

**THE ACQUISITION OF RELATIVE CLAUSE STRUCTURES
IN L2 FRENCH**

by

Kayla Raye Dickens

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Arts in Foreign Languages and Pedagogy

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Approved: _____
Jorge H. Cubillos, Ph.D.
Professor in charge of thesis on behalf of the Advisory Committee

Approved: _____
Jorge H. Cubillos, Ph.D.
Acting Chair of the Department of Languages, Literatures and Cultures

Approved: _____
George Watson, Ph.D.
Dean of the College of Arts and Sciences

Approved: _____
Ann L. Ardis, Ph.D.
Senior Vice Provost for Graduate and Professional Education

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ABSTRACT

Anecdotal evidence as well as research with second-language French learners (for example, Hollerbach 1994 and Walz 1981a) show that learners struggle to properly acquire the complex system of relativization in French. This study analyzes the acquisition of relative clauses in the context of Universal Grammar. Universal Grammar proposes that language acquisition relies on an innate, abstract linguistic system that helps language learners—in both first-language (L1) and second-language (L2) contexts—develop intuitions about grammaticality and create novel utterances. In the L2 context, the question of the influence of the pre-existing L1 grammar on the development of the mental grammar in the L2, a phenomenon known as L1 transfer, remains open.

The present study describes the order of acquisition of several relative clause types for instructed learners across several levels of L2 French at a medium-sized Mid-Atlantic research university based on the results of a grammaticality judgment task and a short production task. The possible role of L1 transfer is considered at each stage, along with other variables such as experience abroad. In the final chapter, the pedagogical implications of these results and instructional strategies to improve learners' acquisition of relative structures at each level of instruction are discussed.

Chapter 1

INTRODUCTION

Generative grammar proposes that human language relies on an innate and abstract linguistic system. The theory of generative grammar is motivated by the logical problem of acquisition, which applies to second-language (L2) contexts as much as it applies to first-language (L1) contexts: that is, language learners in both cases are able to recognize ungrammaticality without explicit instruction and they are able to produce phrases, both grammatical and ungrammatical, that they have never heard before. In other words, they produce novel utterances and have intuitions about the grammaticality of novel utterances they perceive. Generative grammarians explain this phenomenon by supposing that children are born with part of the mental grammar, called Universal Grammar, hence the linguistic system is innate. In the case of the second language (L2), the mental grammar is widely called the “interlanguage,” a term coined by Selinker in 1972 (cited in White, 2015, p. 36).

According to White (2015), second language researchers working within the paradigm of generative grammar agree on the existence of an interlanguage grammar, though the influence of the first language (L1) grammar and Universal Grammar (UG) on the L2 is still up for debate (p. 36). It is not necessarily the case that UG does all the work of second language acquisition; the Full Transfer Full Access Hypothesis proposes that the initial state of the L2 grammar is identical to the L1 grammar, and gradual adjustments are made due to learners’ ability to fully access UG constraints (White, 2015, p. 43). This is only one hypothesis, however; Krashen’s Natural Order

Hypothesis, proposes that there exist natural orders of acquisition for particular grammatical forms based on the constraints of Universal Grammar and independent of instruction or complexity (cited in VanPatten & Williams, 2015, p. 26). The questions of the initial state of the L2 grammar as well as its transformation to a more native-like grammar, thus, remain unanswered.

In the acquisition of French as an L2, one complex structure that can be analyzed from the framework of generative grammar is the relative clause. Relative clauses are a type of embedded clause joined to a main clause to describe a noun; the noun being described is also present in the underlying form of the embedded clause, but not in the surface form. For example, the sentence in (1) is formed by embedding (2) in (3):

1. *The girl who you saw borrowed my bike.*
2. *You saw the girl.*
3. *The girl borrowed my bike.*

Hollerbach (1994) states that “the relative clause is the most complex and the most frequent of the three types of noun-modifying clauses” and further points out their complexity when he writes that the homonymy of relative and interrogative words “hides deep syntactic and semantic differences and thus tends to cause considerable difficulties for the learner of French” (p. 141, 294). Walz (1981a) claims that the relative clause is the most difficult aspect of French syntax to teach and cites several authors who speak of their students’ difficulty with relative clauses (p. 643). Despite its apparent complexity and difficulty, there have been few large-scale studies on the acquisition of the relative clause in second language French, and those that exist present results that contradict other scholars’ work, all while claiming that Universal

Grammar is at work (see Chapter 2: Literature Review). This study proposes to investigate the order of acquisition of relative clause structures in French as L2 for speakers of English as L1, using generative grammar as a framework. A contrastive analysis of the structures in French and English is first presented, followed by other research on the acquisition of relative pronouns in L2 French, before describing the present study and presenting its results.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

Most basically, a relative clause is a type of subordinate or embedded clause—a sentence within a larger sentence, called the root or matrix clause—that modifies a noun (Carnie, 2013, p. 211-212). Lee (1974) suggests that this embedding is a two-step process: first, a relative pronoun (RP) is substituted for a noun phrase (NP), then the movement of that relative pronoun and any preceding preposition to the beginning of the embedded clause (p. 121). For example, to form the sentence in (1), above, (3) would be modified in the following way:

- Replace the NP by an RP.
You saw the girl. → You saw who.
- Move the RP to the beginning of the clause.
You saw who. → who you saw

This new structure is then embedded in the main clause following the noun it describes, *the girl*, to yield the sentence in (1). Lee's description of movement begins to reveal the processes involved in the construction of a grammatical sentence using relative clauses; however, the underlying structures proposed by syntacticians reveal syntactic intricacies far more complex than the seemingly simple steps Lee proposes. A contrastive analysis of the system for selecting relative pronouns in both French and English is necessary before attempting to understand English speakers' difficulties in acquiring that system in French.

Carnie (2013) defines two types of relative clauses which can modify nouns in different ways. A restrictive relative clause “restricts the meaning of a noun as a modifier,” while a non-restrictive relative clause “adds additional parenthetical commentary about a noun” (p. 384). In other words, the information provided in a restrictive relative clause actually narrows the set of referents of a particular noun. For example, in the sentence in (4), the set of referents is narrowed from the set of all books to only the set of books that have blue covers. By contrast, the information in a non-restrictive relative clause provides more information about the set of referents of a noun without changing the members of the set. For example, the sentence in (5) adds the information that the speaker thinks print books are heavy and outdated before the speaker actually finishes their root clause about print books.

4. *I think books that are blue are ugly.*

5. *I think books, which are heavy and outdated, are ugly.*

Because the two types of relative clauses modify nouns in slightly different ways, their structures are also different. This study focuses specifically on restrictive relative clauses; consequently, it is their structure which will be explained at length here.

Within the category of restrictive relative clauses, there are several further subtypes depending on the extraction site of the relative pronoun from the embedded sentence. This study focuses on what textbook grammars traditionally call subject, direct object, and indirect or prepositional object relatives. The type of relative depends on the position of the lexical item that is replaced by the relative pronoun in the embedded clause. This position will be called the “extraction site” as in Hawkins (1989) (p. 158). A subject relative clause, therefore, is one where the subject of the embedded clause is relativized, or replaced by a relative pronoun; in other words, the

extraction site is the subject position of the embedded clause. The sentences in (6) include an English sentence with a gap indicating the extraction site, or original position of the relativized item; the matrix and subordinate clauses as independent clauses; and the French equivalent of each of those lines. (7) and (8) demonstrate parallel examples for direct object and prepositional object relatives, respectively, in which cases the extraction sites are the direct object and prepositional object positions of the embedded clauses.

6. The box that (____) is in the car is heavy.
 = The box is heavy. + The box is in the car.
 La boîte qui (____) est dans la voiture est lourde.
 = La boîte est lourde. + La boîte est dans la voiture.

7. The box that you put (____) in the car is heavy.
 = The box is heavy. + You put the box in the car.
 La boîte que tu as mis (____) dans la voiture est lourde.
 = La boîte est lourde. + Tu as mis la boîte dans la voiture.

8. The box in which you put the books (____) is heavy.
 = The box is heavy. + You put the books in the box.
 La boîte dans laquelle tu as mis les livres (____) est lourde.
 = La boîte est lourde. + Tu as mis les livres dans la boîte.

The sections that follow will briefly define relative clauses within the framework of X-Bar Theory, the syntactic framework that services as a foundation for the present analysis, before describing more specifically the processes that derive grammatical relative clauses in both French and English.

2.2 X-Bar and Relative Clauses

The present analysis will rely on a Chomskian approach to syntax using X-bar theory. Rowlett (2007) provides a concise overview of the theory, explaining that lexical items, or words, include formal or morphosyntactic features, which express

certain grammatical requirements that must be satisfied as they are integrated into a structure built by the mental grammar using one of two operations: Merge and Move (p. 10). It is the Move operation which concerns the present analysis of relative clauses; as we will see later, many authors (Carnie, 2013; Jones, 1996; Rowlett, 2007) describe the formation of relative pronouns as a type of *wh*-movement. Still speaking in general terms, however, Carnie (2013) provides the most concise explanation of the Move operation: basically, two items in the underlying or deep structure of a sentence have the same features, and the latter moves to an available position to be closer to the former so that both can “check” their features (p. 393-396). This touches on the essential distinction between underlying structure and surface structure in syntax: underlying structure is what is initially generated when lexical items are selected and ordered by the X-bar rules, but not necessarily the structure that is pronounced; it is the surface structure, derived via the application of various transformational rules to the underlying structure, which is pronounced and judged as grammatical or ungrammatical (Carnie, 2013, p. 291).

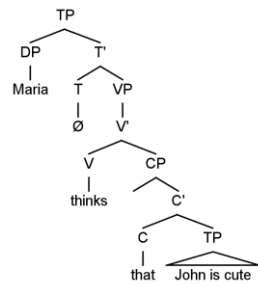
Focusing again on the structure at hand, within X-bar theory, a more technical definition of a relative clause is “a CP that modifies a noun” (Carnie, 2013, p. 384); thus, we must first further understand the function of the CP, or Complementizer Phrase, in order to understand the structure of relative clauses. A CP is simply a phrase headed by a complementizer, which “embed[s] one clause inside of another” (Carnie, 2013, p. 53). The English sentences in (9) and (10), for example, contain complementizers which are underlined; the structure of each sentence is represented in

the trees in (11) and (12), respectively¹. Note that the embedded clauses in these sentences modify the verbs *think* and *wonder*, respectively, making them distinct from the CPs that modify nouns in relative clauses.

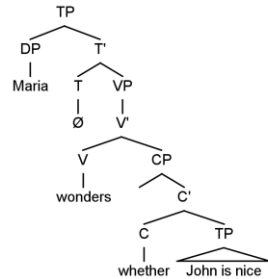
9. *Maria thinks that John is cute.*

10. *Maria wonders whether John is nice.*

11.



12.



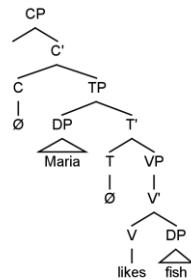
Based on cross-linguistic evidence, X-bar theory assumes that every clause is dominated by a CP, even if it does not begin with an overt complementizer such as

¹ Note that for the sake of simplicity and clarity, details irrelevant to the demonstration of the structures at hand have been obscured by the use of triangles in these tree structures and those that follow. Additionally, the standard TP structure of X-bar theory has been abbreviated to avoid unnecessarily complicated structures.

that or *whether* (Carnie, 2013, p. 216-219). Thus, for example, the sentences in (13) and (15) are represented by the trees in (14) and (16), respectively, which include a CP node despite the lack of overt complementizer in the simple sentences. This CP structure will be critical to our understanding of relative clause formation.

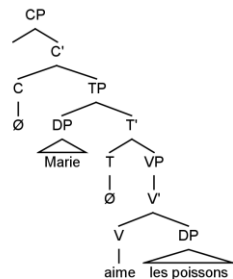
13. *Maria likes fish.*

14.



15. *Marie aime les poissons.*

16.



In general, several authors describe relative clause formation as a type of *wh*-movement, similar to *wh*-question formation. This analysis may seem surprising but is compelling given that many of the relative pronouns both in English (*who*, *which*, *where*) and in French (*qui*, *lequel*, *laquelle*, *lesquels*, *lesquelles*, *quoi*, *où*) also function

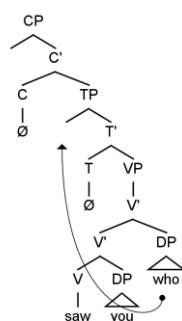
as interrogatives in *wh*-questions, as in (17) through (20) (Adjémian & Liceras, 1984, p. 102; Carnie, 2013, p. 369; Jones, 1996, p. 463; Rowlett, 2007, p. 99).

17. *Who* saw you?
18. *Which one* do you want?
19. *Qui t'a vu?*
20. *Lequel (des livres) veux-tu?*

These sentences are derived by moving the *wh*-element, which replaces a DP² in the underlying structure, from its position in the embedded clause to the Specifier of the TP in order to serve as the subject and check a [+WH] feature on the CP head. The underlying structure and tree for (17) is provided as an example in (21) and (22).

21. *Saw you who.*

22.



² Within X-Bar theory, determiners (a class of lexical items which includes, for example, what are traditionally called articles) head their own phrases, DPs, which dominate NPs, rather than including the determiner as a projection of the NP. Carnie (2013) explains that this construction “is motivated by the elegance of the theory,” as it allows for each phrase to have only a single head, which is not possible if a NP contains both a N and a D head (p. 208-209). For our purposes, a DP can be thought of in the same way as an NP.

Restrictive relative clauses are formed by the same type of movement; the relative pronoun, as a *wh*-word, carries the [+WH] feature, which motivates its movement to the Specifier of the CP of the embedded clause (Carnie, 2013; Jones, 1996; Rowlett, 2007). The details of each type of relative clause are discussed in the following sections, beginning with English and then continuing to French.

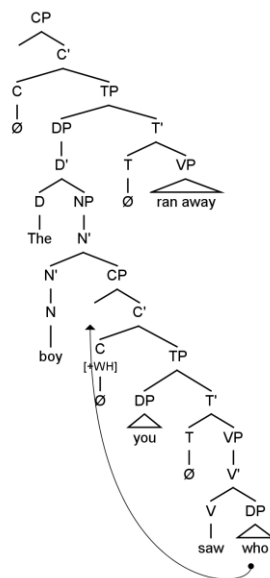
2.2.1 English

2.2.1.1 Subject and Direct Object Relative Clauses

Dealing first with English, a sample sentence is provided in (23) with its corresponding tree structure in (24).

23. *The boy who you saw ran away.*

24.

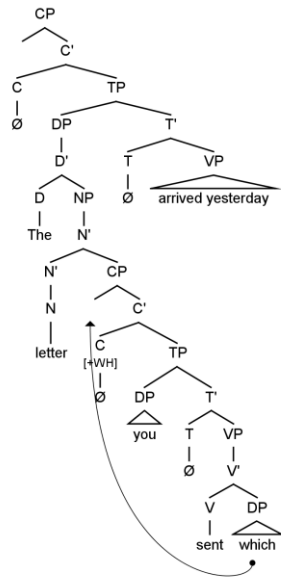


The matrix clause of the sentence in (23) is “The boy ran away” and the full sentence is formed by embedding the clause “You saw *who*,” where *who* stands in for *the boy*.³ In this sentence, the *wh*-element “who” is generated in the object position of the embedded CP, making this an object relative clause, and then moves to the Specifier position to check the [+WH] feature on the head C. The same process is applied to sentences using the relative pronoun “which,” exemplified in sentence (25) and its corresponding tree in (26), as well as sentences with subject relative clauses using either pronoun, exemplified in sentences (27) and (29) with their corresponding tree structures in (28) and (30), respectively.

25. *The letter which you sent arrived yesterday.*

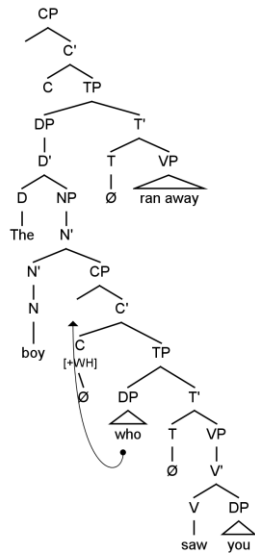
³ While the *wh*-element should traditionally be “whom” as it originates in object position and “who” is traditionally generated in subject position, Carnie (2013) notes that “from a descriptive point of view *who* is perfectly acceptable in object position for most speakers today” (p. 358) so this is a distinction with which this analysis will not be concerned.

26.



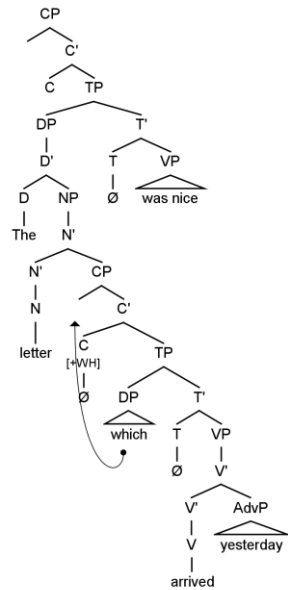
27. *The boy who saw you ran away.*

28.



29. *The letter which arrived yesterday was nice.*

30.



The preceding sentences demonstrate alternating use of two relative pronouns, *who* and *which*. The uses of *who* and *which* in English are differentiated by the semantic features of their antecedents (the lexical items that they describe, identical to the lexical items that they represent in the embedded clause). However, it is unclear in the literature whether it is the [HUMAN] or [ANIMATE] feature that differentiates their usage. Mitchell (2001), for example, explains that *who* can only be used with [+HUMAN] antecedents, while *which* is only used with [-HUMAN] antecedents; Hawkins (1989), by contrast, explains that *who* can only be used with [+ANIMATE] antecedents and *which* only with [-ANIMATE] antecedents (p. 161). This could lead to mixed judgments regarding the use of the relative pronouns with antecedents that are [+ANIMATE, -HUMAN], such as animals.

Many subject and direct object relative clauses in English, however, have no explicit marker and still others are linked to the matrix clause not with *who* or *which*, but rather with *that*, as in (31) and (32), respectively.

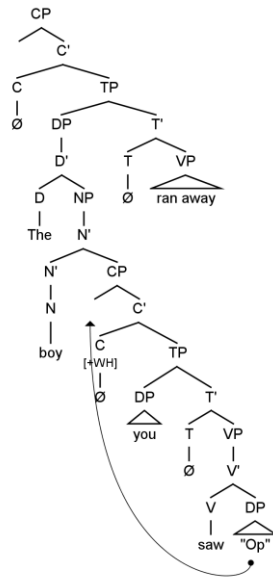
31. *The boy (\emptyset) you saw ran away.*

32. *The boy that you saw ran away.*

Carnie (2013) provides the simplest and most recent explanation for this variation that is consistent with the rest of our theory: he writes that evidence from theta criterion—of which a full explanation is beyond the scope of this thesis as they do not otherwise affect relative clause structures—suggests that there must be some element present in the specifier position of CP. Carnie therefore suggests that an unpronounced “Operator” element, abbreviate “Op” and bearing the [+WH] feature, is generated in place of the relative pronoun in the underlying structure and moved to the Specifier of CP, as any other relative pronoun or *wh*-word, to satisfy the feature-checking requirement of the [+WH] head C (Carnie, 2013, p. 371-372).⁴ The analysis of a sentence with no overt lexical item linking the matrix and subordinate clauses, such as (31), is fairly straightforward within this framework; the derivation is represented in the tree in (33).

⁴ It should be noted that this framework does leave some questions unanswered, at least at the level of complexity where Carnie (2013) describes it. Namely, *that* seems to be randomly generated, and Carnie does not explain why it might be generated in the underlying structures of some sentences with relative clauses but not others. There are other theories which account for the generation of *that*, claiming that it is generated in the underlying forms of all relative clauses, and then gets deleted if another relative pronoun, generated in the embedded clause, moves to the Specifier of CP (Adjémian & Licerias, 1984, p. 103; Hawkins, 1989, p. 179; Jones, 1996, p. 501). These theories, however, leave a similar question unanswered, that of why the unpronounced “Op” would be generated in some sentences rather than a relative pronoun; in this case, the generation of “Op” rather than a relative pronoun seems randomized. Because both theories leave unanswered questions, this analysis will adhere to Carnie’s (2013) analysis, also adopted by Rowlett (2007) in his description of French relative clauses, as both are more recent than the analyses which propose deletion rules (Adjémian & Licerias, 1984; Hawkins, 1989; Jones, 1996).

33.



The only case in which the absence of an overt marker of the relative clause is ungrammatical in English is when the extraction site is the subject (Adjémian & Liceras, 1984, p. 103; Hawkins, 1989, p. 162). Thus, sentences such as those in (34), which leaves a blank to indicate the subject extraction site, are ungrammatical; the sentence in (35) provides the grammatical alternative.

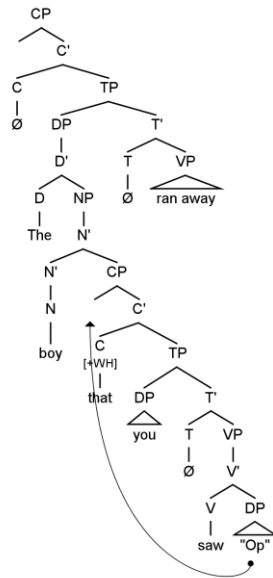
34. *I talked to the boy (____) saw you.*

35. *I talked to the boy who saw you.*

The question remains how to analyze sentences such as (32) which use *that* as a linking word between the matrix and relative clauses rather than the *wh*-words *who* or *which*. In these cases, Carnie (2013) proposes that the word *that* is described as a complementizer in the head C position, rather than a relative pronoun in the Specifier of CP position (p. 371-372). In other words, *that* is not generated as the subject, object or prepositional object of the relative clause at all, but directly in the head C position; this leaves room for the same “Op” element discussed above to be generated

in place of a relative pronoun in the relative clause and moved to the Specifier of CP position. The derivation is represented in the tree in (36), below.

36.



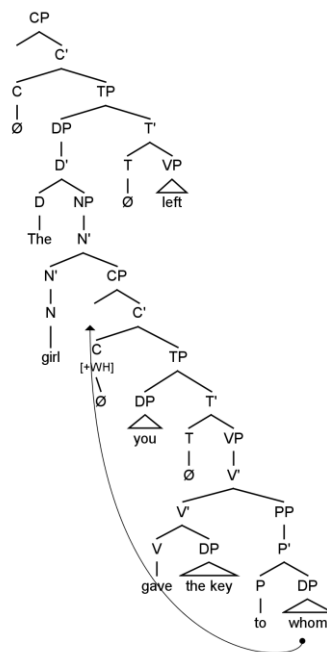
Though this analysis may seem unnecessarily complicated, it is supported by data from non-standard varieties of English and data from German (Carnie, 2013, p.372-373). While it initially seems simpler to consider *that* a relative pronoun, as with *who* and *which*, the proposed analysis allows for a consistent analysis of relative pronouns as *wh*-words; because *that* does not function as a *wh*-word, including it with an analysis of relative pronouns as such would complicate the analysis of the latter (Carnie, 2013, p. 371). Finally, Carnie's proposed analysis, adopted by Rowlett (2007) in his description of relative structures in French, allows for a cohesive cross-linguistic analysis of complementizers; an analysis of the French complementizer *que*, presented below, also lends plausibility to the proposed structure.

2.2.1.2 Prepositional Object Relative Clauses

Prepositional object relative clauses in English are generated in generally the same way as subject and direct object relative clauses; that is, the DP that consists of the relative clause is moved to the Specifier of CP. This results in a sentence such as (37) and its tree structure in (38).

37. *The girl whom you gave the key to left.*

38.

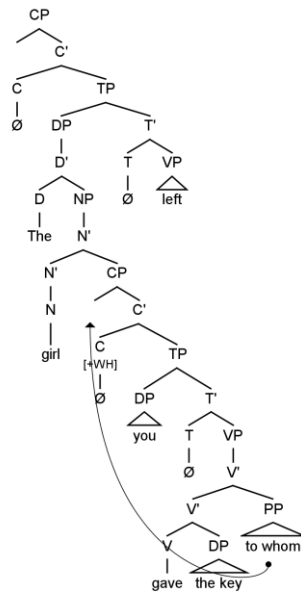


The sentence in (37) is formed by embedding the phrase “You gave the key to *whom*,” where *whom* replaces *the girl*, into the phrase “The girl left.” Carnie (2013) points out that English, unlike other languages, allows preposition stranding with *wh*-movement—in other words, the DP can move to the Specifier position alone, leaving the preposition “stranded” at the end of the clause without its NP complement following it—which yields the above result (p. 465). However, it is also possible to move the entire Prepositional Phrase (PP) that dominates the DP relative pronoun to

the Specifier of CP position (Adjémian & Liceras, 1984, p. 103). This type of movement is called “pied-piping.” The sentence in (39) and its corresponding tree in (40) would be the result of preposition pied piping.

39. *The girl to whom you gave the key left.*

40.



Note that in English, while prescriptive grammarians insist that a preposition should not end a sentence and only (39) is correct, most speakers will accept both structures, (37) and (39), as grammatical (Adjémian & Liceras, 1984, p. 103).

There is only one relevant complication to this analysis, and that is that while *that* can be used in lieu of *who* or *which* in most cases, this is ungrammatical when a preposition is moved with the prepositional object relative pronoun by pied piping (Jones, 1996, p. 500-501). Using *that* in place of *who* or *which*, however, is still grammatical for prepositional object relatives if the preposition is stranded. The

sentences in (41) and (42), copies of (37) and (39), respectively, where *whom* is replaced by *that*, demonstrate the difference.

- 41. *The girl that you gave the key to left.*
- 42. **The girl to that you gave the key left.*

2.2.2 French

2.2.2.1 Prepositional Object Relative Clauses

In French, prepositional object relatives follow a similar pattern as in English; that is, a relative pronoun is generated in place of the prepositional object in the relative clause, and this pronoun is moved to the Specifier position of CP. The pronoun can be either *qui* or an allomorph of *lequel*. Mitchell (2001) explains that *qui* is used when the antecedent has the feature [+HUMAN] or [+ANIMATE], while *lequel* and its allomorphs can be used regardless of the value of the [HUMAN] or [ANIMATE] features of the antecedent (p. 56). This means that *lequel* and its allomorphs can appear in any context in which *qui* appears, as in (43) and (44), but *qui* can only replace *lequel* when the antecedent is [+HUMAN], making (45) ungrammatical as opposed to its grammatical counterpart in (46).

- 43. *L'homme_[+HUMAN/+ANIMATE] sur qui tu mets le chapeau est grand.*
- 44. *L'homme_[+HUMAN/+ANIMATE] sur lequel tu mets le chapeau est grand.*
- 45. **Le bureau_[-HUMAN, -ANIMATE] sur qui tu mets le chapeau est grand.*
- 46. *Le bureau_[-HUMAN, -ANIMATE] sur lequel tu mets le chapeau est grand.*

There is one additional consideration in selecting the correct relative pronoun, as the *lequel* allomorphs are “inflected for gender and number” and “obligatory contractions

are formed with certain prepositions” (Mitchell, 2001, p. 55-56). The following are the allomorphs which are selected based on the gender and number of the antecedent:

- *lequel*: masculine, singular
- *laquelle*: feminine, singular
- *lesquels*: masculine, plural
- *lesquelles*: feminine, plural

Additionally, since the determiners *le* and *les* typically contract with the prepositions *à* and *de* in French, so they do in prepositional object relative clauses where the preposition is *à* or *de*. Wherever the prepositions *à* or *de* precede the relative pronoun, the following contractions are formed:

- *auquel* (*à* + *lequel*)
- *duquel* (*de* + *lequel*)
- *auxquels* (*à* + *lesquels*)
- *desquels* (*des* + *lesquels*)
- *auxquelles* (*à* + *lesquelles*)
- *desquelles* (*des* + *lesquelles*)

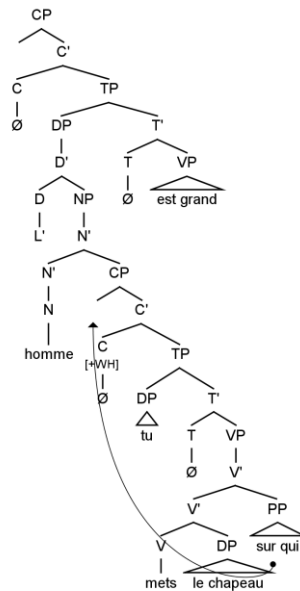
In sum, concerning prepositional object relatives, the distinction between *qui* and the *lequel* allomorphs relying on the value of the semantic feature [HUMAN] of the antecedent is similar to the distinction between *who* and *which* in English. The system in French, however, includes an additional layer of complexity as the choice of the *lequel* allomorphs depends on gender and number inflections and speakers must be aware of the preposition used in order to form obligatory contractions with *à*.

One additional distinction from the English system is that French does not allow preposition-stranding. Prepositional object relative clauses must, therefore, be formed by pied-piping the prepositions with their relative pronouns. This means that (47), which leaves the preposition stranded, is ungrammatical while (48), which pied pipes the preposition with the relative pronoun, is grammatical. The tree for the grammatical sentence (48) is provided in (49).

47. **L'homme qui tu mets le chapeau sur est grand.*

48. *L'homme sur qui tu mets le chapeau est grand.*

49.



2.2.2.2 Subject and Direct Object Relative Clauses

Just as English *that* in subject and object relatives is analyzed as a complementizer rather than a relative pronoun, so are the lexical items *que* and *qui* which link object and subject relatives to their matrix clauses in French, respectively.

Dealing first with *que*, Rowlett (2007) points out that it does not appear in other object proform environments; it cannot appear in prepositional object relatives, for example, as in (50) (p. 192).

50. **La table sur que tu mets le chapeau est grande.*

In addition, Jones (1996) points out that including *que* in the set of relative pronouns significantly complicates their analysis because it can only be used when the direct object of the embedded clause is relativized and it is insensitive to the [+/-HUMAN] feature of the antecedent that distinguishes the relatives *qui* and *lequel*. He also suggests that it is only logical to consider *que* a complementizer even when introducing relative clauses, as the complementizer *que* introduces nearly all other subordinate clauses in French, as in (51) and (52), for example (Jones, 1996, p. 504).

51. *Je pense qu'il est content.*

52. *Je sais que tu aimes le chocolat.*

The case for *que* seems clear, but why would we consider the *qui* of subject relatives a complementizer rather than a relative pronoun, when we just presented a relative pronoun *qui* above? According to several authors, the *qui* that links the matrix and embedded clauses in the case of subject relativization must be considered a separate lexical item from the *qui* which functions as a relative pronoun for prepositional object relatives. Though the two are homophonous and seem to serve similar functions, it is problematic to consider *qui* a relative pronoun when used for subject relatives because it is not subject to the same restriction to [+HUMAN] antecedents as the *wh*-word *qui* in prepositional object relatives and interrogatives (Jones, 1996, p. 506; Rowlett, 2007, p. 191-192). Generally, *qui* in this case is

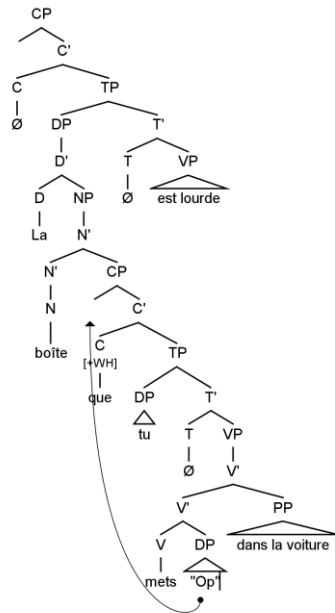
analyzed as an allomorph of complementizer *que*, selected when the extraction site of a relative clause is the subject (Jones, 1996, p. 507; Rowlett, 2007, p. 226).

Understanding *que* as a complementizer and *qui* as an allomorph of the complementizer for subject relativization, we can apply a similar analysis to relatives introduced by *que* and *qui* in French as we did to those introduced by *that* in English. That is, the complementizer *que* is generated as the head C of the underlying structure and an unpronounced “Op” element is generated in place of the relative pronoun. The Operator is moved to the Specifier position of CP in deriving the correct surface structure. In French, however, we must add a supplementary rule to the derivation; when the extraction site is the subject position of the embedded clause, the allomorph *qui* must be used rather than the more common form of the complementizer *que*. The sentences in (53) and (54), reprinted from (6) and (7), contain an object and a subject relative, respectively, and the trees in (55) and (56) show their respective corresponding tree structures.

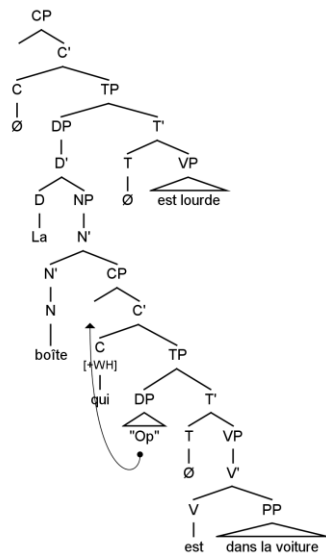
53. *La boîte que tu mets dans la voiture est lourde.*

54. *La boîte qui est dans la voiture est lourde.*

55.



56.



2.2.3 Summary: Contrastive Analysis

Table 1, below, provides a summary of the major points that contrast relative pronoun structures in English and French. The first column provides a characteristic; the second and third columns describe the application of the characteristic in English and French, respectively. For the purpose of the table, the term “relative pronouns” refers only to *who* and *which* in English and to *qui* and *lequel* in French, and the term “complementizers” refers to *that* in English and to *que* and its allomorph *qui* in French, as described above.

Table 1: Summary of Characteristics of Relative Clauses in English and French		
Characteristic	English	French
1. Uses semantic feature [HUMAN] OR [ANIMATE] to distinguish relative pronoun choices	Yes <i>The pronoun who is for [+HUMAN] or [+ANIMATE] antecedents and the pronoun which is for [-HUMAN] or [-ANIMATE] antecedents.</i>	Yes <i>The pronoun qui is for [+HUMAN] or [+ANIMATE] antecedents and the pronoun lequel is insensitive to the features of the antecedent.</i>
2. Allows relative pronouns to mark subject, direct object and prepositional object relative clauses	Yes <i>The pronouns who and which can be used for all three types of relative clauses.</i>	No <i>French only allows relative pronouns qui and lequel to mark prepositional object relatives.</i>
3. Allows complementizer to link subject, direct object and prepositional object	Yes <i>The complementizer that is allowed to mark all relative clauses except in the case of pied-piping for prepositional object relatives.</i>	No <i>French only allows the complementizers que and qui to mark direct object and subject relatives, respectively.</i>

4. Complementizers display allomorphy based on the extraction site of the relative clause	No <i>The complementizer that in English has no allomorphs.</i>	Yes <i>The common complementizer que in French is realized as its allomorph qui to mark subject relative clauses.</i>
5. Allows relative clauses with no overt marker	Yes <i>English allows sentences with neither a complementizer nor a relative pronoun.</i>	No <i>French requires either a relative pronoun (for prepositional object relatives) or a complementizer (for subject and object relatives).</i>
6. Allows pied-piping	Yes <i>English allows a preposition to be moved along with the relative pronoun it dominates.</i>	Yes <i>French allows a preposition to be moved along with the relative pronoun it dominates.</i>
7. Allows preposition-stranding	Yes <i>English allows a preposition to be “stranded” at the end of a sentence when the relative pronoun it dominates is moved.</i>	No <i>French does not allow a preposition to be “stranded” at the end of a sentence when the relative pronoun it dominates is moved.</i>
8. Relative pronouns display allomorphy based on the gender and number of the antecedent	No <i>Relative pronouns who and which in English have no allomorphs.</i>	Yes <i>The relative pronoun lequel has several realizations based on the gender and number of the antecedent.</i>
9. Relative pronouns form contractions with prepositions	No <i>Relative pronouns who and which in English do not form contractions.</i>	Yes <i>The relative pronoun lequel and some of its allomorphs form a contraction with preceding preposition à.</i>

Based on the characteristics and contrasts highlighted in Table 1, the following are possible errors that we may expect from Anglophone learners of French as L2:

- Feature-Related Errors (Characteristics 1 and 2): Even though both languages use the [HUMAN] or [ANIMATE] feature to distinguish between two relative pronoun choices, because relative pronouns and complementizers have a different distribution, Anglophone learners of French may make errors by applying this distinction in the wrong environments. In French, this distinction is limited to prepositional object relatives; English, by contrast, allows relative pronouns to be used in subject, direct object and prepositional object relatives, meaning the distinction can be applied in all cases. Learners, thus, might be expected to overgeneralize this distinction to subject and direct object relatives in French, mapping the feature values onto the complementizers *que* and *qui*. For example, they may assume that *qui* is always used with [+ANIMATE] antecedents and *que* is always used with [-ANIMATE] antecedents. They may, thus, accept as grammatical sentences that are truly ungrammatical, such as *Le garçon qui j'ai vu était petit* (which incorrectly uses *qui* with an animate antecedent in an object relative where *que* should be used) or *L'ordinateur qu'est dans la boîte est lourde* (which incorrectly uses *qu'*, the contracted form of *que*, with an inanimate antecedent in a subject relative where *qui* should be used). In addition, learners may also overgeneralize the double dissociation between the lexical items and the relative pronouns; in other words, since English has one pronoun for [+HUMAN/+ANIMATE] and another for [-HUMAN/-ANIMATE], learners might hypothesize that if the relative pronoun *qui* is restricted to [+HUMAN/+ANIMATE], then the relative pronoun *lequel* must be restricted to [-HUMAN/-ANIMATE]. They might, then, reject as ungrammatical sentences such as *L'étudiant auquel vous parliez était timide*, thinking that *lequel* should not be used with the [+HUMAN, +ANIMATE] antecedent *l'étudiant*, though this is not the case.
- Overgeneralization Errors (Characteristics 3 and 4): In French, the complementizers are limited to subject and direct object relative clauses and the choice is determined by the extraction site; English, on the other hand, has only one complementizer, *that*, which can be used in almost all cases of relativization. Due to the contrast, if L1 transfer is at play, learners may be expected to overgeneralize one of the two complementizer allomorphs to all types of relatives, regardless of extraction site. For example, they might always accept as grammatical sentences which use *que* as a relativizer, whether grammatical or not, and always reject those that use *qui* as a relativizer, regardless of grammaticality. This may lead

them to accept ungrammatical sentences such as *La femme que se présente est la présidente de la société* and reject grammatical sentences such as *La femme qui se présente est la présidente de la société*, as their interlanguage allows only *que* in the relativizing position. Learners could also have an interlanguage rule which allows only *qui* in the relativizing position, which may also lead them to accept ungrammatical sentences such as *La femme qui tu as vue est belle* and reject grammatical sentences such as *La femme que tu as vue est belle* for the same reason.

- Deletion Errors (Characteristic 5): English speakers can often embed a relative clause without using a lexical item that links it to the matrix clause. Learners may therefore make errors by deleting relative pronouns and complementizers in French if they transfer rules from their L1 grammar to their interlanguage grammar of French. For example, they may produce or accept as grammatical an ungrammatical sentence such as *Le garçon j'ai vu au parc était mignon* as the English equivalent, *The boy I saw at the park was cute*, is grammatical despite the lack of complementizer or relative pronoun that makes the French sentence ungrammatical.
- Preposition Stranding Errors (Characteristics 6 and 7): English speakers can choose to move either the DP or the PP that dominates it. Thus, in English one can grammatically say either *The girl to whom I gave the book was confused* or *The girl whom I gave the book to was confused*. French, by contrast, requires that the PP move and does not allow the DP to move on its own. In French, then, one can grammatically say *La fille à qui j'ai donné le livre était perdue* but not *La fille qui j'ai donné le livre à était perdue*. If L1 transfer does influence learners' interlanguage, preposition stranding might be a common error for Anglophone learners of French; in other words, learners may produce or accept as grammatical sentences which are ungrammatical such as the one listed here.
- Surface Allomorphy Errors (Characteristics 8 and 9): English speakers do not need to pay attention to the gender and number of an antecedent or form contractions in L1. Thus, they may initially make errors in the allomorphy of *lequel* and the use of contracted forms with the prepositions *à* and *de* until they develop interlanguage rules for these aspects of the French relative pronoun system. For example, they may produce or accept as grammatical sentences with the incorrect allomorph, such as *Les hommes auquel j'ai parlé étaient sympas* where the singular allomorph is used rather than the plural, *La table sur lequel j'ai mis le livre* which uses the masculine rather than the feminine allomorph, or *Les hommes à lesquels j'ai parlé étaient sympas* where the relative pronoun *lesquels* should contract with the preposition *à* to form *auxquels*.

2.3 Research on the Acquisition of Relative Pronouns in L2 French

2.3.1 Research with Anglophones

Walz (1981a), in search of an explanation as to what made relative clauses such a difficult structure for learners of French, conducted a cross-sectional study examining the errors of college students across several levels of study at the University of Georgia. He used a cloze task, asking learners at intermediate and advanced levels to also explain why they chose a particular relative pronoun or complementizer. Overall, his results showed that learners had the most control of “qui” and “que,” the most frequent forms, but that there still seemed to be some interference from the animacy distinction which determines relative pronoun choice in English. He also observed that learners had particular difficulty identifying the need for a preposition, and even when the need was identified, they also had trouble selecting the right one. Walz’s (1981a) results, thus, provide evidence for Feature-Related Errors, as described above, and may suggest the possibility of Preposition Stranding errors based on learners’ difficulty with prepositions in general.

Adjémian and Licerias’s (1984) study also provides evidence for several of the possible types of errors predicted by the contrastive analysis above. Working with learners from English and French L1s, they investigated the acquisition of relative clauses in French, Spanish and English as L2s. Their subjects were first-level language students at the University of Ottawa, and their tests included imitation, oral translation to L1, grammaticality judgments, written translation to L1, and translating L1 to L2. Concerning Anglophone learners of French, the authors found that they readily imitate but do not often spontaneously produce only NP (DP), such as *lequel* alone, as a relativizing lexical item; along similar lines, they found that Anglophones corrected

75% of cases of preposition stranding in the French grammaticality judgment task even though they did frequently imitate them. Additionally, Adjémian and Liceras found that Anglophone learners of French also reject sentences with no relativizing lexical item in most cases in French—what are called Deletion Errors above—and are very reluctant to repeat them. They conclude that both L1 transfer (imitation of only NP as a relativizing lexical item) and universal grammar (rejection of preposition stranding and sentences without an overt relativizing lexical item) play a role in the learners' hypotheses that make up interlanguage rules.

Turning to feature-related errors, Hawkins' (1989) paper has been a particularly influential one cited by more recent authors on the acquisition of relative clauses in French as an L2, and he explains well some of the theories that have influenced research on the topic more generally. Hawkins compares Keenan and Comrie's (1977, 1979) Noun Phrase Accessibility Hierarchy (NPAH) to Tarallo & Myhill's (1983) model which he calls the configurational model. Hawkins explains that Keenan and Comrie's NPAH—an implicational hierarchy of relative clause types which claims that if a language has one type of relative clause, it also has all of the simpler types of relative clauses—implies that learners use information about grammatical relationships in their development of interlanguage rules (p. 156-158). By contrast, Tarallo & Myhill's model suggests that learners instead use information about sentence configuration, particularly what precedes the relative pronoun or complementizer, in developing their interlanguage rules (cited in Hawkins, 1989, p. 158). Hawkins (1989) conducted his study using a cloze task administered to advanced high school students and undergraduates, concluding that learners use configurational rather than relational information to develop interlanguage rules. He proposed several

stages of development, whereby learners first select a relativizer based on the animacy of the antecedent, then based on the proximity of the first NP (DP) of the embedded clause, and finally based on the presence of the second NP (DP) of the embedded clause.

One of the most extensive recent studies on the acquisition of relative clause structures by Anglophone learners of French is Mitchell's (2001) dissertation. Rather than simply observing learners' errors within a given curriculum, Mitchell's study took an experimental design, administering a pre-test in class, followed by a homework packet as treatment, then a post-test in the following class and a delayed post-test six weeks later. He concludes that teaching the most marked, or most complex, structures first and providing equal amounts of instruction in different clause types aids students in acquiring all forms the most effectively. Mitchell also observed that the animacy feature of the antecedent was important for learners in deciding between *qui* and *que*, where the former was associated with [+ANIMATE] antecedents and the latter with [-ANIMATE] antecedents, and that Keenan and Comrie's NPAH did not play a large role in learners' interlanguage development.

Overall, for Anglophone learners of French as L2, the literature provides evidence that learners commonly make feature-related errors which may result from L1 transfer, such as selecting *que* or *qui* based on the animacy of the antecedent rather than its grammatical role in the embedded clause (Walz, 1981a; Hawkins, 1989; Mitchell, 2001), but often correct deletion and preposition-stranding errors, which suggests that learners also use some knowledge of Universal Grammar in the acquisition of relative clause structures (Adjémian & Liceras, 1984). There is also indirect evidence as to the overgeneralization of the complementizers *que* and *qui* as

Walz (1981a) found that they are the most frequently produced by learners. In explaining learners' development of interlanguage rules, research speaks primarily to two theories: one which proposes that learners use information about grammatical relations in the sentence to form interlanguage rules, and another that proposes instead that information about what is most proximate to the complementizer or relative pronoun is more often used. Two of the four studies here (Hawkins, 1989; Mitchell, 2001) lend support to the latter rather than the former.

2.3.2 Research with Non-Anglophones

Considering German speaking learners of French as L2, Bernd Kielhöfer (1982) published another study using a cloze task. Overall, he suggests that the interlanguage rules for relative pronouns in L2 French develop using both the semantic trait of animacy and the syntactic position of the antecedent. Kielhöfer suggests the following hierarchy of difficulty of contexts for L2 learners of French in selecting the correct relativizing lexical item, from most to least difficult:

- The antecedent is the object of the main clause and animate, but *que* is required as it is the object of the relative clause.
- The antecedent is the subject of the main clause and animate, but *que* is required because it is the object of the relative clause.
- The antecedent is the object of the main clause and inanimate, but requires *qui* because it is the subject of the relative clause.
- The antecedent is the subject of the main clause and inanimate, but requires *qui* as it is the subject of the relative clause.
- The antecedent is the subject of the main clause and animate, and requires *qui* as it is also the subject of the relative clause.

Overall, Kielhöfer finds that *que* is more difficult to master than *qui*, and thus *qui* is more often overgeneralized than *que*. However, he also cautions that the interlanguage rules are unstable and apply most reliably when the antecedent is the object of the main clause. Importantly, he notes that the application of the animacy trait to these rules likely stems from the L2 itself rather than interference from the L1, as learners have already acquired the homophonous interrogatives *qui* and *que* in French which are, in fact, differentiated on the basis of the semantic trait of animacy. He also reasons that *que* may be harder to acquire due to several syntactic considerations, such as the presence of two different subjects in a single complex sentence, the change in subject from the main clause to the relative clause, and the fact that the pronoun representing the object of the relative clause precedes both its verb and its subject.

Caterina Pagani (1986) later published a study also focusing on only the subject and object complementizer allomorphs, *qui* and *que*, but her subjects were native Italian speaking middle school students. Pagani's research followed 26 students in a 13-month longitudinal study and collected several types of written and oral output to construct interlanguage rules that accounted for both accurate and erroneous data. Ultimately, she suggested three stages of acquisition. In the first stage, learners tend to overgeneralize the complementizer *que*, which she claims is most likely due to *que* being the unmarked, or more basic, form. Notably, this is the opposite of what Kielhöfer (1982) suggests based on his work with learners of German. In Pagani's (1986) second stage, the relative pronoun *qui* emerges but is not used properly; she proposes four interlanguage rules at this stage:

- *que* is used if the relative clause follows an object
- *que* is used if the antecedent is inanimate

- *qui* is used if the antecedent is animate
- *qui* is used if the relative clause follows a subject

Pagani (1986) stresses here that semantics seems to take precedence over syntax. In the third stage, however, these rules seem to disappear and learners are able to use forms with a high degree of accuracy. Aside from these three stages, in more general remarks, the author notes that learners tended to prefer relativizing the subject rather than the object, even in sentence-combining tasks where the choice was supposed to be forced. Here she refers back to Keenan and Comrie's Accessibility Hierarchy, as cited in Hawkins (1989) and explained above, noting that her results correspond with their claim that cross-linguistically, the subject is the easiest position to relativize. Pagani (1986) concludes by remarking that her results contribute to a growing body of knowledge on the universals of language in linguistics more generally, though the contradiction of her results and those of Kielhöfer (1982) do call this claim to question.

For the last study of non-Anglophones to be presented here, Mounira Hammami (1992) offers an analysis of the errors of L1 Arabic speakers learning relativization in French. Analyzing errors of the written productions of an unspecified number of Tunisian school students of unspecified age and experience with French, Hammami finds two trends. The first trend is overgeneralization of *que* used with an anaphoric pronoun, for example: "il a appelé son ami *qu'il* a allumé le feu" (p. 99); the second is use of the proper relative pronoun with persistent use of an anaphoric pronoun, for example: "un peuple *dont* Mouloud Feraoun *en* a parlé" (p. 99). Skeptical of the typical claims that errors are due to interference from the L1 linguistic system, Hammami presents evidence that French speakers make the same types of mistakes,

whether as adults in the case of the first type of error or as children in the case of the second type of error.

In summary, research on non-Anglophones shows contradictory results, particularly in overgeneralization errors; while Kielhöfer (1982) claims that German speakers overgeneralize *qui*, Pagani's (1986) results show that Italian speakers overgeneralize *que*. Additionally, unlike research on Anglophones, Pagani suggests that her results support learners' use of relational information, rather than configurational information, in interlanguage development. Finally, Hammami's (1992) research on Arabic speakers shows a type of error that is not observed in any of the other studies, neither those of English speakers nor those of non-English speakers. The variation of error types among learners of different L1s suggests that despite acclaimed evidence of the role of Universal Grammar in acquisition of relative clause structures (Adjémian & Liceras, 1984; Pagani, 1986), L1 transfer may have a wider influence than Universal Grammar.

2.4 Research Questions

Based on the contrastive analysis of French and English, this study investigates the following research questions:

1. Are there distinct stages in the L2 acquisition of French relative clause structures for L1 English speakers?
2. If distinct stages of development are observed, how does the role of L1 transfer in the L2 acquisition of French relative clause structures shape those stages of development?
3. How does experience abroad affect acquisition of relative clause structures in French?

Chapter 3

THE PRESENT STUDY

3.1 Materials & Design

This study consisted of a single, three-part survey delivered online using the Qualtrics platform (a full version of which can be found in Appendix A). Before completing the survey, participants were required to agree to the terms in a consent document which informs potential participants that they must be at least 18 years of age and a native speaker of English to participate; asks them to use only their knowledge of French and no resources such as textbooks, translators, or dictionaries; and announces the purpose of the study and the three parts of the survey.

3.1.1 Part 1: Linguistic Background

The first part of the survey asked participants for information about their language background, including:

- The enrollment in a French major, minor or certificate program at the time of study.
- The French classes they were enrolled in at the time of study.
- The length of time they studied French in elementary, middle and high school, as well as the number of semesters of French study at the university-level, including the Fall 2017 semester during which the survey was taken.
- The language(s) they considered their first language(s).
- Any other language(s) they spoke, including how long they had been speaking them and in what context they learned them.

- Their experience abroad, including the purpose and length of their stay.

The information collected in this part of the survey was used to trace development between five levels of French classes offered to undergraduates at a medium-sized Mid-Atlantic research university and examine the influence of other variables such as travel experience in a French-speaking country.

3.1.2 Part 2: Grammaticality Judgment Task

The second part of the study consisted of a 30-item grammaticality judgment task in which learners indicated whether a sentence in French was “Correct” or “Incorrect.” These sentences tested for feature-related errors, deletion errors, preposition stranding errors, and overgeneralization errors. Correctly identifying an ungrammatical sentence would indicate that learners are aware of the ungrammaticality of these types of errors. By contrast, failing to identify the ungrammaticality of an error might indicate that learners transfer one of several features of their L1 to their French interlanguage:

- The association of the choice between relative pronouns or complementizer allomorphs with the features of the antecedent rather than the grammatical role of the relativizing lexical item in the embedded clause
- The possibility for sentences with no over relativizing lexical item
- The possibility for preposition stranding
- The possibility to use a single complementizer in all relativizing contexts

Of the 30 items, 14 included prepositional object relative clauses, 9 included direct object relative clauses, and 7 were distractors. For all sentences including relative clauses, whether grammatical or ungrammatical, the relative clause was always subordinate to the object of the matrix clause. This is significant because, as Bernd Kielhöfer (1982) points out, learners’ interlanguage rules are unstable and apply most

reliably when the antecedent is the object of the main clause (p. 609). Thus, ensuring that the antecedent has a consistent grammatical role in the matrix clause is key to a sound analysis, and making the antecedent the object of the matrix clause appears to give the most reliable glimpse of learners' interlanguage rules.

Focusing on prepositional objects, items were designed around the features of their antecedents: [+HUMAN], [+ANIMATE, -HUMAN], and [-ANIMATE]. With one exception, for each of the categories, the survey included one correct sentence and three ungrammatical sentences:

- One with preposition stranding in which the relative pronoun was also deleted
- One with preposition stranding in which the relative pronoun was not deleted
- One that used the [+HUMAN] relative pronoun *qui* with a [-HUMAN] antecedent

The exception is the set of sentences with [+HUMAN] antecedents; because it is possible to use both relative pronouns, *qui* and *lequel*, with [+HUMAN] antecedents, there was no way to devise a sentence which used a relative pronoun inappropriate to the semantic features of its antecedent; in this case, a second correct sentence was included. These sentences were used to test for associations of the relative pronouns with the [HUMAN] and [ANIMATE] features of the antecedents, and transfer of characteristics of English such as deletion of the relative pronoun and preposition stranding. The remaining 2 sentences with prepositional object relative clauses were ungrammatical sentences that used preposition stranding and the complementizer *que*, as other authors, such as Pagani (1986), have suggested that learners may overgeneralize *que*.

As for direct object relatives, sentences included antecedents with the same three feature combinations: [+HUMAN], [+ANIMATE, -HUMAN], [-ANIMATE]. For each of these sets of features, the survey included one grammatical sentence and two ungrammatical sentences:

- One in which the complementizer was deleted
- One in which the allomorph *qui* was inappropriately used in place of *que*

3.1.3 Part 3: Open-Ended Task

The third and final part of the survey was a brief open-ended task to gauge participants' ability and willingness to spontaneously produce relative clauses. Aiming for a realistic, communicative task, the learners were provided a context—their host family for an upcoming trip was asking them which decorations they would like in their room—and three questions with answer stems. They needed only to fill in the rest of the answer: the complementizer or relative pronoun and the embedded clause. The questions and stems were designed to lead learners to use a relative clause to indicate which of two choices they preferred for each type of decoration based on the information provided in their host family's original email. The first question would encourage learners to employ the allomorph *qui* of the complementizer *que*, used for relativization of an embedded subject, unless they avoided a relative clause altogether. The second question was designed to lead learners to employ the complementizer *que* with a direct object relative, unless they ungrammatically employed the adjectives *longue* (long) or *courte* (short) after the noun rather than before. Finally, the third question was meant to lead participants to use the relative pronoun *lequel* with the preposition *sur* unless they incorrectly used the adjectives *ancien* (old) or *nouveau* (new) after the noun rather than before.

3.2 Procedure

To recruit participants, the principal investigator visited each French class offered during the Fall 2017 semester, except for sections of FREN105 since this course is designed for true beginners and those students' amount of exposure to French would not have allowed them to make grammaticality judgments based on linguistic intuition. The visits took place over a two-week period. Each one lasted two to three minutes, just long enough for the principal investigator to introduce herself, encourage students to participate in the research, and allow them the opportunity to ask questions. Following each visit, instructors sent a scripted email to their students with a brief reiteration of the purpose of the research and a link to the survey. The survey was left open for nine days following the final classroom visits, allowing students at least one full week and the following weekend to complete the survey, and instructors were asked to remind their students of the survey within the week before it closed.

3.3 Participants

Participants in this study were recruited from French classes at the University of Delaware, and all students participated on a voluntary basis with no offer of compensation. Data were analyzed for a total of 66 participants. Table 2, below, provides information about participants' linguistic background.

Table 2: Language Background of Participants		
Characteristic	Number of Participants	Percent of Participants Analyzed
English as their only L1	62	94.00%

French as their only L2	55	83.33%
Spent \geq 1 week in a French-speaking country	31	46.97%

Though 4 participants reported an additional L1 and 11 reported some amount of a second L2, the participants form a mostly homogenous group of L1 English speakers learning only French as an L2.

Concerning learners' background with French more specifically, Table 3 provides the number of participants at each of five levels analyzed: 106, 107, 200, 300, and 400.

Table 3: Level Descriptions		
Level	Number of Participants	Description & Prerequisites
106	19	<ul style="list-style-type: none"> • The middle level of a three-course sequence in basic French that meets a College language requirement, considered "Elementary/Intermediate" • Prerequisite: FREN105 or 2-3 years of High School French • Relative clauses are not taught at this level
107	10	<ul style="list-style-type: none"> • The last course in a three-course sequence in basic French that meets a College language requirement, considered "Intermediate" • Prerequisite: FREN106 or 4 years of High School French • Relative clauses are discussed as they arise at this level, but not formally presented

200	21	<ul style="list-style-type: none"> • Several courses that generally focus on a subset of the four modalities: grammar, composition, reading, conversation • Prerequisite: FREN107 with a minimum grade of A-, or FREN200 (for other Level 200 courses) • Relative clauses are formally presented in many of these courses
300	10	<ul style="list-style-type: none"> • Content-based courses offered in French, focusing on literature or business • Prerequisite: Any two Level 200 courses (for literature courses, one of them must be FREN211) • Grammar is reviewed on an as-needed basis in these courses depending on students' areas for improvement; relative clauses may be reviewed
400	6	<ul style="list-style-type: none"> • Literature courses offered in French • Prerequisite: Any two Level 300 courses in literature • Grammar is generally not reviewed in these courses

Chapter 4

RESULTS

4.1 Data Analysis

After closing the survey, PivotTables were used in Microsoft Excel to analyze the results of participants at each level of French study on sentences that used relative clauses. These data were further broken down to compare accuracy of participants who had experience abroad to those who did not.

Following the grammaticality judgment task, the open-ended production task was analyzed by collecting all of the responses at each level, categorizing them, and calculating the percent of all responses for that level that fell within each category. From those numbers, we can analyze the percent of participants who responded grammatically, comparing those who used the targeted complementizer or relative pronoun, and the percent of participants who responded ungrammatically, specifically considering those who made incorrect attempts at a relative clause. A list of all responses received for each level is included in Appendix B.

4.2 Level-by-Level Analysis

4.2.1 Level 106

4.2.1.1 Grammaticality Judgment Task

4.2.1.1.1 L1 Transfer

To measure transfer of characteristics from L1 syntax, we consider learners' accuracy in identifying as ungrammatical those sentences in the survey which deleted the subordinating lexical item (the complementizer allomorph or the relative pronoun) and those sentences which stranded the preposition dominating a relative pronoun at the end of the embedded clause, two characteristics of English syntax which are ungrammatical in French. There were 6 sentences with deleted complementizers or relative pronouns: 3 had direct object relatives, and 3 had prepositional object relatives. There were 2 sentences with preposition stranding which had no other errors.

Table 4, below, shows the percentage of students who correctly identified sentences with each of these types of errors as ungrammatical. Accuracy in identifying deletion errors is presented for all errors, followed by a more detailed report of deletion errors by relative clause type. It should be noted, however, that all sentences that deleted prepositional object relatives also stranded their prepositions, as it would not be possible to transfer rules from English that allowed a preposition to be moved without a corresponding relative pronoun. Thus, the comparison of accuracy in identifying as ungrammatical the deletion of complementizers in direct object relatives and relative pronouns in prepositional object relatives should be only cautiously accepted, as the preposition stranding in the sentences with prepositional object relatives may have influenced participants' decision to mark the sentence as

ungrammatical. The sentences in (57) and (58) exemplify the ungrammaticality of structures with pied-piped prepositions but no relative pronouns in English and its translation to French; the sentences in (59) and (60) provides the grammatical alternatives in English.

57. **The girl to (____) you gave the key left.*
58. **La fille à (____) tu as donné la clé est partie.*
59. *The girl to whom you gave the key left.*
60. *The girl you gave the key to left.*

Table 4: Identification of ungrammatical sentences that transfer characteristics of English, Level 106	
Error Type	Accuracy
Deletion	60.53%
Deletion for Direct Object Relatives	66.67%
Deletion for Prep. Object Relatives	54.39%
Preposition Stranding	47.37%

These values demonstrate that as early as Level 106, where overall accuracy in identifying ungrammatical relative clauses was only 50.66%, learners have some intuition as to the ungrammaticality of deletion but do not seem to recognize the ungrammaticality of preposition stranding. Overall, these participants were 9.87% more likely to identify an ungrammatical sentence as such if the error is one of deletion, compared to their overall accuracy in identifying ungrammatical sentences. Particularly in the case of deletion with direct object relatives, they were 16.01% more likely to identify the ungrammaticality of the relative clause as compared with their

average accuracy. On the other hand, they were slightly less likely than average to identify the ungrammaticality of sentences with preposition stranding; thus, they may be transferring this structure as grammatical from English.

4.2.1.1.2 Mapping of [HUMAN] and [ANIMATE] features

Learners may map [HUMAN] and/or [ANIMATE] feature values either to the set of complementizer allomorphs *que* and *qui* or to the set of relative pronouns *lequel* and *qui*. Each set of lexical items will be analyzed separately, first for mapping to the [HUMAN] feature values, then to the [ANIMATE] feature values. An analysis of participants' responses for sentences containing direct object relative clauses reveals their associations of the feature values to the complementizer allomorphs *que* and *qui*. There were 6 sentences with object relative clauses in which the complementizer was not deleted: 3 sentences which grammatically used *que* and 3 sentences which ungrammatically used *qui*.

Table 5, below, presents the percent of cases where participants at Level 106 marked as grammatical sentences containing the complementizer allomorphs *que* and *qui*, separating the analysis according to the [HUMAN] feature values of the antecedents first, followed by the [ANIMATE] feature values of the antecedents. For each pair of values, a p-value is also provided based on a two-sample t-test performed to determine the statistical significance of the results. Note that for *que*, because all sample sentences were grammatical, the values represent accuracy; for *qui*, by contrast, because all sample sentences were ungrammatical, the values represent inaccuracy.

Table 5: Association of Complementizer Allomorphs with [HUMAN] and [ANIMATE] features of antecedents, Level 106		
	<i>QUE</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	84.21%	63.16%
[-HUMAN]	55.26%	76.32%
p-value for [HUMAN] distinction	0.03	0.31
[+ANIMATE]	65.79%	76.32%
[-ANIMATE]	63.16%	63.16%
p-value for [ANIMATE] distinction	0.85	0.31

The results in Table 5 show that learners at Level 106 have not associated either *que* or *qui* with any particular features of the antecedents. Though the values themselves do appear to show some differences, the results of the t-test, which takes into account the sample size, show that most of the pairs of values are not statistically different. The only pair of values with a p-value below 0.05 is the accuracy for *que* with [+HUMAN] and [-HUMAN] antecedents; this may indicate that these participants associate *que* more with [+HUMAN] antecedents than with [-HUMAN] antecedents, and it is clear that *qui* is accepted more often with [-HUMAN] antecedents even if the p-value indicates that the difference is not significant. This association, however, if analyzed despite the high p-value for the *qui* results, is surprising as most studies have pointed to an association of *qui* with either [+HUMAN] or [+ANIMATE] and *que* with the complementary [-HUMAN] or [-ANIMATE] (for example, Hawkins, 1989; Mitchell, 2001; Pagani, 1986; Walz, 1981).

The lack of statistical difference between most values here suggests a lack of association of the complementizer allomorphs with the [HUMAN] and [ANIMATE] features of the antecedents. This may not be surprising given that in English, a single complementizer can be used regardless of the features of the antecedent. In addition, these participants' overall accuracy of 53.32% for sentences with relative clauses may indicate a lack of exposure at this level which means learners do not have enough L2 evidence of the structure to create new rules or modify their L1 rules. However, as Kielhöfer (1982) points out, the association of *que* and *qui* need not necessarily be transferred from L1 but may rather come from knowledge of the L2 (p. 604). Because *qui* is typically associated with humans and *que* with non-humans in their homophonous interrogatives' respective contexts, the lack of association here may indicate that learners do not transfer this knowledge from one context to the other in L2 or that learners perceive the complementizer allomorphs *que* and *qui* as a different category of words than the homophonous interrogatives, as our literature review suggests.

To account for the mapping of these semantic features onto the relative pronouns *qui* and *lequel*, a similar analysis is conducted for participants' responses to sentences containing prepositional object relatives. There were 6 such sentences which were not ungrammatical due to preposition stranding or deletion of the relative pronoun: 4 using the pronoun *lequel*, all grammatical, and 2 using the pronoun *qui*, both ungrammatical. Table 6 presents the percentage of cases in which sentences with *lequel* and *qui* were marked as grammatical, again separating the analysis first according to the [HUMAN] feature value of the antecedent and then by the [ANIMATE] feature value of the antecedent. As with above, note that because all

sentences with *lequel* were grammatical, marking them as such indicates accuracy; for *qui*, by contrast, all sentences were ungrammatical so accepting them implies inaccuracy. A p-value is provided for each pair based on a two-sample t-test to determine the statistical significance of the results. Note that Table 6 only includes data for the [ANIMATE] feature in the *qui* column. This is due to an oversight in the survey creation, which led to a lack of sample sentences with [+HUMAN] antecedents that use *qui*; both such sentences used *lequel*).

Table 6: Association of Relative Pronouns with [HUMAN] and [ANIMATE] features of antecedents, Level 106		
	<i>LEQUEL</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	63.13%	--
[-HUMAN]	47.37%	--
p-value for [HUMAN] distinction	0.17	--
[+ANIMATE]	56.14%	52.63%
[-ANIMATE]	52.63%	42.11%
p-value for [ANIMATE] distinction	0.79	0.53

Again, though some of the pairs of values appear to show differences, the results of the t-test show that none are statistically significant. In general, then, these learners did not seem to associate the relative pronouns *lequel* and *qui* with the [HUMAN] or [ANIMATE] features of the antecedents. This, again, may not be surprising due to their lack of significant exposure to the language.

4.2.1.1.3 Overgeneralization

One last type of error measured for each level with the results of the grammaticality judgment task is overgeneralization of one of the complementizer allomorphs, *que* or *qui*. Table 7, below, shows the percentage of participants who accepted and rejected sentences which incorrectly used either *que* or *qui*.

Table 7: Overgeneralization of Complementizers, Level 106		
	Accepted in Ungrammatical Contexts	Rejected in Ungrammatical Contexts
<i>QUE</i>	42.11%	57.89%
<i>QUI</i>	62.11%	37.89%

The results seem to suggest that participants are more likely to accept *qui* in ungrammatical contexts than *que*. However, while we can reasonably observe that they accept *qui* in more than half of ungrammatical contexts which may point to an overgeneralized rule, a degree of caution is required in analyzing the difference between the rates at which ungrammatical *qui* and *que* are accepted in the survey. Due to an oversight in survey design, all sentences which contain *que* in ungrammatical contexts also involve preposition stranding which may influence the rate at which they reject these sentences. It is, thus, helpful to analyze Tables 4 and 7 together. As observed in Table 4, above, which reports the percentage of cases in which participants rejected ungrammatical sentences in which the only error was preposition stranding (and thus does not include the sentences for which data is reported in Table 7), learners did not seem to have strong intuitions about the ungrammaticality of preposition stranding in French. Comparing Tables 4 and 7, participants at the 106

level are more likely to reject sentences with preposition stranding where the relative pronoun *qui* or *lequel* is replaced by the complementizer *que*, showing that while they may not have strong notions about preposition stranding, they may have stronger notions about the overgeneralization of *que*.

4.2.1.2 Production Task

Table 8, below, presents the types of responses that learners at Level 106 provided for each of the open-ended questions and the percentage of responses each category represents. Question #31 was designed to elicit the complementizer allomorph *qui* used with subject relative clauses; Question #32 was designed to elicit the complementizer allomorph *que* used with direct object relative clauses; and Question #33 was designed to elicit the relative pronoun *lequel* with corresponding preposition *sur*.

Table 8: Response Types for Open-Ended Task, Level 106	
Question #31	
Type of Response	Responses in Category Percent (Number)
“Qu’ont” + DP	5.26% (1)
“Ont” + DP	21.05% (4)
De + DP	42.11% (8)
Avec + DP	10.53% (2)
À + DP	5.26% (1)
Other (Ungrammatical)	5.26% (1)
No response	10.53% (2)
Question #32	
Type of Response	Responses in Category Percent (Number)
“Qui est” + ADJ	5.26% (1)

“Qu’est” + ADJ	5.26% (1)
Rewrote stem (grammatical)	15.79% (3)
Rewrote stem (ungrammatical)	5.26% (1)
ADJ only	36.84% (7)
“C’est” + ADJ	5.26% (1)
No response	26.32% (5)
Question #33	
Type of Response	Response in Category Percent (Number)
“Qu’est” + ADJ	5.26% (1)
NP only	10.53% (2)
VP (infinitive)	5.26% (1)
D + ADJ	10.53% (2)
ADJ only	21.05% (4)
“C’est” + ADJ	5.26% (1)
No response	42.11% (8)

Overall, Question #31, designed to elicit *qui*, had the most grammatical responses at 52.63%, even though none of those involved the use of a relative clause, and the lowest rate of no response at 10.53%. For Question #32, designed to elicit *que*, the number of grammatical responses dropped by more than half at only 21.05%, with one participant correctly using a relative clause with *qui* rather than *que*, and the rate of no responses more than doubled to 26.32%. Finally, for Question #33, designed to elicit the prepositional object relative *lequel* with corresponding preposition *sur*, there were no grammatical responses and the rate of no responses continued to increase to 42.11%. In general, these responses show that learners at Level 106 tend to avoid production of relative clauses.

However, we must note a few key attempts at the use of relative clauses amongst the responses. First, for Question #31, 4 of the 19 participants (21.05%) responded with the conjugated verb *ont* followed by a DP. The targeted structure was *qui ont* followed by a DP. It is possible, then, that these participants were attempting

to provide a relative clause but simply deleted the necessary complementizer allomorph *qui* even though Level 106 participants rejected 60.53% of sentences with deletion errors (see Table 4). These responses may reflect a difference in competence and performance. Second, one learner produced a contracted form *qu'* followed by a verb in all three responses; it is difficult to decide whether this participant meant to use *qui* or *que* here. Though *qui* is typically followed by a verb, it is never contracted with a following vowel; this contraction is typical of *que*, however, both as a relativizing complementizer and for its homophonous forms with different functions such as the interrogative *que*. This may, then, be cautiously considered as overgeneralization of *que* as a relativizing lexical item; whether we consider this possibility or not, the structure does provide insight to the learner's developing interlanguage which has a general, somewhat formulaic rule for producing relative clauses in this way. Finally, though there may be one participant overgeneralizing *que*, the only grammatical production of a relative pronoun was a single use of *qui* in Question #32; this may be early evidence that *qui* is the first relativizing lexical item to develop a grammatical rule in the interlanguage, but we must turn to the data from Level 107 to determine if such a pattern continues.

4.2.2 Level 107

4.2.2.1 Grammaticality Judgment Task

4.2.2.1.1 L1 Transfer

Table 9, below, shows the percentage of students at Level 107 who correctly identified sentences with deletion errors and preposition stranding errors as ungrammatical. Deletion errors are first presented together, followed by a more

detailed report by relative clause type. Again, all sentences that deleted prepositional object relatives also stranded their prepositions, as it would not be possible to transfer rules from English that allowed a preposition to be moved without a corresponding relative pronoun. Thus, the comparison of accuracy in identifying as ungrammatical the deletion of complementizers in direct object relatives and relative pronouns in prepositional object relatives should be only cautiously accepted, as the preposition stranding in the sentences with prepositional object relatives may have influenced participants' decision to mark the sentence as ungrammatical.

Table 9: Identification of ungrammatical sentences that transfer characteristics of English, Level 107	
Error Type	Accuracy
Deletion	76.67%
Deletion for Direct Object Relatives	73.33%
Deletion for Prep. Object Relatives	80.00%
Preposition Stranding	66.67%

At Level 107, learners' accuracy increases in identifying both deletion and preposition stranding errors as compared with the Level 106 participants. At this level, they recognize the ungrammaticality of deletion and preposition stranding at almost the same rate, and both rates are notably higher than their average accuracy in identifying ungrammatical relative clauses as such, 64.38%. These learners, then, are becoming more aware that deletion and preposition stranding are characteristics of English syntax which cannot be transferred to French. Their growing awareness of the ungrammaticality of preposition stranding in French undoubtedly influences their

recognition of the ungrammaticality of sentences with prepositional object relative clauses in which the relative pronoun is deleted and the preposition is stranded, the error type for which they identify most frequently.

4.2.2.1.2 Mapping of [HUMAN] and [ANIMATE] features

Table 10 presents the percentage of cases where sentences with *que* and *qui* were accepted as grammatical, separating the analysis according to the [HUMAN] feature values and then by the [ANIMATE] feature values of the antecedents. For each pair of values, a p-value is also provided based on a two-sample t-test to determine the statistical significance of the results. Note again that for *que*, because all sample sentences were grammatical, accepting the sentences as such implies accuracy; for *qui*, by contrast, because all sample sentences were ungrammatical, accepting a sentence as grammatical implies inaccuracy.

Table 10: Association of Complementizer Allomorphs with [HUMAN] and [ANIMATE] features of antecedents, Level 107		
	<i>QUE</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	80.00%	70.00%
[-HUMAN]	85.00%	44.45%
p-value for [HUMAN] distinction	0.74	0.21
[+ANIMATE]	80.00%	55.00%
[-ANIMATE]	90.00%	50.00%
p-value for [ANIMATE] distinction	0.51	0.80

Table 11 shows the percentage of cases in which sentences with *lequel* and *qui* were accepted, again separating the analysis first according to the [HUMAN] feature value of the antecedent and then by the [ANIMATE] feature value of the antecedent. As above, accepting as grammatical the sentences with *lequel* implies accuracy, while accepting the sentences with *qui* implies inaccuracy. A p-value is provided for each pair based on a two-sample t-test to determine the statistical significance of the results. Note again that Table 11 only includes data for the [ANIMATE] feature in the *qui* column. This is due to an oversight in the survey creation, which led to a lack of sample sentences with [+HUMAN] antecedents that use *qui*; both such sentences used *lequel*.

Table 11: Association of Relative Pronouns with [HUMAN] and [ANIMATE] features of antecedents, Level 107		
	<i>LEQUEL</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	50.00%	--
[-HUMAN]	60.00%	--
p-value for [HUMAN] distinction	0.54	--
[+ANIMATE]	53.33%	40.00%
[-ANIMATE]	60.00%	40.00%
p-value for [ANIMATE] distinction	0.72	1.00

For both the complementizer allomorphs and the relative pronouns, it is clear from the raw values that learners do not make strong associations between the two respective choices and the [HUMAN] or [ANIMATE] features of the antecedents. The

high p-values only confirm this observation. Even for the *qui* complementizer allomorph and [HUMAN] features, the pair of values with largest difference in either Table 10 or 11 at 25.55%, a p-value of 0.21 rejects the idea that this is a statistical pattern for this set of learners. However, if we do analyze this difference without regard to the p-value, it is notable that the Level 107 participants, by contrast with the Level 106 participants, appear to favor *qui* with [+HUMAN] antecedents, similar to the findings of previous research (see again, Hawkins, 1989; Mitchell, 2001; Pagani, 1986; Walz, 1981a).

4.2.2.1.3 Overgeneralization

Table 12, below, shows the percentage of participants who accepted sentences which incorrectly used either *que* or *qui*.

Table 12: Overgeneralization of Complementizers, Level 107		
	Accepted in Ungrammatical Contexts	Rejected in Ungrammatical Contexts
<i>QUE</i>	45.00%	55.00%
<i>QUI</i>	48.00%	52.00%

The pattern here looks similar to that of the Level 106 participants for overgeneralization errors analyzed in Table 7. That is, there seems to be a slight preference to accept *qui* in ungrammatical contexts rather than *que*; however, this analysis must again take into account the additional error of preposition stranding present in all of the sentences which inappropriately employed *que*. Given that participants at Level 107 rejected sentences with preposition stranding in a majority of

cases, this likely decreased their acceptance of the sentences analyzed for overgeneralization of *que*. However, it is notable that these participants rejected only 55.00% of the sentences with *que* and a stranded preposition, whereas they rejected 70.00% of sentences where the preposition was stranded but the correct relative pronoun was used, according to Table 9. In other words, participants at Level 107 accepted 45.00% of sentences using the ungrammatical complementizer *que* with a stranded preposition, but only 30.00% of sentences using the grammatical relative pronoun *lequel* or *qui* with a stranded preposition. These numbers suggest that *que* is, in fact, overgeneralized as a subordinating lexical item.

4.2.2.2 Production Task

Table 13, below, presents the types of responses that learners at Level 107 provided for each of the open-ended questions and the percentage of responses each category represents. Question #31 was designed to elicit the complementizer allomorph *qui* used with subject relative clauses; Question #32 was designed to elicit the complementizer allomorph *que* used with direct object relative clauses; and Question #33 was designed to elicit the relative pronoun *lequel* with corresponding preposition *sur*.

Table 13: Response Types for Open-Ended Task, Level 107	
Question #31	
Type of Response	Responses in Category Percent (Number)
“Qui ont” + DP	20.00% (2)
“Ont” + DP	10.00% (1)
De + DP	30.00% (3)

Avec + DP	40.00% (4)
Question #32	
Type of Response	Responses in Category Percent (Number)
“Qui est” + ADJ	20.00% (2)
“Qu’est” + ADJ	20.00% (2)
ADJ only	50.00% (5)
No response	10.00% (1)
Question #33	
Type of Response	Responses in Category Percent (Number)
“Qui est” + ADJ	30.00% (3)
“Qu’est” + ADJ	10.00% (1)
Rewrote stem (grammatical)	10.00% (1)
ADJ only	30.00% (3)
Incomprehensible	10.00% (1)
No response	10.00% (1)

Based on the data in Table 13, learners at Level 107 seem to more readily produce relative clauses than learners at the Level 106. Each question has 2-3 responses (20.00%-30.00%) which include a grammatical relative clause using *qui* and a verb; the fact that *que* and *lequel* are entirely avoided may indicate that learners’ interlanguage develops rules for *qui* before other relativizing lexical items. Additionally, Questions #32 and #33 have 1-2 response(s) (10.00%-20.00%) each which use *qu’est* with an adjective, an ungrammatical attempt to use a relative clause. The three responses using *qu’est* each come from a different participant at this level, as opposed to the Level 106 responses with *qu’est* and *qu’ont* which came from a single learner. In addition to the successful uses of *qui est*, this may demonstrate that learners’ interlanguage is beginning to develop rules for the production of relative clauses, and perhaps that they are overgeneralizing the complementizer *que*, as discussed above. Finally, there is one further case of an ungrammatical attempt to

produce a relative clause: the single response to question #31 which begins with *ont*. It seems that the learner is trying to embed a relative clause, but they have deleted the relative pronoun. Just as the data in Table 9 suggests, learners recognize that deletion is not grammatical in most cases, but still accept it in some; this response may be a case where deletion is deemed acceptable, or this may indicate a difference in competence and performance, as with the Level 106 participants who produced similar structures. In any case, overall, there are fewer students who produced no response, more attempts to use relative clauses whether the result was grammatical or not, and more grammatical relative clause structures at Level 107 than at Level 106.

4.2.3 Level 200

4.2.3.1 Grammaticality Judgment Task

4.2.3.1.1 L1 Transfer

Table 14 shows the percentage of students at Level 200 who correctly marked as ungrammatical sentences with deletion errors and preposition stranding errors. As above, deletion errors are first presented in the aggregate, with a more detailed report by relative clause type following. A comparison of accuracy in identifying deletion errors for different types of relatives should again be only cautiously accepted as the presence of preposition stranding in all such sentences with prepositional object relatives may have influence participants' decision to mark a sentence ungrammatical.

Table 14: Identification of ungrammatical sentences that transfer characteristics of English, Level 200	
Error Type	Accuracy
Deletion	92.06%
Deletion for Direct Object Relatives	84.13%
Deletion for Prep. Object Relatives	100.00%
Preposition Stranding	71.43%

At Level 200, participants' accuracy further increases from Level 107 for all error types. These participants identify nearly all sentences with deletion errors as ungrammatical, and as with the Levels 106 and 107 participants, identify deletion errors more often than preposition stranding errors. Nonetheless, they do identify a majority of sentences with preposition stranding as ungrammatical, and sentences with combined errors were recognized as ungrammatical in 100.00% of cases. Thus, at Level 200 learners appear to have more concrete knowledge that deletion and preposition stranding are not possible in French as they are in English.

4.2.3.1.2 Mapping of [HUMAN] and [ANIMATE] features

Table 15 presents the percentage of cases at the Level 200 where sentences with *que* and *qui* were accepted, separating the analysis according to the [HUMAN] feature values and then by the [ANIMATE] feature values of the antecedents. A p-value is also provided for each set of values, based on a two-sample t-test, to determine the statistical significance of the results. As above, accepting sentences with *que* as grammatical implies accuracy, while accepting sentences with *qui* implies a lack of accuracy.

Table 15: Association of Complementizer Allomorphs with [HUMAN] and [ANIMATE] features of antecedents, Level 200		
	<i>QUE</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	90.48%	52.38%
[-HUMAN]	97.62%	42.86%
p-value for [HUMAN] distinction	0.22	0.48
[+ANIMATE]	92.86%	45.24%
[-ANIMATE]	100.00%	47.62%
p-value for [ANIMATE] distinction	0.22	0.86

Table 16 shows the percentage of cases at Level 200 in which sentences with *lequel* and *qui* were accepted, again separating the analysis first according to the [HUMAN] feature value of the antecedent and then by the [ANIMATE] feature value of the antecedent. A p-value is provided for each pair based on a two-sample t-test to determine whether the results are statistically significant. Note again that Table 16 only includes data for the [ANIMATE] feature in the *qui* column due to an oversight in survey creation, and that accepting *lequel* implies accuracy while accepting *qui* implies a lack thereof.

Table 16: Association of Relative Pronouns with [HUMAN] and [ANIMATE] features of antecedents, Level 200		
	<i>LEQUEL</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	61.90%	--
[-HUMAN]	61.90%	--

p-value for [HUMAN] distinction	1.00	--
[+ANIMATE]	57.14%	47.62%
[-ANIMATE]	76.19%	38.10%
p-value for [ANIMATE] distinction	0.12	0.54

Though the p-values for each pair indicate that the trends demonstrated in these results are not statistically significant, we can observe some emerging patterns in the values themselves if we only carefully accept them. At Level 200, considering the complementizer allomorphs in Table 15, learners begin to show a preference for *qui* with [+HUMAN] antecedents and for *que* with [-HUMAN] or [-ANIMATE] antecedents, as expected based on prior research (Hawkins, 1989; Mitchell, 2001; Pagani, 1986; Walz, 1981). As for the relative pronouns in Table 16, these participants show a slight preference for *lequel* with inanimates and *qui* with animates, parallel to the results for the complementizer allomorphs and parallel to the functioning of the English relative pronouns *which* and *who*.

4.2.3.1.3 Overgeneralization

Table 17, below, shows the percentage of participants who accepted sentences which incorrectly used either *que* or *qui*.

Table 17: Overgeneralization of Complementizers, Level 200		
	% Accepted in Ungrammatical Contexts	% Rejected in Ungrammatical Contexts
<i>QUE</i>	40.48%	59.52%
<i>QUI</i>	44.76%	55.24%

As with the data for overgeneralization errors at Levels 106 and 107, participants at Level 200 accept *qui* slightly more often than *que* in ungrammatical contexts, but this result may be influenced by the ungrammatical preposition stranding present in all of the sentences with overgeneralized *que* errors. Again, if we look to the same participants' ability to recognize preposition stranding as ungrammatical, we see in Table 14 that they rejected 80.95% of sentences with stranded prepositions, so their strong intuitions about preposition stranding could have influenced their decisions about the sentences with overgeneralized *que*. This means that they accepted only 19.05% of sentences with preposition stranding when the correct relative pronoun was used; however, like Level 107 participants, they accepted even more ungrammatical sentences with preposition stranding when *que* was used (40.48%). This may point to a tendency to overgeneralize *que* as a subordinating lexical item, even if we cannot directly observe the trend with the data in Table 17.

4.2.3.2 Production Task

Table 18, below, presents the types of responses that learners at Level 200 provided for each of the open-ended questions and the percentage of responses each category represents. Question #31 was designed to elicit the complementizer allomorph *qui* used with subject relative clauses; Question #32 was designed to elicit the complementizer allomorph *que* used with direct object relative clauses; and Question #33 was designed to elicit the relative pronoun *lequel* with corresponding preposition *sur*.

Table 18: Response Types for Open-Ended Task, Level 200	
Question #31	
Type of Response	Responses in Category Percent (Number)
“Qui ont” + DP	9.52% (2)
“Qu’ont” + DP	4.76% (1)
“Ont” + DP	19.05% (4)
De + DP	57.14% (12)
Avec + DP	4.76% (1)
DP only	4.76% (1)
Question #32	
Type of Response	Responses in Category Percent (Number)
“Qui est” + ADJ	28.57% (6)
“Que” + Subordinate Clause	4.76% (1)
“Qu’est” + ADJ	9.52% (2)
ADJ only	57.14% (12)
Question #33	
Type of Response	Responses in Category Percent (Number)
“Sur lequel” + Subordinate Clause	9.52% (2)
“Lequel” + Subordinate Clause	4.76%
“Qui est” + ADJ	14.29% (3)
“Où” + Subordinate Clause	4.76% (1)
“Que” + Subordinate Clause (Grammatical)	4.76% (1)
“Que” + Subordinate Clause (Ungrammatical)	9.52% (2)
Avec + DP	9.52% (2)
ADJ only	33.33 (7)
D + ADJ	4.76% (1)
No response	4.76% (1)

At Level 200, the data in Table 18 show a continued grammatical production of *qui* with emerging use of other relativizers, both grammatically and

ungrammatically. One learner produced grammatical relative clauses using *que* in their responses for both Questions #32 and #33, and two others attempted to use *que*, albeit ungrammatically in their response to Question #33. Additionally, the use of the ungrammatical contracted forms *qu'est* and *qu'ont* persists for some participants at this level. In addition to the complementizer allomorphs, two participants produced a grammatical relative clause using *sur lequel* in their responses for Question #33, and another participant attempted to use the relative pronoun *lequel* without a preposition (not with preposition stranding). One student also used the relativizer *où*, not analyzed in this study. Other errors also persist, such as the use of only a verb *ont* and no relativizer in responses to Question #31. Overall, based on these responses, learners at the Level 200 appear to be expanding their repertoire of relativizing morphology and produce grammatical relative clauses at an increased rate from the Level 107 participants.

4.2.4 Level 300

4.2.4.1 Grammaticality Judgment Task

4.2.4.1.1 L1 Transfer

Table 19 shows the percentage of students at Level 300 who correctly marked as ungrammatical sentences with deletion errors and preposition stranding errors. As above, deletion errors are first presented in the aggregate, with a more detailed report by relative clause type following.

Table 19: Identification of ungrammatical sentences that transfer characteristics of English, Level 300	
Error Type	% Accuracy
Deletion	95.00%
Deletion for Direct Object Relatives	93.33%
Deletion for Prep. Object Relatives	96.67%
Preposition Stranding	93.33%

For both deletion and preposition stranding errors, learners at Level 300 continue to increase in accuracy from the participants at Level 200. Curiously, the only category which decreases is their identification of deletion in sentences with prepositional object relatives, which also all use preposition stranding. Nonetheless, these learners identify nearly all deletion and preposition stranding errors at a nearly equal rate.

4.2.4.1.2 Mapping of [HUMAN] and [ANIMATE] features

Table T presents the percentage of cases at Level 300 where sentences with *que* and *qui* were accepted as grammatical, separating the analysis according to the [HUMAN] feature values and then by the [ANIMATE] feature values of the antecedents. A p-value is also provided for each set of values, based on a two-sample t-test, to determine the statistical significance of the results.

Table 20: Association of Complementizer Allomorphs with [HUMAN] and [ANIMATE] features of antecedents, Level 300		
	<i>QUE</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	100.00%	30.00%
[-HUMAN]	100.00%	30.00%
p-value for [HUMAN] distinction	1.00	1.00
[+ANIMATE]	100.00%	30.00%
[-ANIMATE]	100.00%	30.00%
p-value for [ANIMATE] distinction	1.00	1.00

Table 21 shows the percentage of cases at Level 300 in which participants accepted sentences with *lequel* and *qui* as grammatical, separating the analysis first according to the [HUMAN] feature value of the antecedent and then by the [ANIMATE] feature value of the antecedent. A p-value is provided for each pair based on a two-sample t-test to determine whether the results are statistically significant.

Table 21: Association of Relative Pronouns with [HUMAN] and [ANIMATE] features of antecedents, Level 300		
	<i>LEQUEL</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	95.00%	--
[-HUMAN]	70.00%	--
p-value for [HUMAN] distinction	0.05	--
[+ANIMATE]	86.67%	30.00%

[-ANIMATE]	70.00%	30.00%
p-value for [ANIMATE] distinction	0.24	1.00

As for the results for *que* and *qui* in Table 20, rates of acceptance for both complementizer allomorphs were the same regardless of feature values, so Level 300 participants clearly do not have interlanguage rules that distribute either of the complementizer allomorphs according to the semantic features of the antecedent. This could indicate that their interlanguage rules have reached native-like configuration, where the allomorphs *que* and *qui* are chosen based on the relativized position of the embedded clause; this proposition is supported by their overall accuracy in identifying grammatical and ungrammatical relative clauses, 85.71%. Looking at the relative pronouns in Table 21, it is clear that the learners' interlanguage rules about the relative pronoun *qui* also do not differ based on animacy. The acceptance of *lequel* does seem to vary according to the features of the antecedent; while the p-value indicates that the difference for [+ANIMATE] and [-ANIMATE] antecedents is insignificant, the difference between [+HUMAN] and [-HUMAN] antecedents is somewhat significant. It seems that learners at Level 300 have a slight preference for *lequel* used with [+HUMAN] rather than [-HUMAN] antecedents, which is surprising given that *qui* should rather be preferred with [+HUMAN] antecedents due to the use of the homophonous interrogative for [+HUMAN] arguments and we might expect *lequel* to thus be associated with [-HUMAN] antecedents or evenly distributed.

4.2.4.1.3 Overgeneralization

Table 22, below, shows the percentage of participants at Level 300 who accepted sentences which incorrectly used either *que* or *qui*.

Table 22: Overgeneralization of Complementizers, Level 300		
	% Accepted in Ungrammatical Contexts	% Rejected in Ungrammatical Contexts
<i>QUE</i>	25.00%	75.00%
<i>QUI</i>	30.00%	30.00%

The pattern for Level 300 participants is the same as for all levels analyzed thus far: it appears that *qui* is slightly more often accepted than *que* in ungrammatical contexts, but we must err on the side of caution with the results for *que* due to the preposition stranding that may have influenced some participants' decisions in these cases. If we compare these results to the results in Table 19 for preposition stranding, we see that learners rejected 90.00% of sentences with preposition stranding when the correct relative pronoun was used; they accepted 10.00% of such sentences. Table 22 shows that learners accepted 25.00% of sentences which similarly stranded prepositions but used the ungrammatical *que*. Yet again, this pattern suggests that learners have an interlanguage rule which overgeneralizes *que* as a subordinating lexical item.

4.2.4.2 Production Task

Table 23, below, presents the types of responses that learners at Level 300 provided for each of the open-ended questions and the percentage of responses each category represents. Question #31 was designed to elicit the complementizer allomorph *qui* used with subject relative clauses; Question #32 was designed to elicit the complementizer allomorph *que* used with direct object relative clauses; and

Question #33 was designed to elicit the relative pronoun *lequel* with corresponding preposition *sur*.

Table 23: Response Types for Open-Ended Task, Level 300	
Question #31	
Type of Response	Responses in Category Percent (Number)
“Qui ont” + DP	40.00% (4)
“De” + DP	30.00% (3)
“Avec” + DP	30.00% (3)
Question #32	
Type of Response	Responses in Category Percent (Number)
“Que” + Subordinate Clause	10.00% (1)
“Qui est” + ADJ	40.00% (4)
ADJ only	50.00% (5)
Question #33	
Type of Response	Responses in Category Percent (Number)
“Sur lequel” + Subordinate Clause	10.00% (1)
“Qui est” + ADJ	40.00% (4)
Rewrote Stem (grammatical)	10.00% (1)
ADJ only	40.00% (4)

For Level 300 participants, Table 23 reveals that all responses which included relative clauses were grammatical. In fact, learners who produced ungrammatical sentences only did so by placing an adjective which belongs before the noun, after the noun. Otherwise, all responses were grammatical uses of relative clauses; the use of *qui* was still the most common production (40.00% of the responses for each question), but there was one response for Question #32 using *que* and another for Question #33 using *sur lequel*. This suggests that learners at this level still most

readily produce the complementizer *qui* rather than its allomorph *que* or the relative pronoun *lequel*, and perhaps that learners' interlanguage rules for relative pronouns at Level 300 are native-like and that they still most readily produce, though we must be wary to accept any generalizations drawn from a sample size of only 10 participants.

4.2.5 Level 400

4.2.5.1 Grammaticality Judgment Task

4.2.5.1.1 L1 Transfer

Table 24 shows the percentage of students at Level 400 who correctly marked as ungrammatical sentences with deletion errors and preposition stranding errors. As with the other levels, deletion errors are first presented as a whole and followed by a more detailed report by relative clause type following.

Table 24: Identification of ungrammatical sentences that transfer characteristics of English, Level 400	
Error Type	% Accuracy
Deletion	97.22%
Deletion for Direct Object Relatives	94.44%
Deletion for Prep. Object Relatives	100.00%
Preposition Stranding	100.00%

Learners at Level 400 correctly identify nearly all of the deletion and preposition stranding errors. At this level, for the first time, learners are slightly more accurate in identifying preposition stranding errors than deletion errors. Additionally,

as with Levels 200 and 300 participants, these learners more accurately identify sentences with both errors than sentences with only deletion errors.

4.2.5.1.2 Mapping of [HUMAN] and [ANIMATE] features

Table 25 presents the percentage of cases at Level 400 where sentences with *que* and *qui* were marked as grammatical, separating the analysis according to the [HUMAN] feature values and then by the [ANIMATE] feature values of the antecedents. A p-value is also provided for each set of values, based on a two-sample t-test, to determine the statistical significance of the results.

Table 25: Association of Complementizer Allomorphs with [HUMAN] and [ANIMATE] features of antecedents, Level 400		
	<i>QUE</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	100.00%	66.67%
[-HUMAN]	91.67%	33.33%
p-value for [HUMAN] distinction	0.50	0.20
[+ANIMATE]	91.67%	58.33%
[-ANIMATE]	100.00%	16.67%
p-value for [ANIMATE] distinction	0.50	0.10

Table 26 shows the percentage of cases in which Level 400 participants accepted as grammatical sentences with *lequel* and *qui*, again separating the analysis first according to the [HUMAN] feature value and then by the [ANIMATE] feature value of the antecedent. A p-value is provided for each pair based on a two-sample t-test to determine whether the results are statistically significant.

Table 26: Association of Relative Pronouns with [HUMAN] and [ANIMATE] features of antecedents, Level 400		
	<i>LEQUEL</i> % accepted	<i>QUI</i> % accepted
[+HUMAN]	50.00%	--
[-HUMAN]	75.00%	--
p-value for [HUMAN] distinction	0.22	--
[+ANIMATE]	55.56%	66.67%
[-ANIMATE]	83.33%	16.67%
p-value for [ANIMATE] distinction	0.24	0.09

Though none of the p-values indicate statistically significant trends, if we cautiously accept an analysis of the trends in Table 25 we see that learners have a preference for *qui* with [+HUMAN] and [+ANIMATE] antecedents more so than with [-HUMAN] and [-ANIMATE] antecedents. Concerning the relative pronouns in Table 26, learners have a clear preference for *lequel* with [-HUMAN] and [-ANIMATE] antecedents and for *qui* with [+HUMAN] antecedents. It is notable that these patterns, especially for the relative pronouns, resemble the judgments of participants at Level 200 more so than Level 300. Their accuracy overall decreases somewhat, and their judgments in these cases reflect more interference from L1 rules than for learners at the previous level of instruction.

4.2.5.1.3 Overgeneralization

Table 27, below, shows the percentage of participants at Level 300 who accepted sentences which incorrectly used either *que* or *qui*.

Table 27: Overgeneralization of Complementizers, Level 400		
	% Accepted in Ungrammatical Contexts	% Rejected in Ungrammatical Contexts
<i>QUE</i>	0.00%	100.00%
<i>QUI</i>	33.33%	66.67%

Again, the data show that learners at Level 400 were slightly more likely to accept *qui* in ungrammatical contexts than to accept *que* in ungrammatical contexts, but we must cautiously examine the data for *que* since these sentences also included preposition stranding. According to Table 24, the Level 400 participants rejected ungrammatical sentences with preposition stranding and no other errors 100% of the time. Thus, their rejection of the sentences with preposition stranding that use *que* is unsurprising; it is clear that their interlanguage does not allow preposition stranding in French. Unlike the other levels, they do not accept the sentences with preposition stranding and *que*, as represented in Table 27, any more frequently than they accept the sentences with preposition stranding and the appropriate relative pronoun, as represented in Table 24. Their interlanguage no longer allows overgeneralization of the complementizer *que* to all relativizing contexts.

4.2.5.2 Production Task

Table 28, below, presents the types of responses that learners at Level 400 provided for each of the open-ended questions and the percentage of responses each category represents. Question #31 was designed to elicit the complementizer allomorph *qui* used with subject relative clauses; Question #32 was designed to elicit the complementizer allomorph *que* used with direct object relative clauses; and

Question #33 was designed to elicit the relative pronoun *lequel* with corresponding preposition *sur*.

Table 28: Response Types for Open-Ended Task, Level 400	
Question #31	
Type of Response	Responses in Category Percent (Number)
“Qui ont” + DP	66.67% (4)
“De” + DP	33.33% (2)
Question #32	
Type of Response	Responses in Category Percent (Number)
“Que” + Subordinate Clause	16.67% (1)
“Qui est” + ADJ	33.33% (2)
ADJ only	50.00% (3)
Question #33	
Type of Response	Responses in Category Percent (Number)
“Qui est” + ADJ	16.67% (1)
“Auquel” + ADJ	16.67% (1)
Rewrote Stem (grammatical)	16.67% (1)
ADJ only	50.00% (3)

The sample size for the Level 400 learners was the smallest at only 6 participants, so these results must be only carefully considered. However, the data in Table 28 indicate that grammatical use of *qui* persists at Level 400 and *qui* is still the most readily used relativizer, produced in responses to all three open-ended questions. One participant did correctly use *que* in their response to Question #32, and we still see no evidence of its deletion or contraction as we saw for Levels 106, 107 and 200. However, the Level 400 participants show less accuracy than the Level 300 learners in

producing the relative pronoun *lequel*; only one learner attempted to produce it, and did so in a contracted form with the preposition *à*, which is not necessary in the given sentence. Thus, we may conclude that while learners' interlanguage seems to have maintained rules for grammatically producing relative clauses with complementizer *qui*, learners are less willing to produce *que*, and there is some confusion around the relative pronoun *lequel*.

4.3 Effects of Time Spent Abroad

To analyze the impact of time spent abroad in a French speaking country on learners' interlanguage development of complex relative clause structures, the data from the grammaticality judgment task can be analyzed by considering overall accuracy of students at each level, comparing those who have spent at least a week in a French-speaking country or region of the world to those who have not. These data are presented in Figure A; Table AC presents the number of students with and without experience in a French speaking region or country for each level, and Table AD presents p-values for each pair to measure the statistical significance of the results.

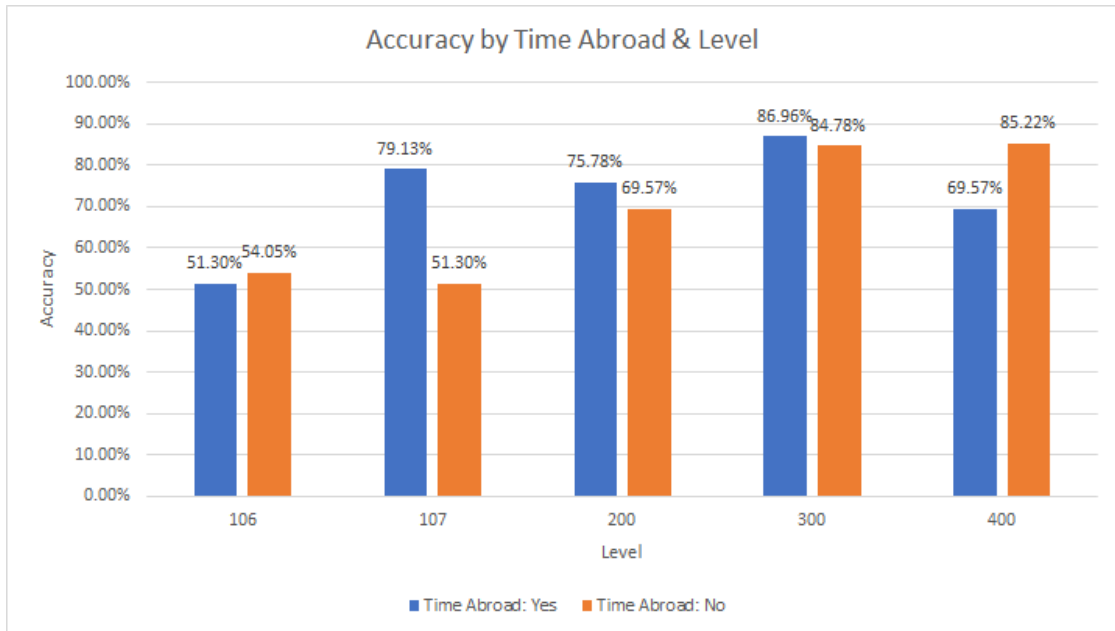


Figure 1: Accuracy by Time Spent Abroad & Level

Table 29: Participants with and without Time Abroad in a French-speaking region or country by level

Level	Time Abroad: Yes	Time Abroad: No
106	5	14
107	5	5
200	14	7
300	6	4
400	1	5

Table 30: p-values for Accuracy by Time Spent Abroad & Level

Level	p-value
106	0.62
107	0.00

200	0.14
300	0.64
400	0.07

Based on the trends in Figure 1, it appears that learners with some experience abroad have an advantage over their peers without that experience at Levels 107, 200, and 300. According to the p-values, however, this margin is only statistically significant for the participants at Level 107, though it is close at Level 200. At the two extremes, the values in Figure 1 suggest that time abroad presents a disadvantage in accuracy for the most beginner learners at Level 106 and the most advanced learners at Level 400; given the p-values for each, and especially the sample size for Level 400, it is safe to say that these data show little to no impact of experience abroad at both ends of the spectrum. However, for the other levels, there is a trend from a statistically significant difference in performance between the two populations at Level 107, to a nearly statistically significant difference at Level 200, to a non-statistically different margin at Level 300. This suggests that increased exposure to the language in an immersion setting may be advantageous to beginning learners who already have a year or more of experience with the language in an instructed setting, but that with increased formal instruction as learners progress to Intermediate and Advanced language courses, the margin of that advantage narrows. This may be explained by the fact that subordination, especially with objects of prepositions, is a complex structure rare to casual interactions that learners are likely to encounter while traveling abroad. Thus, increased exposure to the language in an immersion setting may aid proficiency in a more general manner at lower levels, while formal grammar instruction may be more beneficial to learners in upper levels.

Chapter 5

CONCLUSIONS

5.1 Answers to Research Questions

5.1.1 Are there distinct stages in the L2 acquisition of French relative clause structures for L1 English speakers?

The results of the Level-by-Level analysis are shown visually in Figure 2, which orders learners' accuracy in identifying the different types of errors analyzed from the grammaticality judgment task. The following code is used in the figure to increase readability:

- Del-Only: Sentences with only deletion errors
- PS-Only: Sentences with only preposition stranding errors
- PS&Del: Sentences with preposition stranding and deletion errors combined
- OG-Que: Sentences which use *que* in inappropriate contexts
- OG-Qui: Sentences which use *qui* in inappropriate contexts
- OB-Feat: Sentences which assign *qui* to [+HUMAN] or [+ANIMATE] antecedents when the complementizer allomorph for relativized direct objects, *que*, should be used instead
- PO-Feat: Sentences which assign *qui* to a [+ANIMATE] antecedent when the relative pronoun *lequel* should be used instead

As with previous analyses for the overgeneralization of *que*, the results for the OG-Que category should be carefully examined, as all such sentences also had stranded

prepositions, and previous data show that learners have an early intuition about the ungrammaticality of preposition stranding which remains strong across levels.

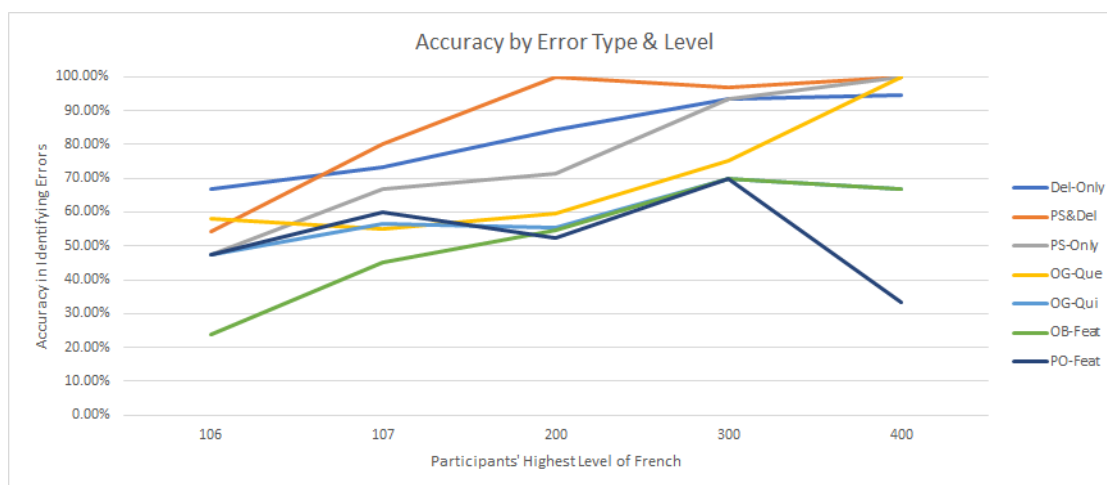


Figure 2: Accuracy by Error Type & Level

To fully understand the developmental trends through which learners progress, their production should be considered in addition to their grammaticality judgments. Figure 3, below, represents the type of productions learners made at each level. The percentages represent the proportion of the answers to all three questions that fall in each category for each level.

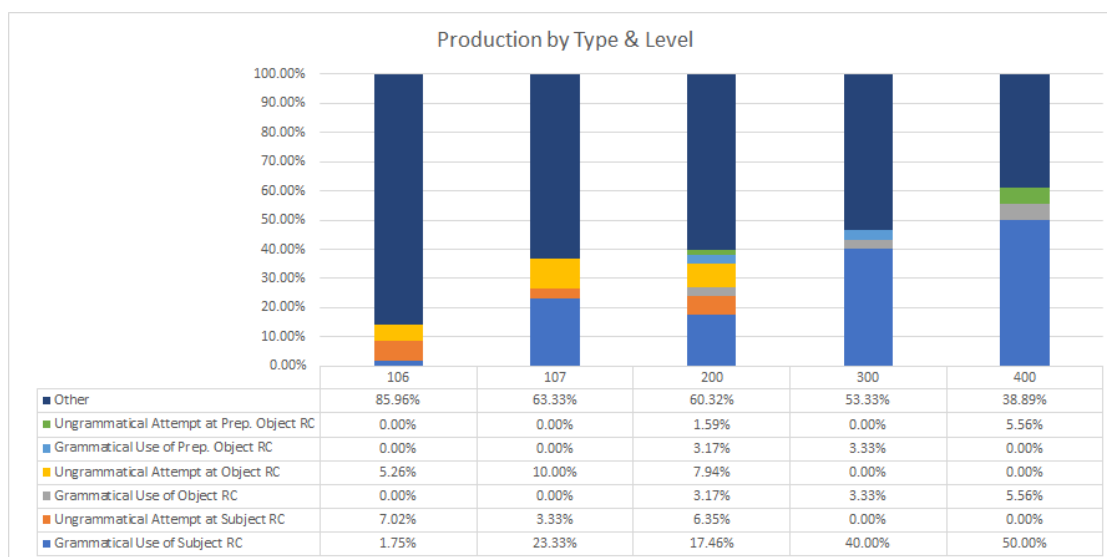


Figure 3: Production by Type & Level

Based on the summary here and the more detailed information provided for each level above, it is possible to describe the following stages of development for learners of French in an instructional setting that uses a communicative approach.

5.1.1.1 Level 106

Even before instruction in relative clause formation, learners at this level have a strong intuition about the ungrammaticality of relative pronoun and complementizer deletion in French. They also recognize the ungrammaticality of preposition stranding, though this notion is much less stable than that of the ungrammaticality of deletion and they recognize ungrammaticality of sentences with preposition stranding more accurately when they are accompanied by another error such as the overgeneralization of *que* as a relativizer or deletion of the relativizing lexical item. They recognize errors in the overgeneralization of *qui* at about the same rate as preposition stranding, just under half the time. They rarely recognize errors in object relative clauses based on the

features of the antecedent. At this stage, they may produce subject relative clauses using the complementizer allomorph *qui*, though some attempts will be ungrammatical, and they may attempt to use the contracted form of *que*, *qu'*, in contexts where it does not belong.

5.1.1.2 Level 107

Learners at this level may or may not have had explicit instruction in relative clause formation based on how they fulfilled the prerequisites; in all cases, it remains constant that learners at this stage have had more exposure to French than those at Level 106. Their accuracy in recognizing errors increases for all error types except for the overgeneralization of *que*, and according to the production task results, Level 107 participants do make more attempts to use *que* than at Level 106; this is a stage where they may overgeneralize the use of the complementizer. Their intuitions about preposition stranding sharply increase with their increased exposure, and they recognize the ungrammaticality of sentences with both deletion and preposition stranding at the highest rate. Their accuracy at identifying errors due to semantic features of the antecedents in object relative clauses also sharply increases to nearly half of all cases, so they do begin to develop a sense that semantic features are not the primary motivation for choosing between the complementizer allomorphs *que* and *qui*. They produce relative clauses more frequently, still with *qui*, and are successful more often than they are unsuccessful.

5.1.1.3 Level 200

Typically, by the time learners reach Level 200, they have had instruction in the formation of relative clauses, if only using the complementizers *qui* and *que*, and

their use is reviewed and practiced in these courses. These participants' accuracy increased for almost all error types; their notions of the ungrammaticality of deletion and preposition stranding become keener and they recognize the error in 100% of the sentences which have both of these errors. However, they still accept as grammatical sentences with preposition stranding when the relativizer used is *que* and not the appropriate relative pronoun. This, combined with increased attempts to use *que* from the previous level, and decreased attempts to use *qui*, indicates that these learners are still susceptible to overgeneralization of *que*. Their accuracy in correcting errors based on the semantic features of antecedents increases for direct object relative clauses, but decreases for prepositional object relative clauses. This may be due to the frequency of subject and direct object relative clauses in the language, as compared with prepositional object relative clauses. Finally, though learners recognize error less frequently in prepositional object relative clauses, they do begin to produce them, though some attempts are still ungrammatical.

5.1.1.4 Level 300

At Level 300, instruction focuses on content though many courses incorporate grammar points with which students have the most difficulty. Here learners' accuracy increases for identifying all types of errors, save for combined preposition stranding and deletion errors, though this decrease was likely insignificant given the sample size of 10. Notably, recognition of errors based on the semantic features of antecedents peaks at this stage at about 70%, along with recognition of the overgeneralization of *qui*. Deletion and preposition stranding errors remain the most frequently recognized, though still learners are more likely to accept preposition stranding when it occurs with the added ungrammaticality of overgeneralized *que* in place of the appropriate

relative pronoun. Learners' productions of relative clauses were all grammatical at this stage, though some still avoided the structures entirely. They still most readily produce *qui*, and rarely produce *que* or *lequel* even in contexts designed specifically to elicit the latter two items.

5.1.1.5 Level 400

By the time learners reach Level 400, they rarely receive direct instruction in grammar and courses typically focus strictly on content. At this level, the data shows that learners recognize a majority of the errors tested in this study, with the exception of the overgeneralization of *qui* and errors based on the semantic features of the antecedents, especially for prepositional object relatives. They produce relative clauses slightly more often than the participants at Level 300, but still most frequently with *qui*; production of *que* and *lequel* is still rare, and in fact the single attempt to produce *lequel* was ungrammatical. The decrease in accuracy for some error types and the errors made in production of the prepositional object relative may be the result of distance from direct instruction in the formation of relative clause structures, despite learners' increased exposure.

5.1.2 Question #2: If distinct stages of development are observed, how does the role of L1 transfer in the L2 acquisition of French relative clause structures shape those stages of development?

As described after the contrastive analysis of English and French in Chapter 2, we expect Anglophones to make the following types of errors in L2 French if L1 interference is at play:

- Feature-Related Errors: producing or accepting as grammatical sentences which employ the complementizer allomorphs *que* and *qui* based on the semantic features of the antecedent rather than on the grammatical position

of the relativized item in the embedded clause, or rejecting as ungrammatical sentences which employ the relative pronoun *lequel* with [+HUMAN] antecedents

- Overgeneralization Errors: producing or accepting as grammatical relative clauses which overuse one of the two complementizer allomorphs, *que* or *qui*, rather than the appropriate complementizer or relative pronoun
- Deletion Errors: producing or accepting as grammatical relative clauses which have no overt lexical marker
- Preposition Stranding Errors: producing or accepting as grammatical sentences with stranded prepositions, rather than pied-piping them as required in French

The data suggests that L1 transfer has a stronger influence on some variables than on others. From the start, learners in Level 106 are able to identify the ungrammaticality of sentences with preposition stranding more than 50% of the time, even though preposition stranding is grammatical in English. This suggests that L1 transfer may have a weak influence on their interlanguage rules concerning preposition stranding as it relates to relative clauses, and Universal Grammar may be a more prevalent influence in that regard, as suggested by the results of Adjémian and Liceras (1984). However, the learners at Level 106 correct feature-related errors, overgeneralization errors, and deletion errors less than 50% of the time, which suggests that they may be relying more on their L1 grammar in grammaticality judgments due to lack of sufficient exposure to the L2.

By Level 107, with increased exposure to the language, learners have even stronger notions about the ungrammaticality of relative clauses with preposition stranding and develop much stronger intuitions about the ungrammaticality of sentences with no overt relativizing lexical item. This suggests that learners overcome L1 interference regarding deletion errors in relative clauses rather early. However,

they are still susceptible to overgeneralization and feature-related errors. This trend continues at Level 200 where learners more accurately identify preposition stranding and deletion errors, but their accuracy in identifying overgeneralization and feature-related errors hovers between 50% and 60%.

Progressing to the upper levels, accuracy peaks for recognition of overgeneralization errors and feature-related errors at about 70% for all sentence types at Level 300, before decreasing again at Level 400.⁵ While accuracy for recognition of sentences with preposition stranding and deletion errors remains between 90% and 100% for both levels, the decrease in accuracy for the errors which appear to be most strongly influenced by L1 transfer is noteworthy. One possible explanation is that because L1 transfer has the strongest influence on these types of structures, as learners begin to take classes which focus on content and no longer engage in targeted grammar practice, the strength of the more native-like rules they formed in the interlanguage decreases, and L1 transfer again becomes more active.

In summary, the data suggest that both Universal Grammar and L1 transfer influence learners' interlanguage development of relative clauses. Some errors, such as preposition stranding and deletion errors, are identified as ungrammatical from early stages before formal instruction; this suggests that Universal Grammar may aid learners in interlanguage rule development. Other errors, however, such as feature-

⁵ One exception to this decrease is for sentences which use overgeneralized *que*. However, as explained in Chapter 3: Results, each of these sentences also had a preposition stranding error. As learners at Level 400 are highly accurate in identifying the ungrammaticality of preposition stranding errors, it is likely that this error had a larger influence on their decision to mark the sentence as ungrammatical rather than the overgeneralization error.

related errors and overgeneralization errors, develop more slowly and accuracy never disappears; this suggests that L1 transfer may also play an important role in interlanguage development of relative clause structures, particularly influencing their use of semantic traits to select relativizers and their tendency to overgeneralize a single complementizer. Increased exposure and instruction appear to weaken the influence of L1 from Level 106 through Level 300, but the native-like rules of the interlanguage prove unstable as L1 transfer has a stronger influence at Level 400 when learners are more distanced from instruction and targeted practice.

5.1.3 Question #3: How does experience abroad affect acquisition of relative clause structures in French?

This study also investigated the effects of time abroad on the acquisition of relative clause structures at various levels of L2 French. Though the data available from the study is analyzed here, it is important to keep in mind that further research needs to be conducted to confirm these findings, given p-values that show that the results are not statistically significant. There are several potential explanations. First, the sample size was very small; with few students and few questions for each variable measured, the results are less reliable than a large-scale study with more participants and a more extensive survey. Second, due to the small sample size, groups were amalgamated into masses that may not capture fine differences in competence and performance. Specifically, to investigate the effects of time abroad, all learners who reported spending at least one week abroad in a French-speaking region were grouped together, regardless of length of stay, in order to avoid groups of only 1 or 2 learners who stayed for a certain time frame. Additionally, to investigate the effects of enrollment in a French program, students from all programs—no matter which major

or minor—were grouped together into one group with a larger sample size to avoid having several groups with a single participant.

Cautiously analyzing the data despite their lack of statistical significance, it appears that there is no effect of program enrollment on accuracy in the grammaticality judgment task, but that time abroad may have a slight impact on learners at early stages. This may be due simply to increased exposure to the language that results from an immersion setting. However, as explained above, subordination is not typically encountered in the routine interactions that learners are most likely to encounter abroad; thus, the advantage of study abroad logically decreases with increased formal instruction, a setting where learners are much more likely to encounter relative clause structures.

5.2 Pedagogical Implications of Findings

The results of this study have pedagogical implications for each level of study. Here, they will be considered for “lower level” learners (second and third semester, Levels FREN106 and FREN107), “middle level” learners (second and third year, Levels 200 and 300) and “upper level” learners (fourth year, Level 400). These implications are, of course, only suggested by the results and have not been tested themselves; further research may focus on the success of the following pedagogical suggestions. In addition, it should be noted that each program of instruction is unique, and these suggestions must be adapted to each of the contexts in which they may be applied.

5.2.1 Lower Level Learners

It is clear that lower level learners have already formed interlanguage rules which do not allow sentences with no overt relativizing lexical item, based on the results of the grammaticality judgment task. Therefore, while instruction of the complex structure of relative clauses is often reserved for middle level learners, the results of this study imply that in curriculum planning and materials design, it may be worthwhile to introduce relative clauses to learners at an earlier stage than is currently common. Learners at Levels 106 and 107 accurately identified as ungrammatical sentences with deletion errors in ~70% of cases; because this is a point of contrast between English and French syntax, this intuition can be attributed to Universal Grammar. Additionally, in the production task, learners at these levels did attempt to produce relative clauses despite a lack of formal instruction in most cases, resulting in many ungrammatical attempts to form them as learners did not know which lexical item should link their clauses. Given that lower level learners seem to have an interlanguage rule that some lexical item must link the matrix and relative clauses, they may be ready for instruction at this early stage, which may take the form elaborated below.

At the lower levels, instructors should help learners investigate and understand these structures, as well as begin to produce them. Drawing on Lee and VanPatten's (2003) suggestions for the application of input processing theories in the classroom, instructors may direct learners' attention to the structure of relative clauses, particularly to the lexical items that link matrix and relative clauses, while maintaining a communicative focus in the classroom through structured input and reflection activities. For example, an instructor might provide their learners with a short, authentic reading that contains a high concentration of relative clauses, and help

learners focus on the relative pronouns and complementizers by underlining them in the text. Instructors could ask students to consider the function of these words in the context, and once students realize that they combine two sentences, ask them to break down the complex sentences into two simple sentences each. Finally, instructors could ask very targeted questions, based on the set of sentences in the reading, to lead learners to recognize the characteristics of the embedded sentence that influence the choice of relative pronoun or complementizer. Because the relative pronouns and complementizers are syntactically different and are selected based on different criteria, it may be best to highlight only one type of relativizer at a time. In particular, Mitchell's (2001) work suggests that mastery of indirect object or prepositional object relative clauses may help learners develop a stronger understanding of the complementizers *que* and *qui* than starting with these seemingly simpler structures (p. 171). Thus, instructors may choose to highlight only indirect object relatives during the first reading. Once learners have an understanding of these structures based on input, communicative but controlled output activities may help learners develop control over the use of these structures since they do attempt to produce relative clause structures at this point. These activities could take the form of sentence-combining exercises or, more authentically, responses to questions asking learners to specify an object. For example, activities could focus on those questions using the *lequel* interrogatives. In either case, instructors should remember to contextualize all activities to help students process grammar more effectively.

5.2.2 Middle Level Learners

At the middle levels of instruction, production overall becomes more accurate, especially at Level 300, but learners still have difficulty correctly identifying as

ungrammatical sentences with feature-related and overgeneralization errors, likely due to L1 interference. While the interventions described above for lower levels learners can easily be applied with middle level learners, if instructors notice that their middle level learners are struggling with these types of errors despite the strategies above, they may benefit from direct instruction targeting these types of potential errors. In other words, these learners may benefit from instruction which specifically addresses the differences between the English and French systems and draws their attention to the fact that animacy of the antecedent does not influence the choice between complementizer allomorphs *que* and *qui*. This can be accomplished through further reflection activities based on authentic input. Such activities should aim to help the learner notice that it is the grammatical role of the relative pronoun in the embedded sentence—or, in more learner-friendly terms, the position of the linking word in the embedded sentence—that determines whether *que* or *qui* should be used. In order to help learners more clearly understand that animacy plays no role in complementizer selection, Walz (1981b) suggests sentence-combining exercises where a set of sentences have the same antecedent but use different types of relative clauses, and thus different complementizer allomorphs (p. 848-849). These types of exercises may help learners more clearly recognize that their choice of allomorph does not depend on the animacy of the antecedent, since the animacy will remain constant while the complementizer allomorph changes.

5.2.3 Upper Level Learners

Finally, upper level learners seem to decrease in accuracy, both in grammaticality judgments and production, for the same errors that middle level learners struggle with: feature-related and overgeneralization errors. This is likely due

to increased L1 interference as learners are distanced from initial instruction and language production, both orally and in writing, becomes less targeted. At this level, continued use of relative clause structures is essential to maintenance of the native-like rules of relative clause formation in the interlanguage. While instructors focus on content rather than grammar in their courses, they should encourage students to use more complex structures in production. One method, for example, might be adding a “Complexity” criterion to rubrics for grading writing, so that not only their accuracy is scored, but also their effort to use complex rather than simple sentences. In fact, Turgut and Kayaoglu (2015) found that use of a rubric with a “Language use and mechanics” criterion not only led English as a Foreign Language learners to use more complicated sentences rather than simple sentences, but also that use of a rubric in general led learners to perform better than their peers whose writing courses did not include rubrics overall (p. 55-56). Instructors should also provide feedback on writing, and recommend targeted practice, such as more controlled structured output exercises, for structures in which they see a pattern of error, such as relative clause formation. Finally, if instructors do choose to incorporate grammar into their courses, they should use the content of their courses to contextualize the grammar instruction. For example, to review relative clauses, instructors could ask students to analyze the structure of sentences with relative clauses within a work they are reading in the course. This suggestion is supported by research which applies to formal grammar instruction even for lower-level learners: Klaus Brandl (2008) explains that contextualized grammar instruction is a current trend in foreign language education (p. 107), and Alice Omaggio Hadley (2001) provides ample evidence of the important role of context in L2 instruction for learners at all levels (p. 139-175).

5.3 Suggestions for Further Research

This study contributed a cross-sectional study of the acquisition of relative clause structures in French by L1 English speakers, studying the acquisition of subject, direct object, and object of a preposition relatives. While the study does provide some data on the topic, most of the results of the grammaticality judgment task were not shown to be statistically significant. This is likely due to the small sample size; thus, a replication of this study with more participants at each level of instruction is essential to confirm these results. The results of a similar study could be even more fruitful if the future study included more sample sentences of each type, thereby further increasing the sample size for each category of error type. In addition, future researchers should also include sample sentences which use the complementizer *que* in inappropriate contexts, such as prepositional object relatives, with no other errors and sentences which use the relative pronoun *qui* with [+HUMAN] antecedents. Both of these types of sentences were omitted in this study, but would contribute to a fuller analysis of the development of learners' interlanguage surrounding relative clauses and provide more sound responses regarding the role of L1 in their acquisition.

One additional recommendation for further research is to test the effects of the pedagogical implications discussed above. While this was beyond the scope of this study's time frame, the suggestions at each level could be tested in the classroom. For lower level learners, for example, a longitudinal study could compare the production and accuracy of two groups over time—one with and one without early instruction in relative clause formation—to determine whether introducing the structures early contributes to increased attempts to produce them and/or significantly higher accuracy in identifying errors. For middle level learners, a comparative study could test the impact of sentence-combining exercises which use the same antecedent for items that

use different relativizing lexical items, by comparing groups with and without this type of treatment. Finally, for upper level learners, research could compare the production and accuracy of groups whose instructors do and do not provide a grade for complexity of their writing.

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Appendix A

SURVEY

The survey used to collect data was delivered online via Qualtrics. The following pages present the exact text participants read on each of the four electronic pages of the survey. Note that learners were able to move freely between pages and could go back to questions on previous pages if they so desired.

A.1 Introduction and Consent

You are being invited to participate in a research study. This study is part of a Master's Thesis in Foreign Language Pedagogy which aims to learn more about the order in which certain grammatical features of French are learned by adults to maximize the effectiveness of future teaching strategies. You are being asked to participate because of your status as a current student of French at the University of Delaware, but may only participate in the study if you are currently 18 years of age or older and a non-native speaker of French. Taking part in this research study is entirely voluntary. You do not have to participate in this research. If you decide not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. There are no particular risks or benefits associated with participation in the study.

This study asks you to complete a three-part survey. The first part will ask for information regarding your language background. The second part will ask you to read 30 sentences and decide if they are correct or incorrect sentences of French. The third part will ask you to finish 3 original sentences based on given information. Please do not use any online or hard copy resources while filling out the survey; use only your knowledge of French and your intuition.

Your participation will involve approximately 10-15 minutes in a single session. All data collected from this study will remain anonymous. Results will be reported by group, considering factors such as study

abroad, level of French, experience with other languages, first language, and other information collected in Part I of the survey.

If you have any questions about this study, please contact the Principal Investigator, Kayla Dickens, at (302) 831-0284 or kdickens@udel.edu or the Principal Investigator's Advisor, Dr. Jorge Cubillos, at (302) 831-6882 or cubillos@udel.edu.

If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at hsrb-research@udel.edu or (302) 831-2137.

By checking the box below, you are indicating that you have read the above information and agree to participate in this study. You may stop participation at any time by simply closing the survey window in your browser.

☐ I Agree

A.2 Part I: Linguistic Background

Please answer the following questions as completely and accurately as possible.

- Do you have a major, minor, or certificate in French?
 - ☐ Major in French Studies
 - ☐ Major in French Education
 - ☐ Minor in French Studies
 - ☐ Minor in French
 - ☐ Certificate in French
 - ☐ None
- Which French class(es) are you taking this semester? _____
- How long have you been studying French?
 - Years in Elementary School: _____

- Years in Middle or High School: _____
- Semesters in College (inc. this semester): _____
- Which language(s) do you consider your first language(s)? In other words, what language(s) did you speak growing up? _____
- Do you speak any other languages? If so, which ones? For how long? How did you learn them? _____
- Have you spent time abroad? If so, please where, for how long, and for what purpose (vacation, study, etc.). _____

A.3 Part II: Grammaticality Judgment Task

For each sentence below, decide whether it is a correct or incorrect sentence in French. Indicate your choice by choosing "Correct" or "Incorrect" below the sentence.

- La question laquelle je réponds à est facile.
- La tortue sur laquelle je vois un chat est lente.
- Le professeur je parle à est sympa.
- Alice ne va pas aller en ville.
- Le garçon auquel je chante est fasciné.
- Le chien je veux est mignon.
- La dame qu'il déteste est méchante.
- La boîte que je mets mes livres dans est grande.
- L'ordinateur tu veux es bon.
- Cette question est facile.
- Mes chats ne m'aime plus.
- Le chien lequel je souris à est timide.
- La dame qui je donne le pain à est triste.

- Le sac qui j'achète n'est pas grand.
- Je veux que Martin vient avec nous.
- Le lapin que je parle à n'est pas content.
- Le jeune homme qui j'ai vu ce matin était triste.
- La calculatrice que j'utilise est incorrecte.
- Le problème je concentre sur est difficile.
- L'étudiant auquel je pense est intelligent.
- Ce livre n'est pas intéressant.
- Ton chat est trop mignonne.
- Le lapin pour qui j'achète de la nourriture est heureux.
- La question à qui je réponds est facile.
- Le garçon tu aimes n'est pas gentil.
- Je n'aime pas prendre le métro.
- Le chat qui Marie adopte s'appelle Fifi.
- La tortue que tu vois est lente.
- L'entreprise pour laquelle je travaille est petite.
- Le chat je donne du lait à n'est pas content.

A.4 Part III: Sentence Completion Task

Your host family for your semester abroad next spring is decorating your room and wants to know your preferences. Respond to the questions in their email by filling in the blank to finish each answer without changing the beginning of the sentence provided. If you are not sure how to finish a sentence, simply enter a dash ("-").

- Nous voulons t'acheter des photos pour les murs. Certaines photos ont des animaux. D'autres photos ont des villes. Quelles photos est-ce que tu préfères ? Je préfère les photos _____.
- Tu as besoin d'une couverture. Nous avons deux choix. Jean a choisi une longue couverture. Christine a choisi une courte couverture. Quelle couverture est-ce que tu préfères ? Je préfère la couverture _____.
- Tu peux avoir un nouveau bureau si tu le veux. Tu peux mettre seulement ton ordinateur sur le nouveau bureau. Tu peux mettre ton ordinateur et tes livres sur l'ancien bureau. Lequel préfères-tu ? Je préfère le bureau _____.

Appendix B

RESPONSES TO OPEN-ENDED ITEMS

The following sections list each of the responses received to the open-ended task, question-by-question and level-by-level. Within the list, answers which repeated exactly are indicated with the number of identical responses in parentheses in italic font.

B.1 Question #31

This question was designed to elicit *qui*, the complementizer allomorph used for subject relative clauses.

B.1.1 Level 106 Responses

- À ma famille et mes amis.
- Avec des animaux.
- Avec les animaux.
- Cet a la ville.
- De la plage
- De mes amis et ma famille.
- Des animaux (*x2*)
- Des animaux. J'adore les chats et chiens, et aussi des animaux comme l'éléphants et les tigres.
- Je préfère les photos des chiens, les vêtements, et fashion.

- Je préfère les photos ont des villes.
- Je préfère les photos de les animaux
- Je préfère les photos des animaux.
- Ont des animaux
- Ont des villes (x2)
- Qu'ont des villes.
- *No response (x2)*

B.1.2 Level 107 Responses

- Avec des animaux.
- Avec des villes (x2)
- Avec ma famille et mes amies.
- Des animaux.
- Des planets
- Des villes
- Ont des animaux et les photos de la nature
- Qui ont des animaux (x2)

B.1.2.1 Level 200 Responses

- Animaux sauvage, comme les requins, les loups, et les ours
- Avec des villes! Un jour, je voudrais d'habiter dans une grande ville.
- De villes
- Des villes (x4)
- Des animaux (x4)

- Des comedies musicales, Living Single, et de boxe
- Des villes parce qu'ils sont très beaux mais ils ne sont pas trop formel
- Does animaux
- Ont des animaux
- Ont des villes
- Ont les chiens
- Ont les plages
- Qui ont des animaux (x2)
- Qu'ont des images du monde comme la mer et le terre.

B.1.3 Level 300 Responses

- Avec des animaux.
- Avec des villes (x2)
- D'animaux et de villes.
- Des animaux.
- Des villes européennes, mais ne vous inquiétez pas décorer les murs.
- Qui montrent des villes.
- Qui ont des animaux.
- Qui ont des villes (x2)

B.1.4 Level 400 Responses

- Je préfère les photos qui ont des animaux.
- Des animaux
- Des villes

- Qui ont des villes (x2)
- Qui tiennent les villes.

B.2 Question #32

This question was designed to elicit *que*, the complementizer allomorph used with direct object relatives.

B.2.1 Level 106 Responses

- C'est longue
- Courte
- Je préfère la couverture longue.
- Je préfère la couverture longue (x2)
- Longue (x3)
- Qu'est longue
- Qui est longue
- Une courte couverture
- Une longue
- Une longue couverture
- Une longue couverture! Je n'aime pas être froid.
- *No response* (x5)

B.2.2 Level 107 Responses

- Longue (x3)
- Qu'est longue (x2)

- Qui est longue (x2)
- *No response*

B.2.3 Level 200 Responses

- Courte
- Grande et longue
- Longue (x7)
- Longue et bleu.
- Longue parce que j'aime quand ma chambre faisait froid et la couverture longue a plus chaud.
- Longue parce-que Je prefere etre enierement couvert
- Qu'est courte
- Que Christine a choisi.
- Qu'est chaud et douce.
- Qui est longue (x6)

B.2.4 Level 300 Responses

- Courte
- Longue (x3)
- Longue que Jean a choisi
- Plus longue.
- Qui est courte.
- Qui est longue (x2)
- Qui est plus longue.

B.2.5 Level 400 Responses

- Je préfère la couverture qui est longue.
- Longue (*x3*)
- Que Jean a choisi.
- Qui est longue.

B.3 Question #33

This question was designed to elicit the relativizing phrase “sur lequel” for an indirect object relative clause.

B.3.1 Level 106

- C’est nouveau
- Je préfère le bureau –
- Je préfère le bureau ancien
- Je préfère le bureau nouveau.
- L’ancien
- L’ancien et j’ai mis mon ordinateur et mes livres
- Mettre mon ordinateur et mes livres.
- Mon ordinateur. J’achèterai les livres nouveaux.
- Nouveau pour mettre mon ordinateur
- Nouveau.
- Qu’est nouveau.
- Un ordinateur
- *No response (x7)*

B.3.2 Level 107 Responses

- Ancien (*x2*)
- Avec un ordinateur, un nouveau bureau
- Nouveau.
- Obenit tes livres
- Qu'est nouveau.
- Qui est ancien (*x3*)
- *No response*

B.3.3 Level 200 Responses

- Ancien (*x5*)
- Avec le plus space, pour mes livres et mon ordinateur
- Avec une ordinateur.
- L'ancien, pour mes livres.
- Lequel je peux mettre mon ordinateur et mes livres.
- Nouveau
- Ou je peux mettre seulement mon Ordinateur
- Que je peut mettre mon ordinateur
- Que je peux utiliser avec ma ordinateur et livres.
- Que je puex mettre mon ordinateur et mes livres.
- Qui est ancien (*x2*)
- Qui est nouveau.
- Sur lequel je peux mettre les livres et l'ordinateur.

- Sur lequel je peux mettre mon ordinateur et mes livres.
- Vieux grâce à la fait qu'il a des espaces pour les livres.
- *No response*

B.3.4 Level 300 Responses

- Ancien (x3)
- Ancien, merci beaucoup !
- L'ancien bureau
- Qui est ancien.
- Qui est nouveau (x3)
- Sur lequel je peux mettre les deux choses

B.3.5 Level 400 Responses

- Ancien (x2)
- Je préfère le bureau auquel je peux seulement mettre mon ordinateur.
- Je préfère le nouveau bureau.
- Nouveau
- Qui est ancien

Appendix C

INSTITUTIONAL REVIEW BOARD PERMISSION LETTER



RESEARCH OFFICE

210 Halliham Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

DATE: August 31, 2017

TO: Kayla Dickens
FROM: University of Delaware IRB

STUDY TITLE: [1111136-1] The Acquisition of Relative Pronouns in French as a Second Language

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: August 31, 2017

REVIEW CATEGORY: Exemption category # (2)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.