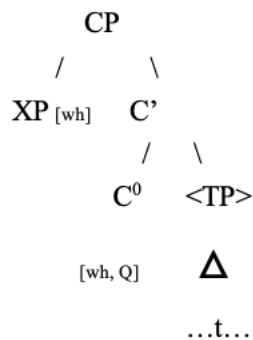


Figure 1: Derivation of sluicing in English

(Merchant, 2006: 272)

Also, under the movement approach, Merchant (2001: 91) further claimed that the Case of the antecedent should correspond to the Case of the sluice wh-phrase, as in (6), which resumes (3).

- (6) a. Er will jemandem schmeicheln, aber sie wissen nicht,
 he wants someone.DAT flatter but they know not
 { *wer/ *wen/ wem }.
 who.NOM who.ACC who.DAT
 ‘He wants to flatter someone, but they don’t know who.’

(Merchant, 2001: 89)

- b. Sie wissen nicht, { *wer/ *wen/ wem } er schmeicheln will.
 they know not who.NOM who.ACC who.DAT he flatter wants
 ‘They don’t know who he wants to flatter.’

(Merchant, 2001: 90)

(6a) shows that the wh-phrase “wem/who” exhibits a Case that corresponds to the Case of its antecedent “jemandem/someone”, and the Case of “jemandem/someone” is assigned by “schmeicheln/flatter”. (6b) is the counterpart of (6a) in the non-elliptical structure, showing that the wh-phrase also receives the Case assigned by the verb “schmeicheln/flatter” before deletion. These data illustrate that sluicing is derived by deletion, i.e. (6a) is derived from (6b) through deletion.

Moreover, preposition stranding is another fact for which the non-movement approach cannot account. Merchant (2006: 273) claimed that “a language *L* will allow preposition stranding under sluicing [as in 7b] if *L* allows preposition stranding under regular wh-movement [as in 7a]”. This assertion implies that the possibility of preposition stranding under sluicing depends heavily on preposition stranding in root questions.

(7) a. Who was he talking with?

(Merchant, 2006: 274)

b. Peter was talking with someone, but I don't know (with) who.

(Merchant, 2006: 274)

(7) shows that preposition stranding is allowed under regular wh-movement; therefore, it is also allowed under sluicing, as claimed by Merchant (2001: 107):

“Both the case facts, and especially the P-stranding facts, seem to indicate that the usual mechanisms for case-assignment and determination of targets of wh-movement that operate in a given language to regulate the shape of wh-phrases in non-elliptical questions operate in identical ways under sluicing as well.”

This indicates that the Case-marking mechanism and preposition stranding in sluicing can be captured by the movement and deletion approach, instead of the non-movement approach or the non-structural analysis.

Merchant's (2001, 2006) analysis of sluicing can be described as a movement + deletion analysis: the wh-phrase moves to Spec, CP, and is followed by the deletion of the IP / TP under CP. In Merchant (2001), we also find an explanation for the deletion of the IP: conceiving deletion as a case of extreme deaccenting, Merchant suggests that a feature E in C gives an instruction to delete the IP if this IP is what Merchant defines as e-GIVEN (in general terms, if it is semantically parallel to an antecedent). As for the feature E itself, Merchant (2001: 60) argues that it is in I and moves from I to C; alternatively, it can originally be on C, not being moved from I (see Merchant, 2001: 60, footnote 12) – we will assume the latter possibility. In that case, and in line also with Merchant's (2001: 60) suggestion, we will assume that this feature is only compatible with a C with the features [wh, Q] (see Figure 1 above); this will account for the restriction of sluicing to wh- questions. To explain that sluicing is possible only

in cases in which the wh-expression was moved to Spec, CP, and if we assume a system such as the one in Adger (2003), in line with the Minimalist Program framework within generative grammar (Chomsky, 1995 and subsequent work), the E feature would only be compatible with C[Q, ν wh*] (where * signals strength).

Summary

In this section, we have discussed the concept and different analyses of sluicing. We assume that sluicing is an elliptical construction that involves the movement of a wh-phrase to the left periphery (Spec, CP) and the deletion of the IP below the CP. Under the non-structural analysis, sluicing does not necessarily involve the structure of a CP. However, this analysis was soon overthrown by proponents of the structural analysis, who claimed that ellipsis is structural. There are two approaches under this analysis, namely the movement approach and the non-movement approach.

Proponents of the non-movement approach claim that this analysis can capture the islands' insensitivity in sluicing. However, proponents of the movement approach argue that the non-movement analysis cannot capture the connectivity effects, namely those effects concerning Case-marking and preposition stranding, which are two phenomena that the movement and deletion approach can easily explain. Moreover, Merchant (2001) argues that island insensitivity in sluicing can receive an independent explanation. To explain deletion in sluicing, and in line with the suggestion in Merchant (2001), we can assume a feature E in C, which is only compatible with a C[wh, Q].

2.2 - Chinese sluicing-like structure

The purpose of this section is to introduce the Chinese sluicing-like structure and its existing approaches, along with a discussion of the various analyses and the selection of an appropriate analysis for this dissertation. This chapter is structured as follows: Section 2.2.1 covers an introduction to the Chinese sluicing-like structure. Section 2.2.2 examines the properties of the copulative verb “shi/be” in Chinese. Section 2.2.3 discusses the characteristics of the Chinese sluicing-like structure. Section 2.2.4 includes the current analyses of the Chinese sluicing-like structure and presents the analyses that will be assumed in this dissertation by the end of this section. Again, as we mentioned earlier in the introduction, Mandarin Chinese is referred to as Chinese in this work.

2.2.1 - Introduction to the Chinese sluicing-like structure

The Chinese sluicing-like structure is superficially similar to English sluicing, as shown in (8) and (9).

(8) Jack bought something, but I don't know what.

(Merchant, 2001: 3)

(9) a. Lisi mai le yiyang dongxi gei mouren, dan wo bu zhidao *(**shi**)

Lisi buy ASP one-CL thing give someone but 1sg not know COP
shei/sheme.

who/what

'Lisi bought something for someone, but I don't know who/what.'

李四買了一樣東西給某人，但我不知道是誰/什麼。

(Adams & Tomioka, 2012: 219)

By comparing the examples in (8) and (9), the major difference between English sluicing and the Chinese sluicing-like structure is the presence of “shi/be”, which will be explained in detail in the following section.

2.2.2 - Properties of “shi” in Chinese

The examples (8) and (9) previously showed that the major distinction between the Chinese sluicing-like structure and English sluicing is the presence of “shi/be”. In this section, the properties and functions of “shi/be”, as well as its obligatoriness and optionality in Chinese, are briefly examined.

According to Song & Yoshida (2017: 486-7), “shi/be” is a multifunctional element that assumes different functions in different syntactic contexts. For example, it can function as a copula that connects a subject and a predicate in a sentence, as shown in (10). It can also function as a focus marker in cleft sentences, as shown in (11).

- (10) Tiankong **shi** lanse de.
sky COP blue DE
‘The sky is blue.’
天空**是**藍色的。

- (11) **Shi** Lisi chi le dangao de.
COP Lisi eat ASP cake DE
‘It’s Lisi who ate the cake.’
是李四吃了蛋糕的。

In addition, following Wei (2004), *apud* Adams & Tomioka (2012: 231), the obligatory “shi/be” occurring before the argument wh-phrases “shei/who” and “sheme/what” may be understood as an identification marker to form a predicate between a null *pro* and the “verbless copulative construction [i.e. ...shi shei]” as argument wh-phrases cannot occur as predicates themselves; whereas when “shi/be” is optional, namely with other wh-phrases, including PP wh-phrases and some assuming the status of adjuncts², “shi/be” can act as an emphatic marker (see Adams & Tomioka, 2012: 222; 231). We return to this in the following sections.

2.2.3 - Characteristics of the Chinese sluicing-like structure

In this section, various characteristics of the Chinese sluicing-like structure are accounted for and discussed.

² The issue is not further developed here, the explanation (“shi/be” is optional before the adjunct wh-phrases because adjunct wh-phrases can form predicates themselves) offered by Adams & Tomioka (2012) is accepted here, even though it could be further discussed. In Adams & Tomioka (2012), “nali/where” is always treated as an adjunct wh-phrase even with verbs such as “qu/go”. However, this is not central to the present study.

English sluicing and Chinese sluicing-like structures share some noticeable similarities. First and foremost, the sluicing-like structure in Chinese, as sluicing in English, cannot be produced out of the blue, that is, it cannot be produced under a non-linguistic context, as shown in (12). Instead, it requires an overt antecedent in the first conjunct, providing the interpretation of the omitted material and a reference set to interpret the remnant wh-phrase in the second conjunct, as illustrated in (13) (Adams, 2004: 2; Adams & Tomioka, 2012: 221).

- (12) a. Mouren jiezou le zheben shu, danshi meiren gaosu wo shi shei.
 someone borrow ASP this-CL book but nobody tell 1sg COP who
 'Somebody borrowed this book, but nobody told me who.'
 某人借走了這本書，但是沒人告訴我是誰。

- b. #(Context: I was searching for a book of mine)
 Meiren gaosu wo shi shei.
 nobody tell 1sg COP who
 'Nobody told me who.'
 沒人告訴我是誰。

(Adams, 2004: 2)

- (13) Lisi kandao moge xueshang, danshi wo xiang bu dao shi shei.
 Lisi saw some-CL student but 1sg think not ASP COP who
 'Lisi saw some student, but I can't figure out who.'
 李四看到某個學生，但是我想不到是誰。

(Adams, 2004: 2)

Second, according to Adams (2004) and Adams & Tomioka (2012), the indefinite correlate shown in (13), repeated here as the example (14a), is considered to be a good correlate in sluicing. In contrast, proper names and quantificational NPs are considered to be bad correlates in antecedent clauses, as shown in (14b) and (14c), respectively.

- (14) a. Lisi kandao **moge xueshang**, danshi wo xiang bu dao shi **shei**.
 Lisi saw some-CL student but 1sg think not ASP COP who
 'Lisi saw some student, but I can't figure out who.'
 李四看到**某個學生**，但是我想不到是**誰**。

(Adams, 2004: 2)

- b. *Lisi dao **Riben** qu le, danshi Dawu bu zhidao shi **nali**.
 Lisi to Japan go ASP but Dawu not know COP where
 'Lisi went to Japan, but Dawu doesn't know where.'
 *李四到日本去了，但是大吳不知道是**哪裏**。

(Adams & Tomioka, 2012: 221)

- c. *Lisi kandao **meige xuesheng**, danshi Dawu bu zhidao shi **shei**.
 Lisi see every-CL student but Dawu not know COP who
 '*Lisi saw every student, but I don't whom.'
 *李四看到**每個學生**，但是大吳不知道是**誰**。

(Adams & Tomioka, 2012: 221)

Aside from sharing similar properties with English sluicing, there are also some disparities between English sluicing and the Chinese sluicing-like structure. Firstly, the copulative verb “shi/be” occurs in the Chinese sluicing-like structure but not in English sluicing – see (15) and (16).

- (15) Lisi mai le yiyang dongxi gei mouren, dan wo bu zhidao *(**shi**)
 Lisi buy ASP one-CL thing give someone but 1sg not know COP
 shei/sheme.
 who/what
 'Lisi bought something for someone, but I don't know who/what.'
 李四買了一樣東西給某人，但我不知道是**誰/什麼**。

(Adams & Tomioka, 2012: 219)

- (16) a. Jack bought something, but I don't know what.

(Merchant, 2001: 3)

- b. *Jack bought something, but I don't know **is** what.

However, according to Adams (2004) and Adams & Tomioka (2012), “shi/be” is required in Chinese sluicing-like sentences with non-D-linked argument wh-constituents (i.e. argument wh-phrases “shei/who” and “sheme/what”), as shown in (15), while it is optional in D-linked argument wh-constituents (i.e. *what/which/how many* + NP) as shown in (17), other (adverbial) wh- phrases that can be adjunct wh-

phrases (i.e. *why*, *when*, *where*), as shown in (18), as well as prepositional wh-phrases (i.e. *to where*, *with whom*) as shown in (19).

- (17) Lisi bu xihuan yishou ge, danshi wo bu zhidao (shi) nayishou
Lisi not like one-CL song but 1sg not know COP which-one-CL
(ge).

(song)

'Lisi doesn't like one song, but I don't know which one/ song'

李四不喜歡一首歌，但是我不知道(是)哪一種首(歌)。

(Adams & Tomioka, 2012: 223)

- (18) Ruguo Lisi qu le mouge difang, ta mama kending zhidao (shi)
if Lisi go ASP some-CL place 3sg mom surely know COP
nali.

where

'If Lisi goes to some place, her mother knows for sure where.'

如果李四去了某個地方，她媽媽肯定知道(是)哪裏。

(Adams & Tomioka, 2012: 222)

- (19) a. Zhangsan cong Niuyue chufa, dan wo bu zhidao (shi) dao nali.
Zhangsan from N.Y. start but 1sg not know COP to where
'Zhangsan started out from N.Y., but I don't know to what place.'
張三從紐約出發，但我不知道(是)到哪裏。

(Wei 2004: 228)

- b. Lisi han mouren qu Riben, danshi wo bu zhidao (shi) han shei.
Lisi with someone go Japan but 1sg not know COP with who
'Lisi went to Japan with someone, but I don't know with whom.'
李四和某人去日本，但是我不知道(是)和誰。

(Adams & Tomioka, 2012: 222)

Third, it is claimed that the nature of “how” in English is different from that in Chinese (Adams, 2004: 13-4); therefore, it is possible to sluice “how” in English, but not “zheme(yang)/how” in Chinese, as shown in (20) and (21).

(20) a. Bart fixed the car, and we all wonder how.

(Adams & Tomioka, 2012: 224)

(21) a. *Dawu xiu hao le che; women dou zai cai (shi)
Dawu fix good ASP car 1PL all ASP guess (COP)
zenme(yang).
how
'Dawu fixed the car, but I wonder how.'
*大吳修好了車，我們都在猜(是)怎麼樣。

(Adams & Tomioka, 2012: 224)

Summary

In summary, the presence of the copulative verb “shi/be” in the Chinese sluicing-like structure is not captured by the analysis of English sluicing. The copulative verb “shi/be” is multifunctional since it can serve as a copula or as a focus marker in a sentence. Furthermore, there are certain specific characteristics of the Chinese sluicing-like structure, namely, “zheme(yang)/ how” cannot be sluiced in Chinese.

2.2.4 - Chinese sluicing-like structure: towards an analysis

According to previous studies, the Chinese sluicing-like structure is a controversial topic that has been subject to numerous debates and analyses. Some studies claim that the Chinese sluicing-like structure is derived through movement and deletion; therefore, it would be similar to the derivation of English sluicing. However, some other authors argue that the Chinese sluicing-like structure is not identical to English sluicing and should instead be treated as pseudo-sluicing. For instance, some authors claim that the Chinese sluicing-like structure corresponds to a reduced form of a (pseudo-)cleft or that it can be captured by what I will call a “merger” analysis. Some scholars also propose that the Chinese sluicing-like structure should receive a pro-form analysis.

Hence, in this section, I begin the discussion by introducing the structure of wh-in-situ and wh-movement in Chinese in section 2.2.4.1, since it plays an important role in the discussion concerning sluicing structures and the acquisition of sluicing.

Different debates regarding Chinese sluicing are explored and surveyed in section 2.2.4.2, including the analyses based on clefting, what I will call the “merger” analysis, a focus movement analysis and, finally, a pro-form analysis. Finally, I select the most appropriate approach to fit into the framework of this dissertation, which is the pro-form analysis.

2.2.4.1 - *Wh-in-situ in Chinese*

Some scholars claim that in wh-in-situ languages, such as Chinese, the sluicing-like structure is not derived through movement and deletion. Merchant (2001: 84) remarked that “what appears to be sluicing in these languages [Japanese and Chinese] is the result of operations different from the movement + deletion derivation found in languages with overt wh-movement”, implying that the Chinese sluicing-like structure cannot be captured by the movement and deletion approach.

Furthermore, Adams & Tomioka (2012: 220) also stated that “the English-style sluicing process would not be a viable option for those languages unless movements of wh-phrases take place at the level of surface syntax.” This indicates that the derivation of English sluicing does not fit the Chinese sluicing-like structure because Chinese does not have wh-movement in the surface syntax, as shown in (22).

(22) a. Lisi chi le **sheme**?

Lisi eat ASP what

‘What did Lisi eat?’

李四吃了什麼？

b. ***Sheme** Lisi chi le?

what Lisi eat ASP

‘What did Lisi eat?’

*什麼李四吃了？

As suggested by Li & Wei (2017: 65), “On the surface, Chinese seems to have the exact counterpart of the English sluicing examples”, especially the examples without “shi/be”, but “the two constructions in the languages are not the same” (Li & Wei 2017: 66). This idea indicates that Chinese does possess some sluicing-like structures that look superficially similar to English sluicing but do not have the same structure. According to Adams (2004: 15), “neither Japanese nor Chinese, wh-in-situ languages, permit IP-ellipsis-type sluicing”. This further indicates that the Chinese sluicing-like

structure does not undergo the same process of movement and IP-ellipsis responsible for deriving English sluicing. In line with these scholars, my view is that Chinese does not share the same structure of English sluicing because Chinese is a language that does not have wh-movement. Therefore, the nature of wh-in-situ in Chinese should first be defined and determined to establish the analyses of sluicing in later sections.

According to Huang, Li & Li (2009: 260), unlike the wh-questions in English – a language with wh-movement – interrogatives in Chinese are formed by leaving the wh-phrases in-situ, as shown in (22a), as moving the wh-phrase to the front would make the sentence ungrammatical (see (22b)). In this sense, Chinese is described as a wh-in-situ language.

Huang (1982a, b) proposed that even though wh-phrases in Chinese do not move overtly, they nevertheless move covertly at LF (cited in Huang et al., 2009). His claim is supported by the similarities between interrogatives in Chinese and English. He stated that certain kinds of verbs in English and Chinese select similar types of complement clauses. For instance, as proposed in Huang (1982b), *apud* Cheng (2003: 106-7), verbs such as “ask” select an interrogative complement, see (23), while verbs such as “believe” select a declarative complement, see (24), and verbs such as “know” select both – see (25). Although the following examples look similar, the interpretation of these examples is indeed not the same, as illustrated by the English counterparts in the following examples.

- (23) a. Qiaofeng wen wo Guojing mai le sheme
 Qiaofeng ask 1sg Guojing buy ASP what
 'Qiaofeng asked me what Guojing bought.'
 喬峰問我郭靖買了什麼。

(Cheng, 2003: 106)

- b. *Qiaofeng wen wo Guojing mai le shu
 Qiaofeng ask 1sg Guojing buy ASP book
 *'Qiaofeng asked me Guojing bought a book.'
 *喬峰問我郭靖買了書。

(Cheng, 2003: 106)

- (24) Huangrong xiangxin Guojing mai le sheme?
 Huangrong believe Guojing buy ASP what
 'What does Huangrong believe that Guojing bought?'
 黃蓉相信郭靖買了什麼？

(Cheng, 2003: 106)

- (25) Botong zhidao Huangrong xihuan shei (?)
 Botong know Huangrong like who
 a. 'Botong knows who Huangrong likes.'
 b. 'Who does Botong know Huangrong likes?.'
 伯通知道黃蓉喜歡誰？

(Cheng, 2003: 106)

In addition, Huang (1982a, b) (cited in Huang et al., 2009: 261-4) also proposed that Chinese wh-phrases are similar to English wh-phrases because they also exhibit some restrictions on locality effects. For instance, as shown in the English example (26), the extraction of an adjunct wh-phrase out of a syntactic island results in ungrammaticality. In Chinese, an in-situ adjunct wh-phrase also exhibits a locality effect as it cannot stay inside the island to form a direct question - see (27).

- (26) *How_i would [for him to fix the car t_i] be nice?

(Huang et al., 2009: 263)

- (27) *ni zui xihuan [weisheme mai shu de ren]?
 you most like why buy book DE person'
 'Why do you like [the person who bought the books t]?'
 你最喜歡為什麼買書的人？

(Huang et al., 2009: 263)

Furthermore, there is an asymmetry between adjuncts and argument wh-phrases in embedded questions in English and Chinese. By way of explanation, it is more difficult to extract an adjunct wh-phrase out of a wh-island than it is to extract an argument wh-phrase in English – see (28). Meanwhile, in Chinese, in an interrogative with both an adjunct wh-phrase and an argument wh-phrase, it is claimed to be more difficult to obtain an interpretation with an adjunct wh-phrase (see (29a)) than with an argument wh-phrase (see (29b)). Therefore, the asymmetry between adjunct wh-phrases and argument wh-phrases in movement in English and interpretation in Chinese is obvious (Huang et al., 2009: 264).

- (28) a. ?? What_i did you wonder [how to fix t_i]?
 b. * How_i did you wonder [what to fix t_i]?

(Huang et al., 2009: 263)

- (29) Li xiang zhidao [wo weisheme mai sheme]?
 2sg want know [1sg why buy what]
 你想知道[我為什麼買什麼]？

Interpretation of this sentence:

- a. ‘What is the x such that you wonder why I bought x?’
 b. Not ‘What is the reason x such that you wonder what I bought for x?’

(Huang et al., 2009: 264)

Particularly, in example (29), despite the fact that there are two wh-phrases embedded in the sentence, the interpretation is preferred to the argument wh-phrase “sheme/what”, as shown in (29a), rather than the adjunct wh-phrase “weisheme/why”, as demonstrated in (29b).

However, Huang’s proposal failed to justify the differences between the English and Chinese argument wh-questions because not only adjunct wh-phrases but also argument wh-phrases in English exhibit locality effects (Huang et al., 2009: 266). However, argument wh-phrases in Chinese do not. For instance, moving an argument wh-phrase out of a wh-island in English exhibits locality effects, see (30), whereas in-situ argument wh-phrases in Chinese can be well interpreted without any island effects, as in (31).

- (30) *What do you like [the man who fixed t_i]?

(Huang et al., 2009: 266)

- (31) [Wo mai sheme] zui hao?
 1sg buy what most good
 ‘What is [that I buy t] best?’

(Huang et al., 2009: 266)

However, Aoun & Li (1993a, b) and Tsai (1994a) (cited in Huang et al., 2009) proposed an important insight of non-movement analysis of wh-phrases even in covert syntax in Chinese. As identified in Tancredi’s (1990) study, the Principle of

Lexical Association (PLA) restrained “only” to be associated with an element in its c-command domain. Based on this principle, Aoun & Li (1993a) conducted a test on covert and overt wh-movements in Chinese, see (32)-(38), in which different interactions between the adverb “only” and other wh-constructions were observed. The results showed that in Chinese “only” can associate with the in-situ wh-phrases, which further illustrates that there is no wh-movement in Chinese, not even in covert syntax (Huang et al., 2009: 273-4).

- (32) a. He only **likes** Mary.
 b. ta zhi **xihuan** Mali.
 3sg only like Mali
 'He only likes Mali.'
 他只喜歡瑪麗。
 c. Interpretation of a & b: He doesn't love her
(Huang et al., 2009: 273)

- (33) a. He only likes **Mary**.
 b. ta zhi xihuan **Mali**.
 3sg only like Mali
 'He only likes Mali.'
 他只喜歡瑪麗。
 c. Interpretation of a & b: He doesn't like Sue
(Huang et al., 2009: 273)

The sentences in (32) and (33) are ambiguous in both English and Chinese because “only” can associate with the elements that it c-commands, which is either the verb “like/xihuan” or the object “Mary/Mali”, so the two interpretations (see (32c) and (33c)) of the same sentence are compatible.

Meanwhile, Huang et al., (2009: 273) stated that an object that is associated to "only" cannot be topicalized, as shown in (34). In other words, (34) shows that when the object “Mary” undergoes movement to the front and becomes topicalized, the ambiguity is removed. “Only” can no longer associate with the object “Mary”, it necessarily associates solely to the verb “likes”; therefore, the reading in (34c) is unavailable. However, when “Mary” in (35) is topicalized in Chinese, it becomes ungrammatical and “only” can no longer associate with it.

(34) a. ***Mary**_i, he only likes t_i.

(Huang et al., 2009: 273)

b. Interpretation: he doesn't love Mary.

c. Interpretation: *he doesn't like Sue.

(35) ***Mali**_i, ta zhi xihuan t_i.

Mali 3sg only like

'He only likes Mali.'

*瑪麗_i，他只喜歡 t_i.

(Huang et al., 2009: 273)

Also, a wh-phrase associated with "only" cannot move to Spec, CP to form interrogatives, as in (36). In other words, when a wh-phrase undergoes movement in (36), the sentence is not ambiguous because "only" no longer associates with the wh-phrase but with the verb "like".

(36) ***Who**_i does he only like t_i?

(Huang et al., 2009: 273)

If one expected wh-phrases in Chinese to move in covert syntax, then in-situ wh-phrases would not be associated with "only", as in (36). However, this expectation is not borne out. (37) shows that "only" still associates with the in-situ wh-phrase "shei/who". This shows that in-situ wh-phrases in Chinese do not undergo wh-movement covertly or overtly.

(37) Ta zhi xihuan **shei**?

3sg only eat who

'Who does he only like?'

他只喜歡誰？

(Huang et al., 2009: 274)

b. Interpretation: Who is x such that he only likes x (but not likes y)?

Since the claim for LF wh-movement does not provide an adequate explanation for the "only" test as well as the difference between the English and Chinese argument wh-phrases, therefore, the classical approach of wh-in-situ in Chinese is more thoughtful from my point of view.

Summary

Considering that Chinese is a wh-in-situ language while English is a language with wh-movement, it is reasonable to assume that the Chinese sluicing-like structure has a different derivation compared to sluicing in English. In Huang's (1982a, b) studies (cited in Huang et al., 2009), the author claimed that Chinese wh-phrases undergo wh-movement at LF due to similarities between English and Chinese adjunct wh-phrases. Nevertheless, Huang's proposal does not provide an adequate explanation for argument wh-phrases in English and Chinese, and it was later overthrown by the "only" test proposed by Aoun & Li (1993a).

2.2.4.2 - Different analyses of the Chinese sluicing-like structure

This section discusses different analyses of the Chinese sluicing-like structure, including the analyses of clefting (in section 2.2.4.2.1), merger (in section 2.2.4.2.2), focus movement (in section 2.2.4.2.3) and pro-form (in section 2.2.4.2.4).

2.2.4.2.1 - The (pseudo-)cleft analysis

It is claimed that in Japanese, a wh-in-situ language, sluicing is a reduced cleft or pseudo-cleft construction (Adams, 2004: 5-6; Wang & Wu 2006: 377). One may try to extend the reduced cleft analysis of Japanese to the Chinese sluicing-like structure, which sounds reasonable because both of them are wh-in-situ languages. By reducing part of the sentence, the structure in a cleft will look similar to the Chinese sluicing-like structure - see (38). (38a) is an example of a cleft structure in Chinese and (38b) is a simplified representation of the Chinese sluicing-like structure as a reduced cleft. However, the fact is that an object "yiben xiaoshuo/a novel" cannot be clefted in "shi...de cleft", as shown in (39). If one expected the Chinese sluicing-like structure to be formed by a reduced cleft, then (39) would be predicted to be ungrammatical because the object "sheme/what" cannot be clefted; however, this hypothesis is not borne out (see (40)).

- (38) a. Lisi shi zainali mai le dong fangzi de?
Lisi COP where buy ASP a house DE
‘Where did Lisi buy a house?’
李四是在哪裏買了棟房子的？

b. Lisi mai le dong fangzi, keshi wo bu zhidao [IP Lisi shi zainali mai
Lisi buy ASP a house but 1sg not know Lisi COP where buy
le—dong fangzi de].

ASP a house DE

‘Lisi bought a house but I don’t know [it is] where [Lisi bought a house].’

李四買了棟房子，可是我不知道李四是在哪裏買了棟房子的。

(Wang & Wu, 2006: 377)

(39) *Lisi zuotian zai shudian li mai le shi [yiben xiaoshuo]_{focus}
(de).

Lisi yesterday at bookstore in buy ASP COP one-CL novel

(DE)

‘It is a novel that Lisi bought in the bookstore yesterday.’

*李四昨天在書店裏買了是一本小說（的）。

(Adams & Tomioka, 2012: 243)

(40) Lisi zuotian zai shudian li mai le yiyang dongxi, dan wo bu zhidao
Lisi yesterday at bookstore in buy ASP one-CL thing but 1sg not know
shi **sheme**.

COP what

‘Lisi bought something in the bookstore yesterday, but I don’t know what (it was).’

李四昨天在書店裏買了一樣東西，但我不知道是什麼。

(Adams & Tomioka, 2012: 244)

In addition, Chiu (2011: 118-21) claimed that the sluicing-like structure in Chinese is indeed a reduced pseudo-cleft structure (see (41)). (41a) is an example of a pseudo-cleft in Chinese. (41b) is a simplified representation of the Chinese sluicing-like structure as a reduced pseudo-cleft.

(41) a. Lisi yujian de shi shei?

Lisi meet DE COP who

‘Who was it that Lisi met?’

李四遇見的是誰？

b. Lisi yujian yige ren, keshi wo bu zhidao [~~IP Lisi yujian de~~ shi shei].
 Lisi meet one-CL man but 1sg not know Lisi meet DE COP who
 ‘Lisi met someone, but I don’t know who [~~the one Lisi met is~~’
 李四遇見一個人，可是我不知道李四遇見的是誰。

(Wang & Wu, 2006: 377)

Note, however, that pseudo-clefts always require the presence of "shi/be" before argument and adjunct wh-phrases. For instance, (41a) is a pseudo-cleft example that would always require the presence of “shi/be” before the argument wh-phrase “shei/who”. Yet, this contradicts what is stated in section 2.2.3 because in sluicing-like sentences, “shi/be” optionally appears before wh-phrases other than “shei/who” or “sheme/what”.

Since there are many questionable issues that remain unsolved under the reduced (pseudo) cleft analyses, these analyses are not able to capture sluicing and they were soon overthrown by other linguists, such as Wei (2004: 176-86), Adams (2004: 7-10), Wang & Wu (2006: 377) and Adams & Tomioka (2012: 243-6).

2.2.4.2.2 - The “merger analysis”

Aside from the (pseudo-)cleft analyses, Chiu (2011) suggested a plausible analysis to account for the Chinese sluicing-like structure. He suggested that the sluicing-like structure in Chinese undergoes a process in which “Merger must build the syntactic structure of the first conjunct either ahead of or in parallel with the second conjunct.” Chiu (2011: 118), without involving wh-movement.

According to Chiu (2011), this analysis is based on a parallel condition that requires the second conjunct to repeat the material in the first conjunct, except the wh-phrase in the second conjunct, and the embedded clause merges to the matrix clause after the wh-phrase is merged in the embedded clause, as claimed by Chiu (2011: 119):

"By the time the second conjunct is being built, the first conjunct has already been spelled out, so it is possible for the embedded clause of the sluice to be built in accordance with the first conjunct, with exactly the same lexical items except for a *wh*-variable in the object position."

Chiu also claimed that sluicing is constructed when the IP in the second conjunct is deleted at PF and transferred to LF at spell-out, followed by the occurrence of the

reemergence of the wh-phrase. Since PF deletion does not delete a focused constituent and in this analysis the wh-phrase is in a Focus projection above the IP, the wh-phrase will be maintained at spell-out.

However, Wei (2004) claimed that the puzzles in the merger analysis remain unsolved, most importantly the presence of “shi/be”. The main idea of the merger analysis is to copy the materials in the first conjunct to the second conjunct, but this idea cannot explain why “shi/be” occurs before argument wh-phrases when it is absent in the antecedent clause (Wei, 2004: 200).

2.2.4.2.3 - The focus movement and deletion analysis

There is a group of scholars who claim that the Chinese sluicing-like structure undergoes focus movement and IP deletion, which includes Wang (2002), Wang & Wu (2006), Chiu (2007), Wang (2012), Murphy (2014) and Song (2016) (as stated in Song 2016: 265). Among these, Wang & Wu (2006) proposed an analysis of focus movement in the Chinese sluicing-like structure that differs from the analysis of English sluicing. In the Chinese sluicing-like structure, the wh-phrase is extracted from IP and moves to Spec, FocusP to check a [+focus] feature; IP deletion then applies before spell-out, as shown in (42).

- (42) a. Lisi yujian yige ren, keshi wo bu zhidao *(shi) shei_i [~~Lisi yujian t_i~~]
 Lisi met one-CL person but 1sg not know COP who Lisi met
 ‘Lisi met someone, but I don’t know who.’
 李四遇見一個人，可是我不知道是誰[李四遇見]。
 b. ..., keshi wo bu zhidao [_{CP} shi [_{FocP} shei_i Foc [_{IP} ~~Lisi yujian t_i~~].

(Wang & Wu, 2006: 376)

Furthermore, scholars such as Wang & Wu (2006) and Liu (2019) stated that the existence of sloppy readings in the Chinese sluicing-like structure highly favors the ellipsis analysis. For instance, Wang & Wu (2006: 381) provided an example of a sluicing-like sentence with a stranded adjunct wh-phrase (see (43)) and claimed that the reflexive “ta-ziji/himself or herself” in this example yields a sloppy reading rather than the strict one.

- (43) Laowu zhidao ta-ziji weisheme yao jiehun, Lisi ye zhidao weisheme.
 Laowu know him-self why get marry Lisi also know why
 ‘Laowu knows why he is getting married, Lisi also knows why.’
 老吳知道他自己為什麼要結婚，李四也知道為什麼。
 a. ?? Strict: Lisi also knows why he (=Laowu) is getting married.
 b. Sloppy: Lisi also knows why he (=Lisi) is getting married.

(Wang & Wu, 2006: 381)

In line with Wang & Wu (2006), Liu (2019) also provided an example of a sluicing-like sentence with a stranded argument wh-phrase (see (44a)) and claimed that sloppy readings are obtained in sluicing-like sentences.

- (44) a. Lisi zhidao shei tou le ta de qian,
 Lisi know who steal ASP 3sg GEN money
 ‘Lisi knows who stole his_i money ...’
 李四知道誰偷了她的錢...
 Mali ye zhidao shi shei.
 ‘...Mali also knows COP/FM who.’
 ...瑪麗也知道是誰。
 a. Strict reading: ‘...Mali_j also knows who (stole his_i (=Lisi’s) money).’
 b. Sloppy reading: ‘... Mali_j also knows who (stole her_j (=Mali’s) money).’

(Liu, 2019: 12)

Liu (2019: 13) further stated that (44a) is captured by the ellipsis analysis because both strict and sloppy readings are maintained under this analysis, as shown in (44b).

- (44b) ... Mali_j ye zhidao shi shei [tou le ta_{i/j} de qian]
 Mali_j too know FM who steal ASP 3SG_{i/j} GEN money
 ‘...Mali_j also knows who (stole his_i/her_j money).’ (strict reading; sloppy reading)

(Liu, 2019: 13)

However, Li & Wei (2017) and Adams & Tomioka (2012) stated that a series of serious problems can be easily found under the focus movement analysis, such as the

optionality of “shi/be” in adjunct wh-phrases and the ungrammaticality of “zheme³/how” in the Chinese sluicing-like structure, which are not properly explained (Adams & Tomioka, 2012: 241-2). Adams & Tomioka (2012: 242) already mentioned that if the sluicing-like structure in Chinese can be explained by the focus movement and deletion analysis, one would expect (45a) and (45b) to pattern similarly, since (45b) should be an unelided counterpart of (45a). However, this expectation is not borne out because (45a) and (45b) pattern differently; for instance, no strict and sloppy readings are available in (45a) because (45a) is an ungrammatical and unacceptable sentence in Chinese. Unlike (45a), (45b) is grammatical and the sloppy reading is available in this example.

- (45) a. *Yuehan xiang zhidao ta yinggai mai na yi-ben xiaoshuo, (erqie)
 Yuehan want know 3sg should buy which one-CL novel and
 Bier xiang zhidao (shi) na yi-ben zidian.
 Bier want know COP which one-CL dictionary.
 ‘*Yuehan wondered which novel he should buy, and Bier wondered
 which dictionary it/that was.’
 *約翰想知道她應該買哪一本小說，(而且)比爾想知道(是)哪一本字典。

(Adams & Tomioka, 2012: 234)

- b. Yuehan xiang zhidao na yi-ben xiaoshuo ta yinggai mai, (erqie) Bier
 Yuehan want know which one-CL novel 3sg should buy and Bier
 xiang zhidao (shi) na yi-ben zidian ta yinggai mai.
 want know COP which one-CL dictionary 3sg should buy.
 ‘Yuehan wondered which novel he should buy, and Bill wondered which
 dictionary he should buy.’
 約翰想知道他應該買哪一本小說，(而且)比爾想知道哪一本字典他應該
 買。

(Adams & Tomioka, 2012: 242)

Strict reading: Bier wondered which dictionary he (=Yuehan) should buy.

Sloppy reading: Bier wondered which dictionary he (=Bier) should buy.

³ The position of placing “zheme/how” and “zhemeyang/how” is slightly different. Wang & Wu (2006: 379) argued that “zhemeyang/how” cannot be sluiced because it cannot be fronted in root questions. However, Adams & Tomioka (2012: 241) argued that “zheme/how” can be fronted in Chinese yet cannot be sluiced in the Chinese sluicing-like structure.

The remaining arguments concerning sloppy readings in a sluicing-like structure are further discussed in section 2.2.4.2.4. However, as the problems remain unsolved under the focus movement account, and considering that Chinese is a wh-in-situ language (as explained in section 2.2.4.1), in the following section (section 2.2.4.2.4), I introduce another analysis that fits well into the framework of this dissertation and provides a more insightful explanation for the sluicing-like structure in Chinese. This analysis is supported by a group of scholars, including Adams (2004), Wei (2004), Adams & Tomioka (2012), and Li & Wei (2017), among others.

2.2.4.2.4 - The pro-form analysis

Adams (2004) claimed that the movement and deletion analysis in English cannot be extended to Chinese sluicing because it cannot explain various facts, such as the requirement of the copula “shi/be” in sluicing-like sentences stranded with the argument wh-phrases “shei/who” or “sheme/what” and the unavailability of “how” in sluicing-like structures. Thus, instead of extending the reduced (pseudo-)cleft structure or movement and deletion analysis to the Chinese sluicing-like structure, Adams (2004) proposed a pro-form analysis to capture the Chinese sluicing-like structure, and Adams & Tomioka (2012) referred to the Chinese sluicing-like structure as pseudo-sluicing. Under the pro-form analysis, a wh-in-situ account of Chinese is maintained.

The pro-form analysis was first proposed by Adams (2004) and Wei (2004). It was further supported by Adams & Tomioka (2012) and Li & Wei (2017). This analysis proposes that there is neither wh-movement nor ellipsis in Chinese sluicing (Adams & Tomioka, 2012: 233) and that the missing material corresponds to a phonologically silent pronoun. Under this analysis, an anaphoric relationship between the silent pronoun and an antecedent is involved (Adams & Tomioka, 2012). In other words, there is a silent pronoun that occurs before the copula “shi/be”, and the silent pronoun refers back to the antecedent in the preceding clause.

Nominal *pro* and event *pro*

The silent *pro* can be further divided into two categories: a nominal *pro* and an event *pro*. The nominal *pro* refers to an entity (NP) in the preceding clause, as illustrated in (46a). An event *pro* refers to an event or a proposition (IP) in the preceding clause – see (46b) (Adams, 2004: 10-11). In (46a), the silent *pro* occurs before the copula “shi/be” and refers back to the NP “a special gift” in the antecedent, while in (46b) it is an event

pro that refers back to the IP in the antecedent, which is the whole event of “John smacked someone”.

(46) a. A Nominal *pro* (a NP silent *pro*)

John bought [**a special gift**]_i (for his girlfriend),
danshi wo bu zhidao [*pro*; shi [**sheme**]].
but 1sg not know COP what
'...but I don't know what that was.'
... , 但我不知道是什麼。

(Adams, 2004: 11)

b. An event *pro* (An IP silent *pro*)

(John is very gentle most of the time.) [**John smacked someone**]_i,
danshi wo bu zhidao [*pro*; shi [**weisheme**]].
but 1sg not know COP why
'... but I don't know why that was.'
... , 但我不知道是為什麼。

(Adams, 2004: 11)

According to Adams (2004: 11-2), the silent *pro* can be spelled out instead as a demonstrative pronoun “na/that” as a “na shi XP/(that is XP)” structure - see (47).

(47) a. Amei mai le yijian liwu, danshi ta mei gaosu wo **na** shi sheme.

Amei buy ASP one-CL present but 3sg not tell 1sg that COP what
'Amei bought a present, but she didn't tell me what that was.'
阿梅買了一件禮物，但是她沒告訴我那是什麼。

(Adams, 2004: 11)

b. Ruguo Lisi qu moge difang, ta mama keding zhidao **na** shi nali.

if Lisi go some-CL place 3sg mom definitely know that COP where
'If Lisi goes somewhere, his mother knows for sure where that is,'
如果李四去某個地方，她媽媽肯定知道那是哪裏。

(Adams, 2004: 11)

In response to Wang & Wu (2006), who claimed that the *pro*-form analysis proposed by Adams (2004) cannot capture sloppy readings in Chinese, Adams & Tomioka (2012) claimed that the picture of sloppy readings in Chinese sluicing is rather complex and that more studies on sloppy readings are required in the future. They

further stated that the idea of sloppy reading as evidence against the pro-form analysis is indeed incorrect. Proponents of the movement analysis believe that pronouns cannot yield sloppy readings and can have one referent only. However, pronouns can indeed also yield sloppy readings, as shown by the “paycheck pronoun” game stated in Adams & Tomioka (2012: 235), which suggests sloppy readings can be obtained in the interpretation of pronouns.

Besides, Liu (2019: 12-4) challenged the pro-form analysis by claiming that if “na/that” is the spell-out form of *pro*, then (44) (restated here as (48)) and (49) should pattern alike and (49) should have a sloppy reading, as it is in (48); however, this hypothesis is not borne out.

(48) Lisi zhidao shei tou le ta de qian,
 Lisi know who steal ASP 3sg GEN money
 ‘Lisi knows who stole his_i money ...’
 李四知道誰偷了她的錢...

Mali ye zhidao shi shei.
 Mali also know COP/FM who
 ‘...Mali also knows who.’
 ...瑪麗也知道是誰。

- a. Strict reading: ‘...Mali_i also knows who (stole his_i (=Lisi’s) money).’
- b. Sloppy reading: ‘... Mali_i also knows who (stole her_j (=Mali’s) money).’

(Liu, 2019: 12)

(49) ... Mali ye zhidao **na** shi shei.
 Mali also know that COP who
 ‘...Mali also knows who that is.’ (strict reading; *sloppy reading)
 ...瑪麗也知道那是誰。

(Liu, 2019: 13)

- a. Strict reading: ‘...Mali also knows who (stole his (=Lisi’s) money).’
- b. *Sloppy reading: ‘... Mali also knows who (stole her (=Mali’s) money).’

However, Adams & Tomioka (2012) had already provided an explanation corresponding to the challenge of overt pronouns and sloppy readings stated in Liu (2019). They explained that the readings of a sluicing-like sentence either with or

without the overt pronoun “na/that” do not necessarily have the same meaning because a silent *pro* yields sloppy reading more easily than an overt pronominal. This fact is validated in declarative sentences with silent and overt pronouns used as objects in (50) and (51), respectively – the authors seem to assume a null pronominal analysis of null objects. In (50), the sloppy reading is easily obtained, whereas in (51) the overt pronoun “ta” reduces the availability of sloppy reading.

(50) Zhangsan xihuan tade laoshi. Lisi ye xihuan.

Zhangsan like his teacher Lisi also like

‘Zhangsan likes his teacher and Lisi also does.’

張三喜歡他的老師，李四也喜歡。

(Adams & Tomioka, 2012: 237)

a. Strict reading: ‘... Lisi also likes his (=Zhangsan’s) teacher.’

b. Sloppy reading: ‘... Lisi also likes her (=Lisi’s) teacher.’

(51) Zhangsan xihuan tade laoshi. Lisi ye xihuan ta.

Zhangsan like his teacher Lisi also like 3sg

Zhangsan likes his teacher and Lisi also likes her.’

張三喜歡他的老師，李四也喜歡他。

(Adams & Tomioka, 2012: 236)

a. Strict reading: ‘... Lisi also likes her (=Zhangsan’s teacher).’

b. *Sloppy reading: ‘...Lisi also likes her (=Lisi’s teacher)

Although current studies of sloppy reading in Chinese sluicing-like structures are not enough to draw conclusions about the sluicing-like structure in Chinese, the pro-form analysis nevertheless provides a more powerful and reasonable insight regarding the challenges raised concerning the sluicing-like structure.

The distinction between the sluicing structure in English and the sluicing-like structure of Chinese, specifically the idea that Chinese only displays a pseudo-sluicing structure of the type [*pro be wh-phrase*], is supported by the contrast between English and Chinese concerning the availability of sprouting, as argued by Li & Wei (2017). Li & Wei (2017) stated that sprouting, which is a subtype of sluicing in English, does not exist in Chinese, indicating that the Chinese sluicing-like structure is not identical to real sluicing in English.

As proposed in Chung et al. (1995), *apud* Li & Wei (2017: 72): “when an overt object is not required, the object licensed by the argument structure of the surrounding material, but not overtly expressed, can be sprouted”. The example in (52) is a case of sprouting.

(52) I know he ate, but I don't know what_i (he ate x_i).

(Li & Wei, 2017: 72)

Sprouting is explained in that one can copy the antecedent IP and add an object that fulfills the argument structure in the preceding clause. For instance, “ate” in (52) does not necessarily require an overt object. One can copy the antecedent IP “he ate” and add a new variable according to the licensing constraints of the antecedent IP, at LF. However, even though (52) sounds perfectly fine in English, (53) is ungrammatical because Chinese does not allow argument sprouting.

(53) *Wo zhidao ta chi le, dan wo bu zhidao shi sheme.

1sg know 3sg eat ASP but 1sg not know COP what

‘I know he ate, but I don't know what.’

*我知道他吃了，但我不知道是什麼。

(Stated in Wei, 2011, and Adams & Tomioka, 2012, *apud* Li & Wei, 2017: 73)

Li & Wei (2017: 78) stated that both sluicing and sprouting in English require movement of a wh-phrase to the peripheral position of a clause, regardless of whether it is under a movement and deletion analysis or a (LF) copying analysis. The unavailability of sprouting (a subtype of sluicing) in Chinese illustrates that this kind of movement is not available in Chinese, which further confirms that the Chinese sluicing-like structure is not captured by the movement and deletion analysis. Instead, the pro-form analysis provides a more insightful explanation to the non-existence of sprouting in Chinese because the silent *pro* fails to be identified when the antecedent is absent in the preceding clause; therefore, the properties of the Chinese sluicing-like structure are captured by the pro-form analysis.

Summary

The examination of various analyses in this section has allowed us to select the most appropriate one for this dissertation, that is, the pro-form analysis. The Chinese sluicing-like structure has been claimed to be explained by a reduced (pseudo-)cleft or

by what we call here the “merger” analyses; however, these were soon rejected. Some scholars claim that the Chinese sluicing-like structure is captured by the focus movement and deletion analysis, which would imply moving the wh-phrase to check a focus feature in FocusP. Proponents of the focus movement analysis mainly focus on sloppy readings in sluicing-like sentences to argue against the pro-form analysis, but this was rejected by Adams & Tomioka (2012), who claimed that sloppy readings are indeed in line with the pro-form analysis. By adopting the classical approach of wh-in-situ earlier in section 2.2.4.1, and in line with this classical approach, the pro-form analysis is adopted in this dissertation. Under the pro-form analysis, there are two types of silent *pro*, which are a nominal *pro* and an event *pro*. A nominal *pro* refers to an NP in the preceding clause, while an event *pro* refers to an IP in the preceding clause. This silent *pro* has its counterpart in an overt demonstrative pronoun “na/that”, giving rise to a “na shi XP/(that is XP)” structure. Last but not least, the unavailability of sprouting mentioned in Li & Wei (2017) further confirms that the properties of the Chinese sluicing-like structure are captured by the pro-form analysis rather than any movement and deletion analyses.

2.3 - Sluicing in European Portuguese

The purpose of this section is to introduce sluicing in European Portuguese (EP). This section is composed of an introduction to sluicing in EP in section 2.3.1, the properties and characteristics of sluicing in EP in section 2.3.2, and root and embedded questions in EP in section 2.3.3.

2.3.1- Introduction to sluicing in European Portuguese

There are numerous empirical studies of ellipsis that concentrate on EP, however, not many have discussed sluicing in EP. For instance, Matos (1992) primarily focused on studies of VP ellipsis and stripping in EP, while another study by Matos (2003) also discussed many different types of ellipsis in EP, including a very brief description of sluicing. Further work was done by Matos & Catarino (2017), which mainly focused on examining the structure of sluicing and pseudosluicing in terms of the omission of prepositions; however, this is not the focus of my dissertation. Last but not least, the work by Mascarenhas & Mendes (1994) discussed sluicing in EP in more detail.

(54a) is an example of sluicing in EP with an illustration of the elided part in (54b).

- (54) a. Convidei um amigo para jantar. Adivinha quem?!
invited one friend for dinner guess who
'I invited a friend for dinner. Guess who?!'

(Matos, 2003: 905)

- b. Convidei um amigo para jantar. Adivinha quem ((é que) eu convidei
invited one friend for dinner guess who is that 1sg invited
para jantar)?!
for dinner
'I invited a friend for dinner. Guess who (I invited for dinner)?!'

(Matos, 2003: 905)

According to Mascarenhas & Mendes (1994: 278), sluicing is an elliptical construction in a sentence that contains an embedded interrogative headed by a wh-phrase, whereby the constituents following the wh-phrase are elided. In other words, sluicing sentences in EP are mainly constructed by embedded interrogatives. It has also

been verified by Mascarenhas & Mendes (1994: 266) that sluicing can behave as a direct interrogative, as shown in (55) and (56).

- (55) Um rapaz partiu o vidro, mas quem?
a boy broke the glass but who
'A boy broke the glass, but who?'

(Mascarenhas & Mendes, 1994: 286)

- (56) O Zé comprou um carro, mas qual?
the Zé bought a car but which
'Zé bought a car, but which?'

(Mascarenhas & Mendes, 1994: 286)

In light of the above, the properties and characteristics of sluicing in EP and root and embedded interrogatives in EP are explored in the following sections.

2.3.2 - Properties and characteristics of sluicing in European Portuguese

First, the elided constituent in sluicing in EP is introduced by an interrogative constituent. Similar to English sluicing and the Chinese sluicing-like structure, sluicing in EP cannot be uttered out of the blue because the interpretation and grammaticality of the construction are highly dependent on the preceding sentence - see (57). (57b) cannot be uttered out of the blue without the antecedent (57a).

- (57) (a) O João chamou alguém?
the João called someone
'Did João call someone?'

- (b) Sim, mas não sei quem_i [-].
yes, but not know who
'but I don't know who.'

(Mascarenhas & Mendes, 1994: 278)

Second, according to these authors, there are two types of antecedents in sluicing constructions in EP, namely with or without an explicit antecedent - see (58) and (59) respectively.

- (58) a. Alguém_i ama o João, mas eu não sei **quem**_i.
 someone love the João but I not know who
 ‘Someone loves João, but I don’t know whom.’

(Mascarenhas & Mendes, 1994: 278)

- b. O João beijou **umas das raparigas**_i, mas não sei **qual**_i.
 the João kissed some of.the girls but not know which
 ‘João kissed some of the girls, but I don’t know which.’

(Mascarenhas & Mendes, 1994: 278)

- (59) a. [-]_i Compraram a casa, mas não sei quem_i.
 bought the house but not know who
 ‘Someone bought a house, but I don’t know whom.’

(Mascarenhas & Mendes, 1994: 279)

- b. O Pedro comeu [-]_i, mas não sei o quê_i.
 the Pedro ate but not know what
 ‘Pedro ate, but I don’t know what.’

(Mascarenhas & Mendes, 1994: 279)

- c. O Pedro partiu [-]_i, mas não sei quando_i.
 the Pedro left but not know when
 ‘Pedro left, but I don’t know when.’

(Mascarenhas & Mendes, 1994: 279)

As illustrated in (59), the cases in which there is no explicit antecedent can be divided into two types. One type corresponds to arguments of the matrix verb (59a,b). The other type is not selected by the matrix verb (such as an adjunct), see (59c). It is relevant to remark that at least some of these cases (see 59b) are similar to what was defined as sprouting, which is available in English but not in Chinese (see the discussion in Li & Wei 2017).

Third, an antecedent is obliged to be indefinite, as in (60). Note that sluicing is ill-formed when the antecedent is a definite expression, as in (61).

- (60) a. O Pedro comprou **um gato**_i, mas não sei **qual**_i.
the Pedro bought a cat but not know which
'Pedro bought a cat, but I don't know which.'

(Mascarenhas & Mendes, 1994: 281)

- b. O Pedro comprou **algo**_i, mas eu não sei **o quê**_i.
the Pedro bought something but 1sg not know what
'Pedro bought something, but I don't know what.'

(Mascarenhas & Mendes, 1994: 281)

- (61) *O Pedro comprou **o gato**_i, mas não sei **qual**_i.
the Pedro bought the cat but not know which
*'Pedro bought the cat, but I don't know which.'

(Mascarenhas & Mendes, 1994: 281)

Fourth, the wh-phrase has a syntactic function that is established in relation to the antecedent (see 62).

- (62) a. O João chamou **alguém**_i, mas eu não sei **quem**_i.
the João called someone but I not know who
'João called someone, but I don't know whom.'

(Mascarenhas & Mendes, 1994: 279)

- b. **Alguém**_i chamou o João, mas eu não sei **quem**_i.
someone called the João but I not know who
'Someone called João, but I don't know who.'

(Mascarenhas & Mendes, 1994: 279)

The syntactic function of "quem/who" in the above examples is identical to the syntactic function of "alguém/someone" in the antecedent, as shown by the fact that we

interpret “alguém/someone” and “quem/who” as direct objects in (62a) and subjects in (62b).

2.3.3 - Root and embedded questions in European Portuguese

In the previous decades, the topic of interrogatives in Brazilian Portuguese (BP) and European Portuguese (EP) has been studied extensively. However, only EP is considered in this dissertation.

In this section, we examine the properties of interrogatives because it is necessary to understand the structure of both root and embedded questions in EP before going deeper into sluicing in EP. We discuss root questions in section 2.3.3.1 and embedded questions in section 2.3.3.2.

2.3.3.1 - Root questions

Portuguese is a mixed language in interrogatives. It licenses both wh-movement and wh-in-situ in the overt syntax (Ambar, 2003: 216; Brito, Duarte, & Matos (2003): 465; Miotto & Lobo, 2016: 276) (see 63).

- (63) a. O que é que a Maria comeu?
what is that the Maria ate
‘What did Maria eat?’
- b. A Maria comeu o quê?
the Maria ate what
‘What did Maria eat?’

Interrogatives with wh-movement differ from wh-in-situ in that wh-phrases in interrogatives with wh-movement move from the clause internal position to the Spec, CP (Bruto, et al., 2003: 465; Miotto & Lobo, 2016: 275). According to Brito et al. (2003: 466), the wh-phrase of an interrogative moves to the Spec, CP whose head C is specified as [+WH, +Q], which triggers the movement of the interrogative constituents to the front of the interrogative, as in (64b).

- (64) a. O que leu a Maria?
 what read the Maria
 ‘What did Maria read?’

(Brito et al., 2003: 473)

- b. [_{CP} O que_j [_C leu_i [_{IP} a Maria t_i t_j.]]]

(Adapted from Brito et al., 2003: 473)

If we assume a system in which the strength of features explains movement, by requiring a local configuration at feature checking, such as the system described in Adger (2003), “o que/what” moves to the Spec, CP to check a (strong) [*uwh**] feature in C. In addition, we are assuming that the verb has moved to C in (64).

In EP, inversion of subject and verb is optional in D-linked contexts, whereas it is required in non-D-linked contexts (Miotto & Lobo, 2016; Brito et al., 2003). According to Ambar (1988), *apud* Miotto and Lobo (2016), the movement of verbs to C occurs to identify the empty category of the non-D-linked wh-constituents (i.e. which). A wh-phrase characterized by an empty category (non-D-linked wh-constituents) triggers V movement to C, see the example in (65). In contrast, in the case of D-linked wh-constituents, no V-to-C movement is required as there is no empty category in the wh-expression. Therefore, inversion is necessary for non-D-linked interrogative contexts (see (65)), whereas it is optional in D-linked wh-constituents (see (66)) (Ambar, 2003: 213-7; Miotto & Lobo, 2016: 278). Soares (2006) presents an explanation for T-to-C movement in terms of features (a feature [*uT*] in C would explain the movement).

- (65) a. O que leu Joana?
 what read Joana
 ‘What did Joana read?’

(Miotto & Lobo, 2016: 277)

- b. *O que Joana leu?
 what Joana read
 ‘What did Joana read?’

(Miotto & Lobo, 2016: 277)

- (66) a. Que livro Joana leu?
 which book Joana read
 ‘Which book did Joana read?’

(Miotto & Lobo, 2016: 277)

- b. Que livro leu Joana?
 which book read Joana
 ‘Which book did Joana read?’

An alternative to inversion (resulting from v-to-T followed by T-to-C movement), is the insertion of a C lexically filled by the grammaticalized expression “é que/is that”, as in (67). This type of wh- question is sometimes described as a cleft interrogative (see Miotto & Lobo 2016: 277). The so-called cleft interrogative can correspond to a structure with “é que/is that”, as in (67), a case in which the verb in “é que/is that”, “é/is” is in the present tense and does not agree with the main verb (“fez/did”, a past tense, in (67)). In that case, the wh-phrase cannot occur between “é/is” and “que/that”, at least in non-echo questions (see (68)). This is shown by Miotto & Lobo (2016: 277), who also show that if the form of the verb “ser/be” is “foi/was”, agreeing with the main verb, leaving the wh-phrase between “foi/was” and “que/that” is more acceptable (see (69)). This is an argument for the more grammaticalized nature of “é que/is that”, which we can assume to lexicalize C.

- (67) O que é que Joana fez?
 what is that Joana did
 ‘What did Joana do?’

(Miotto & Lobo, 2016: 277)

- (68)*É o que que Joana fez?
 is what that Joana did
 ‘What is the thing that Joana did?’

(Miotto & Lobo, 2016: 277)

- (69) ?Foi que /o quê que Joana fez?
 was what that Joana did
 ‘What was the thing that Joana did?’

(Miotto & Lobo, 2016: 277)

The fact that “é que/is that” is grammaticalized explains that it can co-occur with “foi que/was that” in a cleft (as pointed out by Matos & Catarino 2017: 202); see (70):

(70) a. (O) *que é que foi que* o João comprou ?
what is that was that the João bought
'What was the thing that João ate?'

(Matos & Catarino, 2017: 202)

b. O Pedro não sabe [(o) *que é que foi que* o João comprou _]
the Pedro not know what is that was that the João bought
'Pedro does not know what it was that João bought.'

(Matos & Catarino, 2017: 202)

To this extent, if “é que” in (70) is in C, this means that “foi/was” must be in a lower position, possibly a position associated to I (T). We will discuss this issue in turn.

Besides, Portuguese also allows *wh*-in situ questions. They are formed by leaving the *wh*-phrase in the final position of a sentence – see (71b) below. A *wh*-phrase is obliged to stay in situ when it is inside a strong island, as in (72a), and it cannot be extracted out of the island and moved to the left periphery of the sentence, as in (72b) (Miotto & Lobo, 2016: 276).

(71)a. O que comeu Joana?
what ate Joana
'What did Joana eat?'

(Miotto & Lobo, 2016: 276)

b. Joana comeu o quê?
Joana ate what
'What did Joana eat?'

(Miotto & Lobo, 2016: 276)

(72)a. Joana chorou quando Pedro cantou o quê?
Joana cried when Pedro sang what?
'What did Pedro sing when Joana cried?'

(Miotto & Lobo, 2016: 276)

- b. *O que Joana chorou quando Pedro cantou?
what Joana cried when Pedro sang

(Mioto & Lobo, 2016: 276)

There are two positions in the debate concerning wh-in-situ in Portuguese, namely the assumption of a derivation with or without movement. Ambar (2003) claimed that wh-movement does occur in wh-in-situ structures and that wh-in-situ questions result from moving the wh-phrase to Spec, WhP to check the [+WH] feature. The IP moves to Spec AssertiveP to check the [+assertive] feature in its head⁴ (Ambar, 2003: 217).

However, as pointed out by Pires & Taylor (2007), Ambar's approach cannot capture the case in (72) because an interrogative cannot stay inside an island if there is wh-movement. If there was wh-movement occurring in EP wh-in-situ questions, one would expect the interrogative (72a) to be incorrect because the interrogative would be extracted from the island, as exemplified in (72b). However, this is not borne out because the interrogative in (72a) can stay inside the island and the sentence is still grammatical (Ambar, 2003: 217; Mioto & Lobo, 2016: 276; Pires & Taylor, 2007).

Mioto & Kato (2005) claimed that the problem of the optionality of fronted wh-questions and wh-in-situ questions in EP can be resolved pragmatically by analyzing the fronted wh-questions as questions that are asking for information, as [+Q] in I, while wh-in-situ can be analyzed as echo questions, whose feature is defined as [-Q], which does not require movement of the wh-phrase (Mioto & Kato, 2005: 185).

Kato (2013) (*apud* Mioto & Lobo, 2016: 276) proposed that there is a silent morpheme that licenses wh-in-situ questions. The presence or absence of the morpheme results in fronted wh-questions or wh-in-situ questions. Kato also assumed that there is a silent Q-operator in BP that licenses the intonation of wh-in-situ.

Pires & Taylor (2007) proposed a non-movement account for wh-in-situ questions in BP. They proposed that wh-in-situ questions have to be licensed by Common Ground (CG) and that wh-in-situ questions occur in a specific kind of discourse and pragmatic situation. Aside from echo questions, wh-in-situ questions can be uttered under various

⁴ According to Ambar (2003:212; 217-20), “que/what” cannot stay in-situ because it is not a full wh-phrase such as “quem/who” or “que livro/what book”. A complete wh-phrase can check the wh-feature, but “que/what” can only do so if it is in the Spec-head relation with V-I, and it will be in a Spec-head relation only if it is in a fronted wh-position. If it is in a wh-in-situ position, the wh-feature cannot be checked because it is not in the Spec-head relation.

circumstances, such as specific-Q (questions that request more specific information about a topic that has been previously mentioned), expect-Q (questions that request further expected information) and reference-Q (questions that request a paraphrasing or repetition of the prior information). According to Pires & Taylor (2007), one of the significant arguments for covert movement in Chinese is proposed in Huang (1982a,b), who mentioned that an adjunct wh-phrase cannot stay inside an island in Chinese. Along with this argument, Pires & Taylor (2007) argued that this is not the case in BP because adjunct wh-phrases in BP can still stay in situ without any island violations, indicating that there is no wh-movement in wh-in-situ interrogatives. Moreover, Pires & Taylor (2007) further postulated that wh-in-situ interrogatives have a C with [+Wh,+Q] feature, but it does not trigger wh-movement in BP (Mioto & Lobo, 2016: 277; Pires & Taylor, 2007).

2.3.3.2 - *Embedded questions*

Embedded questions occur as a complement to the verb. This kind of question can be classified into two types: yes-no interrogatives that are headed by a complementizer “se/if” and interrogatives headed by wh-phrases. We will only focus on the wh-question type - see (73) (Barbosa, 2013: 1835; Mioto & Lobo, 2016: 279). As shown by Mioto & Lobo (2016: 279), in this type of question, C does not need to be filled (as a result of T-to-C, yielding subject-verb inversion or filled by “é que/is that”) – see (73a).

(73)a. João perguntou o que Joana leu.

João asked what Joana read
‘João asked what Joana read.’

(Mioto & Lobo, 2016: 279)

b. O Ricardo sabe quem ganhou o jogo.

the Ricardo know who won the game
‘Ricardo knows who won the game.’

(Barbosa, 2013: 1835)

According to Barbosa (2013), embedded questions are distinguished from root questions in EP in terms of wh-movement. Barbosa (2013: 1836) mentioned the following: “nas orações subordinadas, o sintagma interrogativo ocorre obrigatoriamente no início da oração” [in embedded questions, the interrogative phrase must obligatorily occur in the initial position of the clause], indicating that

the wh-phrase must be moved to the embedded Spec, CP (see (74)) (Barbosa, 2013: 1836-7; Miotto & Lobo, 2016: 279).

- (74)a. Não sei com quem falou o João.
not know with who talked the João
'I don't know whom João talked to.'
'I don't know who talked to João.'

(Barbosa, 2013: 1836)

- b. *Não sei o João falou com quem.
not know the João talked with who
'I don't know whom João talked to.'

(Barbosa, 2013: 1836)

2.3.4 - A note on Pseudosluicing in Portuguese

Merchant (2001: 116) explains that what looks like sluicing may be pseudosluicing, a case in which we have a reduced cleft “whose pivot is an extracted wh-phrase”, as shown in (75) - the result of (75 a) is identical to (75 b).

- (75) a. Pseudosluice:
Guess who [~~it was~~ ___ ~~that just left~~]

- b. Sluice:
Guess who [___ ~~just left~~]

(Merchant, 2001: 116)

Matos & Catarino (2017) also show the same for European Portuguese. In European Portuguese, pseudosluicing and sluicing are superficially two similar elliptical structures, see (76a), which can be interpreted as sluicing (76b) or pseudosluicing (76c). Sluicing is an elliptical structure in which the elided TP corresponds to the structures in the antecedent, whereas pseudosluicing is an elliptical construction in which the elided TP is interpreted as an underlying cleft structure, as shown in (76).

- (76) a. O João cumprimentou alguém, mas eu não sei quem [-].
the João greeted someone but Isg not know who
'João greeted someone, but I don't know who.'

- b. O João cumprimentou alguém, mas eu não sei quem_i [_{TP} ~~o~~ João
 the João greeted someone but 1sg not know who the João
 cumprimentou t_i].
 greeted
 ‘João greeted someone, but I don’t know who João greeted.’
- c. O João cumprimentou alguém, mas eu não sei quem_i [_{Clivada} foi que
 the João greeted someone but 1sg not know who was that
 [_{TP} ~~o~~ João cumprimentou t_i]]
 the João greeted
 ‘João greeted someone, but I don’t know who it was that João greeted.’

(Matos & Catarino, 2017: 191-2)

Considering the fact that a cleft (namely a standard cleft with “foi...que/was...that”) may occur in a wh-question, as shown in example (70) in section 2.3.3.1 and repeated here as (77a), the standard cleft may also occur in pseudosluicing in Portuguese, as shown in (76c) and repeated here as (77b).

- (77)a. (O) que é que foi que o João comprou ?
 what is that was that the João bought
 ‘What was the thing that João ate?’

(Matos & Catarino, 2017: 202)

- b. O João cumprimentou alguém, mas eu não sei quem_i [_{Clivada} foi que
 the João greeted someone but 1sg not know who was that
 [_{TP} o João cumprimentou t_i]]
 the João greeted
 ‘João greeted someone, but I don’t know who was that João greeted.’

(Matos & Catarino, 2017: 192)

Both Almeida & Yoshida (2007) and Matos & Catarino (2017) show that in the case of pseudosluicing, there is an available paraphrase with a stranded copula verb, see (78):

- (78) O João cumprimentou alguém, mas eu não sei *quem foi*.
 the João greeted someone but 1sg not know who was
 ‘João greeted someone, but I don’t know who that was.’

(Matos & Catarino, 2017: 192)

In this case, if the cleft that we have in (77b) is a standard cleft, and if “foi/was” is in I/T, as proposed by Lobo (2006), who claimed that in a standard cleft, the pivot moves from a position within a lower IP/TP to Spec of an embedded CP (see (79a,b)), then (78), repeated here as (80) can be interpreted as a case of VP ellipsis.

- (79) a. Fui eu que faltei à aula.
 was 1sg that missed the.to class
 ‘It was I who I missed the class.’

b. [...[IP *pro* [I' fui_i [VP [V' t_i [CP eu_j [C' que [IP t_j faltei à aula]]]]]]]]]]

(Lobo, 2006: 464)

- (80) a. O João cumprimentou alguém, mas eu não sei *quem foi* [-].
 the João greeted someone but 1sg not know who was
 ‘João greeted someone, but I don’t know who that was.’

(Matos & Catarino, 2017: 192)

[-] = que o João cumprimentou
 that the João greeted
 ‘... that João greeted’

- b. ...[CP quem [C' C [TP *pro* [T' foi [VP [V' foi [CP quem [C' que [TP o João cumprimentou quem]]]]]]]]]]]

2.3.5 - On the superficial similarity of some sluicing structures in Portuguese and Chinese (and the partly elided semi-pseudocleft in Portuguese)

In this final section, we intend to highlight some possible superficial similarities between the Chinese sluicing-like structure and the Portuguese sluicing structure.

In general, we can say that the Chinese sluicing-like structure is superficially similar to sluicing in EP, only to the same extent as it is similar to the English sluicing, as shown in (81).

- (81) a. Ruguo Lisi qu le mouge difang, ta mama kending zhidao (shi)
 if Lisi go ASP some-CL place 3sg mom surely know COP
 nali.
 where
 ‘If Lisi goes to some place, her mother knows for sure where.’
 如果李四去了某個地方，她媽媽肯定知道(是)哪裏。

(Adams & Tomioka, 2012: 222)

- b. Zhangsan visitou algum museu, mas Lisi não sabe onde.
 Zhangsan visited some museum but Lisi not know where
 ‘Zhangsan visited a museum, but Lisi doesn’t know where.’

However, when “shi/be” obligatorily occurs in sluicing-like sentences with a stranded argument wh-phrases (see 82) and optionally in sluicing-like sentences with a stranded wh-phrase such as adjunct wh-phrases, it seems to superficially correspond to (sluicing combined with) another cleft structure, a semi-pseudocleft – this results in a grammatical structure which we call a partly elided semi-pseudocleft in EP – see (83).

- (82) a. Lisi mai le yiyang dongxi gei mouren, dan wo bu zhidao *(**shi**)
 Lisi buy ASP one-CL thing give someone but 1sg not know COP
 shei/sheme.
 who/what
 ‘Lisi bought something for someone, but I don’t know who/what.’
 李四買了一件東西給某人，但我不知道是誰/什麼。

(Adams & Tomioka, 2012: 219)

b. Ruguo Lisi qu le mouge difang, ta mama kending zhidao (shi)
 if Lisi go ASP some-CL place 3sg mom surely know COP
 nali.

where

‘If Lisi goes to some place, her mother knows for sure where.’

如果李四去了某個地方，她媽媽肯定知道(是)哪裏。

(Adams & Tomioka, 2012: 222)

(83) Zhangsan comprou alguma coisa, mas Lisi não sabe é o quê.

Zhangsan bought some thing but Lisi not know COP what

‘Zhangsan bought something, but Lisi didn’t know what.’

Semi-pseudoclefts are also called *be_ focus structures* in Ambar (1999) or *that-less clefts* in Ambar (2005) (cited in Lobo, Santos, & Soares, 2012: 320), indicating that this structure in EP has a focus function. It allows cleft constituents to occur in the post-verbal position (and to focus on the constituents inside the DP), because the semi-pseudocleft does not involve movement to the left periphery of the clause (Lobo et al., 2012), as shown in (84).

(84) a. O Pedro estragou foi a telefonia.

the Pedro ruined was the telephone

‘What Pedro ruined was a telephone.’

(Lobo, 2006: 457)

It is stated that “*ser*, nestas estruturas, marca a periferia esquerda do vP, e codifica como focalizado contrastivamente todo o material no interior do vP” [*be*, in these structures, marks the left periphery of vP and encodes all the material inside the vP as contrastively focused constituents] (Lobo et al., 2012: 320-1), which indicates that the focused constituents inside vP are marked by “*ser/to be*”, as shown in (85a), and the unfocused constituents are kept outside the vP – Lobo et al. (2012) suggest that the object in (85b) is moved by scrambling as a result of defocalization.

(85)a. Dançou foi a Maria.

danced was the Maria

‘It was Maria who danced.’

(Lobo et al., 2012: 321)

- b. Comeu o bolo foi a Maria.
 ate the cake was the Maria
 ‘It was Maria who ate the cake.’

(Lobo et al., 2012: 321)

The sluicing-like structure in Chinese (86a) seems to superficially correspond to a partly elided semi-pseudocleft in EP, as shown by the focused material NP [o quê/what] marked by the focus marker “ser/to be”, see (86b), even though, as we argued, the Chinese structure does not correspond to the structure of a cleft. In (86b) we have sluicing, but the stranded wh-phrase is also focused in a semi-pseudocleft structure.

- (86) a. Lisi mai le yijian liwu, danshi ta bu gaosu wo *(**shi**) sheme.
 Lisi buy ASP one-CL present but 3sg not tell 1sg COP what
 ‘Lisi bought a present, but she didn’t (want to) tell me what.’
 李四買了一件禮物，但是他告訴我*(是)什麼。

(Adams & Tomioka, 2012: 222)

- b. Zhangsan comprou alguma coisa, mas Lisi não sabe é o quê [é—
 Zhangsan bought some thing but Lisi not know COP what COP
 que—Zhangsan—comprou].
 that Zhangsan bought
 ‘Zhangsan bought something, but Lisi didn’t know what.’

Summary

Overall, we have discussed the properties and characteristics of sluicing in EP. Sluicing in EP is constructed by an embedded interrogative in which only the wh-phrase is pronounced and the constituent following the wh-phrase is deleted. Sluicing in EP cannot be uttered out of the blue and allows two types of antecedents, namely implicit and explicit antecedents. The syntactic function of a wh-phrase is determined by the antecedent.

In root questions with wh-movement, wh-phrases have to move to the front to check a strong [wh] feature. Wh-in-situ root questions are formed by leaving the wh-phrase in the final position of a sentence, whereby the wh-phrase cannot be extracted out of an island. Embedded questions are different from root questions because wh-phrases in embedded questions require wh-movement.

In addition, the sluicing-like structure in Chinese superficially corresponds to a case of sluicing under a semi-pseudocleft in EP, in which the remnant wh-phrase is encoded as a focused constituent marked by the focus marker “*ser/to be*”.

2.4 - The problem of the acquisition of sluicing in European Portuguese by Mandarin speakers

The objective of this section is to discuss the problems of the acquisition of sluicing in European Portuguese by L1 Mandarin speakers.

As discussed in the previous section, the Chinese sluicing-like structure is different from sluicing in Portuguese in that it is not a real sluicing structure, as in Portuguese. The Chinese sluicing-like structure is derived according to the pro-form analysis, see (46), restated here as (87). The silent *pro* can be further divided into two categories: a nominal *pro* and an event *pro*. In the Chinese sluicing-like structure, the silent *pro* refers to an entity (NP) or an event in the preceding clause.

(87) a. A Nominal *pro* (a NP silent *pro*)

John bought [**a special gift**]_i (for his girlfriend),
danshi wo bu zhidao [*pro*_i shi [**sheme**]].
but 1sg not know COP what
'...but I don't know what that was.'
... , 但我不知道是什麼。

(Adams, 2004: 11)

b. An event *pro* (an IP silent *pro*)

(John is very gentle most of the time.) [**John smacked someone**]_i,
danshi wo bu zhidao [*pro*_i shi [**weisheme**]].
but 1sg not know COP why
'... but I don't know why that was.'
... , 但我不知道是為什麼。

(Adams, 2004: 11)

On the other hand, sluicing in Portuguese is derived from the movement of the wh-phrase to Spec CP, whereby IP deletion takes place after the movement of the wh-phrase (see (88)).

(88) Convidei um amigo para jantar. Adivinha [_{CP} quem [_C (é-que) [_{IP} eu convidei-
 invited one friend for dinner guess who is that 1sg invited
 para jantar?!]]]
 for dinner
 ‘I invited a friend for dinner. Guess who (I invited for dinner)?!’

(Matos, 2003: 905)

According to Lardiere (2008), how features are assembled in L1 and L2 plays an important role in L2 acquisition as second language learners are required to acquire a set of relevant features in L2. Lardiere (2008) suggested that different feature configurations in items in the lexicon of the L1 and the L2 can create a complex learning problem for second language learners in that it “involves teasing apart the relevant features from the way they are assembled in the L1, and re-assembling them as required by the L2” (Lardiere 2008: 14).

Lardiere (2008) presented the case study of Patty, a native Chinese and Hokkien speaker who was born in Indonesia, moved to Hong Kong before living in the United States, and had successfully acquired wh-movement in English. By studying Patty’s case, Lardiere claimed that L1 Chinese speakers who acquire wh-movement in L2 English have to acquire strong wh/ Q feature in C (which triggers wh-movement in English), and delink the lexical features of wh-expressions in Chinese, which may exhibit different types of quantifiers bound by different binders in the same wh-phrase. For instance, the interrogative quantifier “sheme/what” can function as a wh-phrase “what” when it is bound by an Q operator; the existential quantifier “sheme/what” can function as “anything” when it is bound by the negative particle “bu/not”; and universal quantifiers function as “everything” when they are bound by the adverb “dou/all”. Therefore, to acquire wh-movement in English, one has to delink the lexical features of the wh-phrases in Chinese, that is, the different quantifiers that are applied to wh-phrases in Chinese, and remap the corresponding interrogative feature of the wh-phrases from Chinese to English as well as remap the features of the quantification in Chinese to English (i.e. anything, everything, etc.). According to Lardiere’s results, Patty succeeded in acquiring the English features that explain the production of target-like questions.

According to Adger (2003: 350), wh- movement is explained by assuming that C with a [Q] feature in wh-questions may bear a strong (uninterpretable) [wh] feature, i.e. [*uwh**], that must be checked with a wh-phrase in Spec, CP. However, according to

Aoun & Li (1993a) and Tsai (1994a), *apud* Huang et al., (2009: 276-7) in Chinese, there is a Q operator in C, which bounds the wh-phrase in Chinese syntactically and does not require any wh-movement of the wh-phrase. Therefore, unlike Portuguese, Chinese does not have wh-movement, and the wh-phrase does not move from T to Spec CP to check a feature [*uwh**] in C. This indicates that Mandarin speakers do not have a strong [wh] feature in C and therefore must acquire the relevant set of features [Q, *uwh**] with their specifications (strong wh-feature) in Portuguese prior to the acquisition of sluicing. However, is acquiring wh-movement already enough for Mandarin speakers to have sluicing? Or do they need to acquire something else before they manage to have sluicing, for instance, IP ellipsis?

As seen in section 2.1.2, Merchant (2001:59-60) suggested that there is an E feature, which may be base-generated on C, only when C has [wh, Q] features. The E feature triggers the deletion of the IP at PF. This E feature is important for the acquisition of sluicing in Portuguese because Mandarin speakers must acquire this E feature in order to acquire sluicing. Therefore, acquiring sluicing in Portuguese requires not only [wh, Q] features but also the E feature in C that triggers IP ellipsis.

In addition, it is also worth mentioning that although the Chinese sluicing-like structure is superficially similar to sluicing in Portuguese, the copulative verb placed before the wh-phrase in the Chinese sluicing-like structure does not occur in sluicing in Portuguese. Due to the superficial similarity, Mandarin speakers may acquire sluicing in Portuguese by superficially mapping the features of the Chinese sluicing-like structure to sluicing in Portuguese. For instance, Mandarin speakers may drop the "shi/be" in Chinese (see (87a)) and map the form of the sluicing-like structure in Chinese to sluicing in Portuguese (see (85b)).

- (87) a. *Zhangshan chi le mouge dongxi, dan wo bu zhidao shi sheme.
 Zhangsan eat ASP some-CL thing, but 1sg not know COP what
 'Zhangshan ate something, but I don't know what.'
 *張三吃了某個東西，但我不知道是什麼。

- b. Zhangshan comeu alguma coisa, mas eu não sei o quê.
 Zhangshan ate some thing but 1sg not know what
 'Zhangshan ate something, but I don't know what.'

Also, it would also be interesting to know whether Mandarin speakers map the Chinese sluicing-like structure to Portuguese as it seems to correspond superficially to the partly elided semi-pseudocleft structure in Portuguese (sluicing with a semi-pseudocleft).

Furthermore, the majority of the participants in the study that we will present in the next chapter are not strictly L2 speakers of Portuguese but rather L2 speakers of English and L3 speakers of Portuguese. They started to learn English in primary school and learned Portuguese later at university, even though, to a certain extent, they may be significantly more fluent in Portuguese than in English. Rothman (2011) proposed that typological proximity determines multilingual transfer in L3. Conforming to Rothman (2011: 112),

"Typological Primacy Model: Initial State transfer for multilingualism occurs selectively, depending on the comparative perceived typology of the language pairings involved, or psychotypological proximity. Syntactic properties of the closest (psycho)typological language, either the L1 or L2, constitute the initial state hypotheses in multilingualism, whether or not such transfer constitutes the most economical option."

Therefore, it is also important to know whether they are influenced by L2 English when they acquire sluicing in L3 Portuguese.

In sum, the Chinese sluicing-like structure is a pseudo-sluicing structure that may be derived according to the pro-form analysis instead of wh-movement and IP ellipsis. In contrast, sluicing in Portuguese is a real sluicing structure that is derived by wh-movement and IP ellipsis. Lardiere (2008) proposes that second language speakers have to delink the features associated to lexical items in L1, remap the features from L1 to L2, and reassemble the features according to the configuration requirements in the L2. To acquire interrogatives and sluicing in Portuguese, Mandarin speakers have to acquire three features specified in C, namely [Q, wh, E]. As for sluicing, we highlight that a strong [wh] feature must be acquired and that the E-feature must be associated with a [wh, Q] C. In this scenario, the following research questions can be formulated:

1. Is acquiring wh-movement already enough for Mandarin speakers to have sluicing, or do they need to separately acquire IP ellipsis (associated with the E-feature in C) to acquire sluicing?

2. Do Mandarin speakers map the Chinese sluicing-like structure to Portuguese, which seems to superficially correspond to the partly elided semi-pseudocleft structure (sluicing with a semi-pseudocleft) in Portuguese?

3. Are Mandarin speakers (positively) influenced by English when acquiring sluicing in Portuguese?

3. Methodology

This chapter aims to describe and explain the tasks conducted in answering the research questions for this dissertation as stated in 2.4. Section 3.1 describes the participants while section 3.2 presents the procedure and tasks. Portuguese here refers to European Portuguese.

3.1 - Participants

The target participants of this study were native Mandarin speakers who were acquiring European Portuguese. Mandarin is one of the seven main dialect groups in China and, according to Li & Thompson (1989: 1), it “represents the speech of Beijing, which for centuries has been recognized as the standard language of China because of the political and cultural significance of that city”. In 1955, it was recognized as the official language in China, based on “the pronunciation of the Beijing dialects, the grammar of Northern Mandarin, and the vocabulary of modern vernacular literature”, and it “has since been known as Putonghua” (Li & Thompson, 1989: 1).

Even though Mandarin is acknowledged as the official language in China, it is not necessarily the first language of most Chinese citizens. According to Francis (2016: 143), “not all school children and adult students in China are L1 speakers of the national language”, which indicates that individuals may acquire a specific dialect before speaking Mandarin depending on their origin or where they grew up. It is also believed that different dialects/languages influence speakers in their learning of Mandarin. As claimed by Li & Thompson (1989:1):

"Both Putonghua and Guoyu [Mandarin in Taiwan] are far from being ‘uniform’, for China has a large population spread over a vast geographical area, and consequently numerous other dialects inevitably influence and affect the versions of Putonghua and Guoyu spoken by people from different regions."

Therefore, to minimize the influence on the acquisition of Mandarin, in this study it was necessary to select participants from specific regions where Mandarin is widely spoken.

Although our target participants in this experiment were Mandarin speakers only, we nevertheless distributed the test to Chinese students in the class because we did not

want some to feel excluded; therefore, they were welcome to complete the test. Consequently, while a total number of 172 people took the test in class, only 60 of these qualified as participants of this experiment due to the restrictions we set before distributing the test. The participants were selected based on their regional background and mother tongue to minimize the influence of L1 on L2 acquisition. To this end, a questionnaire (see appendix II) was designed that comprised eight questions aimed at gathering personal information about the participants. Potential participants were subsequently selected based on their answers to the first three questions in the questionnaire; see (i), (ii) and (iii). The questionnaire was written in Portuguese and was explained in Chinese before the participants filled it in.

- (i) Qual é a sua língua materna (ou línguas maternas), i.e. a(s) língua(s) que fala desde a primeira infância com a família?
(What is your mother tongue(s), i.e. the language(s) that you have spoken since early childhood in the family?)

- (ii) Qual é a sua província/ zona de origem na China?
(What is your province/origin in China?)

- (iii) Além da sua língua materna, fala que línguas/dialetos da China?
(Aside from your mother tongue, what languages/dialects do you speak in China?)

The selection of participants based on the questionnaire was successful, selecting only those from particular regions in China where Mandarin is widely spoken. The participants who were selected were two participants from Anhui, two from Beijing, one from Chongqing, two from Gansu, one from Guangxi, three from Guizhou, seven from Heilongjiang, two from Henan, two from Hubei, two from Jilin, four from Jiangsu, four from Jiangxi, one from Jilin, two from Liaoning, six from Shaanxi, six from Shandong, five from Sichuan, six from Tianjin, and two from Yunnan. Table 1 summarizes the regions of the participants:

Table 1 The number of participants and their corresponding regions

Regions	Number	Total
Anhui	2	60
Beijing	2	
Chongqiang	1	
Gansu	2	
Guangxi	1	
Guizhou	3	
Heilongjian	7	
Henan	2	
Hubei	2	
Jialin	2	
Jiangsu	4	
Jiangxi	4	
Jilin	1	
Liaoning	2	
Shaanxi	6	
Shangdong	6	
Sichuan	5	
Tianjin	6	
Yunnan	2	

Since there is no standardized Portuguese placement test to assess participants' Portuguese proficiency levels, we used the certificates issued by ICLP⁵ and CAPLE⁶ as the criterion to select the participants. There were 81 participants in total; 60 of these were L2 Portuguese learners aged 20-31 while the remaining 21 were L1 Portuguese speakers aged 20-69. None of the participants from either group had a relevant linguistics background, and even though some were enrolled in linguistics courses, they did not have relevant linguistic knowledge of the structures which were targeted in the test items.

⁵ Instituto de Cultura e Língua Portuguesa (Institute of Portuguese Culture and Language), Faculdade de Letras, Universidade de Lisboa. This is an institute offering Portuguese language courses with different proficiency levels; refer to <http://www.iclp.letras.ulisboa.pt/en/iclp-en/> for more information.

⁶ Centro de Avaliação e Certificação de Português Língua Estrangeira (Evaluation and Certification Centre of Portuguese Foreign Language); refer to <https://caple.letras.ulisboa.pt/> for more information.

Within these 60 L2 Portuguese learners, 23 held an intermediate level I (B1) certificate issued by ICLP and were still enrolled in the intermediate level II (B2) course in ICLP at the time they took the test.

A total of 20 participants were certificate holders of an intermediate level II (B2), whereby 11 held a certificate issued by ICLP and were still enrolled in the advanced level (C1) course in ICLP at the time they took the test. The remaining nine participants were holders of a DIPLÉ⁷ certificate issued by CAPLE.

The remaining 17 participants were also L2 learners holding an advanced level (C1) certificate. Four of these held a certificate issued by ICLP and were still enrolled in the proficiency level (C2) course in ICLP at the time they took the test. The other 13 participants held a DAPLE⁸ certificate issued by CAPLE.

The L2 Portuguese learners who enrolled in ICLP received formal instruction in the Portuguese language. Most of them were in their third year of an undergraduate degree (Portuguese Language and Culture) in China and/or in an exchange program to attend the Portuguese courses⁹ offered by ICLP. Before the semester started, they were assigned to different proficiency levels based on a Portuguese proficiency test. The participants who held certificates issued by CAPLE held a bachelor's degree in Portuguese Language and Culture.

Finally, 21 L1 Portuguese speakers aged 20-69 are the control group in this study. Most of them were undergraduates at the University of Lisbon.

⁷ Diploma Intermédio de Português Língua Estrangeira (Intermediate Diploma of Portuguese Foreign Language) issued by CAPLE, which corresponds to the B2 Portuguese proficiency level.

⁸ Diploma Avançado de Português Língua Estrangeira (Advanced Diploma of Portuguese Foreign Language) is issued by CAPLE and corresponds to the C1 Portuguese proficiency level.

⁹ Each semester comprises 200 learning hours, with four days per week and four hours per day.

Table 2 presents a brief summary of the participants of this study.

Table 2 Summary: participants.

Speakers (L1)	Proficiency level (L2 Portuguese)	Participants from ICLP	Participants with a CAPLE certificate	Total number of participants in different groups	Total number of participants
Mandarin	Intermediate level I (B1)	23	0	23	81
Mandarin	Intermediate level II (B2)	11	9	20	
Mandarin	Advanced level (C1)	4	13	17	
Portuguese	-	-	-	21	

The test was conducted with the consent of the Faculty's Ethics Committee, ICLP, and with the consent of the participants.

3.2 - Procedure and Tasks

In response to the research questions, three different written tasks were designed: an elicited production task, a grammaticality judgment task on Portuguese, and a grammaticality judgment task on English.

The elicited production task only concentrated on sluicing, while both grammaticality judgment tasks focused on assessing participant's judgment on embedded questions with and without *wh*-movement as well as elliptical constructions including sluicing and partly elided semi-pseudoclefts. The three experiments were applied in the following order:

- i) Elicited production task of sluicing
- ii) Portuguese grammaticality judgment task
- iii) English grammaticality judgment task

3.2.1 - Data collection

Data were collected in the second semester of the annual course in 2019. Since the whole test was very long, taking approximately two hours to finish and thus causing

the students to get tired, the suggestion was made to break it into two sessions. However, ICLP and the teachers preferred to conduct the test in a single session due to the tight class schedules and because it was difficult for them to arrange two sessions for the study. Thus, to create a comfortable setting for all participants, they were given a short 10 to 15-minute break after the Portuguese grammaticality judgment task and they were offered snacks.

3.2.2 - Elicited production task

This task was designed based on the elicited production task on VP ellipsis of Santos & Flores (2016: 322-3). It was aimed at testing if the Mandarin speakers were able to eliminate redundancy and produce sluicing when faced with a relevant context. Aside from this, specific comparisons between different wh-phrases included in the task allowed a determination of whether specific effects were triggered by different types of wh-phrase.

The participants were presented with short texts that comprised one target sentence each. The texts were greatly repetitive, and the participants were asked to eliminate the redundancies and rewrite part of the texts (if necessary). Instructions were given in Portuguese and Chinese. An example was given at the beginning of the task that was not a case of sluicing or VP ellipsis but rather a case presenting redundancies that could only be solved by eliminating the subject DP or that would ideally be solved with other types of corrections; see (1). (1a) shows the original text before the elimination and (1b) shows the text after the elimination and correction.

- (1) a. Ontem, quando o pai chegou, ele achou que a Beatriz estava a tomar um banho. Mas não, a Beatriz disse que não estava a tomar um banho, estava a secar o cabelo.

(Yesterday, when Beatriz's father arrived, he thought that Beatriz was taking a shower, but that was not the case, Beatriz said that she was not taking a shower, she was drying her hair.)

- b. Ontem, quando o pai chegou, ele achou que a Beatriz estava a tomar um banho. Mas não, ~~a Beatriz~~ **ela** disse que ~~não estava a tomar um banho~~, estava a secar o cabelo.

(Yesterday, when Beatriz's father arrived, he thought that Beatriz was taking a shower, but that was not the case, Beatriz said that ~~she was not taking shower~~, she was drying her hair.)

A total of eight texts were presented to the participants. Four of these comprised argument wh-phrases (two “quem/who” and two “qual/which”), while the other four contained wh-phrases which can be adjuncts (two “onde/where” and two “quando/when”)¹⁰, as summarized in table 3.

Table 3 Matrix of the elicited production task.

Text	Type of wh-phrase	Wh-phrase
1	Adjunct	Onde
2	Adjunct	Onde
3	Adjunct	Quando
4	Adjunct	Quando
5	Argument	Quem
6	Argument	Quem
7	Argument	Qual
8	Argument	Qual

Two experimental items were built for each wh-phrase and were included in small texts containing the experimental item (in italics in (2) and (3)) and an additional sentence that contained a distractor (another type of redundant information that could not be avoided through sluicing) (see the non-italicized sentences in (2) and (3)). Redundant information is presented here in bold, but it was presented as plain text in the test materials.

- (2) *Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde é **que ela a viu**.* É pena que a Ana não se lembre, porque assim **a Ana** não consegue ajudar o Pedro.

(Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn't know where she saw it. It is a pity that Ana doesn't remember, because Ana cannot help Pedro.)

- (3) Hoje de manhã, quando eu fui para a escola de autocarro, a minha carteira estava na mala. Mas, agora, quando **eu** quis pagar o almoço, descobri que a carteira desapareceu. *Acho que perdi a carteira, mas eu não sei onde é **que a perdi**.*

¹⁰ “Porque/why” and “o que/what” were not selected in this task because they can be used in wh-in-situ context as “porquê” or “o quê”, which may cause ambiguity to L2 Portuguese speakers. “How” was not selected because it is unavailable in Chinese sluicing-like structure.

(This morning when I went to school by bus, my wallet was in the bag. But now, when I wanted to pay for lunch, I found that my wallet was gone. *I think that I lost my wallet, but I don't know where I lost it.*)

When distributing the test sentences internally to texts, for each set of two items built for a particular wh-phrase, in one case the test sentence was placed at the beginning of the text (see 2) and in the other case the test sentence was placed at the end (see 3). All experimental items in this task were randomized using the Microsoft Excel RAND function.

The redundancy presented in the test items can be eliminated through sluicing. The distractors were subject DPs scattered throughout the text that needed to be solved by replacing the null subject or correcting it to a pronoun, as shown in (4). (4a) shows the original text before elimination and (4b) shows the expected response to (4a). The participants were expected to eliminate the redundant part in the test item, producing sluicing, as shown in strikethrough and italic in (4b) and to rewrite the distractor with a pronoun or simply use a null subject, as shown in bold and strikethrough in (4b).

- (4) a. Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde é que ela a viu. É pena que a Ana não se lembre, porque assim a Ana não consegue ajudar o Pedro.

(Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn't know where she saw it. It is a pity that Ana doesn't remember, because in this situation Ana cannot help Pedro.)

- b. Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde ~~é que ela a viu~~. É pena que ~~ela a Ana~~ não se lembre, porque assim ~~a Ana~~ não consegue ajudar o Pedro.

(Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn't know where ~~she saw it~~. It is a pity that ~~she Ana~~ doesn't remember, because she ~~Ana~~ cannot help Pedro.)

As the participants had different proficiency levels, careful word selection was important, so mainly simple and frequently used words were selected. The focus in this experiment was only on argument wh-phrases that fill an argument position and adjunct wh-phrases that fill an adjunct position.

We avoided cases like (5a), in which an adverbial wh-phrase fills an argument position, as well as cases in which it is in a predicate position, copula verbs such as “ser/be”, “estar/be” and “ficar/stay”. Therefore, for sentences with adjunct wh-phrases, the focus was only on adjunct wh-phrases filling an adjunct position, as in (5b).

(5) a. An adverbial wh-phrase filling an argument position:

A: Onde é que a Ana deixou a carteira?
where is that the Ana left the wallet
'Where did Ana leave her wallet?'

B: A Ana deixou a carteira na mala.
the Ana left the wallet in bag
'Ana left her wallet in bag.'

b. An adjunct wh-phrase filling an adjunct position:

A: Onde é que a Ana perdeu a carteira?
where is that the Ana lost the wallet
'Where did Ana lose her wallet?'

B: A Ana perdeu a carteira no autocarro.
the Ana lost the wallet in.the bus
'Ana lost her wallet in the bus.'

In addition, “é que/is that” was used to avoid ambiguity, especially in contexts with “quem/who”. For instance, “é que/is that” is absent in (6a) and ambiguity may arise because without “é que/is that”, the verb “matou/kill” moves to C in Portuguese, and “a Beatriz” can function as both subject or object in this sentence. However, the ambiguity in (6a) was resolved by adding “é que/is that” in (6b).

(6) a. Quem matou a Beatriz?

who killed the Beatriz
“Who did Beatriz kill?”/ “Who killed Beatriz?”

b. Quem é que a Beatriz matou?

who is that the Beatriz killed
“Who did Beatriz kill?”

3.2.3 - Portuguese grammaticality judgment task

Even though the elicited production task aimed to verify whether the participants could produce sluicing, it did not illustrate the whole situation because the participants might have had sluicing but, for certain reasons, may have simply preferred not to use it. In light of this, the primary key of this task was to test whether the participants accepted wh-movement (especially in embedded questions) and sluicing, and to verify the connection between having sluicing and having wh-movement. Another goal of this task was to see if they accepted or rejected sluicing under a semi-pseudocleft (what we call here “partly elided semi-pseudoclefts”), which could be superficially identical to the Chinese-like sluicing structure, in Portuguese.

This task was presented after the elicited production task. It was a written task with instructions stated in both Portuguese and Chinese. Before the task started, the instructions were explained verbally in Portuguese and Chinese (if necessary). At the beginning of the task, an example was given that did not involve any sluicing, wh-movement or VP ellipsis. The participants were asked to rate the sentences on a four-point Likert scale (0-3) and “não sei/ I don’t know” placed next to the test items. Example (7) is an example of an item presented in the test.

(7)

CONTEXTO: *Eu não comi o bolo.*

comeu

O João ~~comi~~ o bolo.

① 1 2 3 não sei

(CONTEXT: *I did not eat the cake.*

ate (3sg)

João ~~ate~~ (1sg) the cake.)

A grammaticality judgment task with a Likert scale (which we can also call an acceptability judgment task) was preferred over a binary judgment task, because it prevents the participants from accepting any items by default when they were not sure about the answers. In addition to the Likert scale, there was also an option of “não sei/I don’t know”, which they could select in cases in which they did not know how to judge the items. The participants were also asked to correct the mistakes (if any), which allowed us to decide whether or not their corrections corresponded to the expected response and whether their corrections confirm that the rejection was due to the

identification of the relevant structure in each condition. For instance, as illustrated in (7), we expected the participants to correct the inflection of the verb, i.e. *comi* → *comeu*.

The distractors consisted of 48 Portuguese cleft items and 18 Portuguese clitic items. The first item presented in the task was a distractor of a Portuguese clitic item instead of a target item.

The order of presentation of the items in the task was semi-randomized (using the Microsoft Excel RAND function and manually) to prevent the items in the same condition from occurring twice in a row.

In this task, *wh*-movement and elliptical structures were tested. Four conditions focused on testing *wh*-movement and two conditions focused on testing elliptical structures, as described in 3.2.3.1 and 3.2.3.2.

3.2.3.1 - Test on *wh*-movement

The four conditions that focused on *wh*-movement included root and embedded questions with and without *wh*-movement. The purpose of this test was to verify whether the participants had acquired *wh*-movement, since *wh*-movement is a fundamental structure in acquiring sluicing. Each condition in this test comprised eight items, thus a total of 32 items were included in the test.

In each condition, there were two types of *wh*-phrases, whereby each type comprised two *wh*-phrases, namely adjunct *wh*-phrases (*onde/where* and *quando/when*) and argument *wh*-phrases (*quem/who* and *o quê/what*)¹¹, and each *wh*-phrase contained two test items.

¹¹ The above four *wh*-phrases were selected because they correlate with their counterparts in Chinese, unlike “how”, which cannot be sluiced in Chinese. “Qual/which” was not chosen here because it relies heavily on context and is always used with a noun (i.e. D-linked *wh*-constituent) in Chinese, as (i), meaning it would have increased the mental processing of the participants.

(i) *Lisi bu xihuan yishou ge, danshi wo bu zhidao (shi) nayishou (ge).*

Lisi not like one-CL song but 1sg not know COP which-one-CL (song)

‘Lisi doesn’t like one song, but I don’t know which one/ song’

李四不喜歡一首歌，但是我不知道(是)哪一種首(歌)。

(Adams & Tomioka, 2012: 223)

Table 4 summarizes the condition, type of wh-phrase, and number of items in the Portuguese grammaticality judgment task on wh-movement.

Table 4 Summary of the Portuguese grammaticality judgment task on wh-movement.

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of Items	Total
Test on wh-movement	1	Root questions with wh-movement	Adjunct	Onde	2	32
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	2	Wh-in-situ root questions	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	3	Embedded questions (with wh-movement)	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
4	Ungrammatical wh-in-situ embedded questions	Adjunct	Onde	2		
			Quando	2		
		Argument	Quem	2		
			O quê	2		

In the following, I present each condition. As a general option, root questions involving wh-movement were questions with a C filled by “é que/is that” in order to avoid the type of ambiguity mentioned in (6). “É que/is that” was also used to prevent the participants from correcting the question in an unexpected way, such as by adding “é que/is that” or creating subject-verb inversion (as described in section 2.3). The verbs selected for all conditions (i.e. in all experiments) were all transitive verbs¹², such as “perder/lose”, “comprar/buy”, and “ler/read”. The tense used in conditions 1 and 2 was past tense, and in condition 3 and 4, the present tense was used in the main clauses and the past tense was used in the embedded clauses.

¹² Verbs that select a preposition were not chosen because they would have increased the mental processing of the participants while the test items would have been more inconsistent and challenging; also, no copula verbs were included here, as explained in section 3.2.2.

Condition 1: Root questions with wh-movement

This condition consisted of root questions with wh-movement. It was aimed at testing whether the participants had acquired wh-movement in root questions. (8) is an example of this condition. In each case, a context (in italics) preceded the test sentence.

- (8) CONTEXTO: *A Ana perdeu a carteira.*
Onde é que a Ana perdeu a carteira?

(CONTEXT: *Ana lost her wallet.*
Where is that Ana lost her wallet?)

The participants were supposed to accept the test items in this condition since all of them were grammatical in Portuguese.

Condition 2: Wh-in-situ root questions

This condition contained wh-in-situ root questions. As discussed in section 2.3, interrogatives in Portuguese can be formed either with or without wh-movement; therefore, this condition was aimed at testing to what extent the participants accepted or rejected wh-in-situ root questions. The participants were expected to accept the test items in this condition as all of them were grammatical. (9) is an example in condition 2:

- (9) CONTEXTO: *A Joana viu alguém.*
A Joana viu quem?

(CONTEXT: *Joana saw someone.*
Joana saw who?)

Condition 3: Embedded questions (with wh-movement)

This was one of the conditions used to check whether the participants had obligatory wh-movement in embedded questions. It comprised embedded questions with wh-movement and was aimed at testing whether the participants accepted wh-movement in embedded questions. The participants were expected to accept the test items in this condition because all of them were grammatical in this condition. If they accepted the structure in this condition, it would indicate that they had already acquired the structure underlying sluicing, because wh-movement is obligatory in sluicing formation. (10) is an example in condition 3.

(10) CONTEXTO: *O Luís visitou alguém.*

O Carlos não sabe quem é que o Luís visitou.

(CONTEXT: *Luís visited someone.*

Carlos does not know who Luís visited.)

Condition 4: Ungrammatical wh-in-situ embedded questions

Condition 4 was another key condition to check whether participants obligatorily moved the wh-phrases. It was aimed at confirming whether participants had completely acquired wh-movement because they were expected to reject the test items in this condition for a relevant reason and make corrections by moving the wh-phrases to the Spec, CP in the embedded clause.

Conditions 3 and 4 were able to provide a better insight into whether the participants had wh-movement as there was only one hypothesis that existed in both these conditions, that is, wh-movement in embedded questions. While the purpose of condition 4 was similar to that of condition 3, there was a possibility that the participants had accepted the test items by default in condition 3 without truly knowing the requirement of wh-movement in the embedded questions. However, in condition 4, they were expected to reject all the test items and make corrections on wh-movement. Therefore, condition 4 allowed us to assess participants' awareness of wh-movement by rejecting and correcting items for the relevant reason.

Example (11a) shows the original text before correction and (11b) shows the expected response in this condition (the expected corrections are presented above the corrected material):

(11) a. CONTEXTO: *O Diogo convidou alguém.*

O Paulo não sabe o Diogo convidou quem.

① 1 2 3 não sei

(CONTEXT: *Diogo invited someone.*

Paulo does not know Diogo invited who.)

b. CONTEXT: *O Diogo convidou alguém.*

quem o Diogo convidou

O Paulo não sabe ~~o Diogo convidou quem.~~

⓪ 1 2 3 não sei

(CONTEXT: *Diogo invited someone.*

who Diogo invited

Paulo does not know ~~Diogo invited who.~~)

Participants were asked to score the sentence and rewrite the corrected part on top, i.e. the movement of the wh-phrase, as shown in (11b).

3.2.3.2 - Test on elliptical structures

Although the test on wh-movement revealed whether the participants had acquired the structure underlying sluicing (wh-movement to the left periphery), it could not confirm whether they had fully acquired sluicing. It is possible that the participants had acquired wh-movement first but were unable to do sluicing in Portuguese because they still had to acquire IP ellipsis before acquiring sluicing. Therefore, another test on elliptical structures was needed. Two conditions focused on elliptical structures, including sluicing and structures that we assume to be partly elided semi-pseudoclefts (sluicing under a semi-pseudocleft), and each condition comprised eight items, meaning a total of 16 items were included in this test; see table 5.

Table 5 Matrix of Portuguese grammaticality judgement task on elliptical structures.

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of Items	Total
Test on elliptical structures	1	Sluicing	Adjunct	Onde	2	16
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	2	Partly elided semi-pseudoclefts	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	

Condition 1: Sluicing

This condition contains sluicing sentences that aimed at testing and confirming whether the participants had obtained sluicing. The participants were expected to accept the sentences in this condition because all of them were grammatical in Portuguese. If they accepted the items in this condition, it indicated that they had acquired sluicing. However, if they rejected it, it illustrated that they had not yet fully obtained sluicing. (12) is an example in this condition. All the sluicing sentences in this condition contained an explicit antecedent, as shown in “alguém/someone” in (12).

(12) CONTEXTO: *A Sofia viu alguém?*

A Sofia viu alguém, mas o Paulo não sabe quem.

(CONTEXTO: *Sofia saw someone?*)

Sofia saw someone, but Paulo doesn't know who.)

Condition 2: Partly elided semi-pseudoclefts (sluicing under a semi-pseudocleft)

This condition consisted of partly elided semi-pseudoclefts and aimed to test whether the participants would transfer the Chinese sluicing-like structure (which superficially corresponds to partly elided semi-pseudoclefts in Portuguese) to Portuguese by examining their acceptance of the relevant structure in Portuguese.

The L1 Portuguese speakers were expected to accept this structure because the items in this condition are grammatical in Portuguese. However, in the case of the Mandarin speakers, if they accepted this structure, it was possible that they might have been transferring the Chinese sluicing-like structure to Portuguese, or they were really acquiring this structure in Portuguese. (13) is an example of a partly elided semi-pseudocleft.

(13) CONTEXTO: *A Ana lavou o carro?*

A Ana lavou o carro em algum lugar, mas o Carlos não sabe é onde.

(CONTEXTO: *Ana washed the car?*)

*Ana washed the car somewhere, but Carlos does not know is where.)

3.2.4 - English grammaticality judgment task

This task was presented after the Portuguese grammaticality judgment task. It was aimed at verifying whether there was an influence of English on the acquisition of Portuguese.

Similar to the task in Portuguese, it was a shorter written task with instructions stated in Chinese as well as given verbally in Portuguese and Chinese (if necessary) before the task started. Although an example was not written in the test, it was given verbally and explained in the classroom, and it was never a case of *wh*-movement, sluicing or VP ellipsis. Again, participants were asked to rate the test items on a Likert scale (0-3) or with “I do not know”; see (14). This task was also semi-randomized using the Microsoft Excel RAND function and manually.

(14) CONTEXT: *David met his friend.*

Susana knows where David met his friend.

0 1 2 3 I do not know

In this task, *wh*-movement and elliptical structures were tested. Two conditions focused on testing *wh*-movement and two conditions focused on testing elliptical structures, as described in 3.2.4.1 and 3.2.4.2.

3.2.4.1 - Test on *wh*-movement

The two conditions that focused on *wh*-movement were grammatical embedded questions and ungrammatical embedded questions. Each condition contained four test items, thus a total of eight test items were included; see table 6. This task aimed at collecting data that could allow a determination of whether the participants had been influenced by English while they were acquiring sluicing in Portuguese.

Table 6 Matrix of English grammaticality judgement task on wh-movement.

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of items	Total
Test on wh-movement	1	Grammatical embedded questions	Adjunct	Where	1	8
				When	1	
			Argument	Who	1	
				What	1	
	2	Ungrammatical embedded questions	Adjunct	Where	1	
				When	1	
			Argument	Who	1	
				What	1	

To maintain consistency with the Portuguese grammaticality judgment task, all settings remained constant except for the number of test items in each condition, which was reduced to only one item per wh-phrase.

Condition 1: Grammatical embedded questions

This condition consisted of grammatical embedded questions, i.e. there was wh-movement in these items. It was aimed at testing whether the participants had wh-movement in embedded sentences in English. If the participants' performance showed that they had wh-movement in English as well as in Portuguese, we could not reject that they had been influenced by English when they were acquiring Portuguese, and vice versa.

Test items in this condition were grammatical in English, and the participants were expected to accept the test items in this condition. (15) is an example in this condition:

(15) CONTEXT: *Cindy ate an apple.*

Jenny knows when Cindy ate an apple.

Condition 2: Ungrammatical embedded questions

This condition consisted of ungrammatical embedded questions, i.e. no wh-movement occurred in the test items. Its aim was to verify the test results in condition 1 and to verify whether the participants had obligatory wh-movement in embedded questions. The participants were expected to correct the items by moving the wh-phrases to Spec, CP of the embedded clause. This allowed us to assess whether the

participants were correcting the items for the relevant reason. (16b) shows the response expected for (16a).

(16) a. CONTEXT: *Sally lost her wallet.*

Sam knows Sally lost her wallet where.

b. Context: *Sally lost her wallet.*

where Sally lost her wallet

Sam knows ~~Sally lost her wallet~~ where.

3.2.4.2 - Test on elliptical structures

The two conditions that focused on testing elliptical structures were grammatical and ungrammatical sluicing sentences. Each condition contained four test items, and a total of eight items were included (see table 7).

Table 7 Matrix of English grammaticality judgement task on elliptical structures.

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of items	Total
Test on elliptical structures	1	Grammatical sluicing sentences	Adjunct	Where	1	8
				When	1	
			Argument	Who	1	
				What	1	
	2	Ungrammatical sluicing sentences	Adjunct	Where	1	
				When	1	
			Argument	Who	1	
				What	1	

Condition 1: Grammatical sluicing sentences

This condition contained grammatical sluicing sentences, and it was aimed at verifying whether the participants had acquired sluicing in English. If they had sluicing in both Portuguese and English, we cannot exclude that they were influenced by English, and vice versa. All sluicing sentences in this condition contained explicit antecedents; (17) is an example in this condition.

(17) CONTEXT: *Did Sam have an accident?*

Sam had an accident somewhere, but Peter doesn't know where.

Condition 2: Ungrammatical sluicing sentences

This condition consisted of ungrammatical sluicing sentences. The test items in this condition superficially corresponded to those in condition 2 of the test on elliptical structures (partly elided semi-pseudoclefts in Portuguese (sluicing under a semi-pseudocleft)) of the Portuguese task. It was aimed at testing whether the participants would accept this kind of structure in English as it is ungrammatical in English but grammatical in Portuguese.

Similar to the Portuguese sluicing structure under a semi-pseudocleft, a form of “be” (*é in EP*) was placed in front of the wh-phrase (see (18)). The participants were expected to reject all the sentences in this condition because they are ungrammatical in English. They were expected to correct them to sluicing sentences in English. Therefore, if they rejected the test items in this condition, it would be possible to see whether they had a sluicing structure in English based on their corrections. (18b) shows the expected response for (18a).

(18) a. CONTEXT: *Did Peter hold a party?*

Peter held a party somewhere, but Cindy doesn't know *is* where.

b. CONTEXT: *Did Peter hold a party?*

Peter held a party somewhere, but Cindy doesn't know ~~is~~ where.

As shown in (18), the participants were expected to delete the copulative verb occurring before the wh-phrase and correct the sentence to a sluicing sentence.

Additionally, if they accepted this structure in both English and Portuguese, then it was possible to state that they were transferring from Chinese to English and Portuguese, or they were transferring from Portuguese to English since this structure is grammatical in Portuguese but not in English. If they rejected the structure in English but accepted it in Portuguese, it might be possible that they were not being influenced by English. Moreover, if they rejected the structure in both English and Portuguese, it would be possible to say that they were not transferring it from Chinese to both English and Portuguese; however, there might have been an influence of English on Portuguese since the participants might have thought that this structure was ungrammatical in English and therefore was also ungrammatical in Portuguese.

4. Results

This chapter presents the results of the experimental data obtained in the three experimental tasks outlined in chapter 3. The results of the elicited production task, the Portuguese grammaticality judgment task, and the English grammaticality judgment task are presented in sections 4.1, 4.2 and 4.3, respectively.

The responses of all the participants were transferred from the examination documents to a Microsoft Excel file, which was subsequently further transferred to an SPSS statistics file. SPSS Statistics Version 25 was used, and apart from the examination of global percentages, we used an independent sample Kruskal-Wallis test and post-hoc tests to analyze the results of the grammaticality judgment task.

4.1 - Elicited Production Task

In this section, the results of the experimental data of the production task on sluicing are presented. Example (1) shows the expected answer of a text extracted from the task. It includes the answer given to the target item, which elicited sluicing, and the answers given to the distractors, which elicited null or overt pronominal subjects.

- (1) Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde ~~é que ela a viu~~. É pena que ~~ela a Ana~~ não se lembre, porque assim ~~a Ana~~ não consegue ajudar o Pedro.

(Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn't know where ~~she saw it~~. It is a pity that ~~she Ana~~ doesn't remember, because she ~~Ana~~ cannot help Pedro.)

Figure 1 shows the proportion of the responses that corresponded to sluicing in the correction of the target sentence.

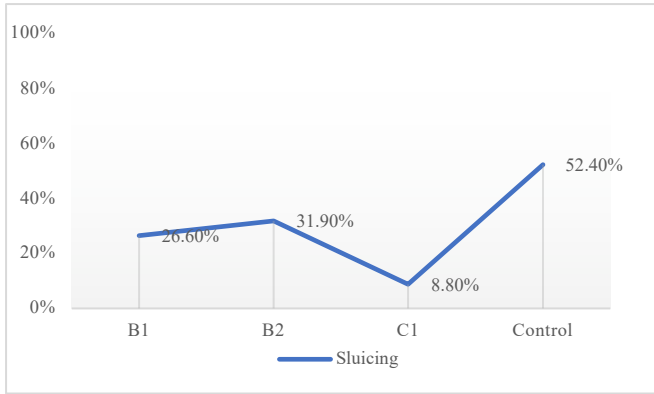


Figure 1: The proportion of responses that corresponded to slicing in the elicited production task.

As shown in Figure 1, 52.4% of the responses in the control group were slicing in the expected contexts, demonstrating that the task was able to elicit slicing. Among the B1-C1 groups, it is astonishing to note that the C1 group produced slicing the least (8.8%), whereas the B2 group produced slicing the most (31.9%), followed by the B1 group (26.6%).

Figure 2 shows the proportion of participants from the different groups who produced at least one item corresponding to slicing in this task. The total number used in this calculation is the total number of participants from the different groups.

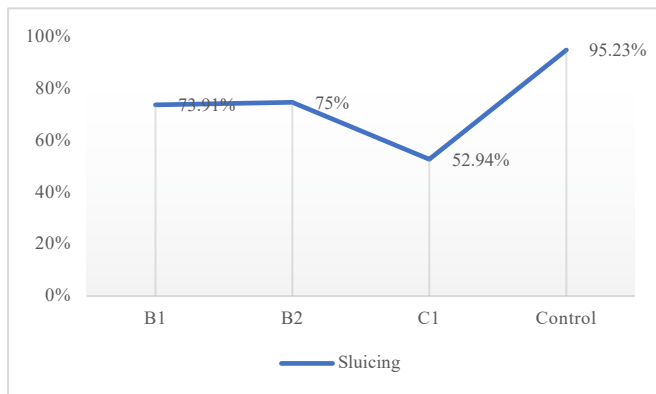


Figure 2: The proportion of participants from the different groups who produced at least one case of slicing in the elicited production task.

As shown in Figure 2, the proportion of participants who produced at least one slicing item in this task reached 95.23% in the control group, dropping to 73.91% and 75% in the B1 and B2 groups, respectively, and further dropping to 52.94% in the C1 group.

Figure 2 shows that the majority of the participants in all groups produced at least one case of sluicing; however, this cannot illustrate whether they are producing it by chance, given that our task, even though it is a production task, could be solved by simply eliminating parts of a sentence. Therefore, Figure 3 shows a clearer picture of the proportion of participants who produced sluicing, at a more stable level.

Figure 3 shows the proportion of participants from the different groups who produced sluicing for half or more than half of the items in this task. The total number used in this calculation is the total number of participants from the different groups.

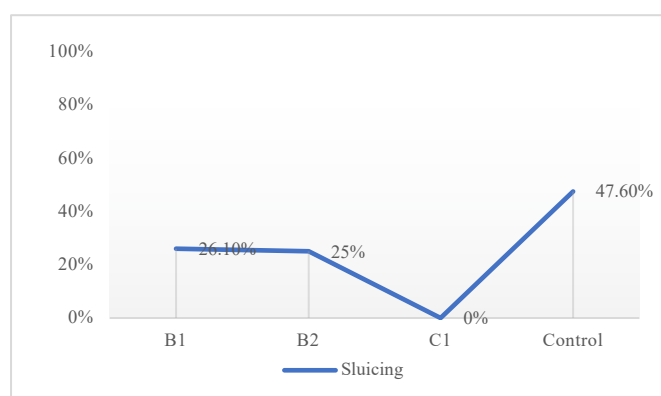


Figure 3: The proportion of participants from the different groups who produced sluicing in half or more than half of the items in the elicited production task.

As shown in Figure 3, the proportion dropped from the control group (47.6%) to the B1 (26.1%) and B2 groups (25%), and even reached 0 in the C1 group.

Figure 4 illustrates whether the responses produced by the participants from the different groups corresponded to sluicing with different types of wh-phrases.

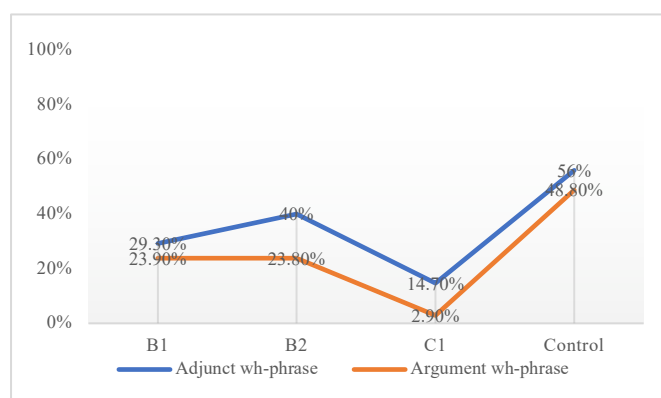


Figure 4: The proportion of answers from the different groups produced sluicing with different types of wh-phrases in the elicited production task.

Figure 4 shows that adjunct wh-phrases comprised the type of wh-phrase that showed a higher sluicing production (56% in the control group, 29.3% in B1, 40% in B2 and 14.7% in C1) compared to argument wh-phrases (48.8% in the control group, 23.9% in B1, 23.8% in B2 and 2.9% in C1).

Figure 5 illustrates whether the participants from the different groups produced sluicing with different wh-phrases, whereby L2 Portuguese learners refers to the B1-C1 groups.

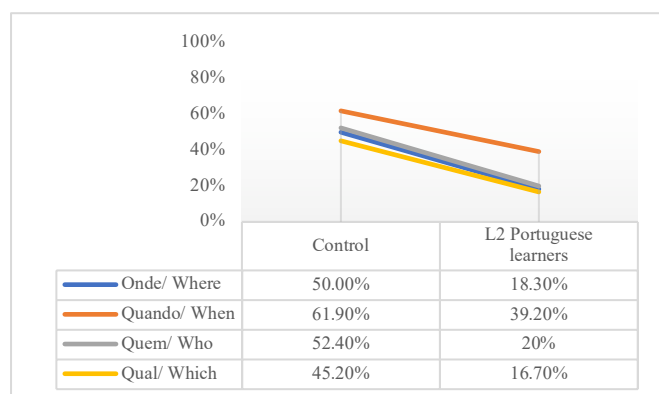


Figure 5: The proportion of answers from the different groups that produced sluicing with different wh-phrases in the elicited production task.

In Figure 5, “quando/when” was the wh-phrase that showed the highest proportion of sluicing production in both the control group (61.9%) and the L2 Portuguese learner groups (39.2%), whereas “qual/which” was the wh-phrase that showed the least proportion of sluicing production in both groups, with 45.2% and 16.7%, respectively.

Aside from the sluicing structure, the L2 learner groups also produced a "wh-phrase + ser/ be" structure, as shown in (2), and other kinds of structure (referred to as "others") that correspond neither to sluicing nor to the "wh-phrase + ser/ be" structure.

(2a) is an example of a sluicing answer in this task and (2b) shows how the participants produced the “wh-phrase + ser/ be” structure. As for the contrast between “é/is” and “foi/was” in (2b), we will discuss to what extent different groups used each option.

(2) a. Ontem, a Ana viu a pintura que o Pedro queria
 yesterday the Ana saw the painting that the Pedro wanted
 comprar, mas ela não sabe onde ~~é que ela a viu~~.
 buy but she not know where is that she CLI saw
 ‘Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn’t
 know where.’

b. Ontem, a Ana viu a pintura que o Pedro queria
 yesterday the Ana saw the painting that the Pedro wanted
 comprar, mas ela não sabe onde ~~é que ela a viu~~ **é/foi**.
 buy but she not know where is that she CLI saw COP
 ‘Yesterday, Ana saw a painting that Pedro wanted to buy, but she doesn’t
 know where it is.’

In terms of other kinds of structure, these were mainly: (i) no changes; (ii) elimination of subject(s); (iii) elimination of "é que/is that"; (iv) elimination of both subject(s) and "é que/is that"; (v) verb phrase ellipsis; (vi) null object. Table 1 summarizes the types of adjustment and presents examples for each of these types (from type i to type vi).

Table 1 Other types of production in the elicited production task.

Types of adjustments	Details	Examples
I	No changes	Acho que perdi a carteira, mas eu não sei onde é que a perdi.
II	Elimination of subject(s)	Acho que perdi a carteira, mas eu não sei onde é que a perdi.
III	Elimination of "é que/is that"	Acho que perdi a carteira, mas eu não sei onde é que a perdi.
IV	Elimination of both subject(s) and "é que/is that"	Acho que perdi a carteira, mas eu não sei onde é que a perdi.
V	Verb phrase ellipsis	O Pedro viajou sozinho para Espanha, mas não sei quando é que ele viajou para Espanha .
VI	Null object	Alguém me enviou uma mensagem, mas não sei quem é que me enviou uma mensagem .

Figure 6 presents a clearer picture of the proportion of production of sluicing, "wh-phrase + ser/be", and "others".

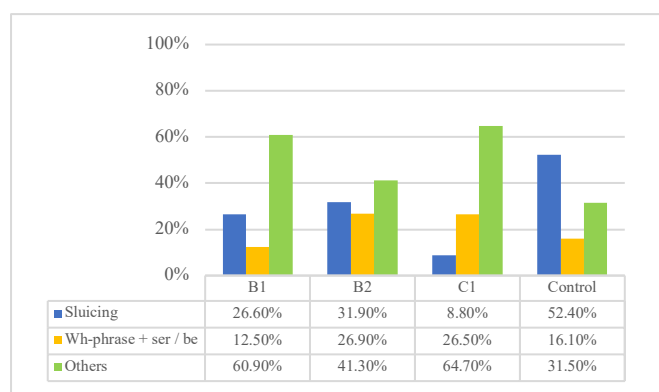


Figure 6: Types of structures produced in the elicited production task.

As shown in Figure 6, most of the answers given by the participants in the B1-C1 groups were other structures, with 60.9% in the B1 group, 41.3% in the B2 group, and 64.7% in the C1 group, whereas in the control group only 31.5% of the answers were such structures. Only 16.1% of the answers given by the control group and 12.5% by the B1 group were the “wh-phrase + ser/ be” structure, see (2), and the proportion rose to 26.9% and 26.5% in the B2 and C1 groups, respectively.

Figure 7 shows the proportion of answers that corresponded to “wh-phrase + é/is” or “wh-phrase + foi/was”. The total number used in this calculation is the total number of answers that corresponded to “wh-phrase + ser/be” structure.

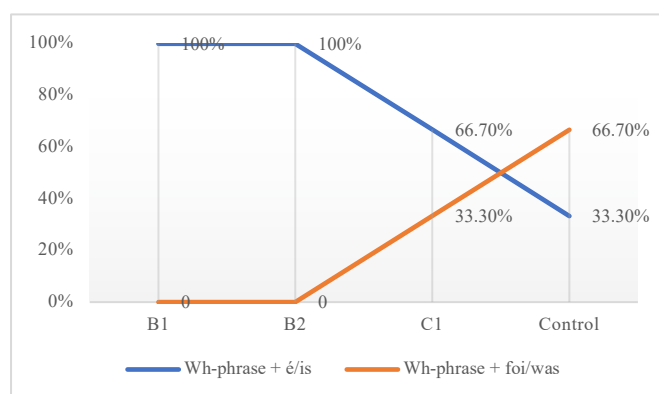


Figure 7: Proportion of “wh-phrase + é/is” or “wh-phrase + foi/was” (over the total number of “wh-phrase + ser/be”) in the elicited production task.

As shown in Figure 7, 33.3% of the “wh-phrase + ser/be” structure produced by the control group corresponded to “wh-phrase + é/is”, and 66.7% corresponded to “wh-phrase + foi/was”. In the B1 and B2 groups, all answers were “wh-phrase + é/is”. In the C1 group, 66.7% corresponded to “wh-phrase + é/is” and 33.3% to “wh-phrase + foi/was”.

Figure 8 shows the proportion of answers from the different groups that produced “wh-phrase + ser/be” with different types of wh-phrases. The total number used in this calculation is the total number of answers that corresponded to “wh-phrase + ser/be”.

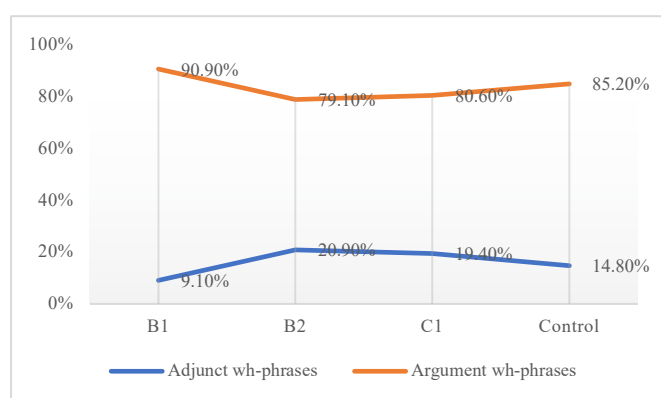


Figure 8: Proportion of “wh-phrase + ser/be” answers with different types of wh-phrases in the elicited production task

Figure 8 shows that the sentences containing argument wh-phrases showed a higher production of “wh-phrase + ser/be” (85.2% in the control group, 90.9%, 79.1% and 80.6% in the B1, B2 and C1 groups, respectively) compared to adjunct wh-phrases (14.8% in the control group, 9.1%, 20.9% and 19.4% in B1, B2 and C1 groups, respectively).

In summary, the control group produced sluicing, but the L2 learner groups tended to produce other kinds of structure rather than sluicing, whereas the C1 group had the lowest proportion of sluicing production.

4.2 - Portuguese Grammaticality Judgment Task

In this section, the results of the experimental data of the Portuguese grammaticality judgment task are presented. There were six experimental conditions, and the experimental data are presented by condition.

The participants were asked to rate the sentences on a four-point Likert scale (0-3) placed next to the test items. If an item was rated with zero, it means that the participants were showing level 0 of acceptance (complete rejection); if it was rated with one, it indicates that the participants were showing a level 1 acceptance (partial rejection); if it was rated with two, the participants were showing a level 2 acceptance (marginal rejection); if an item was rated with three, they were showing a level 3 acceptance (complete acceptance). They were asked to make corrections to the items that they did not rate with a three. When an item was marked with “não sei/I don’t know” by the participants, this indicates that the participants did not know the answer.

Table 2 summarizes the score used by the participants on a four-point Likert scale (0-3) and its corresponding level of acceptance on the test items.

Table 2 Rate on the Likert scale, its corresponding level of acceptance, and indications in the grammaticality judgment tasks.

Rate	Level of acceptance	Indications
0	Level 0	Complete rejection
1	Level 1	Partial rejection
2	Level 2	Marginal rejection
3	Level 3	Complete acceptance

4.2.1 - Test on wh-movement

Condition 1: Root questions with wh-movement

This condition comprised root questions involving wh-movement, and the participants were expected to accept the test items in this condition.

Figure 9 provides a general pattern of the results for this condition.

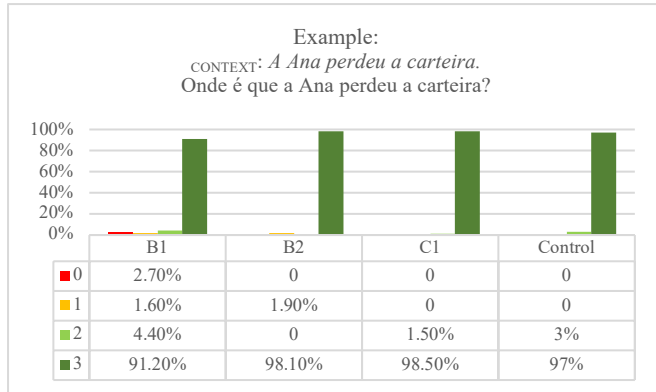


Figure 9: Root questions (with wh-movement) in the Portuguese grammaticality judgment task.

As shown in Figure 9, almost all four groups performed at the ceiling level as more than 90% of the participants in all four groups accepted the items completely, choosing level 3 (complete acceptance) in the assessment scale (97% of the answers in the control group, 91.2% in the B1 group, 98.1% in the B2 group and 98.5% in the C1 group). A Kruskal-Wallis test for ordinal data was used to analyze the performance among the different groups. It showed that different groups performed significantly differently, as shown by the statistical data obtained in the Kruskal-Wallis test ($H(3)=15.529, p=.001$). Post hoc tests identified differences between the B1 and B2 groups and the B1 and C1 groups ($p=.001$). Overall, all four groups showed a strong tendency to accept the root interrogatives with wh-movement.

Condition 2: Wh-in-situ root questions

This condition comprised test items of wh-in-situ root questions, and the participants were expected to accept the test items in this condition. Figure 10 shows the results obtained for this condition.

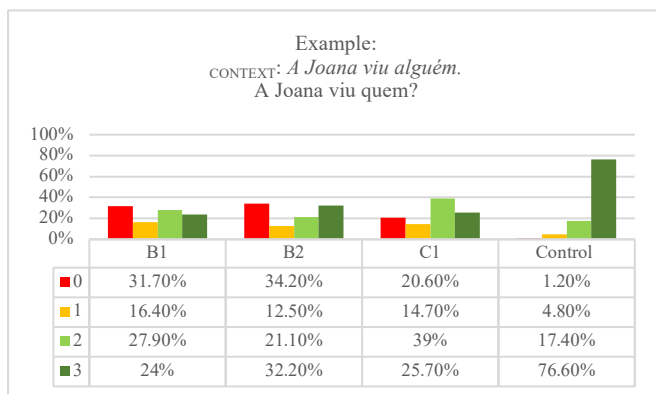


Figure 10: Wh-in-situ root questions in the Portuguese grammaticality judgment task.

As shown in Figure 10, despite the high complete acceptance of wh-in-situ root questions in the control group (76.6%), the B1-C1 groups did not show a strong tendency towards wh-in-situ root questions, as demonstrated by the low proportion of complete acceptance in the B1 (24%), B2 (32.2%) and C1 (25.7%) groups. In addition, the proportion of level 0 (complete rejection) was slightly higher than the proportion of complete acceptance in the B1 (31.7%) and B2 (34.2%) groups, except in the C1 group (20.6%), which contrasted significantly with the complete rejection rate in the control group (1.2%). The statistical data obtained in the Kruskal-Wallis test showed that the difference between groups was significant: $H(3)=133.094$, $p<.001$. The post-hoc tests showed a significant difference between the control group and the L2 speaker groups ($p=.001$) for the comparison between the control group and the B1, B2 and C1 groups.

In general, the control group tended to accept the wh-in-situ root questions, but the experimental group tended to reject it.

Also, those participants who made adjustments to the test items corrected the wh-in-situ questions to questions with wh-movement, as shown in Figure 11, which reveals the types of adjustment made by those participants who refused to completely accept the test items in this condition. The total number of items used in this calculation is the total number of items that were corrected by the participants.



Figure 11: Types of adjustment made by participants who refused to completely accept the test items in the wh-in-situ questions in the Portuguese grammaticality judgment task.

More than 94% of the responses in all four groups were adjusted to the root questions with wh-movement, even reaching 100% in the C1 group. In the case the participants who maintained the wh-in-situ root questions, they tended to make other types of adjustments, such as putting a preposition before the wh-phrase and correcting an indefinite article to a definite one.

Condition 3: Embedded questions (with wh-movement)

This condition comprised embedded questions with wh-movement and the participants were expected to accept the test items in this condition. Figure 12 presents the general pattern of the results for this condition.

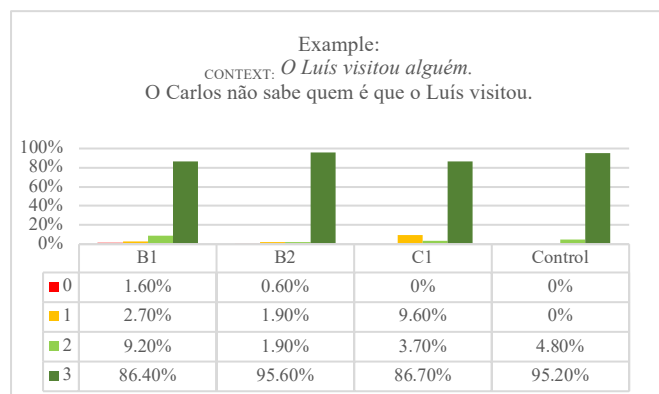


Figure 12: Embedded questions (with wh-movement) in the Portuguese grammaticality judgment task.

As shown in Figure 12, the performance of the B2 group was nearly identical (95.6%) to the control group (95.2%), meaning that both groups had a ceiling performance with over 95% complete acceptance of the test items. Meanwhile, both the B1 group (86.4%) and the C1 group (86.7%) exhibited a slight drop in performance, but the proportion still remained very high. The Kruskal-Wallis test showed that there are significant differences between the groups ($H(3)=16.021, p<.001$). The post-hoc tests showed that only the control group and the B1 group, and the B1 group and the B2 group differed significantly ($p=.004$ in both cases).

In contrast, the proportion of complete rejection of the test items was almost non-existent, as presented by 0 in both the control and C1 groups and 0.6% and 1.6% in the B2 and B1 groups, respectively. In sum, all four groups tended to accept the embedded questions with wh-movement in Portuguese.

Condition 4: Ungrammatical wh-in-situ embedded questions

This condition included test items that corresponded to ungrammatical embedded questions in which wh-movement did not occur, and the participants were expected to reject the test items in this task. Figure 13 presents the results obtained for this condition.

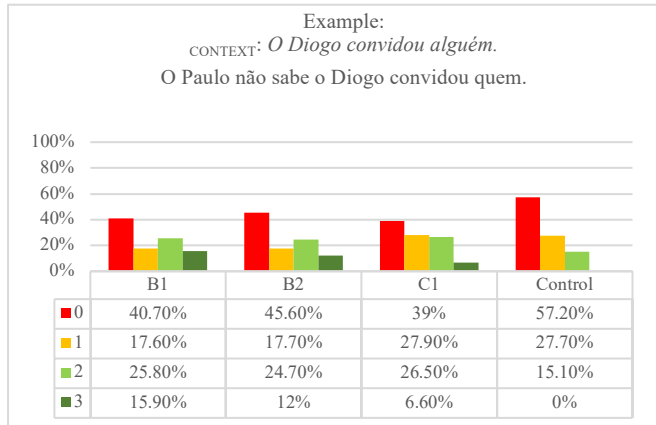


Figure 13: Ungrammatical *wh*-in-situ embedded questions in the Portuguese grammaticality judgment task.

We can see that 57.2% of the answers given by the control group were a complete rejection of the test items, with 0 complete acceptance in this group. The proportion of complete acceptance in the B1 group (15.9%) was less than complete rejection (40.7%), partial rejection (level 1 acceptance) (17.6%) and marginal rejection (level 2 acceptance) (25.8%). A similar pattern was also found in the B2 group, with 45.6% complete rejection, 17.7% partial rejection and 24.7% marginal rejection, but only 12% complete acceptance. In the C1 group, the complete rejection dropped slightly to 39% and the proportion of partial and marginal rejection was 27.9% and 26.5%, respectively, while only 6.6% of the answers were complete acceptance. A Kruskal-Wallis test showed that the performance of groups was significantly different ($H(3)=26.817, p<.001$). The post-hoc tests showed that there is a significant difference between the control group and the L2 speaker groups ($p<.001$ in all three cases).

Figure 14 shows the proportion of items in this condition that were corrected to embedded questions with *wh*-movement; this provides more evidence on whether the participants rejected this structure for the relevant reason. In Figure 14, we took into account the proportion of the expected corrections in this condition¹³. The total number of items used in this calculation is the total number of items in this condition.

¹³ In this case, participants were expected to reject and correct the items as all the items were ungrammatical. If a participant moved the position of a *wh*-phrase to the front of the embedded question, this response would be counted as a response that corresponded to an embedded question with *wh*-movement. On the contrary, if a participant made other types of correction instead of the position of the *wh*-phrase, the response would not be considered to correspond to an embedded question with *wh*-movement.

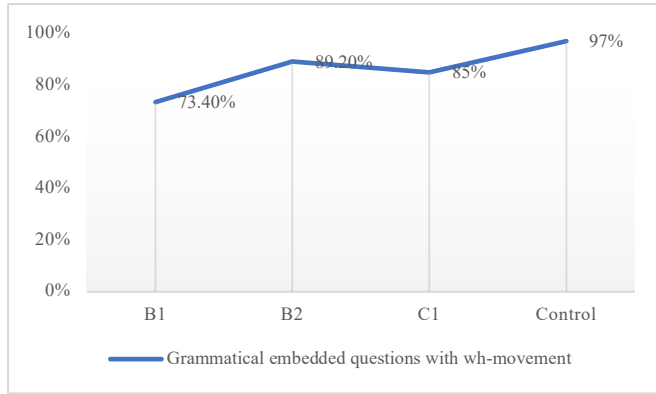


Figure 14: The proportion of expected corrections in embedded questions with wh-movement in the Portuguese grammaticality judgment task.

Figure 14 further confirms that the control group rejected the items in this condition for the relevant reason as the percentage of grammatical responses was 97%. It is also plausible to assert that the B1, B2, and C1 groups rejected this structure for the right reason (i.e., corrected the items with wh-movement). This is shown by the high proportion of the total number of items in this condition that were rejected and corrected to embedded questions with wh-movement (73.4%, 89.2%, and 85%, respectively).

4.2.2 - Test on elliptical structures

Condition 1: Sluicing

This condition consisted of sluicing sentences, and the participants were expected to accept the test items in this condition. Figure 15 reveals the results with respect to the sluicing sentences obtained in this task.

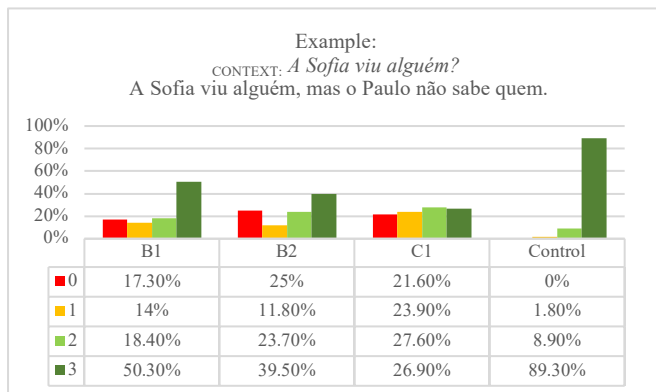


Figure 15: Acceptance of sluicing in the Portuguese grammaticality judgment task.

As shown in Figure 15, a high proportion of complete acceptance (89.3%) was found in the control group, and no participants in the control group completely rejected the sluicing sentences. However, only approximately 50.3% of the answers given by the B1 group were complete acceptance, and 17.3% were complete rejection. Also, the proportion of complete acceptance dropped in the B2 group (39.5%) and complete rejection rose to 25%. The performance in the C1 group was quite split: 21.6% were complete rejection, 23.9% were partial rejection, approximately 27.6% were marginal rejection, and 26.9% were complete acceptance. In general, the control and B1 groups showed a tendency to accept sluicing, whereas the B2 and C1 groups tended to reject it. The results obtained in this condition are in line with the results obtained in the production task, as the C1 group had the least proportion in terms of accepting sluicing and producing sluicing. Besides, the Kruskal-Wallis test showed that the difference between groups was significant ($H(3)=136.074, p<.001$). The post-hoc test also showed that there was a significant difference between the control group and the L2 speaker groups, and the B1 and C1 groups ($p<.001$ in all cases).

Comparing the results in this task to the results in the production task, we found that there is an asymmetry between these two tasks in the B1 group, as shown by low proportion of answers that corresponded to sluicing in the production task compared to the high proportion of marginal rejection and complete acceptance in the Portuguese grammaticality judgment task. Therefore, further information about the performance of the participants in the B1 group in these tasks is needed to verify and investigate this situation. For instance, Figure 16 shows the proportion of the participants who (i) both produced and accepted¹⁴ sluicing; (ii) produced but did not accept sluicing; (iii) did not produce sluicing but accepted it; and (iv) neither produced nor accepted sluicing. Production of sluicing here refers to the proportion of participants from the different groups who produced sluicing for half or more than half of the items in the production task.

¹⁴ In this case, acceptance of sluicing refers to (i) a participant completely accepting an item; (ii) a participant not completely accepting an item and making adjustments to other parts of the item, but sluicing was maintained.

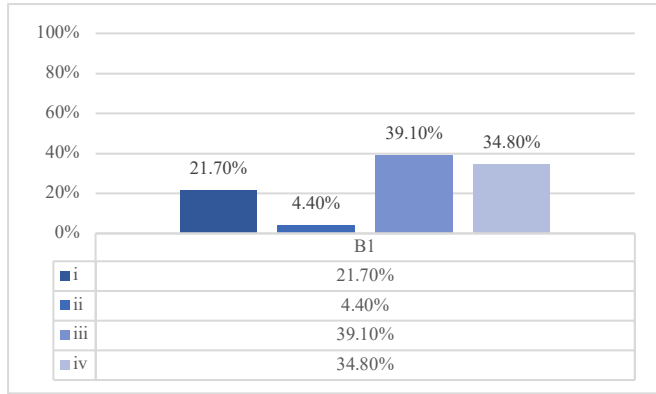


Figure 16: The proportion of the participants in the B1 group in relation to their production and/or acceptance of sluicing in the production task and the Portuguese grammaticality judgment task.

Figure 16 shows that 21.7% of the participants in the B1 group produced and accepted sluicing; only 4.4% of the participants produced but did not accept it; 39.1% of the participants did not produce but accepted it; and 34.8% of the participants neither produced nor accepted it.

Furthermore, those participants who corrected the test items tended to do so by adding “ser/be” to the end of the sluicing sentences. Figure 17 shows the type of adjustments made by the participants who refused to completely accept sluicing. The total number of items that were used in this calculation is the total number of items that were corrected by the participants.

Participants who refused to accept sluicing corrected the items to the "wh-phrase + ser/be" structure or to other types of structure that correspond neither to sluicing¹⁵ nor to the "wh-phrase + ser/be" structure.

¹⁵ Sluicing in this case refers to cases in which the structure of sluicing was maintained, but other aspects of the structure were corrected.

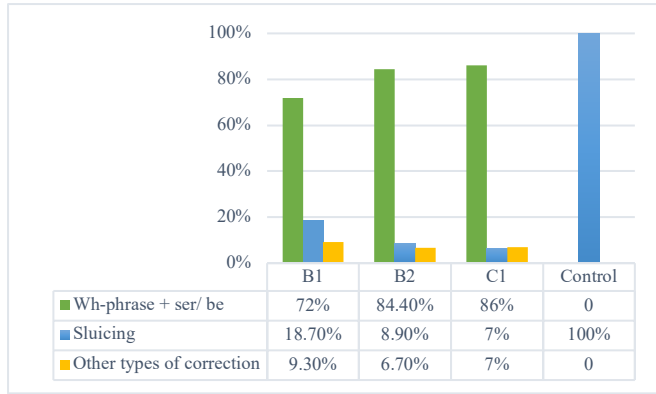


Figure 17: Types of adjustment in sluicing in the Portuguese grammaticality judgment task.¹⁶

As illustrated in Figure 17, the majority of the answers given by the B1 (72%), B2 (84.4%) and C1 (86%) groups who refused to completely accept the items were adjusted to the "wh-phrase + ser/be" (see (2)).

Since participants who corrected the items to "wh-phrase + ser/be" tended to correct it to "wh-phrase + é/is" or "wh-phrase + foi/was", Figure 18 shows the proportion of adjustments that corresponded to "wh-phrase + é/is" and "wh-phrase + foi/was". The total number used in this calculation is the total number of answers that were corrected as a "wh-phrase + ser/be" structure.

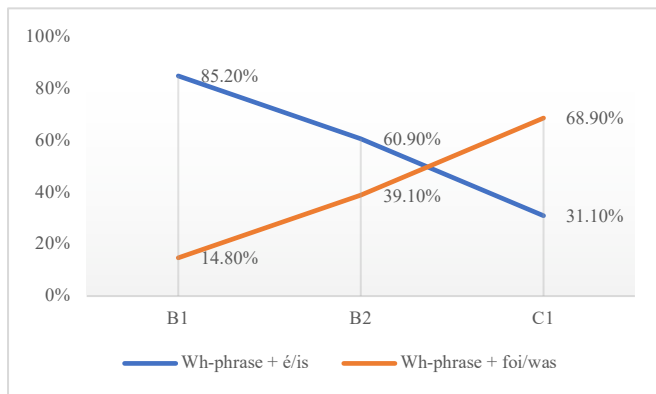


Figure 18: The proportion of adjustments that corresponded to "wh-phrase + é/is" or "wh-phrase + foi/was" (over the total number of "wh-phrase + ser/be") in the Portuguese grammaticality judgment task.

Figure 18 shows that the participants in the higher levels tended to adjust the items to "wh-phrase + foi/was", as shown by a rise in the proportion from 14.8% in the B1

¹⁶ In this case, 100% of the adjustments made by the participants in the control group who refused to accept sluicing completely corresponded to cases in which the speakers corrected other aspects of the structure but maintained the answers in sluicing.

group to 39.1% in the B2 group and 68.9% in the C1 group, whereas the proportion of adjustment to “wh-phrase + *é/is*” dropped from 85.2% in B1, to 60.9% in B2 and to 31.1% in C1.

Figure 19 shows the proportion of answers given by the different groups that were adjusted to “wh-phrase + *ser/be*” with different types of wh-phrases. The total number used in this calculation is the total number of the answers that corresponded to the “wh-phrase + *ser/be*” structure.

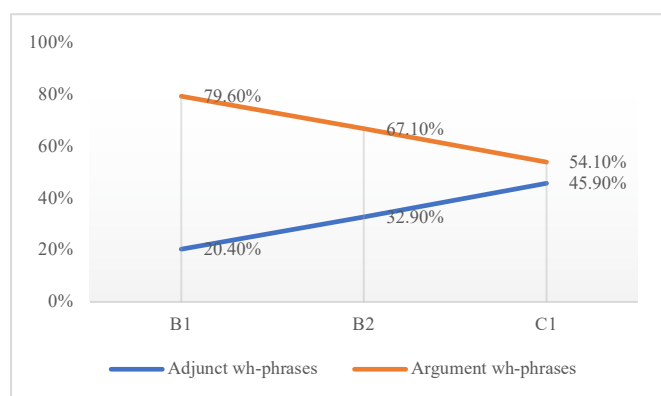


Figure 19: The proportion of answers from the different groups that were adjusted to the “wh-phrase + *ser/be*” structure with different types of wh-phrases in the Portuguese grammaticality judgment task.

Figure 19 shows that argument wh-phrases comprised the type of wh-phrase that showed a higher proportion of the “wh-phrase + *ser/be*” structure (79.6%, 67.1% and 54.1% in the B1, B2 and C1 groups, respectively) compared to adjunct wh-phrases (20.4%, 32.9% and 45.9% in the B1, B2 and C1 groups, respectively).

Figure 20 shows the results of the proportion of acceptance of different types of wh-phrases (see annotation 14). The total number of items that was used to calculate the percentage of acceptance on items comprising adjunct wh-phrases (the blue line), presented in Figure 20, is the total number of items comprising adjunct wh-phrases in this condition. Also, the total number of items that were used to calculate the percentage of acceptance of items comprising argument wh-phrases (the orange line) is the total number of items comprising argument wh-phrases in this condition.

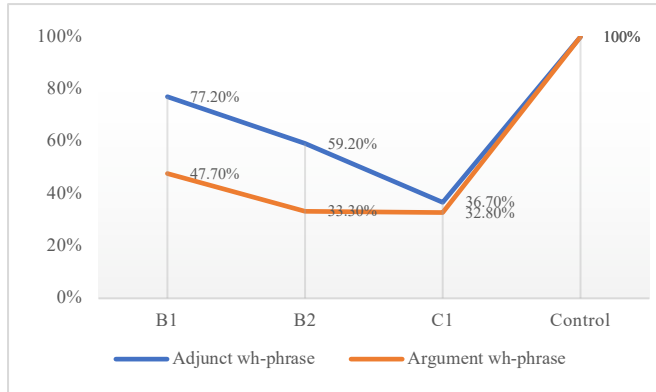


Figure 20: The proportion of acceptance of different types of wh-phrases (adjunct and argument wh-phrases) in sluicing in the Portuguese grammaticality judgment task.

As shown in Figure 20, the control group reached 100% in all cases. However, in the case of the experimental groups, they tended to accept more sluicing with adjunct wh-phrases (77.2%, 59.2% and 36.7% in the B1-C1 groups, respectively) than sluicing with argument wh-phrases (47.7%, 33.3% and 32.8% in the B1-C1 groups, respectively). It is interesting that the difference is visible only in the case of the B1 and the B2 groups; this difference is not observable in the C1 group. However, this does not happen as a result of a general increase in the acceptance rates; instead, the acceptance rate of adjunct wh-phrases in sluicing drops.

Condition 2: Partly elided semi-pseudocleft

This condition was made up of sluicing under a semi-pseudocleft, and the participants were expected to accept the test items. Figure 21 reveals the results with respect to the partly elided semi-pseudoclefts obtained in this task.

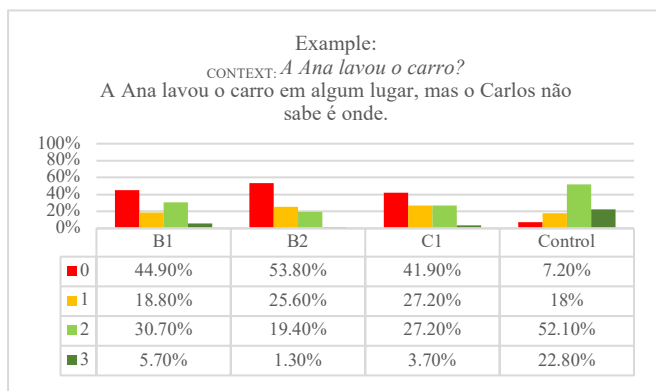


Figure 21: Partly elided semi-pseudoclefts in the Portuguese grammaticality judgment task.

As shown in Figure 21, only 22.8% of the answers given by the control group were complete acceptance and 52.1% were marginal rejection. The proportion of complete rejection is very low, at only 7.2%. This might be because this structure is a focus structure and probably needs a particular context to be accepted. The proportion of complete acceptance for the other three groups was considerably lower, with very low percentages in the B1 (5.7%), B2 (1.3%) and C1 (3.7%) groups, while the proportions of complete rejection of the test items were relatively high in the experimental groups, with 44.9%, 53.8% and 41.9% in the B1, B2, and C1 groups, respectively. In general, the control group did not seem to completely accept this structure, but the experimental groups clearly rejected this structure. A Kruskal-Wallis test showed that the performance between the groups was significantly different ($H(3)=136.585, p<.001$). The post-hoc tests showed that the difference between the control group and each of the L2 speaker groups was significant ($p<.001$ in all three cases).

Moreover, for those who made adjustments to the items in this condition, Figure 22 illustrates the proportion of the types of adjustment made by the participants who refused to completely accept and then corrected the test items in this condition. The total number of items used to calculate the percentage in Figure 22 is the total number of items that were corrected by the participants. Different types of structure were used in the corrections by the participants, including the partly elided semi-pseudocleft structure¹⁷, sluicing, the "wh-phrase + ser/ be" structure, and other structures that do not correspond to the above structures (referred to as "others").

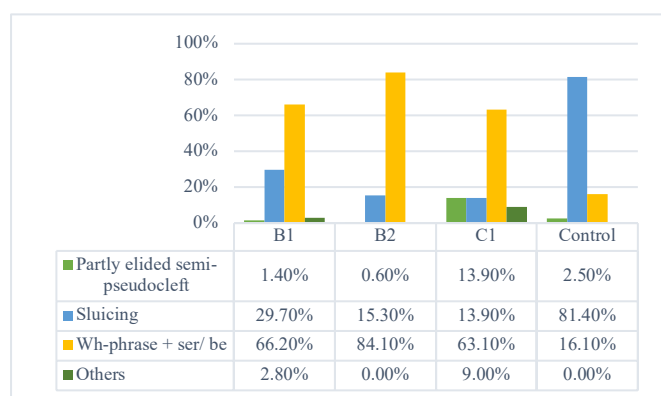


Figure 22: Types of adjustment made by different groups in partly elided semi-pseudoclefts in the Portuguese grammaticality judgment task.

¹⁷ In this case, other aspects of the structure were corrected, but a partly elided semi-pseudocleft was maintained.

As seen in Figure 22, the majority of the answers given by the control group (81.4%) were corrected from the partly elided semi-pseudoclefts (i.e. sluicing under a semi-pseudocleft) to a simple case of sluicing. This is in contrast to the answers given by the B1-C1 groups (29.7%, 15.3% and 13.9% in the B1-C1 groups, respectively), whereby less than one third of the answers were corrected to sluicing. However, the majority of the answers given by the B1-C1 groups (66.2%, 84.1% and 63.1% in B1-C1 groups, respectively) were corrected to the "wh-phrase + ser/ be" structure (see (2)), which is in contrast to the proportion of answers given by the control group (16.1%) who corrected the items to the "wh-phrase + ser/ be" structure.

4.3 - English grammaticality judgment task

There were four conditions in this task; two of these tested obligatory wh-movement and the other two conditions tested sluicing. The results of this task are presented by condition.

4.3.1 - Test on wh-movement

Condition 1: Grammatical embedded questions

Condition 1 was made up of grammatical embedded wh-questions, and the participants were expected to accept them. Figure 23 shows the results of the acceptance and rejection of the grammatical embedded questions for this condition.

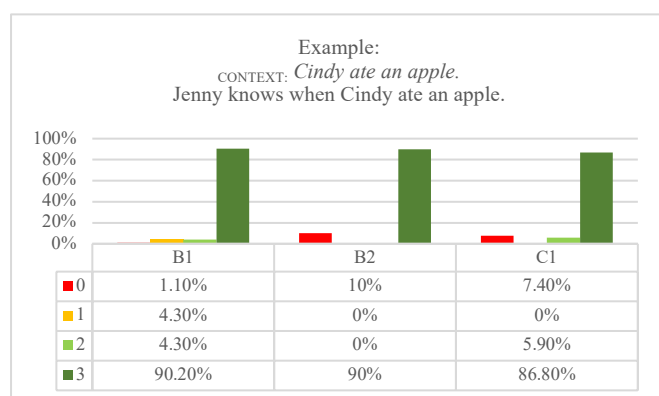


Figure 23: Grammatical embedded questions in the English grammaticality judgment task.

As represented in Figure 23, the proportion of answers given by the B1-C1 groups showed that the L2 speaker groups tended to accept the test items, with 90.2% in the B1 group, 90% in the B2 group and 86.8% in the C1 group completely accepting the

items. The Kruskal-Wallis test indicated that there was no difference in the performance between these groups ($H(2)=.581, p=.748$).

Condition 2: Ungrammatical embedded questions

This condition was made up of ungrammatical embedded questions and the participants were expected to reject the sentences and make corrections to the sentences by moving the wh-phrases to the front. Figure 24 illustrates the results obtained for this condition, in terms of the level of acceptance.

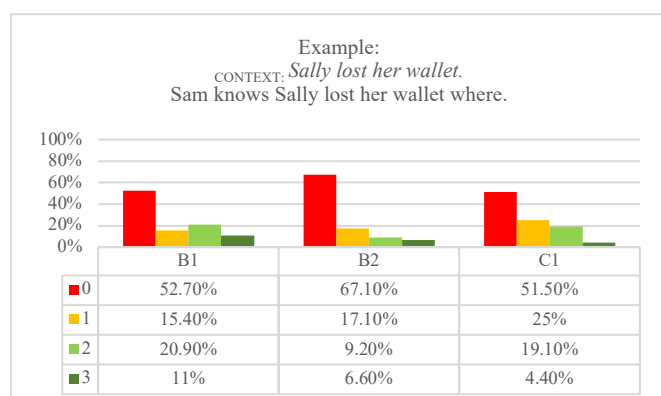


Figure 24: Ungrammatical embedded questions in the English grammaticality judgment task.

Figure 24 shows that the experimental group had a tendency to reject this structure because more than half of the answers given by the experimental groups was complete rejection, with 52.7%, 67.1%, and 51.5% in the B1-C1 groups, respectively. Also, the proportion of complete acceptance was very low in the experimental groups, with only 11%, 6.6%, and 4.4% in the B1-C1 groups, respectively. There was no significant difference between groups (as indicated by the Kruskal-Wallis test, $H(2)=5.141, p=.077$). All three groups tended to reject this structure.

4.3.2 - Test on elliptical structures

Condition 1: Grammatical sluicing sentences

This condition consisted of grammatical sluicing sentences and the participants were expected to accept them. Figure 25 illustrates the results obtained for this condition.

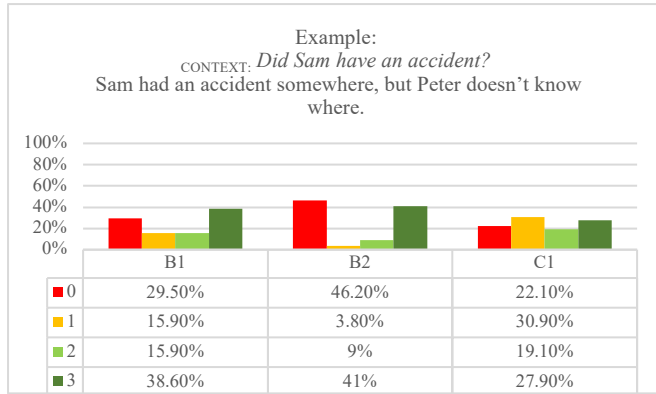


Figure 25: Grammatical slicing sentences in the English grammaticality judgment task.

As shown in Figure 25, the B2 group had the highest complete rejection rate (46.2%) and complete acceptance rate (41%) among the three groups. The B1 group had the second-highest complete acceptance rate with 38.6%, which was 9.1% higher than the proportion of complete rejection (29.5%). Meanwhile, the C1 group has the lowest complete rejection rate (22.1%) and complete acceptance rate (27.9%) as well as the highest partial rejection rate (30.9%) and marginal rejection rate (19.1%). The performance among these three groups was not significantly different, as shown by the statistical results ($H(2)=.947, p=.623$).

Comparing the results obtained in this condition (Figure 25) to the slicing condition in the Portuguese grammaticality judgment task (Figure 15), we can see that the B1 group has a higher complete rejection rate in English slicing (29.5%) than in Portuguese slicing (17.3%) and a lower complete acceptance rate in English slicing (38.6%) than in Portuguese slicing (50.3%). Also, the complete rejection rate in the B2 group in English slicing (46.2%) was much higher than in Portuguese slicing (25%), and the complete acceptance in English slicing (41%) was more or less the same as in Portuguese slicing (39.5%). The partial and marginal rejections in English slicing (3.8% and 9%, respectively) were lower than in Portuguese slicing (11.8% and 23.7%, respectively). The proportion of the C1 group was also considerably split in both tasks; the proportion of complete rejection and acceptance remained more or less the same (22.1% and 27.9% in English slicing and 21.6% and 26.9%, respectively, in Portuguese slicing), except for the proportion of partial rejection, which was slightly higher in English slicing (30.9%) than in Portuguese slicing (23.9%). Meanwhile, marginal rejection was lower in English slicing (19.1%) than in Portuguese slicing (27.6%).

Moreover, there are different types of structures that participants tended to use when correcting these sentences, including: (i) sluicing¹⁸; (ii) the "wh-phrase + verb to be" structure; (iii) the "wh-phrase + subject + verb" structure; (iv) the "wh-phrase + subject + verb to be" structure; (v) other structures that do not correspond to the above structures (referred as "others").

Table 3 summarizes the types of the adjustment and presents examples for each of these types.

Table 3 Types of adjustment on corrected items in condition 1 (sluicing) in the elliptical structure test in the English grammaticality judgment task and its examples.

Types of adjustments	Details	Examples
I	Sluicing	Sam kissed someone, but Peter doesn't know who.
II	Wh-phrase + verb to be	*Sam kissed someone, but Peter doesn't know who is.
III	Wh-phrase + subject + verb	Sam kissed someone, but Peter doesn't know who he kissed.
IV	Wh-phrase + subject + verb to be	Sam kissed someone, but Peter doesn't know who it is.
V	Others (mainly "wh-phrase + verb to be + pronoun")	*Sam kissed someone, but Peter doesn't know who is it.

Figure 26 shows the proportion of the types of adjustment made by the participants who refused to completely accept and then corrected the test items in this condition. The total number of items used in this calculation is the total number of items that were corrected by the participants in this condition.

¹⁸ In this case, other aspects of the structure were corrected, but sluicing was maintained.

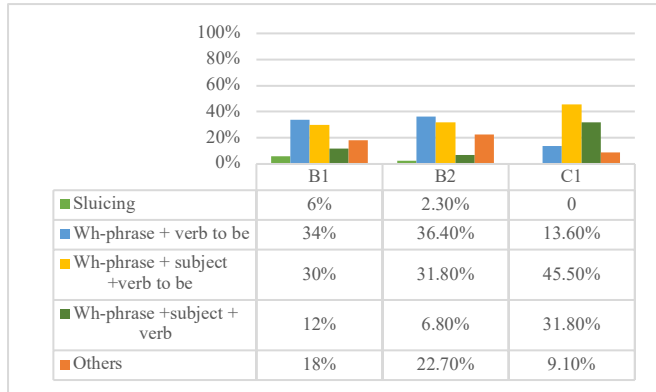


Figure 26: Types of adjustment made by different groups in sluicing in the English grammaticality judgment task.

Figure 26 shows that the answers given by both the B1 (34%) and B2 (36.4%) groups were corrections to the "wh-phrase + verb to be" structure, which also corresponds to their corrections in condition 2 (sluicing) of the elliptical test mentioned in the Portuguese grammaticality judgment task in 4.2.2. Also, the answers of B1 (30%) and B2 (31.8%) groups were corrections to the "wh-phrase + subject + verb to be" structure, and some of the answers given by the B1 (18%) and B2 (22.7%) groups were corrections to "others", which mainly includes the "wh-phrase + verb to be + pronoun" structure. The answers given by the C1 group (45.5%) were corrections to the "wh-phrase + subject + verb to be" structure, 31.8% were corrections to the "wh-phrase + subject + verb" structure, which is a grammatical structure in English, and 13.6% were corrections to the "wh-phrase + verb to be" structure.¹⁹

In general, the experimental groups did not show that they had acquired sluicing in English.

¹⁹ Note that in this condition, two participants rejected the sentences (one participant rejected it completely, another participant marginally rejected it) in the item that comprised an argument wh-phrase "who" to "whom", see (1). According to native speakers who we have consulted on this, while "who" and "whom" in this condition are both acceptable in English, "whom" is associated with more formal styles and is usually used in written form, whereas "who" is commonly and widely used nowadays, especially in oral form. Considering that sluicing is a structure associated with oral and more informal uses of language, we preferred to use "who" rather than "whom" in this task.

(1) CONTEXT: *Did Sam kiss someone?*

whom

Sam kissed someone, but Peter doesn't know ~~who~~.

Condition 2: Ungrammatical sluicing sentences

This condition was made up of ungrammatical sluicing sentences and the participants were expected to reject the test items in this condition and to correct them to sluicing sentences in English.

Figure 27 shows the results for the ungrammatical sluicing sentences.

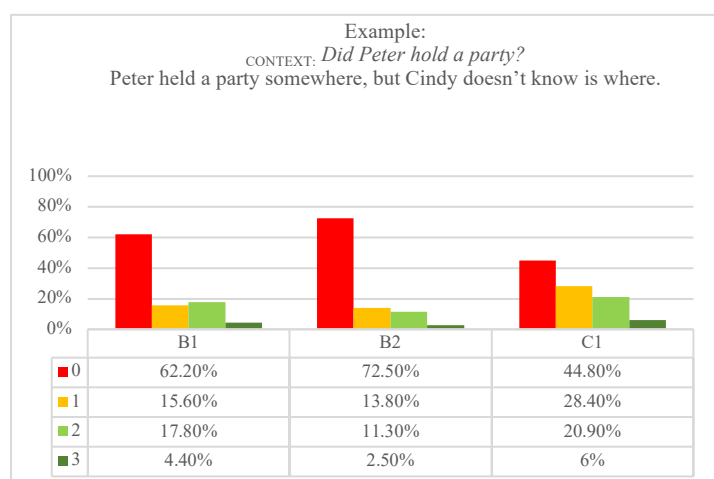


Figure 27: Ungrammatical sluicing sentences in the English grammaticality judgment task.

Figure 27 shows that 62.2% of the B1 group completely rejected this structure, and only 4.4% completely accepted it. A similar pattern was also found for B2, with 72.5% complete rejection and 2.5% complete acceptance. The complete acceptance rate remained low at 6% in the C1 group, yet this group also had the lowest complete rejection rate for this structure (44.8%) and the highest partial and marginal rejection acceptance rates (28.4% and 20.9%, respectively). Significant differences were found between groups ($H(2)=10.636, p=.005$). The difference between the B2 and C1 groups was significant, as shown by the post hoc test ($p=0.001$). In general, the B1 and B2 groups had a tendency to completely reject this structure, but the C1 group had a lower tendency to completely reject this structure.

Also, Figure 28 shows the proportion of the types of adjustment made by the participants who refused to completely accept the test items in this condition. The total number of items used in this calculation is the number of items that were corrected by the participants.

There are different types of structure that the participants tended to correct to, including (i) ungrammatical sluicing sentences²⁰, (ii) the "wh-phrase + verb to be" structure, (iii) the "wh-phrase + subject + verb to be" structure, and (iv) other kinds of structures that do not correspond to the mentioned structures (referred as "others").²¹

Table 4 summarizes the types of adjustment on the corrected items in this condition and presents examples for each of these types.

Table 4 Types of adjustment on corrected items in condition 2 (ungrammatical sluicing) in the elliptical structure test in the English grammaticality judgment task.

Types of adjustment	Details	Example
I	Ungrammatical sluicing sentence	*Joanne bought something, but Becky doesn't know is what.
II	Wh-phrase + verb to be	*Joanne bought something, but Becky doesn't know what is.
III	Wh-phrase + subject + verb to be	Joanne bought something, but Becky doesn't know what it is.
IV	Others (mainly wh-phrase + verb to be + pronoun)	*Joanne bought something, but Becky doesn't know what is it.

²⁰ In this case, other aspects of the structure were corrected, but the ungrammatical sluicing sentence was maintained.

²¹ There is a case in which a participant corrected an item of the wh-phrase from "who" to "whom", as shown in the examples (2) stated below. However, this does not affect the results obtained in this condition because the participant still rejected the item for a relevant reason, that is, corrected this item to sluicing.

(2) CONTEXT: *Did Susan hit someone?*
 Susan hit someone, but Peter doesn't know ^{whom} ~~is who~~.

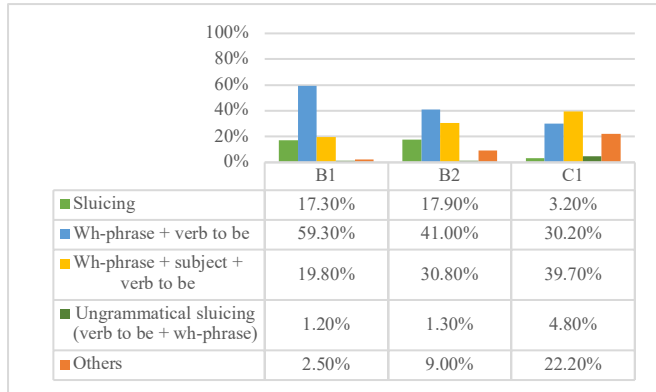


Figure 28: Types of adjustment made by different groups in ungrammatical sluicing in the English grammaticality judgment task.

As illustrated in Figure 28, the corrections of the experimental groups did not correspond to sluicing in English, as shown by a low proportion of correction to sluicing in all three groups (17.3%, 17.9%, and 3.2% in the B1-C1 groups, respectively). Besides, their corrections showed that they tended to correct the sentence to a structure that was ungrammatical in English. For instance, 59.3%, 41%, and 30.2% of answers given by the B1-C1 groups, respectively, were corrected to the "wh-phrases + verb to be" structure. This also corresponds to their corrections in condition 2 (sluicing) of the elliptical test mentioned in the Portuguese grammaticality judgment task in 4.2.2. Also, 19.8%, 30.8%, and 39.7% of answers given by the B1-C1 groups, respectively, were corrected to the "wh-phrases + subject + verb to be" structure. Meanwhile, 2.5%, 9%, and 22.2% in the B1-C1 groups, respectively, were corrected to "others", which mainly includes the "wh-phrases + verb to be + pronoun" structure, etc.

5. Discussion

5.1 - Discussion of results

In general, the statistical analysis presented in Chapter 4 showed that the experiments outlined in Chapter 3 answered the research questions presented in Chapter 2.4, which are reiterated here:

1. Is acquiring wh-movement already enough for Mandarin speakers to have sluicing or do they need to separately acquire IP ellipsis (associated with the E feature in C) to acquire sluicing?
2. Do Mandarin speakers map the Chinese sluicing-like structure to Portuguese, which seems to superficially correspond to the partly elided semi-pseudocleft structure (sluicing with a semi-pseudocleft) in Portuguese?
3. Are Mandarin speakers (positively) influenced by English when acquiring sluicing in Portuguese?

The results indicate that Mandarin speakers acquire wh-movement and sluicing separately, and that acquiring wh-movement is not enough for Mandarin speakers to have sluicing. What Mandarin speakers need to acquire is not only wh-movement but also the feature that determines IP ellipsis. Besides, the Mandarin speakers in this study did not map the Chinese sluicing-like structure to a structure corresponding to sluicing under a semi-pseudocleft (a structure that we named a partly elided semi-pseudocleft structure), which is a structure superficially similar to the Chinese sluicing-like structure. Finally, the Mandarin speakers were not influenced by English when acquiring sluicing in Portuguese, even though they acquired English before acquiring Portuguese.

In the following contents, we will discuss the second and third research questions first, then we will return to the discussion of the first research question.

In response to the second research question, the L2 speaker groups did not map the Chinese sluicing-like structure to the Portuguese structure of sluicing under a semi-pseudocleft. This can be shown by the partly elided semi-pseudocleft condition (Figure 21) in the Portuguese grammaticality judgment task. As mentioned in 2.3.5 and 2.4, the Chinese sluicing-like structure looks superficially similar to a structure which we call

a partly elided semi-pseudocleft in Portuguese, but in fact, they are two completely different structures in these languages. The results obtained in this condition (Figure 21) showed that L2 speaker groups rejected the items in this condition, which indicates that they did not map the Chinese sluicing-like structure to the partly elided semi-pseudocleft (sluicing under a semi-pseudocleft) in Portuguese – a structure that looks superficially similar but is never the case in Portuguese.

Aside from answering this research question, the results in the partly elided semi-pseudocleft condition (Figure 21) also show that the L2 speaker groups have not yet acquired this structure in Portuguese. This is made clear by the high complete rejection rate and considerably low complete acceptance rate shown in this condition, whereby no acquisition effect was shown between the L2 speaker groups. This may be due to various reasons. Firstly, native speakers do not frequently use this structure in their daily conversations, which leads to a low exposure to this structure and a limited input for the L2 speaker groups to learn and acquire it during their acquisition process. Secondly, this structure is a focus structure that is usually used orally rather than in written form, and probably needs a particular context to be accepted. This is also illustrated by the results of the control group, which showed that the native speakers also did not accept this structure in Portuguese at very high rates; therefore, it may probably be more difficult for L2 speakers to accept this structure without sufficient context, clues and information. These facts also explain that it would be very unlikely for L2 speakers to map the Chinese sluicing-like structure to this particular structure in Portuguese. Finally, this type of results is in line with the idea that the L2 speaker groups only acquired “ser/be” as a copula verb rather than as a focus marker in Portuguese, so they might not have known that “ser/be” in this structure is a focus marker and not a copula verb placed before the wh-phrase; therefore, they tended to reject this structure. This is also supported by Li (submitted) in that the Mandarin speakers did not acquire semi-pseudoclefts and failed to associate the [+focus] feature to “ser/be” in the semi-pseudocleft in EP. This indicates that they had not yet acquired “ser/be” as a focus marker in semi-pseudoclefts in EP; therefore, it is very likely that they had also not yet acquired the partly elided semi-pseudocleft.

In addition, the results concerning the condition presenting sluicing under a partly elided semi-pseudocleft (Figure 22) show that the difference between the corrections made by the control group and the L2 speaker groups was large. The control group tended to adjust the items to sluicing but the L2 speaker groups tended to adjust it to the “wh-phrase + ser/be” structure, which is consistent with the results shown in the production task (Figure 6) and in the sluicing condition in the Portuguese

grammaticality judgment task (Figure 17). We will further discuss the structure of “wh-phrase + ser/be” when providing a detailed answer to the first research question.

In response to the third research question, the results obtained in the English grammaticality judgment task show that the L2 speaker groups were not influenced by English when acquiring Portuguese sluicing.

The results for the grammatical and ungrammatical embedded questions (Figures 23 and 24) in the English grammaticality judgment task show that the L2 speaker groups had acquired wh-movement, as shown by the high proportion of acceptance in the grammatical embedded question condition and the high proportion of rejection in the ungrammatical embedded questions condition. Besides, the data collected in the Portuguese grammaticality judgment task suggested that the L2 speaker groups had acquired wh-movement in Portuguese as well; this is shown by the high proportion of complete acceptance of the root questions with wh-movement (Figure 9) and the embedded questions with wh-movement conditions (Figure 12). Furthermore, the results of the ungrammatical embedded questions condition (Figure 13) also supported this claim as complete rejection rates were always higher than complete acceptance rates. In addition, the L2 speakers also rejected the ungrammatical embedded questions for a relevant reason, that is, they made corrections that correspond to moving the wh-phrase from the final position to the initial position of the item.

Note that although the L2 speaker groups showed that they had acquired wh-movement in both English and Portuguese, it is hard to tell whether this acquisition of wh-movement in Portuguese was influenced by the acquisition of English wh-movement. We can also assert that wh-questions in Portuguese are the first thing that Mandarin speakers learn in formal Portuguese classes. Therefore, at the level of B to C, it is not surprising to see that they had acquired wh-movement in Portuguese.

Despite the fact that L2 speaker groups had acquired wh-movement in English, they had not yet acquired sluicing in English. The results of the grammatical sluicing sentences (Figure 25) in the English grammaticality judgment task showed that the proportion of complete acceptance of the items in this condition is low and there is no significant difference between groups, indicating that the L2 speaker groups in general did not accept this structure. Furthermore, the results of the ungrammatical sluicing sentences (Figure 27) also showed that although the L2 speaker groups rejected this structure, they did not adjust the items to sluicing sentences, which confirms that L2 speaker groups had not yet acquired sluicing in English as they were expected to correct

the ungrammatical sluicing sentences to grammatical sluicing sentences. However, the L2 speaker groups preferred to adjust the items that they rejected in these two conditions to a “wh-phrase + verb to be” structure, an ungrammatical option in English, or to a “wh-phrase + subject + verb to be” structure in English, a grammatical option, as shown in Figures 26 and 28. On one hand, we cannot exclude that the L2 speaker groups were influenced in their corrections from the Portuguese grammaticality judgment task to the English grammaticality judgment task, as illustrated by the evidence that the L2 speaker groups tended to make adjustments in the English grammaticality judgment task by using the same “wh-phrase + ser/be” structure produced in the corrections provided to the Portuguese grammaticality judgment task (see Figure 28). On the other hand, it is also plausible to assert that the L2 speaker groups may have known that English is not a pro-drop language; therefore, aside from using “wh-phrase + ser/be, they also used “wh-phrase + subject + verb to be”, which is a grammatical structure in English.

Finally, a comparison of the data collected in the conditions of grammatical sluicing sentences in the English grammaticality judgment task (Figure 25) and in the condition of sluicing in the Portuguese grammaticality judgment task (Figure 15) shows that the differences between these two tasks are small. This indicates that sluicing is a structure that is undergoing acquisition in both English and Portuguese. Therefore, the participants were not influenced by English when acquiring sluicing in Portuguese. We further discuss the acquisition of sluicing in what follows.

In response to the first research question, we can say that the Mandarin speakers had already acquired wh-movement but not sluicing in Portuguese, indicating that Mandarin speakers acquire wh-movement and sluicing separately.

The results shown in the production task and the Portuguese grammaticality judgment task in regards of the acquisition of wh-movement and sluicing indeed conform to the theory proposed by Lardiere (2008). As stated in chapter 2.4, how features are assembled in a language is important for second language acquisition, and L2 learners have to tease apart the features assembled in particular items in the L1 and re-assemble them according to the requirements of the L2. The successful acquisition of wh-movement in Portuguese shows that the Mandarin speakers had successfully acquired a C defined by the features [Q, *uwh**] in Portuguese. The association of a strong [wh] feature with C explains the acquisition of wh-movement and is in line with the results in Lardiere (2008). Nonetheless, the failure of the acquisition of sluicing in Portuguese can be explained if, although the Mandarin speakers had acquired the

features in C associated with wh-movement in Portuguese, they had not yet acquired the E feature (suggested by Merchant, 2001), which licenses IP ellipsis. Therefore, they had not acquired sluicing.

As mentioned previously in relation to the third research question, the L2 speaker groups had acquired wh-movement in Portuguese. However, acquiring wh-movement did not imply that the L2 speaker groups had acquired sluicing, which was indicated by the results obtained in the elicited production task and the Portuguese grammaticality judgment task.

The results obtained in the production task suggested that while the control group tended to produce sluicing, the L2 speaker groups tended to produce other kinds of structures. Although the proportion of “others” (other types of structures in Figure 6) seems to be higher than the “wh-phrase + ser/be” structure in all four groups, this is because “others” was a category that contained different types and different proportions of different structures produced by the participants in different groups (see Table 1 in Chapter 4). For instance, the most common three types²² of production included in “others” in the control group were mainly elimination of the subject, no changes to the items and VP ellipsis. For the B1 group, they were elimination of the subject, no changes to the items and elimination of both subject and “é que/is that”. The most common three types produced by the B2 and C1 groups were no changes to the items, elimination of the subject and VP ellipsis. However, the majority of the answers produced by all four groups that were not sluicing were still the structure of “wh-phrase + ser/be”.

For participants who produced the “wh-phrase + ser/be” structure, we assume that its production may correspond to three different underlying structures, as stated in (1)-(3). The first type is what we analyze as “VP ellipsis with an underlying cleft structure (VPECL)”, see (1) – this underlying structure is the type of structure that would result in pseudosluicing, if only the copula verb “ser/be” was stranded; the second type is “VP ellipsis with an underlying copular structure (VPECop)”, see (2); and the third type is “Wh-phrase + *pro* + ser/be” structure, see (3).

²² The proportions of structures produced by the participants are arranged in descending order.

(1) VP ellipsis with an underlying cleft structure (VPECL)

Alguém me enviou uma mensagem, mas não sei [CP quem [C' C [TP *pro*
someone CLI sent one message but not know. who
[T' foi [VP [*v'* foi [CP quem [C' que [TP quem me enviou uma mensagem]]]]]]]]]]]
was was who that who CLI sent one message
'Someone sent me a message, but I don't know who it was that sent me the
message.'

(2) VP ellipsis with an underlying copular structure (VPECop):

Alguém me enviou uma mensagem, mas não sei [CP quem [C' C [TP quem
someone CLI sent one message but not know who who
[T' foi [VP [*v'* foi [SC quem [DP a pessoa que me enviou uma mensagem.]]]]]]]]]]]
was was who the person that CLI sent one message
'Someone sent me a message, but I don't know who it was that sent me the
message.'

(3) Wh-phrase + *pro* + ser/be:

Alguém me enviou uma mensagem, mas não sei [CP quem [C' C [TP *pro* foi
someone CLI sent one message but not know who was
quem]]]
who
'Someone sent me a message, but I don't know who that was.'

The first hypothesis for the production of the “wh-phrase + ser/be” structure may correspond to VPECL; see (1). As mentioned in 2.3.4, an elliptical structure with a stranded wh-expression can often be interpreted as sluicing or pseudosluicing - see (4).

(4) Alguém me enviou uma mensagem, mas não sei quem [-].
someone CLI sent one message but not know who
Someone sent me a message, but I don't know who.'

a. Sluicing:

[-] = me enviou uma mensagem
CLI sent one message
'...sent me a message.'

b. Pseudosluicing

[-] = foi que me enviou uma mensagem
was that CLI sent one message
'... who it was that sent me the message.'

In this case, the answers that correspond to “wh-phrase + ser/be” may possibly correspond to the structure with a cleft that may also underly pseudosluicing (see (4b)). When the form of “be”, namely “foi/was”, is stranded, it corresponds to VP ellipsis if we accept the analysis of standard clefts by Lobo (2006), as explained in section 2.3.4. - see (5) and the representation in (1).

- (5) Alguém me enviou uma mensagem, mas não sei quem foi [-]
someone CLI sent one message but not know who was
'Someone sent me a message, but I don't know who it was.'

[-] = que me enviou uma mensagem.
that CLI sent one message
'...sent me a message.'

The second hypothesis is that the “wh-phrase + ser/be” structure may correspond to VPECop; see (2). In VPECop, the elliptical construction can also be analyzed as a VP ellipsis (as is also the case in (5)), but the VP ellipsis in this case is different from the one stated in (5). VPECop is a case of VP ellipsis with an underlying copular structure, instead of a cleft; see (6) and the representation in (2). Besides, VPECop, being a copular structure, is a structure that is close to the Chinese sluicing-like structure; therefore, it is likely that the L2 speaker groups mapped the Chinese sluicing-like structure to Portuguese, as shown in (7).

- (6) Alguém me enviou uma mensagem, mas não sei quem foi [-]
someone CLI sent one message but not know who was
'Someone sent me a message, but I don't know who it was.'

[-] = a pessoa que me enviou uma mensagem
the person that CLI sent one message
'... the person that sent me the message.'

- (7) a. Mouren fa le wo yige duanxun, dan wo bu zhidao [pro shi shei].
 Someone sent ASP 1sg one-CL message but 1sg not know COP who
 ‘Somebody sent me a message, but I don’t know who.’
 某人發了我一個短訊，但我不知道[pro 是誰]。

The third hypothesis is that the “wh-phrase + ser/be” structure may correspond to the “wh-phrase *pro* ser/be” structure, which is an exact counterpart of the pro-form analysis of the Chinese sluicing-like structure, as shown in (8). Note that this structure does not involve VP ellipsis.

- (8) a. Mouren fa le wo yige duanxun, dan wo bu zhidao [pro shi shei].
 somebody sent ASP 1sg one-CL message but 1sg not know COP who
 ‘Somebody sent me a message, but I don’t know who.’
 某人發了我一個短訊，但我不知道[pro 是誰]。

- b. Alguém me enviou uma mensagem, mas não sei [CP quem [C C] TP]
 someone CLI sent one message but not know who
pro foi quem |||
 was who
 ‘Someone sent me a message, but I don’t know who that was.’

As shown in (8), the L2 speakers may produce “wh-phrase + *pro* + ser/be” by moving the wh-phrase “quem/who” to Spec, CP. This structure is the counterpart of the Chinese sluicing-like structure, except for the fact that the wh-phrase is moved. This is made possible by the fact that the L2 learners acquired wh-movement in Portuguese. Also, this can be shown by the correction “wh-phrase + subject + verb to be” made by the L2 learners in the English grammaticality judgment task, which indicates that the L2 learner groups were transferring from the Chinese sluicing-like structure “*pro* shi wh-phrase” to English (“wh-phrase + subject + verb to be”), as well as to Portuguese (“wh-phrase + *pro* + ser/be”). The occurrence of subject in the English sentences shows awareness of the fact that English is not a null subject language.

The above assumptions are also supported by Gao (submitted: 60), who conducted a study on VP ellipsis in EP. Her results showed that the Mandarin speakers achieved a high proportion of accuracy in VP ellipsis, as assessed by a truth-value judgment task. This indicates that the Mandarin speakers had already acquired VP ellipsis in EP. Therefore, it is reasonable to assume that the Mandarin speakers might be producing one of the above three structures when they produce the “wh-phrase + ser/be” structure.

We will further explore this issue when we discuss the data from the production and Portuguese grammaticality judgment task.

The results obtained in the production task (Figure 7) show that all the participants who produced the “wh-phrase + ser/be” structure in the B1 and B2 groups produced “wh-phrase + é/is”, which is not the preferred structure in EP; whereas the proportion of answers that corresponding to “wh-phrase + foi/was”, which is the preferred option in EP, increased in the C1 and control groups (B1 and B2: 0, C1: 33.3%, control: 66.7%). This may be because the speakers at a higher level were more aware of tense agreement. Note that part of the answers (33.3%) of the control group also produced the “wh-phrase + é/be” structure. This may be because a very small number among the control group may have wanted to maintain the consistency of the context and the setting of tense in the text, as almost all of who produced this ungrammatical structure produced it in Text 7, in which present and future tenses were used. Comparing the proportion of production that corresponded to “wh-phrase + ser/be” in the production task (Figure 7) to that in the grammaticality judgment task (Figure 18), we can see that the proportion of the production of “wh-phrase + foi/was” increased in all the L2 speaker groups, especially in the B2 and C1 groups (B1: 14.8%, B2: 39.1%, C1: 68.9%). This indicates that the L2 speaker groups were more aware of tense agreement in the Portuguese grammaticality judgment task because the tenses used in this condition were past tense in the antecedent and present tense in the main clause. This also strengthens the claim that L2 speakers at higher levels are more aware of tense agreement.

Besides, the majority of the L2 speaker groups and the control group tended to produce “wh-phrase + ser/be” structure with texts that contained argument wh-phrases rather than adjunct wh-phrases in both the production and Portuguese grammaticality judgment tasks (Figure 11 and Figure 19). Figure 19 shows that the proportion of corrections corresponding to “wh-phrase + ser/be” in sluicing sentences comprising the argument wh-phrase dropped at the higher levels, whereby it increased in sluicing sentences comprising adjunct wh-phrases. This suggests that the participants at the lower levels tended to produce VPECop when they produced “wh-phrase + ser/be” because it is much easier and more compatible to produce VPECop with argument wh-phrases (see (9a)) than with adjunct wh-phrases (see (9b)).

- (9) a. Alguém me enviou uma mensagem, mas não sei quem foi [-].
someone CLI sent one message but not know who was
'Someone sent me a message, but I don't know who that was.'

[-] = [DP a pessoa que me enviou uma mensagem.]
the person that CLI sent one message
‘...the person that sent me the message.’

- b. Ele respondeu que a Maria saiu de casa, mas não sabe quando foi [-].
he responded that the Maria left PREP home but not know when was
‘He responded that Maria left the house, but I don’t know when that was.’

[-] = ?? a saída
the departure
‘... the departure’

[-] = que a Maria saiu de casa
that the Maria left PREP house
‘... that Maria left the house.’

Therefore, it is plausible to assert that the L2 speaker groups tended to produce VPECop, but there may have been some participants in the C1 group who also produced VPECL. However, it is hard to tell whether the participants also produced “wh-phrase + *pro* + ser/be”.

Moreover, the results obtained in the production and Portuguese grammaticality judgment tasks (Figures 4 and 20) show that the participants preferred to produce and accepted sluicing that comprised adjunct wh-phrases rather than argument wh-phrases. This is reasonable because “shi/be” is optional in Chinese sluicing-like sentences that contain adverbial wh-phrases. In such cases, the structure looks superficially similar to sluicing in Portuguese. It is possible to assert that participants who produced and accepted sluicing comprising adjunct wh-phrases may have been superficially mapping the Chinese sluicing-like structure to sluicing in Portuguese, especially with sluicing sentences containing adjunct wh-phrases, as mentioned previously in chapter 2.4. Furthermore, the proportion of production and acceptance of sluicing (Figure 4 and Figure 20) in sluicing sentences comprising adjunct wh-phrases in L2 speaker groups is higher than sluicing sentences comprising argument wh-phrases. This indicates that the L2 speaker groups tend to transfer the Chinese sluicing-like sentences comprising adjunct wh-phrases to sluicing sentences comprising adjunct wh-phrases in Portuguese because both of these structures are superficially similar. However, this proportion dropped in the C1 group, which indicates that the C1 group has a smaller tendency to

transfer the Chinese sluicing-like structure to Portuguese sluicing – speakers in the C1 group may realize that they cannot directly transfer this structure from Chinese to Portuguese.

In addition, the results obtained in the sluicing condition (Figure 15) in the Portuguese grammaticality judgment task show an asymmetry between the production task and the Portuguese grammaticality judgment task, especially in the B1 group. To explain this, we verified the relation between the results obtained in the production task and the Portuguese grammaticality judgment task, and found that only a small number of the participants (21.7%) in the B1 group produced and accepted sluicing at the same time, while 39.1% of the participants did not produce but accepted sluicing, see Figure 16. It is more likely to assume that the B1 group is overaccepting sluicing in the Portuguese grammaticality judgment task instead of actually showing the effects of having acquired it. Therefore, it is plausible to assume that learners in the lower levels were more insecure and tended to overaccept the items in the grammaticality judgment task.

Aside from the asymmetry shown between the production task and the Portuguese grammaticality judgment task in the B1 group, the results also showed consistency between these two tasks, especially in the B2 and C1 groups. The low proportion of the production of sluicing in the production task in Figure 1 (B2: 31.9%; C1: 8.8%, respectively), and the low proportion of participants who produced sluicing in Figure 3 (B2: 25%; C1: 0), as well as the low proportion of the complete acceptance of sluicing in the Portuguese grammaticality judgment task in Figure 15 (B2: 39.5%; C1: 26.9%, respectively) showed that both the B2 and C1 groups had not acquired sluicing. Besides, the results obtained in the production task were consistent with the results obtained in the Portuguese grammaticality judgment task, as the C1 group had the lowest proportion of sluicing production and complete acceptance when compared to the B1 and B2 groups. This is surprising because the C1 group was supposed to have better results compared to the B1 and B2 groups, yet the results clearly contradict this assumption. Apparently, some of the acceptance by speakers in lower levels is overacceptance, and some production might result from the fact that the production task only implied eliminating words.

Last but not least, the results obtained in the wh-in-situ root questions show that the majority of the L2 speaker groups and part of the control group did not completely accept this structure. This may be because wh-in-situ questions are widely used as echo-

questions, and are usually used orally, within a particular context (Pires & Taylor (2007), Mito & Kato (2005)), as previously mentioned in section 2.3.3.1.

Finally, some additional discoveries about the acquisition of Portuguese were made. This includes aspects of the acquisition of *wh*-in-situ root questions, subject-verb inversion in interrogatives, and the problem of “*o que/what*” and “*o quê/what*”. When speakers made adjustments to the items in the *wh*-in-situ root questions to root questions with *wh*-movement, most of them did not use “*é que/is that*” or use subject-verb inversion in the interrogatives. Based on their adjustments in the Portuguese grammaticality judgment task, we can see that they were also confused by “*o que/what*” and “*o quê/what*”, and usually mixed them up.

5.2 - Limitations

There are some possible limitations in this study, including the limitations caused by the length of the test and the limitations of the production task.

With respect to the length of the test, it took around two hours to finish, which might have been too long for the participants to concentrate because we found that they grew tired during the tests, especially during the final parts. Some participants might have even lost patience and rushed to finish the test, leading to data loss and sample loss. Therefore, if possible, it would be better to separate the test into two sessions to reduce their stress and fatigue.

In addition, the production task itself cannot reflect a very complete and clear picture of the situation of the production of sluicing and the acquisition of sluicing. This is because participants who might have acquired sluicing may not have fully shown it in the production task, and different participants might have had different perceptions and interpretations of the texts and contexts. Hence, different possibilities and hypotheses can be made based on this task. However, with the help of the Portuguese grammaticality judgment task, this task can reflect a clearer picture of the acquisition of sluicing.

The inconsistency between the setting of the tenses in the text, especially Text 7, might have led to the high proportion of the production of “wh-phrase + *é/is*” by the control group. It would have been better if the past tense had been maintained in all the texts to avoid this situation.

Finally, two mistakes were made in the design of the questions in the test (see Appendix I). However, these mistakes were not a big problem and they did not influence the results of the task. These two mistakes were in the embedded questions (with wh-movement) and the ungrammatical embedded wh-in-situ questions conditions (conditions 3 and 4 in the test on wh-movement) in the Portuguese grammaticality judgment task, with questions that comprised argument wh-phrase “quem/who”, as mentioned here in (10) and (11). (10) and (11) should be in the negative form (as in (12) and (13)) in order to be consistent with the other items in the same conditions.

10. CONTEXTO: *O Miguel procurou alguém.*

A Isabel sabe quem é que o Miguel procurou.

11. CONTEXTO: *O Pedro beijou alguém.*

A Ana sabe o Pedro beijou quem.

12. CONTEXTO: *O Miguel procurou alguém.*

A Isabel não sabe quem é que o Miguel procurou.

13. CONTEXTO: *O Pedro beijou alguém.*

A Ana não sabe o Pedro beijou quem.

6. Conclusion

Our main findings on the study of “The L2 Acquisition of European Portuguese Sluicing by L1 Mandarin Chinese Speakers” are the following:

1. In line with the theory proposed by Lardiere (2008), Mandarin speakers must acquire the relevant feature set associated to C in Portuguese wh- questions prior to the acquisition of sluicing. What the Mandarin speakers in this study had already acquired was only the relevant syntactic and lexical feature set of wh-questions in Portuguese, that is, [Q, ν wh*] and, if we consider the discussion in Lardiere (2008), which we did not develop in this dissertation, the difference between the lexical wh-phrases in Chinese and in English. However, the Mandarin speakers had not yet acquired the E feature that licenses sluicing. Therefore, in general, they were not able to delete everything after the wh-phrase, that is, the IP. In other words, the Mandarin speakers acquired wh-movement and sluicing separately.
2. Instead of producing and accepting sluicing, the Mandarin speakers tended more to produce a “wh-phrase + ser/be” structure, both in the production and in the Portuguese grammaticality judgment tasks. We assume that this structure may correspond to three different types of structure: VP ellipsis with an underlying cleft, VP ellipsis with an underlying copular structure and a “wh-phrase + *pro* + ser/be” structure, also a copular structure but not involving ellipsis. However, it is difficult to tell which group is using which structure, and further studies could be done to further investigate this issue.
3. The Mandarin speakers tended more to produce the structure “wh-phrase + *é/is*” than the native speakers; this may be due to a lack of awareness of tense agreement in Portuguese. For instance, participants at higher levels are more aware of tense agreement than the participants at lower levels.
4. It is possible that the Mandarin speakers who produced and accepted sluicing sentences comprising adjunct wh-phrases may have superficially mapped the Chinese sluicing-like structure to Portuguese sluicing.
5. The Mandarin speakers in the lower levels were more insecure and tended to overaccept the items in the grammaticality judgment task.

6. The Mandarin speakers were not influenced by English during their acquisition of sluicing in Portuguese because both of the structures in English and Portuguese were undergoing acquisition.

In general, the expectations of this study are met and fulfilled. What is worth mentioning here is that the methodology adopted in this study effectively sheds light on the situation of the acquisition of wh-movement and sluicing in Portuguese. Aside from answering the research questions, the three tasks also allowed us to gain new insights and make new discoveries concerning the acquisition processes.

The findings of this research contribute to a clearer understanding of the situation of the acquisition of both wh-movement and sluicing by Mandarin speakers. While the studies on the acquisition of Portuguese by Mandarin speakers have not been intensively developed, and previous research focused more on the acquisition of other types of ellipsis as well as the acquisition of sluicing in L1 (mainly child studies) in different languages, this study sheds light on the acquisition of sluicing in L2 by adult learners, thereby successfully filling the gap on the acquisition of sluicing in Portuguese by Mandarin speakers.

To better understand the implications of these results, further research could be done in the future. For instance, researchers could investigate the mental process of Mandarin speakers to test which types of underlying structure they tend to produce when they produce an elliptical structure (sluicing or VP ellipsis).

Last but not least, the findings of this study also make contributions to the institutions and universities that offer Portuguese language courses to Mandarin speakers. We already know that Mandarin speakers acquire wh-movement and sluicing separately, which indicates that aside from instructing the Mandarin speakers on wh-movement, teachers should also instruct them on how to produce elliptical structures such as sluicing.

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Appendices

Appendix I - Test Design

Part I - Production Task

Text	Type of Wh-phrase	Wh-phrase	Position of Target
1	Adjunct	Onde	Beginning
2	Adjunct	Onde	End
3	Adjunct	Quando	Beginning
4	Adjunct	Quando	End
5	Argument	Quem	Beginning
6	Argument	Quem	End
7	Argument	Qual	Beginning
8	Argument	Qual	End

Text 1

Target sentence: a Ana viu a pintura que o Pedro queria comprar, mas ele não sabe onde.

Ontem, a **Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde é que ela a viu.** É pena que a Ana não se lembre, porque assim a Ana não consegue ajudar o Pedro.

Text 2

Target sentence: Acho que perdi a carteira, mas eu não sei onde.

Hoje de manhã, quando eu fui para a escola de autocarro, a minha carteira estava na mala. Mas, agora, quando eu quis pagar o almoço, descobri que a carteira desapareceu. **Acho que perdi a carteira, mas eu não sei onde é que a perdi.**

Text 3

Target sentence: O Pedro viajou sozinho para Espanha, mas não sei quando.

O Pedro viajou sozinho para Espanha, mas não sei quando é que ele viajou para Espanha. Durante a viagem, o Pedro comeu alguma coisa que lhe fez mal e por isso, o Pedro ficou no hospital durante uma semana. Coitado!

Text 4

Target sentence: Ele respondeu que a Maria saiu de casa, mas não sabe quando.

A Maria convidou-me para um jantar. Quando eu cheguei à casa da Maria, bati à porta, mas ninguém respondeu. Continuei a tocar por duas horas. Finalmente, decidi telefonar ao pai dela. **Ele respondeu que a Maria saiu de casa, mas não sabe quando é que ela saiu de casa.**

Text 5

Target sentence: Ontem alguém assaltou o meu apartamento, mas não sei quem.

Ontem alguém assaltou o meu apartamento, mas não sei quem é que assaltou o meu apartamento. Logo que descobri que o meu apartamento foi assaltado, eu liguei imediatamente à polícia e a polícia prometeu que ia dar apoio à investigação do caso.

Text 6

Target sentence: Alguém me enviou uma mensagem, mas não sei quem.

Ontem, quando eu fui à casa de banho, o meu telemóvel caiu na água e o ecrã do meu telemóvel deixou de funcionar. Hoje de manhã, **alguém me enviou uma mensagem, mas não sei quem é que me enviou uma mensagem.**

Text 7

Target sentence: Eu sei que o Paulo admira um jogador do Benfica, mas eu não sei qual.

Eu sei que o Paulo admira um jogador do Benfica, mas eu não sei qual é que ele admira. Como o Paulo vai fazer anos em breve e o Paulo gosta muito do Benfica, eu pretendia comprar-lhe uma camisola com assinatura.

Text 8

Target sentence: Disse-me que já tinha comprado um apartamento, mas eu não sei qual.

Na semana passada, a Ana deu-me algumas fotografias de dois apartamentos que ela pretendia comprar, um dos apartamentos é mais bonito, e o outro apartamento maior. Hoje, **disse-me que já tinha comprado um apartamento, mas eu não sei qual é que ela comprou.**

Part II - Portuguese Grammaticality Judgment Task

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of Items	Total
Test on wh-movement	1	Root questions with wh-movement	Adjunct	Onde	2	48
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	2	Wh-in-situ root questions	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	3	Embedded questions (with wh-movement)	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	4	Ungrammatical wh-in-situ embedded questions	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
Test on elliptical structures	1	Sluicing	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	
	2	Partly elided semi-pseudoclefts	Adjunct	Onde	2	
				Quando	2	
			Argument	Quem	2	
				O quê	2	

Test on wh-movement	Type of wh-phrase	Wh-phrase	Condition 1 - Root questions with wh-movement	Condition 2 – Wh-in-situ root questions
	Adjunct	Onde	CONTEXTO: <i>A Ana perdeu a carteira.</i> Onde é que a Ana perdeu a carteira?	CONTEXTO: <i>A Isabel levantou o dinheiro.</i> A Isabel levantou o dinheiro onde?
	Adjunct	Onde	CONTEXTO: <i>A Maria comprou um livro.</i> Onde é que a Maria comprou o livro?	CONTEXTO: <i>A Nádia viu um filme.</i> A Nádia viu o filme onde?
	Adjunct	Quando	CONTEXTO: <i>O Pedro leu um livro.</i> Quando é que o Pedro leu o livro?	CONTEXTO: <i>O Adriano tomou o medicamento.</i> O Adriano tomou o medicamento quando?
	Adjunct	Quando	CONTEXTO: <i>O Carlos bebeu leite.</i> Quando é que o Carlos bebeu o leite?	CONTEXTO: <i>O Danilo comeu uma sopa.</i> O Danilo comeu a sopa quando?
	Argument	Quem	CONTEXTO: <i>A Beatriz matou alguém.</i> Quem é que a Beatriz matou?	CONTEXTO: <i>A Joana viu alguém.</i> A Joana viu quem?
	Argument	Quem	CONTEXTO: <i>A Diana convidou alguém.</i> Quem é que a Diana convidou?	CONTEXTO: <i>O Roberto cumprimentou alguém.</i> O Roberto cumprimentou quem?
	Argument	O que	CONTEXTO: <i>A Inês comprou alguma coisa.</i> O que é que a Inês comprou?	CONTEXTO: <i>A Glória leu alguma coisa.</i> A Glória leu o quê?

	Argument	O que	CONTEXTO: A Sofia escreveu alguma coisa. O que é que a Sofia escreveu?	CONTEXTO: A Júlia ouviu alguma coisa. A Júlia ouviu o quê?
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Type of wh-phrase	Wh-phrase	Condition 3 - Embedded questions (with wh-movement)	Condition 4 - Ungrammatical wh-in-situ embedded questions
Adjunct	Onde	CONTEXTO: <i>A Sofia tirou uma fotografia.</i> A Joana não sabe onde é que a Sofia tirou a fotografia.	CONTEXTO: <i>A Ana comeu um bife.</i> O Pedro não sabe a Ana comeu o bife onde.
Adjunct	Onde	CONTEXTO: <i>A Maria encontrou um gato.</i> O Pedro não sabe onde é que a Maria encontrou o gato.	CONTEXTO: <i>A Margarida fez uma festa.</i> O Pablo não sabe a Margarida fez a festa onde.
Adjunct	Quando	CONTEXTO: <i>A Margarida vendeu o apartamento.</i> O João não sabe quando é que a Margarida vendeu o apartamento.	CONTEXTO: <i>A Isabel leu um livro.</i> O João não sabe a Isabel leu o livro quando.
Adjunct	Quando	CONTEXTO: <i>O Afonso acabou a aula.</i> A Diana não sabe quando é que o Afonso acabou a aula.	CONTEXTO: <i>O Carlos arrumou o quarto.</i> A Maria não sabe o Carlos arrumou o quarto quando.
Argument	Quem	CONTEXTO: <i>O Miguel procurou alguém.</i> A Isabel sabe quem é	CONTEXTO: <i>O Pedro beijou alguém.</i> A Ana sabe o Pedro beijou quem.

			que o Miguel procurou.	
Argument	Quem	<p>CONTEXTO: <i>O Luís visitou alguém.</i></p> <p>O Carlos não sabe quem é que o Luís visitou.</p>	<p>CONTEXTO: <i>O Diogo convidou alguém.</i></p> <p>O Paulo não sabe o Diogo convidou quem.</p>	
Argument	O quê	<p>CONTEXTO: <i>A Susana comprou alguma coisa.</i></p> <p>A Maria não sabe o que é que a Susana comprou.</p>	<p>CONTEXTO: <i>A Joana estudou alguma coisa.</i></p> <p>A Maria não sabe a Joana estudou o quê.</p>	
Argument	O quê	<p>CONTEXTO: <i>O Bruno ouviu alguma coisa.</i></p> <p>O Diogo não sabe o que é que o Bruno ouviu.</p>	<p>CONTEXTO: <i>O Pedro bebeu alguma coisa.</i></p> <p>A Susana não sabe o Pedro bebeu o quê.</p>	

Test	Type of wh-phrase	Wh-phrase	Condition 1 – Sluicing	Condition 2 – Partly elided semi-pseudoclefts
Test on elliptical structures	Adjunct	Onde	CONTEXTO: <i>A Maria passeou o cão?</i> A Maria passeou o cão em algum lugar, mas o Bruno não sabe onde.	CONTEXTO: <i>A Ana lavou o carro?</i> A Ana lavou o carro em algum lugar, mas o Carlos não sabe é onde.
	Adjunct	Onde	CONTEXTO: <i>A Joana partiu o prato?</i> A Joana partiu o prato em algum lugar, mas o Afonso não sabe onde.	CONTEXTO: <i>O Bruno tomou o café?</i> O Bruno tomou o café em algum lugar, mas a Beatriz não sabe é onde.
	Adjunct	Quando	CONTEXTO: <i>O Afonso arrumou o quarto?</i> O Afonso arrumou o quarto num desses dias, mas o Carlos não sabe quando.	CONTEXTO: <i>A Joana vendeu o carro?</i> A Joana vendeu o carro num desses dias, mas o David não sabe é quando.
	Adjunct	Quando	CONTEXTO: <i>A Diana limpou a mesa?</i> A Diana limpou a mesa num desses dias, mas a Joana não sabe quando.	CONTEXTO: <i>A Beatriz abriu a janela?</i> A Beatriz abriu a janela num desses dias, mas a Isabel não sabe é quando.
	Argument	Quem	CONTEXTO: <i>A Ana informou alguém?</i> A Ana informou alguém, mas a Sofia não sabe quem.	CONTEXTO: <i>A Diana encontrou alguém?</i> A Diana encontrou alguém, mas a Ana não sabe é quem.
	Argument	Quem	CONTEXTO: <i>A Sofia viu alguém?</i> A Sofia viu alguém, mas o Paulo não sabe quem.	CONTEXTO: <i>O Carlos visitou alguém?</i> O Carlos visitou alguém, mas a Margarida não sabe é quem.

	Argument	O quê	<p>CONTEXTO: <i>A Maria bebeu alguma coisa?</i> A Maria bebeu alguma coisa, mas o João não sabe o quê.</p>	<p>CONTEXTO: <i>A Elisa comeu alguma coisa?</i> A Elisa comeu alguma coisa, mas o Afonso não sabe é o quê.</p>
	Argument	O quê	<p>CONTEXTO: <i>O Diogo fez alguma coisa?</i> O Diogo fez alguma coisa, mas a Maria não sabe o quê.</p>	<p>CONTEXTO: <i>A Beatriz escreveu alguma coisa?</i> A Beatriz escreveu alguma coisa, mas o Paulo não sabe é o quê.</p>

Part III - English Grammaticality Judgment Task

Test	Number	Condition	Type of wh-phrase	Wh-phrase	Number of items	Total
Test on wh-movement	1	Grammatical embedded questions	Adjunct	Where	1	16
				When	1	
			Argument	Who	1	
				What	1	
	2	Ungrammatical embedded questions	Adjunct	Where	1	
				When	1	
			Argument	Who	1	
				What	1	
Test on elliptical structures	1	Grammatical sluicing sentences	Adjunct	Where	1	
				When	1	
			Argument	Who	1	
				What	1	
	2	Ungrammatical sluicing sentences	Adjunct	Where	1	
				When	1	
			Argument	Who	1	
				What	1	

Test	Type of wh-phrase	Wh-phrase	Condition 1 – Grammatical embedded wh-questions	*Condition 2 - Ungrammatical embedded wh-questions
Test on wh-movement	Adjunct	Where	CONTEXT: <i>David met his friend.</i> Susana knows where David met his friend.	CONTEXT: <i>Sally lost her wallet.</i> Sam knows Sally lost her wallet where.
	Adjunct	When	CONTEXT: <i>Cindy ate an apple.</i> Jenny knows when Cindy ate an apple.	CONTEXT: <i>Tom sold his car.</i> Peter knows Tom sold his car when.
	Argument	Who	CONTEXT: <i>Ivan visited someone.</i> Susan knows who Ivan visited.	CONTEXT: <i>Peter saw someone.</i> Sally knows Peter saw who.
	Argument	What	CONTEXT: <i>Sam ate something.</i> Peter knows what Sam ate.	CONTEXT: <i>Jenny bought something.</i> Sandy knows Jenny bought what.

Test	Type of wh-phrase	Wh-phrase	Condition 3 – Grammatical sluicing sentences	*Condition 4 – Ungrammatical sluicing sentences.
Test on elliptical structures	Adjunct	Where	CONTEXT: <i>Did Sam have an accident?</i> Sam had an accident somewhere, but Peter doesn't know where.	CONTEXT: <i>Did Peter hold a party?</i> Peter held a party somewhere, but Cindy doesn't know is where.
	Adjunct	When	CONTEXT: <i>Did Sam visit the museum?</i> Sam visited the museum one day last week, but Peter doesn't know when.	CONTEXT: <i>Did Robert call Jenny?</i> Robert called Jenny one day last week, but Jenny doesn't know is when.

	Argument	Who	CONTEXT: <i>Did Sam kiss someone?</i> Sam kissed someone, but Peter doesn't know who.	CONTEXT: <i>Did Susan hit someone?</i> Susan hit someone, but Peter doesn't know is who.
	Argument	What	CONTEXT: <i>Did Sam lose something?</i> Sam lost something, but Peter doesn't know what.	CONTEXT: <i>Did Joanne buy something?</i> Joanne bought something, but Becky doesn't know is what.

Appendix II - Test for the L2 learner groups

Informação sobre o participante

Código (a preencher pelo investigador): _____

Nome (Nome português + Apelido): _____

Data de Nascimento: _____

1. Qual é a sua língua materna (ou línguas maternas), i.e. a(s) língua(s) que fala desde a primeira infância com a família?

2. Qual é a sua província/zona de origem na China?

3. Além da sua língua materna, fala que línguas/dialetos da China?

4. Fala que línguas estrangeiras? Por favor, indique as línguas pela ordem de aprendizagem e indique o nível que atingiu em cada uma. Por exemplo: inglês (B2), francês (B1)...

5. Qual é o nível mais elevado que já concluiu em português?

6. Tem quantos anos de ensino formal do português?

7. Tem quantos anos/quanto tempo de imersão em ambiente da língua portuguesa?

8. Em que países em que se fala português passou algum tempo e quanto tempo passou em cada um deles?

Por exemplo: Portugal (1 ano), Moçambique (6 meses)

Tarefa de produção

Nome: _____ Data de Nascimento: _____ Código: _____

Instruções:

Os textos que apresentamos têm partes muito repetitivas e podem ser melhorados. Elimine as repetições desnecessárias e reescreva as frases, quando necessário.

提示:

请删掉以下句子重复的部分，如有必要，请重写句子。

Exemplo 例子:

Ontem, quando o pai chegou, ele achou que a Beatriz estava a tomar um banho. Mas não, a Beatriz disse que não estava a tomar um banho, estava a secar o cabelo.

Ontem, quando o pai chegou, ~~ele~~ achou que a Beatriz estava a tomar um banho. Mas não, ~~a Beatriz~~ **ela** disse que ~~não estava a tomar um banho~~, estava a secar o cabelo.

Texto 1

A Maria convidou-me para um jantar. Quando eu cheguei à casa da Maria, bati à porta, mas ninguém respondeu. Continuei a bater por duas horas. Finalmente, decidi telefonar ao pai dela. Ele disse que a Maria saiu de casa, mas não sabe quando é que ela saiu de casa.

Texto 2

Eu sei que o Paulo admira um jogador do Benfica, mas eu não sei qual é que ele admira. Como o Paulo vai fazer anos em breve, e o Paulo gosta muito do Benfica, eu pretendia comprar-lhe uma camisola com assinatura.

Texto 3

Hoje de manhã, quando eu fui para a escola de autocarro, a minha carteira estava na mala. Mas, agora, quando eu quis pagar o almoço, descobri que a carteira desapareceu. Acho que perdi a carteira, mas eu não sei onde é que a perdi.

Texto 4

Na semana passada, a Ana deu-me algumas fotografias de dois apartamentos que ela pretendia comprar, um dos apartamentos é mais bonito, e o outro apartamento maior. Hoje, disse-me que já tinha comprado um apartamento, mas eu não sei qual é que ela comprou.

Texto 5

O Pedro viajou sozinho para Espanha, mas não sei quando é que ele viajou para Espanha. Durante a viagem, o Pedro comeu alguma coisa que lhe fez mal e por isso, o Pedro ficou no hospital durante uma semana. Coitado!

Texto 6

Ontem alguém assaltou o meu apartamento, mas não sei quem é que assaltou o meu apartamento. Logo que descobri que o meu apartamento foi assaltado, eu liguei imediatamente à polícia e a polícia prometeu que ia dar apoio à investigação do caso.

Texto 7

Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde é que ela a viu. É pena que a Ana não se lembre, porque assim a Ana não consegue ajudar o Pedro.

Texto 8

Ontem, quando eu fui à casa de banho, o meu telemóvel caiu na água e o ecrã do meu telemóvel deixou de funcionar. Hoje de manhã, alguém me enviou uma mensagem, mas não sei quem é que me enviou uma mensagem.

Tarefa: Juízo de gramaticalidade

Nome: _____ Data de Nascimento: _____ Código: _____

Instruções:

Leia cada contexto, julgue se a frase abaixo e a negrito é gramaticalmente correta, e classifique-a, usando uma escala em que

0 = frase incorreta, completamente agramatical

3 = frase perfeita, completamente gramatical

Caso não considere a frase perfeita, corrija a frase riscando ou escrevendo por cima. Se não souber mesmo responder, escolha a opção “não sei”.

Por favor, concentre-se na estrutura de cada frase e ignore qualquer problema com ortografia ou pontuação. Marque apenas UMA resposta para cada frase, e assegure-se de que julgou todas as frases.

提示：

请阅读下列每一个背景句，判断背景句下方加粗的句子是否符合语法，并运用以下梯度打分，圈出所给分数：

0 = 错误句，完全不符合语法

3 = 正确句，完全符合语法

如果不认为该句完全正确，请在原句上修改。如果实在无法判断，请选择“não sei”。

请专注于句子结构，并忽略任何拼写或标点问题。请为每一题圈出一个答案，并最后确认已经完成了所有题目。

Exemplo 例子:

CONTEXTO: *Eu não comi o bolo.*

comeu

O João ~~comi~~ o bolo.

① 1 2 3 não sei

1. CONTEXTO: *O que disse a Amália?*
- A Amália disse que se levantou cedo.** 0 1 2 3 não sei
2. CONTEXTO: *A Ana comeu um bife.*
- O Pedro não sabe a Ana comeu o bife onde.** 0 1 2 3 não sei
3. CONTEXTO: *O Pablo não destruiu a torneira.*
- Quem destruiu a torneira foi a Letícia.** 0 1 2 3 não sei
4. CONTEXTO: *A Tatiana ainda não visitou o Porto.*
- A Eduarda já visitou-o.** 0 1 2 3 não sei
5. CONTEXTO: *O Simão não atendeu o telefone.*
- A Rute é que atendeu o telefone.** 0 1 2 3 não sei
6. CONTEXTO: *O Afonso acabou a aula.*
- A Diana não sabe quando é que o Afonso acabou a aula.** 0 1 2 3 não sei
7. CONTEXTO: *A Filipa leu a revista.*
- O Álvaro também leu-a.** 0 1 2 3 não sei
8. CONTEXTO: *O Carlos bebeu leite.*
- Quando é que o Carlos bebeu o leite?** 0 1 2 3 não sei
9. CONTEXTO: *O rapaz não corrigiu o texto.*
- As raparigas foram que corrigiram o texto.** 0 1 2 3 não sei
10. CONTEXTO: *A Isabel leu um livro.*
- O João não sabe a Isabel leu o livro quando.** 0 1 2 3 não sei
11. CONTEXTO: *A Cecília não ganhou a bolsa.*
- Foi a Carlota ganhou a bolsa.** 0 1 2 3 não sei

12. CONTEXTO: *A Ana informou alguém?*
- A Ana informou alguém, mas a Sofia não sabe quem.** 0 1 2 3 não sei
13. CONTEXTO: *A Diana convidou alguém.*
- Quem é que a Diana convidou?** 0 1 2 3 não sei
14. CONTEXTO: *O Francisco não lavou a cozinha.*
- Os pais é que lavaram a cozinha.** 0 1 2 3 não sei
15. CONTEXTO: *A Diana encontrou alguém?*
- A Diana encontrou alguém, mas a Ana não sabe é quem.** 0 1 2 3 não sei
16. CONTEXTO: *A Frederica não vendeu os óculos.*
- O que a Frederica vendeu foi o casaco.** 0 1 2 3 não sei
17. CONTEXTO: *O Diogo fez alguma coisa?*
- O Diogo fez alguma coisa, mas a Maria não sabe o quê.** 0 1 2 3 não sei
18. CONTEXTO: *A Joana estudou alguma coisa.*
- A Maria não sabe a Joana estudou o quê.** 0 1 2 3 não sei
19. CONTEXTO: CONTEXTO: *O Prof. João não chumbou a turma toda.*
- A Prof^a. Lúcia é que chumbou a turma toda.** 0 1 2 3 não sei
20. CONTEXTO: *A Ana lavou o carro?*
- A Ana lavou o carro em algum lugar, mas o Carlos não sabe é onde.** 0 1 2 3 não sei
21. CONTEXTO: *Os rapazes não abriram a porta.*
- Quem abriram a porta foram os avós.** 0 1 2 3 não sei

22. CONTEXTO: *A Susana comprou alguma coisa.*
- A Maria não sabe o que é que a Susana comprou.** 0 1 2 3 não sei
23. CONTEXTO: *O Fernando não mostrou um filme.*
- Foi uma série o Fernando mostrou.** 0 1 2 3 não sei
24. CONTEXTO: *A Maria passeou o cão?*
- A Maria passeou o cão em algum lugar, mas o Bruno não sabe onde.** 0 1 2 3 não sei
25. CONTEXTO: *O Cesário não perdeu a carteira.*
- A mala é que o Cesário perdeu.** 0 1 2 3 não sei
26. CONTEXTO: *O Vítor não lavou a roupa.*
- A Luciana já a lavou.** 0 1 2 3 não sei
27. CONTEXTO: *A Dra. Ferreira não interrompeu o diálogo.*
- Foi o Dr. Machado que interrompeu o diálogo.** 0 1 2 3 não sei
28. CONTEXTO: *A Madalena entregou o trabalho de casa?*
- Acho que a Madalena entregou-o.** 0 1 2 3 não sei
29. CONTEXTO: *O Pedro leu um livro.*
- Quando é que o Pedro leu o livro?** 0 1 2 3 não sei
30. CONTEXTO: *A Vera não sujou a roupa.*
- O Vítor é que sujou a roupa.** 0 1 2 3 não sei
31. CONTEXTO: *O Carlos arrumou o quarto.*
- A Maria não sabe o Carlos arrumou o quarto quando.** 0 1 2 3 não sei
32. CONTEXTO: *A Emilia não entrou na Sala de Atos.*
- Entrou foi a Mafalda.** 0 1 2 3 não sei

33. CONTEXTO: *Quem ofereceu as flores aos professores?*
- Todos ofereceram-lhes as flores.** 0 1 2 3 não sei
34. CONTEXTO: *O Afonso arrumou o quarto?*
- O Afonso arrumou o quarto num desses dias, mas o Carlos não sabe quando.** 0 1 2 3 não sei
35. CONTEXTO: *A Madalena não publicou o livro.*
- Foi o Eduardo publicou o livro.** 0 1 2 3 não sei
36. CONTEXTO: *A Maria comprou um livro.*
- Onde é que a Maria comprou o livro?** 0 1 2 3 não sei
37. CONTEXTO: *O Rúben não escreveu uma carta.*
- O que o Rúben escreveu foi um romance.** 0 1 2 3 não sei
38. CONTEXTO: *A Sofia viu alguém?*
- A Sofia viu alguém, mas o Paulo não sabe quem.** 0 1 2 3 não sei
39. CONTEXTO: *Os meninos não resolveram a equação.*
- Quem resolveu a equação foram as meninas.** 0 1 2 3 não sei
40. CONTEXTO: *Tenho uma nova notificação.*
- Alguém enviou-me um e-mail.** 0 1 2 3 não sei
41. CONTEXTO: *A Glória leu alguma coisa.*
- A Glória leu o quê?** 0 1 2 3 não sei
42. CONTEXTO: *O João não recebeu o prémio.*
- Foram as meninas que recebeu o prémio.** 0 1 2 3 não sei
43. CONTEXTO: *A Sofia tirou uma fotografia.*
- A Joana não sabe onde é que a Sofia tirou a fotografia.** 0 1 2 3 não sei

44. CONTEXTO: *O dono não fechou a loja.*
- Quem fechou a loja foram os filhos.** 0 1 2 3 não sei
45. CONTEXTO: *A Júlia ouviu alguma coisa.*
- A Júlia ouviu o quê?** 0 1 2 3 não sei
46. CONTEXTO: *Estes atores não deram entrevistas.*
- Foram as cantoras que deram entrevistas.** 0 1 2 3 não sei
47. CONTEXTO: *O Nelson usou o computador.*
- A Matilde também o usou.** 0 1 2 3 não sei
48. CONTEXTO: *O gerente não estragou o piano.*
- Os músicos é que estragaram o piano.** 0 1 2 3 não sei
49. CONTEXTO: *O Luís visitou alguém.*
- O Carlos não sabe quem é que o Luís visitou.** 0 1 2 3 não sei
50. CONTEXTO: *A Rafaela não cancelou a reunião.*
- Foi o Santiago que cancelou a reunião.** 0 1 2 3 não sei
51. CONTEXTO: *A Margarida vendeu o apartamento.*
- O João não sabe quando é que a Margarida vendeu o apartamento.** 0 1 2 3 não sei
52. CONTEXTO: *O Guilherme não aqueceu a sopa.*
- Quem aqueceu a sopa foi a Teresa.** 0 1 2 3 não sei
53. CONTEXTO: *A Susana quebrou o vidro.*
- Não, a Susana não quebrou-o.** 0 1 2 3 não sei
54. CONTEXTO: *A Joana não tomou chá.*
- Foi café a Joana tomou.** 0 1 2 3 não sei

55. CONTEXTO: *O Roberto cumprimentou alguém.*
- O Roberto cumprimentou quem?** 0 1 2 3 não sei
56. CONTEXTO: *A Diana limpou a mesa?*
- A Diana limpou a mesa num desses dias, mas a Joana não sabe quando.** 0 1 2 3 não sei
57. CONTEXTO: *A Anita não preparou sobremesas.*
- Os irmãos é que prepararam sobremesas.** 0 1 2 3 não sei
58. CONTEXTO: *A Inês comprou alguma coisa.*
- O que é que a Inês comprou?** 0 1 2 3 não sei
59. CONTEXTO: *A Sónia não estudou um romance realista.*
- Foi um poema modernista que a Sónia estudou.** 0 1 2 3 não sei
60. CONTEXTO: *A Isabel levantou o dinheiro.*
- A Isabel levantou o dinheiro onde?** 0 1 2 3 não sei
61. CONTEXTO: *O Diogo não fez o teste.*
- Foram os amigos que fizeram o teste.** 0 1 2 3 não sei
62. CONTEXTO: *A Íris faz anos hoje.*
- Todos deram-lhe os parabéns.** 0 1 2 3 não sei
63. CONTEXTO: *A Antónia não visitou o museu.*
- O castelo é que a Antónia visitou.** 0 1 2 3 não sei
64. CONTEXTO: *O Bruno não apareceu na cerimónia.*
- Apareceu foi a Margarida.** 0 1 2 3 não sei
65. CONTEXTO: *A Luísa ficou assustada.*
- Alguém empurrou-a.** 0 1 2 3 não sei

66. CONTEXTO: *O Bruno ouviu alguma coisa.*
- O Diogo não sabe o que é que o Bruno ouviu.** 0 1 2 3 não sei
67. CONTEXTO: *A Fabiana não aprendeu francês.*
- Quem aprendeu francês foi o Alberto.** 0 1 2 3 não sei
68. CONTEXTO: *O Adriano tomou o medicamento.*
- O Adriano tomou o medicamento quando?** 0 1 2 3 não sei
69. CONTEXTO: *A Laura encontrou a Sandra.*
- O Miguel também encontrou-a.** 0 1 2 3 não sei
70. CONTEXTO: *A Ana perdeu a carteira.*
- Onde é que a Ana perdeu a carteira?** 0 1 2 3 não sei
71. CONTEXTO: *A Lorena não comprou um quadro.*
- A Lorena comprou foi um CD.** 0 1 2 3 não sei
72. CONTEXTO: *O Henrique não cometeu esse erro.*
- Foi o Dinis que cometeu o erro.** 0 1 2 3 não sei
73. CONTEXTO: *A Elisa comeu alguma coisa?*
- A Elisa comeu alguma coisa, mas o Afonso não sabe é o quê.** 0 1 2 3 não sei
74. CONTEXTO: *A Rosa não elaborou esta teoria.*
- Quem elaboraram esta teoria foram as amigas.** 0 1 2 3 não sei
75. CONTEXTO: *A Maria encontrou um gato.*
- O Pedro não sabe onde é que a Maria encontrou o gato.** 0 1 2 3 não sei
76. CONTEXTO: *A Noa não desligou a máquina de lavar roupa.*
- A televisão é que a Noa desligou.** 0 1 2 3 não sei

77. CONTEXTO: *A Margarida fez uma festa.*
- O Pablo não sabe a Margarida fez a festa onde.** 0 1 2 3 não sei
78. CONTEXTO: *Os enfermeiros não divulgaram a notícia.*
- Os médicos foram que divulgaram a notícia.** 0 1 2 3 não sei
79. CONTEXTO: *A Beatriz matou alguém.*
- Quem é que a Beatriz matou?** 0 1 2 3 não sei
80. CONTEXTO: *A empregada não limpou as mesas.*
- Foi o chão a empregada limpou.** 0 1 2 3 não sei
81. CONTEXTO: *A Joana viu alguém.*
- A Joana viu quem?** 0 1 2 3 não sei
82. CONTEXTO: *A Nina não leu o poema.*
- Foram os colegas que leram o poema.** 0 1 2 3 não sei
83. CONTEXTO: *A Beatriz abriu a janela?*
- A Beatriz abriu a janela num desses dias, mas a Isabel não sabe é quando.** 0 1 2 3 não sei
84. CONTEXTO: *O Samuel não congelou a carne.*
- Foi o peixe que o Samuel congelou.** 0 1 2 3 não sei
85. CONTEXTO: *O Bernardo não guardou os documentos.*
- Quem guardaram os documentos foram os funcionários.** 0 1 2 3 não sei
86. CONTEXTO: *O Leonardo resolveu o problema.*
- Alguém o ajudou.** 0 1 2 3 não sei
87. CONTEXTO: *A Liliana não chegou antes da aula.*
- Chegou foi a Teresa.** 0 1 2 3 não sei

88. CONTEXTO: *A Maria bebeu alguma coisa?*
- A Maria bebeu alguma coisa, mas o João não sabe o quê.** 0 1 2 3 não sei
89. CONTEXTO: *O Sérgio vendeu o livro.*
- Não, ele não o vendeu.** 0 1 2 3 não sei
90. CONTEXTO: *Os caloiros não acabaram o trabalho.*
- Os finalistas foram que acabaram o trabalho.** 0 1 2 3 não sei
91. CONTEXTO: *O Danilo comeu uma sopa.*
- O Danilo comeu a sopa quando?** 0 1 2 3 não sei
92. CONTEXTO: *Os engenheiros não sugeriram este plano.*
- Foram os arquitetos que sugeriu este plano.** 0 1 2 3 não sei
93. CONTEXTO: *A Joana vendeu o carro?*
- A Joana vendeu o carro num desses dias, mas o David não sabe é quando.** 0 1 2 3 não sei
94. CONTEXTO: *Onde está o chocolate?*
- O Ricardo disse que comeu-o.** 0 1 2 3 não sei
95. CONTEXTO: *O Pedro beijou alguém.*
- A Ana sabe o Pedro beijou quem.** 0 1 2 3 não sei
96. CONTEXTO: *O Bruno tomou o café?*
- O Bruno tomou o café em algum lugar, mas a Beatriz não sabe é onde.** 0 1 2 3 não sei
97. CONTEXTO: *A Cristina não vestiu os calções.*
- A Cristina vestiu foi a saia.** 0 1 2 3 não sei

98. CONTEXTO: *A Nádia viu um filme.*
- A Nádia viu o filme onde?** 0 1 2 3 não sei
99. CONTEXTO: *O Romeu beijou a Julieta.*
- Não, o Romeu não beijou-a.** 0 1 2 3 não sei
100. CONTEXTO: *O Pedro bebeu alguma coisa.*
- A Susana não sabe o Pedro bebeu o quê.** 0 1 2 3 não sei
101. CONTEXTO: *O Gilberto não partiu a janela.*
- Foi a Margarida partiu a janela.** 0 1 2 3 não sei
102. CONTEXTO: *A Joana partiu o prato?*
- A Joana partiu o prato em algum lugar, mas o Afonso não sabe onde.** 0 1 2 3 não sei
103. CONTEXTO: *O Enzo não ouviu esta música.*
- O Gustavo já ouviu-a.** 0 1 2 3 não sei
104. CONTEXTO: *Os residentes não construíram o edifício.*
- Quem construiu o edifício foram os trabalhadores.** 0 1 2 3 não sei
105. CONTEXTO: *O Carlos visitou alguém?*
- O Carlos visitou alguém, mas a Margarida não sabe é quem.** 0 1 2 3 não sei
106. CONTEXTO: *A Inês não encomendou a tarte.*
- Foram os colegas que encomendou a tarte.** 0 1 2 3 não sei
107. CONTEXTO: *O Miguel procurou alguém.*
- A Isabel sabe quem é que o Miguel procurou.** 0 1 2 3 não sei

108. CONTEXTO: *O Duarte não alugou uma casa.*

O que o Duarte alugou foi um quarto. 0 1 2 3 não sei

109. CONTEXTO: *Hoje é o Dia de Natal.*

Todos o festejam em casa. 0 1 2 3 não sei

110. CONTEXTO: *A Sofia escreveu alguma coisa.*

O que é que a Sofia escreveu? 0 1 2 3 não sei

111. CONTEXTO: *O André não comprou um computador.*

Foi um tablet que o André comprou. 0 1 2 3 não sei

112. CONTEXTO: *A Beatriz escreveu alguma coisa?*

A Beatriz escreveu alguma coisa, mas o Paulo não sabe é o quê. 0 1 2 3 não sei

113. CONTEXTO: *O Xavier não cantou uma música de pop.*

O Xavier cantou foi um fado. 0 1 2 3 não sei

114. CONTEXTO: *O Diogo convidou alguém.*

O Paulo não sabe o Diogo convidou quem. 0 1 2 3 não sei

Nome: _____ Data de Nascimento: _____ Código: _____

提示：

请阅读下列每一个背景句，判断背景句下方加粗的句子是否符合语法，并运用以下梯度打分，圈出所给分数：

0 = 错误句，完全不符合语法

3 = 正确句，完全符合语法

如果不认为该句完全正确，请在原句上修改。如果实在无法判断，请选择“I do not know”。

请专注于句子结构，并忽略任何拼写或标点问题。请为每一题圈出一个答案，并最后确认已经完成了所有题目。

1. CONTEXT: *Who has solved the problem?*

The problem had been solved by Michelle. 0 1 2 3 I do not know

2. CONTEXT: *Sally lost her wallet.*

Sam knows Sally lost her wallet where. 0 1 2 3 I do not know

3. CONTEXT: *Ivonne didn't answer the door.*

It was Joanne that answered the door. 0 1 2 3 I do not know

4. CONTEXT: *Who cleans the table every day?*

The table was cleaned by John every day. 0 1 2 3 I do not know

5. CONTEXT: *Who had taken a photo?*

A photo had been taken by Fiona. 0 1 2 3 I do not know

6. CONTEXT: *Did Sam lose something?*

Sam lost something, but Peter doesn't know what. 0 1 2 3 I do not know

7. CONTEXT: *Laura didn't read the novel.*

What Laura read was a film script. 0 1 2 3 I do not know

8. CONTEXT: *Who kicked the ball?*
The ball is kicked by the children. 0 1 2 3 I do not know
9. CONTEXT: *Daniel didn't accept the offer.*
It was Ronan accepted the offer. 0 1 2 3 I do not know
10. CONTEXT: *Cindy ate an apple.*
Jenny knows when Cindy ate an apple. 0 1 2 3 I do not know
11. CONTEXT: *Who eats a banana every day?*
A banana was eaten by Doris every day. 0 1 2 3 I do not know
12. CONTEXT: *Did Sam have an accident?*
Sam had an accident somewhere, but Peter doesn't know where. 0 1 2 3 I do not know
13. CONTEXT: *Raymond didn't learn German.*
It was Dutch Raymond learnt. 0 1 2 3 I do not know
14. CONTEXT: *Who was writing an e-mail?*
An e-mail is being written by Robert. 0 1 2 3 I do not know
15. CONTEXT: *Did Susan hit someone?*
Susan hit someone, but Peter doesn't know is who. 0 1 2 3 I do not know
16. CONTEXT: *The teachers didn't organize the parade.*
It was the students that organized the parade. 0 1 2 3 I do not know
17. CONTEXT: *Who catches a fish every day?*
A fish is caught by Paul every day. 0 1 2 3 I do not know
18. CONTEXT: *Did Sam kiss someone?*
Sam kissed someone, but Peter doesn't know who. 0 1 2 3 I do not know

19. CONTEXT: *Who beat Susana?*
- Susana is beaten by Tom.** 0 1 2 3 I do not know
20. CONTEXT: *David didn't drink the milk.*
- Who drank the milk was Paul.** 0 1 2 3 I do not know
21. CONTEXT: *Jenny bought something.*
- Sandy knows Jenny bought what.** 0 1 2 3 I do not know
22. CONTEXT: *Who has received a letter?*
- A letter has been received by Sophia.** 0 1 2 3 I do not know
23. CONTEXT: *Levin didn't drop his key.*
- It was Peter that dropped his key.** 0 1 2 3 I do not know
24. CONTEXT: *Who is selling Tom's car?*
- Tom's car was being sold by Clare.** 0 1 2 3 I do not know
25. CONTEXT: *Did Joanne buy something?*
- Joanne bought something, but Becky doesn't know is what.** 0 1 2 3 I do not know
26. CONTEXT: *Cristine didn't write a post card.*
- It was a letter that Cristine wrote.** 0 1 2 3 I do not know
27. CONTEXT: *David met his friend.*
- Susana knows where David met his friend.** 0 1 2 3 I do not know
28. CONTEXT: *Who was building a house?*
- The house is being built by Harry.** 0 1 2 3 I do not know
29. CONTEXT: *John didn't borrow a dictionary.*
- It was a book John borrowed.** 0 1 2 3 I do not know

30. CONTEXT: *Did Peter hold a party?*
Peter held a party somewhere, but Cindy doesn't know is where. 0 1 2 3 I do not know
31. CONTEXT: *Caroline didn't draw the picture.*
Who drew the picture was Anita. 0 1 2 3 I do not know
32. CONTEXT: *Who bought a t-shirt?*
A t-shirt was bought by Mary. 0 1 2 3 I do not know
33. CONTEXT: *Tom sold his car.*
Peter knows Tom sold his car when. 0 1 2 3 I do not know
34. CONTEXT: *The singers didn't practice the musical.*
It was the dancers that practiced the musical. 0 1 2 3 I do not know
35. CONTEXT: *Who had fed the cat?*
The cat has been fed by Jenny. 0 1 2 3 I do not know
36. CONTEXT: *Adam didn't pick an apple.*
What Adam picked was a pear. 0 1 2 3 I do not know
37. CONTEXT: *Peter saw someone.*
Sally knows Peter saw who. 0 1 2 3 I do not know
38. CONTEXT: *Who has caught the mouse?*
The mouse had been caught by Sarah. 0 1 2 3 I do not know
39. CONTEXT: *The company didn't sign the contract.*
It were the lawyers that signed the contract. 0 1 2 3 I do not know
40. CONTEXT: *Sam ate something.*
Peter knows what Sam ate. 0 1 2 3 I do not know

41. CONTEXT: *Who was washing the dishes?*
- The dishes were being washed by Sandy.** 0 1 2 3 I do not know
42. CONTEXT: *Teddy didn't break the window.*
- It was Fredric broke the window.** 0 1 2 3 I do not know
43. CONTEXT: *Ivan visited someone.*
- Susan knows who Ivan visited.** 0 1 2 3 I do not know
44. CONTEXT: *Philip didn't buy the beer.*
- It was the juice that Philip bought.** 0 1 2 3 I do not know
45. CONTEXT: *Did Robert call Jenny?*
- Robert called Jenny one day last week,
but Jenny doesn't know is when.** 0 1 2 3 I do not know
46. CONTEXT: *Who is writing a story?*
- The story is being written by Susana.** 0 1 2 3 I do not know
47. CONTEXT: *Who had made a cake?*
- A cake has been made by Kylie.** 0 1 2 3 I do not know
48. *The police didn't search the whole town.*
- It were the volunteers that searched
the whole town.** 0 1 2 3 I do not know
49. CONTEXT: *Did Sam visit the museum?*
- Sam visited the museum one day last week,
but Peter doesn't know when.** 0 1 2 3 I do not know
50. CONTEXT: *Who is reading a book?*
- The book was being read by Peter.** 0 1 2 3 I do not know

Appendix III - Test for the control group

Informação sobre o participante
Código (a preencher pelo investigador): _____

Nome: _____

Data de Nascimento: _____

1. Qual é a sua língua materna (ou línguas maternas), i.e. a(s) língua(s) que fala desde a primeira infância com a família?

2. Qual é a sua zona de origem de Portugal?

3. Fala que línguas estrangeiras? Por favor, indique as línguas pela ordem de aprendizagem e indique o nível que atingiu em cada uma. Por exemplo: inglês (B2), francês (B1)...

Tarefa de produção

Nome: _____ Data de Nascimento: _____ Código: _____

Instruções:

Os textos que apresentamos têm partes muito repetitivas e podem ser melhorados. Elimine as repetições desnecessárias e reescreva as frases, quando necessário.

Exemplo:

Ontem, quando o pai chegou, ele achou que a Beatriz estava a tomar um banho. Mas não, a Beatriz disse que não estava a tomar um banho, estava a secar o cabelo.

Ontem, quando o pai chegou, ~~ele~~ achou que a Beatriz estava a tomar um banho. Mas não, ~~a Beatriz~~ **ela** disse que ~~não estava a tomar um banho~~, estava a secar o cabelo.

Texto 1

A Maria convidou-me para um jantar. Quando eu cheguei à casa da Maria, bati à porta, mas ninguém respondeu. Continuei a bater por duas horas. Finalmente, decidi telefonar ao pai dela. Ele disse que a Maria saiu de casa, mas não sabe quando é que ela saiu de casa.

Texto 2

Eu sei que o Paulo admira um jogador do Benfica, mas eu não sei qual é que ele admira. Como o Paulo vai fazer anos em breve, e o Paulo gosta muito do Benfica, eu pretendia comprar-lhe uma camisola com assinatura.

Texto 3

Hoje de manhã, quando eu fui para a escola de autocarro, a minha carteira estava na mala. Mas, agora, quando eu quis pagar o almoço, descobri que a carteira desapareceu. Acho que perdi a carteira, mas eu não sei onde é que a perdi.

Texto 4

Na semana passada, a Ana deu-me algumas fotografias de dois apartamentos que ela pretendia comprar, um dos apartamentos é mais bonito, e o outro apartamento maior. Hoje, disse-me que já tinha comprado um apartamento, mas eu não sei qual é que ela comprou.

Texto 5

O Pedro viajou sozinho para Espanha, mas não sei quando é que ele viajou para Espanha. Durante a viagem, o Pedro comeu alguma coisa que lhe fez mal e por isso, o Pedro ficou no hospital durante uma semana. Coitado!

Texto 6

Ontem alguém assaltou o meu apartamento, mas não sei quem é que assaltou o meu apartamento. Logo que descobri que o meu apartamento foi assaltado, eu liguei imediatamente à polícia e a polícia prometeu que ia dar apoio à investigação do caso.

Texto 7

Ontem, a Ana viu a pintura que o Pedro queria comprar, mas ela não sabe onde é que ela a viu. É pena que a Ana não se lembre, porque assim a Ana não consegue ajudar o Pedro.

Texto 8

Ontem, quando eu fui à casa de banho, o meu telemóvel caiu na água e o ecrã do meu telemóvel deixou de funcionar. Hoje de manhã, alguém me enviou uma mensagem, mas não sei quem é que me enviou uma mensagem.

Tarefa: Juízo de gramaticalidade

Nome: _____ Data de Nascimento: _____ Código: _____

Instruções:

Leia cada contexto, julgue se a frase abaixo e a negrito é gramaticalmente correta, e classifique-a, usando uma escala em que

0 = frase incorreta, completamente agramatical

3 = frase perfeita, completamente gramatical

Caso não considere a frase perfeita, corrija a frase riscando ou escrevendo por cima. Se não souber mesmo responder, escolha a opção “não sei”.

Por favor, concentre-se na estrutura de cada frase e ignore qualquer problema com ortografia ou pontuação. Marque apenas UMA resposta para cada frase, e assegure-se de que julgou todas as frases.

Exemplo:

CONTEXTO: *Eu não comi o bolo.*

comeu

O João ~~comi~~ o bolo.

Ⓐ 1 2 3 não sei

1. CONTEXTO: *O que disse a Amália?*

A Amália disse que se levantou cedo.

0 1 2 3 não sei

2. CONTEXTO: *A Ana comeu um bife.*

O Pedro não sabe a Ana comeu o bife onde.

0 1 2 3 não sei

3. CONTEXTO: *O Pablo não destruiu a torneira.*
- Quem destruiu a torneira foi a Letícia.** 0 1 2 3 não sei
4. CONTEXTO: *A Tatiana ainda não visitou o Porto.*
- A Eduarda já visitou-o.** 0 1 2 3 não sei
5. CONTEXTO: *O Simão não atendeu o telefone.*
- A Rute é que atendeu o telefone.** 0 1 2 3 não sei
6. CONTEXTO: *O Afonso acabou a aula.*
- A Diana não sabe quando é que o Afonso acabou a aula.** 0 1 2 3 não sei
7. CONTEXTO: *A Filipa leu a revista.*
- O Álvaro também leu-a.** 0 1 2 3 não sei
8. CONTEXTO: *O Carlos bebeu leite.*
- Quando é que o Carlos bebeu o leite?** 0 1 2 3 não sei
9. CONTEXTO: *O rapaz não corrigiu o texto.*
- As raparigas foram que corrigiram o texto.** 0 1 2 3 não sei
10. CONTEXTO: *A Isabel leu um livro.*
- O João não sabe a Isabel leu o livro quando.** 0 1 2 3 não sei
11. CONTEXTO: *A Cecília não ganhou a bolsa.*
- Foi a Carlota ganhou a bolsa.** 0 1 2 3 não sei
12. CONTEXTO: *A Ana informou alguém?*
- A Ana informou alguém, mas a Sofia não sabe quem.** 0 1 2 3 não sei
13. CONTEXTO: *A Diana convidou alguém.*
- Quem é que a Diana convidou?** 0 1 2 3 não sei

14. CONTEXTO: *O Francisco não lavou a cozinha.*
- Os pais é que lavaram a cozinha.** 0 1 2 3 não sei
15. CONTEXTO: *A Diana encontrou alguém?*
- A Diana encontrou alguém, mas a Ana não sabe é quem.** 0 1 2 3 não sei
16. CONTEXTO: *A Frederica não vendeu os óculos.*
- O que a Frederica vendeu foi o casaco.** 0 1 2 3 não sei
17. CONTEXTO: *O Diogo fez alguma coisa?*
- O Diogo fez alguma coisa, mas a Maria não sabe o quê.** 0 1 2 3 não sei
18. CONTEXTO: *A Joana estudou alguma coisa.*
- A Maria não sabe a Joana estudou o quê.** 0 1 2 3 não sei
19. CONTEXTO: CONTEXTO: *O Prof. João não chumbou a turma toda.*
- A Prof^a. Lúcia é que chumbou a turma toda.** 0 1 2 3 não sei
20. CONTEXTO: *A Ana lavou o carro?*
- A Ana lavou o carro em algum lugar, mas o Carlos não sabe é onde.** 0 1 2 3 não sei
21. CONTEXTO: *Os rapazes não abriram a porta.*
- Quem abriram a porta foram os avós.** 0 1 2 3 não sei
22. CONTEXTO: *A Susana comprou alguma coisa.*
- A Maria não sabe o que é que a Susana comprou.** 0 1 2 3 não sei
23. CONTEXTO: *O Fernando não mostrou um filme.*
- Foi uma série o Fernando mostrou.** 0 1 2 3 não sei

24. CONTEXTO: *A Maria passeou o cão?*
- A Maria passeou o cão em algum lugar, mas o Bruno não sabe onde.** 0 1 2 3 não sei
25. CONTEXTO: *O Cesário não perdeu a carteira.*
- A mala é que o Cesário perdeu.** 0 1 2 3 não sei
26. CONTEXTO: *O Vítor não lavou a roupa.*
- A Luciana já a lavou.** 0 1 2 3 não sei
27. CONTEXTO: *A Dra. Ferreira não interrompeu o diálogo.*
- Foi o Dr. Machado que interrompeu o diálogo.** 0 1 2 3 não sei
28. CONTEXTO: *A Madalena entregou o trabalho de casa?*
- Acho que a Madalena entregou-o.** 0 1 2 3 não sei
29. CONTEXTO: *O Pedro leu um livro.*
- Quando é que o Pedro leu o livro?** 0 1 2 3 não sei
30. CONTEXTO: *A Vera não sujou a roupa.*
- O Vítor é que sujou a roupa.** 0 1 2 3 não sei
31. CONTEXTO: *O Carlos arrumou o quarto.*
- A Maria não sabe o Carlos arrumou o quarto quando.** 0 1 2 3 não sei
32. CONTEXTO: *A Emília não entrou na Sala de Atos.*
- Entrou foi a Mafalda.** 0 1 2 3 não sei
33. CONTEXTO: *Quem ofereceu as flores aos professores?*
- Todos ofereceram-lhes as flores.** 0 1 2 3 não sei

34. CONTEXTO: *O Afonso arrumou o quarto?*
- O Afonso arrumou o quarto num desses dias, mas o Carlos não sabe quando.** 0 1 2 3 não sei
35. CONTEXTO: *A Madalena não publicou o livro.*
- Foi o Eduardo publicou o livro.** 0 1 2 3 não sei
36. CONTEXTO: *A Maria comprou um livro.*
- Onde é que a Maria comprou o livro?** 0 1 2 3 não sei
37. CONTEXTO: *O Rúben não escreveu uma carta.*
- O que o Rúben escreveu foi um romance.** 0 1 2 3 não sei
38. CONTEXTO: *A Sofia viu alguém?*
- A Sofia viu alguém, mas o Paulo não sabe quem.** 0 1 2 3 não sei
39. CONTEXTO: *Os meninos não resolveram a equação.*
- Quem resolveu a equação foram as meninas.** 0 1 2 3 não sei
40. CONTEXTO: *Tenho uma nova notificação.*
- Alguém enviou-me um e-mail.** 0 1 2 3 não sei
41. CONTEXTO: *A Glória leu alguma coisa.*
- A Glória leu o quê?** 0 1 2 3 não sei
42. CONTEXTO: *O João não recebeu o prémio.*
- Foram as meninas que recebeu o prémio.** 0 1 2 3 não sei
43. CONTEXTO: *A Sofia tirou uma fotografia.*
- A Joana não sabe onde é que a Sofia tirou a fotografia.** 0 1 2 3 não sei
44. CONTEXTO: *O dono não fechou a loja.*
- Quem fechou a loja foram os filhos.** 0 1 2 3 não sei

45. CONTEXTO: *A Júlia ouviu alguma coisa.*
- A Júlia ouviu o quê?** 0 1 2 3 não sei
46. CONTEXTO: *Estes atores não deram entrevistas.*
- Foram as cantoras que deram entrevistas.** 0 1 2 3 não sei
47. CONTEXTO: *O Nelson usou o computador.*
- A Matilde também o usou.** 0 1 2 3 não sei
48. CONTEXTO: *O gerente não estragou o piano.*
- Os músicos é que estragaram o piano.** 0 1 2 3 não sei
49. CONTEXTO: *O Luís visitou alguém.*
- O Carlos não sabe quem é que o Luís visitou.** 0 1 2 3 não sei
50. CONTEXTO: *A Rafaela não cancelou a reunião.*
- Foi o Santiago que cancelou a reunião.** 0 1 2 3 não sei
51. CONTEXTO: *A Margarida vendeu o apartamento.*
- O João não sabe quando é que a Margarida vendeu o apartamento.** 0 1 2 3 não sei
52. CONTEXTO: *O Guilherme não aqueceu a sopa.*
- Quem aqueceu a sopa foi a Teresa.** 0 1 2 3 não sei
53. CONTEXTO: *A Susana quebrou o vidro.*
- Não, a Susana não quebrou-o.** 0 1 2 3 não sei
54. CONTEXTO: *A Joana não tomou chá.*
- Foi café a Joana tomou.** 0 1 2 3 não sei
55. CONTEXTO: *O Roberto cumprimentou alguém.*
- O Roberto cumprimentou quem?** 0 1 2 3 não sei

56. CONTEXTO: *A Diana limpou a mesa?*
- A Diana limpou a mesa num desses dias, mas a Joana não sabe quando.** 0 1 2 3 não sei
57. CONTEXTO: *A Anita não preparou sobremesas.*
- Os irmãos é que prepararam sobremesas.** 0 1 2 3 não sei
58. CONTEXTO: *A Inês comprou alguma coisa.*
- O que é que a Inês comprou?** 0 1 2 3 não sei
59. CONTEXTO: *A Sónia não estudou um romance realista.*
- Foi um poema modernista que a Sónia estudou.** 0 1 2 3 não sei
60. CONTEXTO: *A Isabel levantou o dinheiro.*
- A Isabel levantou o dinheiro onde?** 0 1 2 3 não sei
61. CONTEXTO: *O Diogo não fez o teste.*
- Foram os amigos que fizeram o teste.** 0 1 2 3 não sei
62. CONTEXTO: *A Íris faz anos hoje.*
- Todos deram-lhe os parabéns.** 0 1 2 3 não sei
63. CONTEXTO: *A Antónia não visitou o museu.*
- O castelo é que a Antónia visitou.** 0 1 2 3 não sei
64. CONTEXTO: *O Bruno não apareceu na cerimónia.*
- Apareceu foi a Margarida.** 0 1 2 3 não sei
65. CONTEXTO: *A Luísa ficou assustada.*
- Alguém empurrou-a.** 0 1 2 3 não sei
66. CONTEXTO: *O Bruno ouviu alguma coisa.*
- O Diogo não sabe o que é que o Bruno ouviu.** 0 1 2 3 não sei

67. CONTEXTO: *A Fabiana não aprendeu francês.*
- Quem aprendeu francês foi o Alberto.** 0 1 2 3 não sei
68. CONTEXTO: *O Adriano tomou o medicamento.*
- O Adriano tomou o medicamento quando?** 0 1 2 3 não sei
69. CONTEXTO: *A Laura encontrou a Sandra.*
- O Miguel também encontrou-a.** 0 1 2 3 não sei
70. CONTEXTO: *A Ana perdeu a carteira.*
- Onde é que a Ana perdeu a carteira?** 0 1 2 3 não sei
71. CONTEXTO: *A Lorena não comprou um quadro.*
- A Lorena comprou foi um CD.** 0 1 2 3 não sei
72. CONTEXTO: *O Henrique não cometeu esse erro.*
- Foi o Dinis que cometeu o erro.** 0 1 2 3 não sei
73. CONTEXTO: *A Elisa comeu alguma coisa?*
- A Elisa comeu alguma coisa, mas o Afonso não sabe é o quê.** 0 1 2 3 não sei
74. CONTEXTO: *A Rosa não elaborou esta teoria.*
- Quem elaboraram esta teoria foram as amigas.** 0 1 2 3 não sei
75. CONTEXTO: *A Maria encontrou um gato.*
- O Pedro não sabe onde é que a Maria encontrou o gato.** 0 1 2 3 não sei
76. CONTEXTO: *A Noa não desligou a máquina de lavar roupa.*
- A televisão é que a Noa desligou.** 0 1 2 3 não sei
77. CONTEXTO: *A Margarida fez uma festa.*
- O Pablo não sabe a Margarida fez a festa onde.** 0 1 2 3 não sei

78. CONTEXTO: *Os enfermeiros não divulgaram a notícia.*
- Os médicos foram que divulgaram a notícia.** 0 1 2 3 não sei
79. CONTEXTO: *A Beatriz matou alguém.*
- Quem é que a Beatriz matou?** 0 1 2 3 não sei
80. CONTEXTO: *A empregada não limpou as mesas.*
- Foi o chão a empregada limpou.** 0 1 2 3 não sei
81. CONTEXTO: *A Joana viu alguém.*
- A Joana viu quem?** 0 1 2 3 não sei
82. CONTEXTO: *A Nina não leu o poema.*
- Foram os colegas que leram o poema.** 0 1 2 3 não sei
83. CONTEXTO: *A Beatriz abriu a janela?*
- A Beatriz abriu a janela num desses dias, mas a Isabel não sabe é quando.** 0 1 2 3 não sei
84. CONTEXTO: *O Samuel não congelou a carne.*
- Foi o peixe que o Samuel congelou.** 0 1 2 3 não sei
85. CONTEXTO: *O Bernardo não guardou os documentos.*
- Quem guardaram os documentos foram os funcionários.** 0 1 2 3 não sei
86. CONTEXTO: *O Leonardo resolveu o problema.*
- Alguém o ajudou.** 0 1 2 3 não sei
87. CONTEXTO: *A Liliana não chegou antes da aula.*
- Chegou foi a Teresa.** 0 1 2 3 não sei

88. CONTEXTO: *A Maria bebeu alguma coisa?*
- A Maria bebeu alguma coisa, mas o João não sabe o quê.** 0 1 2 3 não sei
89. CONTEXTO: *O Sérgio vendeu o livro.*
- Não, ele não o vendeu.** 0 1 2 3 não sei
90. CONTEXTO: *Os caloiros não acabaram o trabalho.*
- Os finalistas foram que acabaram o trabalho.** 0 1 2 3 não sei
91. CONTEXTO: *O Danilo comeu uma sopa.*
- O Danilo comeu a sopa quando?** 0 1 2 3 não sei
92. CONTEXTO: *Os engenheiros não sugeriram este plano.*
- Foram os arquitetos que sugeriu este plano.** 0 1 2 3 não sei
93. CONTEXTO: *A Joana vendeu o carro?*
- A Joana vendeu o carro num desses dias, mas o David não sabe é quando.** 0 1 2 3 não sei
94. CONTEXTO: *Onde está o chocolate?*
- O Ricardo disse que comeu-o.** 0 1 2 3 não sei
95. CONTEXTO: *O Pedro beijou alguém.*
- A Ana sabe o Pedro beijou quem.** 0 1 2 3 não sei
96. CONTEXTO: *O Bruno tomou o café?*
- O Bruno tomou o café em algum lugar, mas a Beatriz não sabe é onde.** 0 1 2 3 não sei
97. CONTEXTO: *A Cristina não vestiu os calções.*
- A Cristina vestiu foi a saia.** 0 1 2 3 não sei

98. CONTEXTO: *A Nádia viu um filme.*

A Nádia viu o filme onde? 0 1 2 3 não sei

99. CONTEXTO: *O Romeu beijou a Julieta.*

Não, o Romeu não beijou-a. 0 1 2 3 não sei

100. CONTEXTO: *O Pedro bebeu alguma coisa.*

A Susana não sabe o Pedro bebeu o quê. 0 1 2 3 não sei

101. CONTEXTO: *O Gilberto não partiu a janela.*

Foi a Margarida partiu a janela. 0 1 2 3 não sei

102. CONTEXTO: *A Joana partiu o prato?*

A Joana partiu o prato em algum lugar, mas o Afonso não sabe onde. 0 1 2 3 não sei

103. CONTEXTO: *O Enzo não ouviu esta música.*

O Gustavo já ouviu-a. 0 1 2 3 não sei

104. CONTEXTO: *Os residentes não construíram o edifício.*

Quem construiu o edifício foram os trabalhadores. 0 1 2 3 não sei

105. CONTEXTO: *O Carlos visitou alguém?*

O Carlos visitou alguém, mas a Margarida não sabe é quem. 0 1 2 3 não sei

106. CONTEXTO: *A Inês não encomendou a tarte.*

Foram os colegas que encomendou a tarte. 0 1 2 3 não sei

107. CONTEXTO: *O Miguel procurou alguém.*

A Isabel sabe quem é que o Miguel procurou. 0 1 2 3 não sei

108. CONTEXTO: *O Duarte não alugou uma casa.*

O que o Duarte alugou foi um quarto. 0 1 2 3 não sei

109. CONTEXTO: *Hoje é o Dia de Natal.*

Todos o festejam em casa. 0 1 2 3 não sei

110. CONTEXTO: *A Sofia escreveu alguma coisa.*

O que é que a Sofia escreveu? 0 1 2 3 não sei

111. CONTEXTO: *O André não comprou um computador.*

Foi um tablet que o André comprou. 0 1 2 3 não sei

112. CONTEXTO: *A Beatriz escreveu alguma coisa?*

A Beatriz escreveu alguma coisa, mas o Paulo não sabe é o quê. 0 1 2 3 não sei

113. CONTEXTO: *O Xavier não cantou uma música de pop.*

O Xavier cantou foi um fado. 0 1 2 3 não sei

114. CONTEXTO: *O Diogo convidou alguém.*

O Paulo não sabe o Diogo convidou quem. 0 1 2 3 não sei

Appendix IV - Agreement

Código: _____

CONSENTIMENTO INFORMADO

“Aquisição do português europeu como língua não materna por falantes de mandarim e aquisição do mandarim como língua não materna por falantes de português”

Objectivo do estudo: Este estudo pretende identificar possíveis problemas na aquisição do português europeu como língua não materna por falantes de mandarim e possíveis problemas na aquisição do mandarim por falantes de português.

Descrição e métodos: Para alcançar os objetivos definidos, será necessário comparar o desempenho em português de alunos chineses que têm mandarim como língua materna com o desempenho de falantes monolíngues do português; será ainda necessário comparar o desempenho em mandarim de falantes que têm o português como língua materna com o desempenho de falantes monolíngues do mandarim. O estudo foca-se apenas na aquisição em idade adulta. A participação neste estudo implica que o participante responda a diferentes questionários, que envolvem o julgamento da gramaticalidade de frases, a avaliação do seu valor de verdade e, ainda, a produção escrita (produção provocada). A recolha de dados será feita em suporte escrito. A participação de cada participante no estudo demorará em conjunto cerca de 60 minutos. Os resultados expectáveis poderão contribuir para uma compreensão mais completa da aquisição de uma língua não materna, podendo ter, especificamente, consequências para a reflexão sobre o ensino de português a falantes de mandarim e para o ensino de mandarim a falantes de português.

Riscos previsíveis: Não aplicável.

Possíveis benefícios para os participantes: Não se garante que este estudo proporcione benefícios diretos para o participante. No entanto, a informação obtida vai contribuir para aumentar o conhecimento científico sobre a aquisição da sintaxe da língua não materna e poderá vir a beneficiar terceiros. O participante não terá quaisquer benefícios financeiros decorrentes deste estudo.

Participação voluntária: O participante terá toda a liberdade para recusar a participação no estudo ou retirar o seu consentimento, suspendendo a participação em qualquer momento. A participação é voluntária e a recusa em participar não acarreta qualquer penalização ou perda de benefícios.

Confidencialidade: Os dados obtidos serão utilizados exclusivamente para investigação. A informação recolhida de cada participante será combinada e analisada em conjunto com informação

de outros participantes. Todos os dados de identificação de cada participante serão mantidos em confidencialidade. Para o estudo, a cada participante será atribuído um número codificado. A identidade dos participantes nunca será revelada em qualquer relatório ou publicação decorrente do estudo.

A quem devo colocar questões relacionadas com este estudo: Chang Gao (mestranda, FLUL), 18811760223@163.com; Jinwen Yu (mestrando, FLUL), isyujw@163.com; Ka Man Kou (mestranda, FLUL), joanne1995kou@gmail.com; Xinyi Li (mestranda, FLUL), lixinyi@campus.ul.pt; Ana Lúcia Santos (Professora Associada; Faculdade de Letras, Universidade de Lisboa), als@letras.ulisboa.pt (Investigadora Responsável).

DECLARAÇÃO DE CONSENTIMENTO INFORMADO

“Aquisição do português europeu como língua não materna por falantes de mandarim e aquisição do mandarim como língua não materna por falantes de português”

Declaro ter tomado conhecimento e aceitar participar, voluntariamente, num estudo que tem por objetivo estudar a aquisição do português como língua não materna por falantes de mandarim e a aquisição do mandarim como língua não materna por falantes do português. Para esse efeito, aceito que seja feita a recolha de dados em suporte escrito conforme acima mencionado.

Autorizo que os dados obtidos, e já anonimizados, sejam armazenados no servidor da instituição de ensino superior a que os investigadores estão ligados, de acordo com legislação em vigor, podendo apenas ser utilizados para o estudo acima. Poderei, no entanto, revogar a autorização para utilização dos meus dados em qualquer momento.

Declaro ainda que os resultados dos estudos realizados com os meus dados poderão ser usados em comunicações e publicações científicas de forma anónima.

O estudo proposto foi-me claramente explicado e tive oportunidade de colocar questões. Recebi uma cópia desta declaração devidamente assinada e datada.

Data, Nome e assinatura do participante/seu representante legal

Discuti este estudo com o participante, utilizando uma linguagem compreensível e apropriada. Informei adequadamente o participante sobre a natureza deste estudo e sobre os seus possíveis benefícios e riscos. Considero que o participante compreendeu a minha explicação.

Data, Nome e assinatura do Professor/Investigador responsável
