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Cross-linguistic influence of the L1 and L2 cognate forms on L3 frame acquisition in the multilingual lexicon

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INTRODUCTION

1.1   Overview

The study of cross-linguistic influence in the multilingual lexicon is still a new frontier in terms of research. While the bilingual and multilingual models that have thus far been expounded by researchers in the linguistic field have proven useful (Weinreich, 1953; Harley, 1995; Cenoz, Hufeisen, and Jessner, 2003; Murphy, 2003), more research regarding how the mental lexicon is structured will allow a clearer picture of the architecture of the multilingual mental lexicon. An increased complexity of the mental architecture has been found to correspond with the increased of the number of languages a speaker acquires. Advances in the area of cross-linguistic influence (Odlin, 1989; Murphy, 2003; Wei, 2003) may allow us to better understand the more intricate interactions that occur within the multilingual mind with the addition of a third language. Advances will also provide opportunities for insight into the nature and possible effects of psychotypology, which is the learner's perception of how languages are related or connected.

The effect of cross-linguistic influence on multilingual lexicon development is an area of study that merits increased research. The experiment reported in this thesis is a quantitative psycholinguistic study that investigated the cross-linguistic influence of L1 and L2 cognate forms on L3 frame acquisition (grammatical use of a word) in the multilingual lexicon. Cross-lexical influence is the phenomenon in which the knowledge of one set of words affects another being learned, comprehended, and produced. Within cross-lexical influence resides the so-called

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"cognate effect", which is the assumption of translation equivalence when words from different languages share form. A cognate is a word that is found in one language that is quite similar, through speaking or spelling, with a word from another language, as with *cocktail* in English and *coctel* in Spanish. In this experiment, cognate verbs in French (L3) with Spanish (L1) or English (L2) verbs were the focus.

Throughout this study, the Triad Model (Hall, 1993) is used to describe the connections between the mental representations of lexical entries. This model describes the nature of the relationship between three aspects of lexical knowledge: the *form*, which is the "physical" representation, the *frame*, which is the syntactic representation, and the *concept*, which is the meaning of the word (see Figure 1). The first two components are linguistic, while the third component is not (cf. Jackendoff, 1983). The frame contains the grammatical information of the word, such as its syntactic category, and other necessary information, such as categorical, subcategorization, and thematic features (Radford, 1988; Jackendoff, 1983).
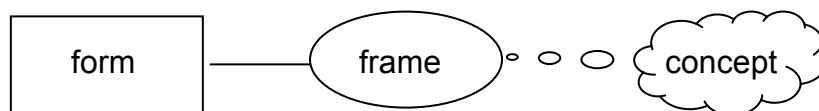
Figure 1: Hall's (1993) Triad Model

The prime motivation for this thesis is two-fold. Firstly, this is a conceptual replication study of an experiment reported in Hall, Ecke, Sperr, & Hayes (2004)[1] that studied learners for whom the L1 was Spanish, the L2 was English, and the L3 was German. The experiment tested one of the predictions of the "Parasitic Model" of multilingual vocabulary development, according to which a cognate in an L1 or L2 may serve as a "magnet" to a newly-learned L3 word. The experiment sought to verify whether the L3 German learners would adopt the frame of an L1 or L2 cognate. Although the hypothesis was confirmed, the effect appeared to be temporary. The connection between the new L3 word and the L1 or L2 cognate was tenuous after one presentation and dissolved quickly. In order to gain further insight, information was solicited regarding the learners' perceptions of the typological relationship (psychotypology) that exist between Spanish, English, and German. English and German, historically, are typologically closer, while Spanish is considered more distant. The information solicited sought to draw out the learner's views on the relationship of the three languages and the influence these views may have had on their frame selections. Secondly, a further motivation for this study is to add needed data to the area of cross-linguistic (specifically, cross-lexical) influence in the multilingual lexicon with regard to vocabulary development by testing the theory with different languages.

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[1] Both the experiment using German as the L3 and the current project using French as the L3 are part of the FCT (Frame, Cognate, Typology) research project [CONACYT Grant number 39704-H awarded to Hall].

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1.2   Multilingual lexicon

The study of the architecture of the mental lexicon has been an area of major interest for psycholinguistic researchers (Weinreich, 1953; Collins, 1975; Harley, 1995; Altarriba, 1997; Cenoz, 2001; Cenoz, Hufeisen, and Jessner, 2003; and Murphy, 2003, among others). This study focuses on the multilingual lexicon and the cross-linguistic influence that linguistic systems exert on each other.

The mental lexicon is the component of the mind where the phonological, morphological, and syntactic information about words is stored in lexical entries and connected to the semantic information of the lexical item. Study of the mental lexicon has provided information regarding the representation of lexical structure and its organization. The addition of a second (L2) language to a speaker's language repertoire increases the complexity of his/her mental lexicon. Weinreich's (1953) model of the bilingual lexicon postulates three possible mental representations of translation equivalents and was used to characterize different kinds of bilingual speakers (see Figure 2).

Compound representation:
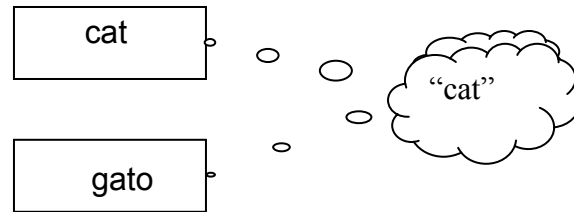
Coordinate representation:
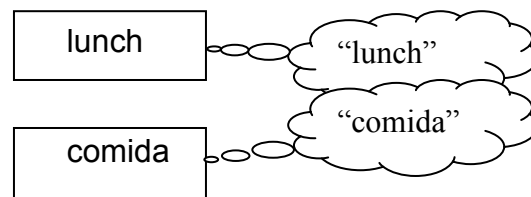
Subordinate representation:
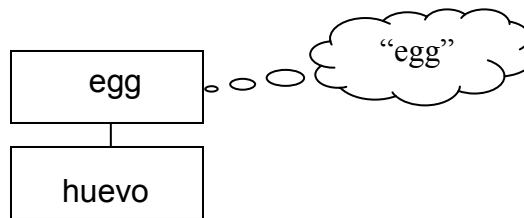
Figure 2: Weinreich's (1953) Model of the Bilingual Lexicon

In *compound representation* (later called *concept mediation* by Potter, So, Von Eckardt, and Feldman, 1984), the two word forms are individually connected to the same meaning (such as *cat* and *gato* both being connected to the concept of "cat"). In *coordinate representation,* the word forms are linked to two distinct but possibly overlapping concepts (such as *lunch* and *comida)*. Both of these

representations are possible for bilinguals or advanced learners of a second language. The third possibility is *subordinate representation* (later called *word association* by Potter, et al., 1984) in which a word form in a second language is connected to the word in the native language, and is then connected to the concept. This is common in beginning learners of a second language. An example of this representation would be the form *huevo* in the target language, which would be connected to the lexical entry for *egg* in the native language, which would then be connected to the concept of "egg" in the learner's conceptual system (cf. Figure 2). The word association model described by Potter et al. (1984) states that a second language learner uses translation equivalents from the first language to access concepts in the second language.

The Revised Hierarchical Model (Kroll & De Groot, 1997) elaborates on the concept mediation idea and describes a more direct access to the L2 concepts with a diminishing reliance on the learner's native language, with stronger connections from the concept to the L1 than the concept to the L2. The model proposes that lexical-level links are stronger from L2 to L1, while conceptual-level links are stronger for L1 than for L2. Kroll & Stewart (1994) found in their experiment with Dutch-English bilinguals performing a translation task that L2 to L1 translation occurred more accurately and rapidly than L1 to L2 translation. Sholl, Sankaranarayanan, and Kroll's (1995) work with bilinguals also revealed that words in the two languages are connected asymmetrically via lexical links and conceptual links.

Jiang (2002) bases his ideas on Levelt's (1989) model of lexical representation that describes the *lexeme* (which contains the form information of the lexical item) and the *lemma* (which contains the syntactical information and meaning of the lexical item). For a beginning second-language learner, Jiang contends that the information from the L1 is mapped directly onto the L2 lexeme, instead of the existence of L1 and L2 lexemes that are individually connected to the same lemma. As the learner becomes bilingual, the L2 lexeme detaches itself from the L1 lexeme and forges a direct link to the lemma.

Singleton (1999) notices in his survey of research on cross-linguistic influence that cross-linguistic influence is found in both the form and meaning aspects of the words involved. He states that cross-linguistic evidence "shows the interlingual facets of lexical operations to be semantic as well as formal and thus supports the view…that meaning is central to the functioning of the L2 lexicon" (p. 166).

One study on cross-linguistic influence involving the assumption of cognate form is Hall's (2002) study of pseudocognates of real Spanish words and English non-words. The results of this study found that intermediate EFL students (automatically) noticed the form overlap (potential cognates) and went on to assume a semantic overlap as well. Hall found that when learners were exposed to new vocabulary items, they utilized the form information of words that were known to them to theorize about the meaning of the new vocabulary item.

Within the multilingual lexicon, when an L3 word has phonological or orthographic level similarities with an L1 or L2 word, the new L3 form may be

subordinately connected to the similar L1 or L2 form. This means that the meaning of the L3 word may be tentatively connected to the L1 or L2 word as a result of the form bring similar.

1.3   Cross-linguistic influence

The study of the multilingual lexicon has received more interest of late as researchers attempt to create a more thorough understanding of the "interconnections between the various lexicons in the multilingual's mind" (Cenoz, Hufeisen, and Jessner, 2003, p. 3) as well as the organization and accessibility of the lexicons. In L3 acquisition, Wei (2003) has found that a learner's prior knowledge of the L1 and L2 may influence the cognitive process and the alterations that are made in the mental lexicon while acquiring a third language. He uses the term *interlanguage transfer* to refer to the "competing language systems in multilinguals" (p.60). The study of multilingualism is proving to be more complicated than the study of bilingualism due to the cross-linguistic influence that occurs between the languages.

Weinreich (1953, p. 1) first coined the term *interference* for "instances of language deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than one language". Because of the negative connotation that became associated with this word, *transfer* was then adopted. Odlin (1989, p. 27) encompasses both the positive and negative aspects of transfer and defines it as "the influence resulting from similarities and differences between the target language and any other language that has been

previously (and perhaps imperfectly) required". Kellerman and Sharwood Smith chose to use the term *cross-linguistic influence* to describe "the interplay between earlier and later acquired languages" (Sharwood Smith & Kellerman, 1986, p. 1). This term is adopted here because of the behaviorist connotations of the term "transfer".

Recent studies have looked at the role of cross-linguistic (including cross-lexical) influence during third language acquisition and the interaction that occurs among the three languages during acquisition of an L3. Because of the presence of a third language in the mental lexicon, it has been suggested that there is a different (and perhaps more complex) interaction than that of L1 influence on L2 learning (see Hall & Ecke, 2003, for factors contributing to the effects of cross-linguistic influence). Odlin (1989) found that "transfer occurs in ALL linguistic subsystems" (p. 152) and has also found that there is a greater possibility of cross-linguistic influence between languages that are structurally similar or typologically close.

Some of the factors that affect cross-linguistic influence in an L2 are also applicable for L3 acquisition. These factors include typological similarity between languages (see section 1.5) and the proficiency level and age of the speaker (Kellerman, 1983; Hall & Ecke, 2003). There are other factors that are particular to learners of L3 languages (or Ln, signifying any number of languages), such as the L2 recency effect (how recently the language has been accessed) or last language effect (Murphy, 2003). Another factor may be the concept that Grosjean (2001) developed called *language mode,* in which the L1 is continually in a state of

activation while the L2 and L3 languages are in varying states of activation during production. The L2 effect, in which the L2 seems to interfere with the production of the L3, leads researchers to believe the state of activation of the L2 may be high. The L2 effect is the phenomenon that occurs when the most recent language learned has a higher level of activation than the L1 (or any other previously-acquired language). Ecke (2001) found that "the degree of L1, L2, and L3 influence varies according to processing tasks and conditions" (p.106), which therefore influence language mode.

1.4   Parasitic Model

Largely through research on cross-linguistic influence, Hall (1993) developed the Parasitic Model, which is a theoretical framework that attempts to explain the default cognitive process of vocabulary development. Hall (2002) describes this process as "a series of automatic, unconscious cognitive stages that an emerging lexical entry is hypothesized to undergo after the learner first encounters an unknown word" (p. 72). New lexical items are added and mapped to the existing network.

According to the model, initial connections are established and a new L2 word is attached to the most highly-activated L1 word, which is normally the perceived translation equivalent. The translation equivalent chosen by the learner may be a clear translation (direct cognate) into the L1 (such as the English *telephone* and the Spanish *teléfono*), a false cognate (such as the English *actually* and the Spanish *actualmente*), an indirect cognate (such as the English *practice*

and the Spanish *practicar*), an L1 or L2 definition, or contextual cues (Hall, 2002).

Connections are formed through *spreading* activation (Collins & Loftus, 1975).

Generally, the form is the first characteristic that is acquired by second language

learners, followed by the meaning (provided by the translation equivalent) and

then the frame. This corresponds to Weinreich's (1953) subordinate

representation mentioned previously. If the L2 word is a cognate of the L1, for

example, then the direct connection to the conceptual structure will be easily

established and reinforced (see Figure 3). If it is a false cognate, then the

connections will need to be revised. Access routes are revised after receiving

additional input.
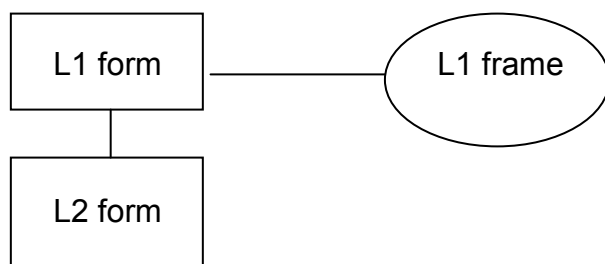
Figure 3: The closeness of form will allow the forms to connect

An example of this is found in Figure 4:

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┌──────────┐              ⬭─────────────⬯
│ fascinar │──────────────│  V <T>_<E>² │
└──────────┘              ⬭─────────────⬯
     │
┌──────────┐
│ fascinate│
└──────────┘
```
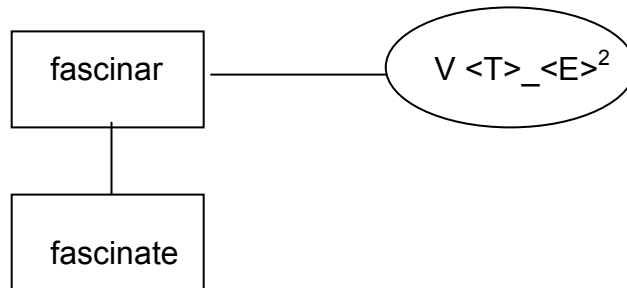
Figure 4: An example in L1 Spanish and L2 English

If the lexical item is not a cognate, then the L2 word will form a tentative connection with the frame of an alternate translation equivalent in the L1 (see Figure 5).

```
┌──────────┐              ⬭──────────⬯
│ L1 form  │──────────────│ L1 frame │
└──────────┘              ⬭──────────⬯
┌──────────┐            ╱
│ L2 form  │───────────╱
└──────────┘
```
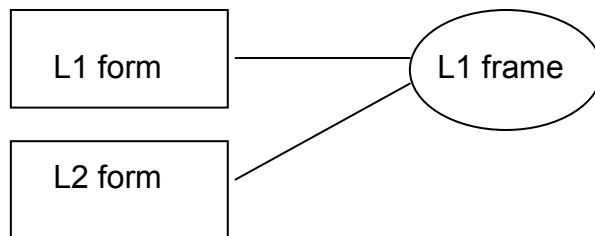
Figure 5: Tentative connection to the frame through translation
equivalents

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[2] This notation refers to the syntactic structure of the verb, such as thematic structure or sub-categorization frame.

An example of this is found in Figure 6:
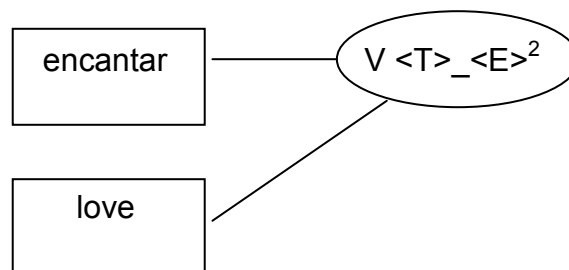
Figure 6: An example in L1 Spanish and L2 English

Hall, Ecke, Sperr, & Hayes (2004) note that the frame information provided in the lexical item may be most important for verbs due to the unpredictability of their syntactic features, including argument structure, valence, and complement types. Syntactic variation between languages has proven to present difficulties for second language learners (Adjemian, 1983) because of the tendency for the second language learner to assume the transfer of L1 verbs' syntactical properties. Even advanced L2 learners were subject to cross-linguistic effects from their L1 (Juffs, 1998).

In Hall & Ecke (2003), the Parasitic Model is extended to include the L3 mental lexicon. The idea of "total parasitism", which is a cross-linguistic influence, is the occurrence of connections at any level of the triad (form, frame, or concept) with any of the languages in the trilingual lexicon. An analysis of the L3 speech

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[2] This notation refers to the syntactic structure of the verb, such as thematic structure or sub-categorization frame.

data collected led the authors to find that cross-linguistic influence occurred at all levels of the triad. The languages involved were Spanish as the L1, English as the L2, and German as the L3. The most common occurrences of cross-linguistic influence at the form level of the triad were found to originate in the L3, while the most cross-linguistic influence at the frame level was from the L1, and the most cross-linguistic influence at the conceptual level was from the L2. Of the three languages, the L2 was found to be used most often as a source language, which may be due to the typology effect (see section 1.5). Other reasons for these results may include recency or proficiency effects (to account for the L3 influence), and the language effect of gender (to account for the L1 influence).

The methodological precedent for the current study, Hall, Ecke, Sperr, & Hayes (2004), consisted of three experimental conditions. Subjects were briefly exposed to new German verbs with their Spanish and English translation equivalents. Each German verb belonged to one of three conditions. The first condition was the Spanish Cognate condition in which German verbs were cognates with Spanish but not English. The second was the English Cognate condition in which German verbs were cognates with English but not Spanish. The third was the Non-Cognate condition in which German verbs were not cognates with Spanish or English. The verb stimuli were randomly mixed with noun distractors. The first two conditions were chosen to see if the L1 (Spanish) or L2 (English) cognate form of a new L3 (German) word would lead to the acquisition of the corresponding L1 or L2 frame. The third condition, in which no

cognate status existed among the three words, was designed to explore the subjects' selection when no cognate was present.

The subjects were university students taking a beginning German course at an elite private Mexican university after having achieved an equivalent of 500 on the TOEFL. The first part of the experiment consisted of a learning phase in which the German verbs in their infinitive form (with no frame information) were shown alone on a PowerPoint presentation slide for two seconds, then for an additional five seconds with the Spanish and English translation equivalents underneath, including their respective frame information. The second part of the experiment consisted of a testing phase (immediately after the learning phase) in which two sentences in French were shown to the students for 15 seconds. The subjects chose which sentence they thought was correct and marked it on their answer sheet. A delayed second testing phase was performed exactly one week later. The third part of the experiment consisted of a follow-up post-test questionnaire in which the subjects provided information regarding knowledge of German and English verbs, their previous level of study, a questionnaire regarding their psychotypological beliefs, and their personal strategies that were used during the learning and testing phases.

The results appeared to show the EFL learners transferred the Spanish L1 frames more often from L1 cognates, while the frequent use of the L2 English frames did not depend on similar forms. That is, Hall, et al. (2004) found that the subjects tended to adopt the frame of the Spanish verb when the German verb was a cognate with the Spanish verb. They found that this also to have been true

in the presence of English cognates. The results from the third condition (with no

cognates present) showed a preference for the L2 or the typologically closer

language (English).

These results were the impetus for the interest in replicating the study using

French as the L3. The use of French, a language that is typologically closer to

Spanish, allowed the exploration into whether, in the absence of cognates,

learners will be influenced by the L2 effect or by psychotypological factors.

1.5   Typology

The typology effect, as mentioned in the previous section, has been argued

to be another primary factor in cross-linguistic influence. Linguistic typology is the

study of the similarities or common features that languages share. Typology

involves some type of cross-linguistic comparison (Croft, 1990). Lehmann (1992)

describes typological linguistics as trying to "assemble such knowledge, to

formulate it, and to use it in providing explanations for patterns and processes of

language" (p. 9).   Finegan (1989) defines it as "a field of inquiry that focuses on

classifying languages according to their structural characteristics" (p. 247). These

characteristics could be lexical, phonological, morphological, or syntactic. They

may develop based on inheritance through the historical closeness of the

relationship on the "genealogical tree" of language evolution (English and German,

Spanish and French, or Russian and Serbo-Croatian, for example) or through

language borrowing (which may be due to trade, migration, science and

technology, or the conquering of countries). In many cases, however, there may

not be any historical or contact reason, since all human languages are structured in a way that allows limited options of certain parameters, such as the order of subject, object, and verb, possessive marking, etc. (Chomsky, 1995).

Typology also aids in the discovery of language universals, which are principles that hold for all language types. There exist, for example, semantic universals within vocabulary, such as basic colors, animal names, body part names, and sensory verbs. To illustrate, all languages contain the two basic color types of black and white. The next level of classification includes red, the third level adds yellow or green/blue, and the next level consists of the five basic color terms of black, white, red, yellow, and green/blue. This progression continues and encompasses all color terms (Finegan, 1989).

Historical typology refers to languages that are "genetically" related to each other, while *formal typology* looks at the structure of the languages, independent of their "genetic" ties. By examining language structure, comparisons can be made regarding language distance. Odlin (1989) argued, for example, that Thai and English seem to be more structurally related than Thai and Arabic even though all three come from different families. Cenoz's (2001) study of linguistic distance in L3 acquisition "confirms previous studies on typological distance in multilingual acquisition and proves that linguistic distance is a stronger predictor of cross-linguistic influence than L2 status" (p. 18) but emphasizes that it is not the only factor. In this study, she analyzed the influence of Basque (a non-IndoEuropean language) and Spanish on English. Basque and/or Spanish were the subjects' first languages (44% had Basque as their L1, 23% had Spanish as their L1, 32%

had Basque and Spanish as their first languages) and English was the third language taught in school. Her data showed that typological distance was a salient factor, and she found that perception of typological distance could be more important than objective linguistic distance.

Kellerman (1983) was the first to use the term *psychotypology,* which he defined as a language learner's conscious or unconscious "perception of language distance" (p. 114). This refers to the perceived proximity or distance between the languages due to etymology, the "genealogical family tree" of human language, or mere coincidence. He proposed that cross-linguistic influence depends on whether the learner perceives that it is the L1 or L2 that is more closely related to the L3. The idea of psychotypology is based on the learner's *beliefs* on how the languages are related, and not necessarily the actual historical relationship between the languages. Murphy (2003) describes psychotypology as "the learner's perception of language typology, central to his perspective on transfer, whereby the learner's recognition of congruent forms between the native and target languages either facilitates or interferes with L2 acquisition" (p. 5). According to psychotypology, the *awareness* of the learner and his/her perceptions are more important than the actual language distance. This is because the personal perception that a learner has in his/her mind may be influential, while the actual fact of language distance may not be known and therefore not have any influence in the learner's mind. Kellerman (1978, 1986, 2001) found that a learner's perception of the distance affects his/her use (and

transferability) of metaphor, narrative, borrowing, etc. The perception of language

distance and transferability may be more important than actual language distance.

In order to better examine the effects of linguistic typology or

psychotypology on L3 development, Hall (2004) expands upon the concepts of the

I-language (internal, individual) language system and the E-language (external,

social) language system (Chomsky, 1986) by relating them to the concept of

typology. In his current research proposal, Hall (2004, pp. 2-3) recognizes three

forms of typology based on historical fact, actual learner knowledge, and learner

perceptions:

- E-Typ: *The (study of) (proportion(s) of) shared linguistic features*
    (indicators of language "type") in the groups of E-language
    systems.

- I-Typ: *The actual proportion(s) of shared linguistic features in the distinct*
    I-language systems of individual multilingual learners/users at
    any given stage in their interlanguage competence.

- P-Typ: *The perception of the proportion(s)of shared linguistic features in*
    the E-languages and/or distinct I-language systems in multilingual
    learners/users.

Since the language system of the learner of an L3 is a developing language

system, the learner's expectation (psychotypology) may be different from the

actual typological facts of the L3 that is being acquired. Learners may, for example, expect that French and Spanish are typologically closer than French and English, though extensive borrowing from French by English may make French and English typologically closer. Learners may also hold an expectation that English and German are typologically closer to each other than to Spanish.

The theoretical framework related thus far underlies the purpose of this study. The purpose was to explore the cross-linguistic interactions that may occur in the multilingual mental lexicon with regard to syntactic frame selection during acquisition of L3 vocabulary with L1 and L2 cognates. The role of historical typology and psychotypology was probed to determine if cross-linguistic influence effects existed.

1.6   Research strategy

This experiment investigated the possible connections between L1 or L2 cognates and initial, unconscious frame assumptions in L3 vocabulary development. The first hypothesis was:

1. The similar form representation (cognate form) of a new L3 word and a previously-known L1 or L2 translation equivalent will lead to the initial adoption of the corresponding L1 or L2 frame, when the learner has had recent exposure to these translation equivalents.

A question this experiment seeks to answer is: When translation equivalents are provided, does form similarity affect frame use? From L3 error data (Hall & Ecke, 2003), it has been shown that there is frame influence from L1 to L3 and from L2 to L3 in natural data. Since lexical activation cannot be recreated naturally in this experiment, the lexical items will be artificially stimulated. In other words, there is induced priming to verify if by giving the L1 and L2 translation equivalents for new L3 words, similarity in form leads to frame inheritance.

By comparing and discussing the results from this study and the original study (Hall, Ecke, Sperr, & Hayes, in prep.), an additional hypothesis was explored when taking the two studies together:

2. Psychotypology will exert a cross-linguistic influence on the choice of frame when the translation equivalents are *not* cognate forms.

The major methodological precedent was the Hall, Ecke, Sperr, & Hayes (2004) experiment that was described in the literature review. A more in-depth description of the experimental study involving French as the L3 is presented in the Methodology section. Data from the experiment and the statistical analyses performed are presented in the Results section. The final section focuses on the interpretation and discussion of the results, along with comparisons to other studies and implications for the future.

2   METHODOLOGY

The major methodological precedent of this study is the experiment reported in Hall, Ecke, Sperr, & Hayes (2004). That study was designed to address whether "similarity of phonological and/or orthographic form in an L1 or L2 cognate will lead to the initial adoption of the cognate's grammatical properties in the learner's assumptions of how the new word may be deployed syntactically" Hall, et al., in prep., p. 2). Additionally, information was solicited regarding the learners' perceptions of the typological relationship (psychotypology) that exist between Spanish, English, and German. This was done to explore if and how learners' perceptions of these relationships could affect their choices or if other explanations are plausible, such as the L2 effect.

In the current study, French L3 learners were presented with novel French (L3) words along with their Spanish (L1) and English (L2) translation equivalents. Verbs were chosen and categorized based on their cognate status. The three conditions were: cognate with Spanish (L1), cognate with English (L2), and non-cognate (cognate with neither L1 nor L2). After an initial presentation of the words, subjects were given a test in which they chose between two sentences using the novel word with the Spanish or English frame. A repeat of the same test was given a week later, along with a post-test to determine, among other issues, psychotypological effects.

2.1 Subjects

The subjects initially included 65 students at a private Mexican university. They were native Spanish speakers (L1), who were advanced English speakers (L2), and were enrolled in a basic French course (L3). At the time of study, they had received approximately 20 class hours of instruction. Advanced-English status was determined through information on TOEFL scores and previous coursework that was collected during the post-test (see *post-test* under section 2.2). All testing took place in their regular classroom settings during their regular class times in five intact groups.

2.2 Materials

The materials involved in the experiment were the verb stimuli used in the presentation and testing phases, and the post-test used after the delayed second testing phase.

Stimuli

Verb conditions

Subjects were presented with 45 unknown French verbs in the following cognate verb form (translation equivalent) conditions:

- 15 French verbs that have a cognate translation equivalent in Spanish but a non-cognate translation equivalent in English (called the Spanish Cognate condition, or *SpCog*);

- 15 French verbs that have a cognate translation equivalent in English but a non-cognate translation equivalent in Spanish (called the English Cognate condition, or *EngCog*);

- 15 French verbs that have non-cognate translation equivalents in both Spanish and English (called the Non-Cognate condition, or *NoCog*);

Additionally, all English and Spanish translation equivalents differed in syntactic frame (see *frame status* under section 2.2).

The stimuli also included 45 French noun distractors which differed or coincided in grammatical gender with their Spanish equivalents in the use of a definite or indefinite article. This equal number of noun distractors served to keep the subjects unaware that the focus of the study was the choice of verb frame. A complete list of the 90 experimental stimuli may be found in Appendix A. The idea of using 45 French verbs that were cognates in Spanish, English, and French (such as *adaptar/adapt/adapter*) as distractors was initially considered. It was thought to be a way to extract further insight into the subjects' choice of frame when all three verbs were cognates, in particular contrast to the non-cognate condition in which all three verbs were not cognates. Further deliberation, however, clarified that the use of only verbs in the experiment would perhaps influence the subjects' awareness of the purpose of the experiment. The possibility of the addition of the all-cognate condition to the verb conditions was

considered and rejected, as this would have increased the total number of verbs to 60 (and the total number of stimuli to 120, once the 60 distractors were included). This would have prohibitively lengthened the time of the subjects' role in the experiment.

The greatest challenge to the execution of the experiment was the development of stimuli sets. Finding verb stimuli to satisfy the various conditions and characteristics proved to be a very difficult and time-consuming task. Nouns were found through a review of a French text (Bérard, Canier & Lavenne, 1996) and a French dictionary (Rey-Debove, 1999). Verbs were selected through searches of bilingual dictionaries (Sinclair Knight & Butterfield, 2003) and a grammar text (Becherelle, 1990) that included an exhaustive inventory over 3,000 French verbs in its *Dictionnaire orthographique des verbes*. Consultation with native speakers of Spanish, English, and French was employed throughout the stimuli set development and the subsequent sentence development. Verb lists (containing the Spanish, English, and French translation equivalents) were first constructed based on the cognate status condition of the verbs (SpCog, EngCog, and NoCog). The Spanish and English translation equivalents were then examined to verify that they contained differing grammatical frame characteristics (discussed below). Preliminary sentences were developed to establish the frame use in Spanish and English, in specific contexts, and provide possible sentences to translate into French for the testing phase of the experiment.

After exhaustive research, a list of all the verbs to be used was presented to professors of the basic French courses in which the test subjects were enrolled.

The professors indicated that eight of the verbs *(arrêter, écouter, écrire, gagner, montrer, oublier, ouvrir, rencontrer)* were already known to the subjects. These verbs were replaced with verbs not known to the subjects. The objective of reaching 15 verbs for each condition was arduous but ultimately achieved. The use of fewer verbs in each condition was not a desirable option because of the potential loss of stimuli due to subject prior knowledge that was solicited in the post-test. All the verbs were checked as being unknown to the subjects through administration of a vocabulary post-test.

Frame status

In all of the verb conditions, the Spanish and English verbs had differing frames, due to either reflexivity or prepositional complementation. Some Spanish verbs use a reflexive pronoun (*me, te, se, nos, se*), which normally occurs pre-verbally. The selection of reflexive verbs was limited to cases in which it has a clear grammatical, rather than semantic, application. In other words, the use of the reflexive available in English (myself, yourself, him/herself, etc.) was avoided as the semantically transparent utilization. An example of the English semantic reflexive would be *The hostage freed himself* (or in Spanish *El rehén se liberó*). The action is directed to the subject or "self".

Prepositional complementation included Spanish and English use of different translation equivalents of prepositions (such as *de* and *with*), or one language using a preposition and the other not. Examples of the frame types used in the experiment follow:

1) Use of the reflexive in Spanish only:

Siempre *me* despierto a las 5am.

'I always wake at 5am.'

2) Use of a complement preposition in Spanish *and* English:

Los fanáticos amenazan *de* muerte a los traidores.

'The fanatics threaten traitors *with* death.'

3) Use of a complement preposition in Spanish *or* English:

La junta dura tres días.

'The meeting lasts *for* 3 days.'

4) Use of both reflexive and complement preposition:

Nos lamentamos *por* la decisión.

'We regret the decision.'

Of the 45 stimuli verbs used, 28 differed due to reflexivity alone, 8 differed due to prepositional complementation alone, and 9 differed due to a combination of both. The actual frame status of the French verbs is irrelevant since the verbs, and thus the verb frames, were unknown to the subjects. The experiment explores the subject's choice of English or Spanish frame based on the cognate

status of the novel French verb. A complete list of frame status of the 45 verb stimuli may be found in Appendix A.

Cognate status

Cognate status was defined as the cognate verbs having at least 50% shared phonemes in the same linear order. To perform the analysis, all the inflections were removed, such as the verb endings *-ir, -er, -ar,* etc. Only the stem of the verb was taken into account. It should be noted that the inflectional systems between Spanish and French are very close in form, and may possibly have added to the cognate perception by the subjects. Orthographic similarities were first considered during the analysis, and then phonological characteristics were taken into account. The sharing of letters and phonemes was qualified in the following way: any letters (consonants or vowels) that were an exact match were counted as +1, and a vowel that was part of the same phoneme segment of a neighboring vowel was considered a partial match and counted as +0.5. Other partial matches that were also counted as +0.5 included phonemes with similar sounds such as [s], [c] and [z], [l] and [ll], [r] and [rr], [c] and [ch], [c] and [g], [dg] and [g], and [c], [k], [ck] and [qu]. For example, *rinse* and *rincer* are compared orthographically, and then the [*s*] and [*c*] are partially matched as similar sounds but different letters, therefore receiving a +0.5.

In the Spanish cognate condition, *con-* in *congelar* was accepted as a transparent prefix and counted as one item instead of three separate letters. Similarly, in the English cognate condition, *-ate* in *hesitate* was accepted as a

transparent suffix and counted as one item. Also within the English cognate condition, the *-n* on the verb *hasten* was considered a verb ending of the noun *haste* and therefore was not counted, even though it would count as a cognate without doing this. The mean proportion of shared phonemes of the Spanish cognates was 87.9%, while the mean of the shared phonemes for the English cognates was 85.9%. A complete list of the cognate criteria analysis of the 45 verb stimuli may be found in Appendix B.

Final stimuli sets

The final stimuli sets of the three conditions with the differing Spanish and English frames were established. Examples of the final verb stimuli are provided in Table 1:

Condition	L1 Spanish	L2 English	L3 French
SpCog	*durar*	*last for*	*durer*
EngCog	*voltearse*	*turn*	*tourner*
NoCog	*acordarse de*	*remember*	*souvenir*

Table 1: Examples of condition and frame status of verb stimuli

French sentences for the test session were originally developed in Spanish and English to ensure that the frames were being utilized correctly in a particular

context. The sentences were developed using simple vocabulary and grammar

structures with which the subjects would be familiar or could, without difficulty,

deduce because of their cognates in Spanish and/or English (such as

traidores/traitors/traîtres or *presidencia/presidency/présidence*). The sentences

were subsequently translated into French by a native speaker. With regard to

frame, the reflexives in French (*me, te, se, nous, vous, se*) are similar to Spanish

and their use was known to the subjects. This was confirmed through review of

the French textbook used by the subjects (Berger & Spicacci, 2000). The use of

the reflexive was presented on the fourth page of the first unit in the textbook

under the section entitled *Se présenter*. With regard to the prepositions used in

the Spanish and English frames, the French equivalents were chosen (such as *de*

and *en* for the Spanish *de* and *en, avec* for the Spanish *con* and English *with, pour*

for the Spanish *por* and the English *for,* etc.).   A complete list of test sentences

used for the 90 stimuli may be found in Appendix A.

Form of the instrument

The stimuli for the presentation phase were randomized across groups and

conditions in two ways. First, all 90 stimuli were randomized through use of the

Microsoft Excel random numbers function. Second, for each of the five

presentations, a block of 18 was selected and moved to the end of the

presentation so that each group saw the stimuli in a different overall order. This

was done to ensure the validity of the experiment in that the order of the stimuli

presented to the subjects would have no effect on the outcome. The sentences

for the first testing phase were randomized in the same manner as for the presentation phase, and the order of English and Spanish options was randomized for each verb tested. The sentences for the second testing phase were pseudo-randomized in two steps: first, by taking the randomized sentences that were used in the first testing phase and changing the order so that group 1 then saw group 3's test, group 2 then saw group 4's test, and so on. Second, for each of the rearranged tests, all the even-numbered sentences were moved to make up the top half of the test and all the odd-numbered sentences were moved to make up the bottom half of the test.

Both the response sheet and the post-test questionnaire sheet (examples of which may be found in Appendix C) were printed out and subjects were given ball-point pens to respond. The presentation and testing phases were presented on Microsoft PowerPoint slides, which were projected onto a white screen. The sessions were carried out in the subjects' normal classrooms during normal class times. The length of each class was approximately 50 minutes.

The only form of identification on the testing response sheets and the post-test questionnaires was the area for the subjects to put the last four digits (of the six digits total) of their student number. By doing this, the subjects maintained their anonymity while allowing the response sheets from the first and second testing phases, as well as the post-test questionnaire, to be identified as originating from the same subject.

Post-test

A follow-up post-test questionnaire (in Spanish) was developed in order to elicit information from the subjects regarding the following points:

- English verbs – their prior knowledge of the English verbs used in the experiment was solicited. Subjects marked a *yes* or *no* box next to the verb to indicate if they knew the verb before the experiment. Through this, it was documented whether the subjects knew the English verbs that were used in the stimuli;

- French verbs – their prior knowledge of the French verbs used in the experiment was solicited. Subjects marked a *yes* or *no* box next to the French verb to indicate if they had been exposed to the verb before the experiment. They provided a translation in Spanish if they marked the *yes* box. Through this, it was documented whether the subjects knew the French verbs that were used in the stimuli;

- Personal strategies – questions regarding the subjects' use of personal strategies to study the words in the learning phase and the sentences in the testing phases were posed through an open-ended question format. An additional question provided an opportunity for the subjects to express any comments they might have had regarding the study or their participation in it;

- Previous level of study of English – subjects provided their TOEFL scores, details of their previous coursework in English, and any equivalent placement results in order to confirm their advanced level of English;

- Psychotypological beliefs – the subjects provided information on their psychotypological views on how Spanish, English, and French are related through a series of five multiple-choice questions. These questions explored their perception of the three languages with regard to language similarity, language genealogy, and ease of learning.

2.3   Procedure

The experiment was composed of three phases. The first part was the presentation phase that was conducted during the first session with the subjects. The second part was the testing phase, which was divided into two sections. One testing phase took place immediately after the presentation phase during the first session, while the other took place in the second session with the subjects a week later. The third part of the experiment was the post-test phase that occurred after the testing phase in the second session.

Presentation phase

The first part of the experiment was a presentation phase in which the French verbs in their infinitive form (with no frame information) were shown alone

on a PowerPoint presentation slide for two seconds, then for an additional five

seconds with the Spanish and English translation equivalents underneath,

including the respective frame information (use of reflexive pronoun or

prepositional complement) for the English and Spanish verbs. The use of a

PowerPoint presentation was chosen to ensure standardized implementation of

stimuli presentation procedure. In each slide (see Figures 7-10), the French verb

appeared in black, lower-case, 60-point Arial font while the Spanish and English

translation equivalents appeared in gray, lower-case, 48-point Arial font. The

distractor nouns appeared in the same format as the verbs with the addition of the

French definite article (*le* or *la*) in front of the French verb (in gray) and the

Spanish and English translation equivalents with no articles. The French article

was included as the grammatical gender in the noun frame.

Figure 7: Example of Spanish cognate (*SpCog*) presentation slide

Figure 8: Example of English cognate (*EngCog*) presentation slide

Figure 9: Example of Non-cognate (*NoCog*) presentation slide

Figure 10: Example of distractor noun presentation slide

Instructions in Spanish were given orally and also appeared on the screen at the beginning of the presentation, along with an example. The first slide greeted the subjects, and the second slide announced that they would be "seeing a series of words in French". The third slide advised them that "to help them learn the words, they would be presented with their Spanish and English equivalents". The fourth slide provided them an example of a distractor noun slide. The fifth slide instructed them "to please study the words carefully" because, as the sixth slide states, "after the presentation, there will be a testing session". A complete listing of the instruction slides for the presentation phase may be found in Appendix D. When subjects asked the purpose of the study, the response given was that the objective was to explore the mental processes while learning a third language. Students were asked to remain silent and to not take any notes during the presentation. The average duration of this phase was approximately 12 minutes.

Testing phase

The second part of the experiment consisted of a testing phase (immediately after the learning phase) in which a series of pairs of sentences in French were shown to the students for 15 seconds each. Subjects were alerted to the slide changes through an audible click. The sentences contained the experimental stimuli from the learning phase. Each slide was numbered in bold, 44-point, Arial font. In each numbered slide, the sentences appeared in bold,

italicized, 32-point, Arial font (see Figure 11). The stimuli verbs and distractor nouns were underlined in order for the subjects to be able to identify them more easily and focus on those, rather than on other parts of the sentence. The students chose the sentence (A or B) that they thought was correct and marked it on their response. The only difference between the two sentences was the frame element. One sentence used the Spanish frame and the other used the English frame. For example, for the French verb *sécher*, the slide appeared as:

<div style="border:1px solid black; width:40%; padding:10px;">

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A. Les tapis se <u>sèchent</u> mieux au soleil.

B. Les tapis <u>sèchent</u> mieux au soleil.

</div>
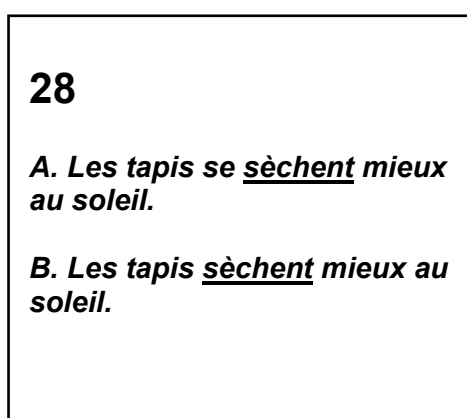
Figure 11: Example of testing phase slide

As shown in this example, the sentences varied only in the verb frame. Sentence A used the reflexive while sentence B did not. Sentence A could be translated using the Spanish frame as *Las alfombras se secan mejor al sol*. Sentence B could be translated using the English frame as *Carpets dry better in the sun*.

Instructions in Spanish were given orally and also appeared on the screen at the beginning of the testing phase. The first slide informed the subjects that

they would be "seeing pairs of sentences that included the words that they just studied". The second slide asked them to "please indicate on the answer sheet which of the sentences (A or B) used the word correctly". A complete listing of the instruction slides for the testing phase may be found in Appendix D. Students were asked to remain silent during the testing phase.   The average duration of this phase was approximately 26 minutes.

A delayed second presentation of the testing phase took place exactly one week later in order to gauge the residual connections that may have existed. As previously noted, the stimuli were re-ordered for the delayed second testing phase.

Post-test phase

Immediately following the delayed second testing phase, the third part of the experiment was conducted. It consisted of a follow-up post-test questionnaire in which the subjects provided elicited information (as described in the Materials section). Responses were recorded through checked boxes, and both multiple-choice and open-ended questions. Students were told to record their first impression and to not reflect for a long time on a particular question. The length of this phase was approximately 15 minutes. Subjects were allowed to leave the classroom after they finished the post-test. Subjects were given a can of Coke and a bag of M&M's as an expression of gratitude for their participation.

Results from the test, the delayed test, and the post-test questionnaire are discussed in the next chapter.

3   RESULTS

The results of the experiment consisted of two elements: the post-test information and the data from the testing phases. The information solicited from the post-test was first used to determine if any subjects and/or verb stimuli needed to be eliminated based on subjects' language proficiency and prior vocabulary knowledge. Following this, the data from the first and delayed second test were tabulated and means were calculated prior to statistical analysis. As a point of information, the complete data from both testing sessions showing all 42 subjects and 45 verb stimuli may be found in Appendix E. Finally, the post-test responses regarding the psychotypological views of the subjects were tabulated, and the subjects' comments with respect to their use of strategies and their participation were recorded.

3.1   Analysis of post-test: subject/stimuli validity

Of the 65 original subjects who were present for the first day of testing session, only 42 were present for the delayed second test session and the post-test questionnaire. The 23 subjects who did not complete the post-test were therefore eliminated from the study. After evaluating the subjects (discussed below), the total number remaining in the experiment was 40 subjects.

Language proficiency

The first step of the analysis of the results was to evaluate the subjects' English level to ensure they were at an advanced level. TOEFL scores of over

500 were accepted, as well as similar qualifying certification (Cambridge or PET).

Bilingual education (reaching an advanced level in high school English) was also

accepted, as was successful completion of one the university's advanced English

courses. Subject #21 did not provide evidence of his/her English level, but as the

English knowledge section of the post-test questionnaire showed that the subject

knew over 93% of the verb items, his/her responses were included in the study.

Subject #2 reported a TOEFL score of 480, and since an evaluation of the English

knowledge section of the post-test questionnaire revealed only an 84%

comprehension level, the subject's data were consequently excluded from the

results. In addition, subject #13 did not complete the French knowledge section.

As his/her prior knowledge of the verb stimuli could not be established, this

subject's data were also excluded from the results. The data from a total number

of 40 subjects were therefore used in the results analysis. A complete listing of

the subjects' reported English level information from the post-test questionnaire

may be found in Appendix F.

Prior knowledge of stimuli

The second step of the analysis was to evaluate the subjects' prior

knowledge of both English and French verbal stimuli. A minimum of 75% of the

subjects affirming knowledge of each English verb was considered the limit to

maintain the English verb in the study and use the data in the analysis of the

results. This corresponded to at least 30 of the 40 subjects marking the *yes* box

next to the English verbs. A check in the *yes* box signified that they knew the

verb. Subjects were only required to mark a *yes* or *no* box in a self-assessment of their own knowledge. An analysis of the post-test questionnaire revealed that six English verbs were unknown to more than 25% of the subjects. These included four English-French cognate verbs (*rejoice* [62.5%], *plead* [67.5%], *mock* [70%], and *lodge* [72.5%]) and two Non-cognate verbs (*gaze at* [47.5%] and *stroll* [60%]). These were removed from the study. Although several of these verbs were close to the 75% minimum required and would have permitted a larger number of verb stimuli in each condition to remain if kept in the study, they were removed to maintain the integrity of the study. The average rate of prior English knowledge for the remaining verb stimuli was 94.9% -- clearly over the 75% minimum. As further evidence of English knowledge, all stimuli were reviewed by 26 Spanish L1 speakers (with advanced English as their L2) who were not participants in the experiment. These included fellow graduate students and high school seniors in a bilingual Mexican school. These speakers stated that while some of the English verbs were lower in frequency, they were familiar with them. In three cases of English verb knowledge (*hasten*, *hesitate*, and *sour*) further analysis of the data showed that the subjects chose the English frame for the French verb, and there was an assumption by the researcher that the subject knew the English verb.

A maximum of 25% of the subjects affirming knowledge of the French verbs was considered the limit to maintain the French verb in the study and use the data in the analysis of the results. This corresponded to no more than 10 of the 40 subjects marking the *yes* box next to the French verbs. A check in the *no* box signified they did not know the verb. Subjects were required to mark a *yes* or *no*

box in a self-assessment of their own knowledge, and to provide a translation equivalent of the verb if they marked the *yes* box. An analysis of the post-test questionnaire revealed that four French verbs were known to more than 25% of the subjects. These included two English cognate verbs (*marier* [40%] and *paniquer* [27.5%]) and two Non-cognate verbs (*souvenir* [57.5%] and *essayer* [45%]). It is important to note that some subjects may have marked the *yes* box of any of the French verbs, implying that they knew the verb and thereby disqualifying it while in actuality it may have been an attempt at guessing or they may have been influenced by the similarity due to cognate status with their L1. In these cases, if further analysis of the data showed that the subject did not provide a correct Spanish translation or did not choose the correct frame for the verb, there was an assumption that the subject did not know the verb and the *no* box should have been marked.

The tally for the removal of verb stimuli for each condition thus far was as follows:

English Cognate: 4 English verbs + 2 French verbs   =   6 total

Non-Cognate: 2 English verbs + 2 French verbs   =   4 total

In order to maintain an equal number of stimuli in each condition for clearer statistical analysis, a total of six stimuli verbs were targeted for removal in each condition, giving 11 stimuli verbs per condition.

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In an interesting aspect of the French section of the post-test, more than the 25% limit of subjects reported a prior knowledge of nine of the Spanish cognate verbs even though it was confirmed by French professors that these nine verbs had not yet been seen by the students. There are three possible explanations for this. First, the subjects may have felt they knew the verb previously since they had been exposed to it four times during the experiment. Second, the close similarity in form of these Spanish/French cognates may have influenced the subjects to report that they knew the French verb even though they had not, in reality, been exposed to the verb previously. Third, although perhaps less likely, the subject could actually have seen the verbs outside of class in other "French exposure" opportunities. An analysis of the test responses demonstrates that a significant number subjects did not apparently know the frame use for these French verbs. Since these verbs are in the Spanish cognate condition, however, the students could coincidentally choose the Spanish frame while not really knowing the French verb. Additionally, the verbs in question were not only true cognates but also exact translation equivalents, so when asked for the definition, the subjects could respond with the Spanish translation and be correct.

In order not to lose a larger number of verb stimuli because of undue cognate influence, the six verbs with the highest rate of mention were removed (*solliciter* [28/40], *féliciter* [25/40]*, manifester* [23/40]*, postuler* [19/40], *laver* [17/40], and *durer* [16/40]) and the three verbs with the lowest rate of mention (*sentir* [15/40], *calciner* [14/40], and *obstiner* [11/40]) were allowed to remain in the study.

As six verb stimuli needed to be extracted from each condition (due to the total six verbs being removed from the Spanish and English cognate conditions), an additional two verbs had to be removed from the non-cognate condition. The verb *réveiller* [8/40] and *rêver* [6/40] were chosen because of their status as the next-highest French verbs to be recognized. English verb stimuli were not chosen because almost all of the subjects reported knowing all of the remaining non-cognate English verb stimuli. The average rate of prior French knowledge for the remaining verb stimuli was 14.4%, well below the 25% minimum. The average rate of prior French knowledge for the stimuli was: 21.7% in the Spanish cognate condition, 11.1% in the English cognate condition, and 10.6% in the Non-cognate condition.

The data from a total number of 9 verbs per condition were therefore used in the results analysis. A complete listing of the subjects' reported English and French prior knowledge of the verb stimuli may be found in Appendix G.

The final tally for the removal of verb stimuli for each condition was as follows:

Spanish Cognate:	0 English verbs	+ 8 French verbs	=	8 total
English Cognate:	4 English verbs	+ 2 French verbs	=	6 total
Non-Cognate:	2 English verbs	+ 2 French verbs	=	4 total
				---------
				18 total

3.2   Analysis of test data

From the first test and the delayed second test data, the averages (means) for each subject's responses in the three conditions were calculated based on the rate of use of the Spanish frame for each item. A "1" was assigned each time a subject chose the Spanish frame use, and a "0" each time a subject chose the English frame use. Since the subjects were required to choose between the two sentences (A or B) in the testing phase, the rate of English frame use would simply be a mirror image of the Spanish frame use. A breakdown of the 40 subjects' frame selection of the nine verb stimuli from the first test session and the delayed second test session may be found in Appendix H. Data were statistically analyzed using GraphPad's Instat 3.0b software.

First testing session

The means from first test session are shown in Table 2. Results from the first testing session showed that the SpCog condition was where the Spanish frame was most frequently chosen. In the EngCog condition, the Spanish frame was chosen less often, i.e., the English frame was favored. The NoCog condition showed that the Spanish frame was chosen at a slightly greater rate than in the EngCog condition, but the English frame was still favored.

Condition	Mean	SD	SEM
SpCog	5.2	2.1507	0.34006
EngCog	3.975	1.7757	0.28077
NoCog	4.05	1.9075	0.30160

Table 2: Mean, Standard Deviation (SD), and Standard Error of Mean (SEM) of Spanish frame use per condition from the first testing session

These results are shown as percentages of Spanish frame selection in the form of a table (see Table 3) and a graph (see Figure 12):

	SpCog	*EngCog*	*NoCog*
Spanish Frame	57.58%	44.12%	45.00%
English Frame	42.22%	55.88%	55.00%

Table 3: Mean percentages of Spanish frame use per condition from the first testing session
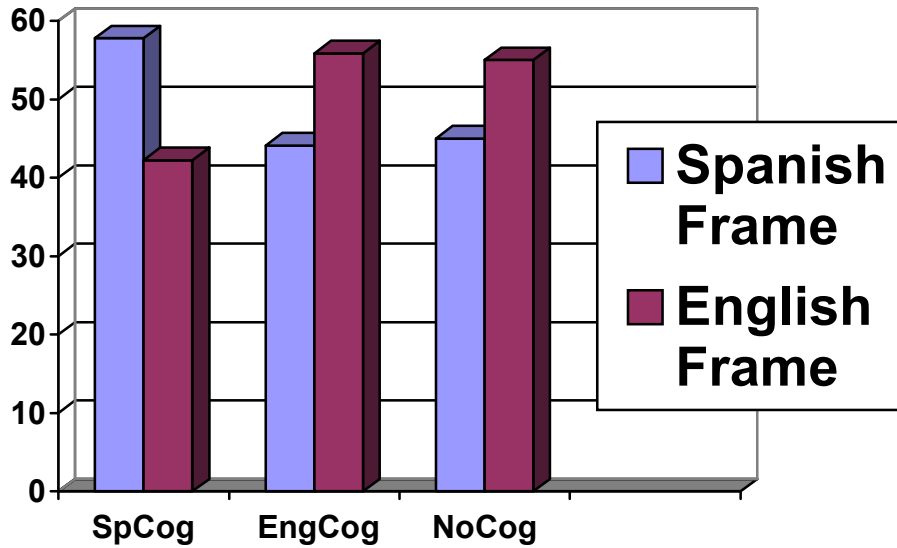
Figure 12: Mean percentages of Spanish frame use per condition from
the first testing session

The results of an ANOVA showed that for the first testing session there was

an extremely significant cognate status effect between conditions (F (2,119) =

10.486, p < 0.0001). This indicated that the variation among condition means was

significantly greater than expected by chance. The details from the ANOVA are

presented in Table 4:

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Treatment (between conditions)	2	37.717	18.858
Individual (between subjects)	39	304.99	7.820
Random (residual)	78	140.28	1.799
	119	482.99	

F = 10.486 = MStreatment/MSresidual

Table 4: Intermediate calculations and ANOVA result for the first testing session

An assumption test was done to check if the matching of data was effective. The assumption test used another value of F of 4.348 and a different value of p. Since the p value was < 0.0001, and considered extremely significant, there was significant variation among means and the matching was apparently effective.

The Tukey-Kramer Multiple Comparison Test was then performed on the data from the first testing session in order to determine which means were significantly different from other means, and the results are presented in Table 5:

Comparison	Mean Difference	q	p value
SpCog vs. EngCog	1.225	5.777	*** p<0.001
SpCog vs. NoCog	1.150	5.423	*** p<0.001
EngCog vs. NoCog	-0.075	0.3537	ns p>0.05

Difference	Mean Difference	95% Confidence Interval	
		From	To
SpCog - EngCog	1.225	0.5070	1.943
SpCog - NoCog	1.150	0.4320	1.868
EngCog - NoCog	-0.075	-0.7930	0.6430

Note: If the value of q is greater than 3.386 then the p value is less than 0.05.

Table 5: Tukey-Kramer Multiple Comparisons Test for the first testing session

The results of the Tukey-Kramer Multiple Comparisons test showed a significant difference between the SpCog vs. EngCog scores and the SpCog vs. NoCog scores, both of which had a p value of less than 0.001. It should be noted, however, that the EngCog vs. NoCog scores demonstrated no significant difference with a p value of greater than 0.05.

The possibility existed that the subjects might have chosen the correct French sentence because of their knowledge of French rather than the cross-linguistic influence from the cognates. In the SpCog condition, the French sentences that were correct included 10 Spanish frames, 4 English frames, and 1

of either frame use. The subjects mostly chose the Spanish frame, proving that the possibility existed. The EngCog condition contained 5 Spanish frames, 7 English frames, 2 of either frame use, and 1 of neither in the correct French sentences. As the subjects chose more English frames in this condition, the possibility could still exist. The correct French sentences in the NoCog condition included 11 Spanish frames and 4 English frames. Since the subjects chose more English frames than Spanish frames in this condition, the possibility that the subjects chose their responses based on their knowledge of French became remote.

Delayed second testing session

The means from the delayed second test session (held a week later) are shown in Table 6. Results from the delayed second testing session showed that the Spanish frame was once again chosen most often in the SpCog condition with an almost identical rate as the first testing session (difference of 0.025). As in the first testing session, the Spanish frame was chosen less in the EngCog condition. This meant that the English frame was still favored, although to a lesser degree. The NoCog condition continued to show a lower rate of Spanish frame selection than English frame selection, even slightly lower than the EngCog condition. Both the EngCog and NoCog conditions, however, demonstrated a smaller rate of English frame selection than in the first testing session. Interestingly, the NoCog condition showed a slightly higher rate of English frame selection than the EngCog condition (difference of 0.25). This point is addressed in the Discussion section.

Condition	Mean	SD	SEM
SpCog	5.175	2.1230	0.33567
EngCog	4.275	2.1242	0.33586
NoCog	4.25	2.0096	0.31744

Table 6: Mean, Standard Deviation (SD), and Standard Error of Mean (SEM) of Spanish frame use per condition from the delayed second testing session

These results are shown as percentages of Spanish frame selection in the form of a table (see Table 7) and a graph (see Figure 13):

	SpCog	*EngCog*	*NoCog*
Spanish Frame	57.50%	47.50%	47.22%
English Frame	42.50%	52.50%	52.78%

Table 7: Mean percentages of Spanish frame use per condition from the delayed second testing session
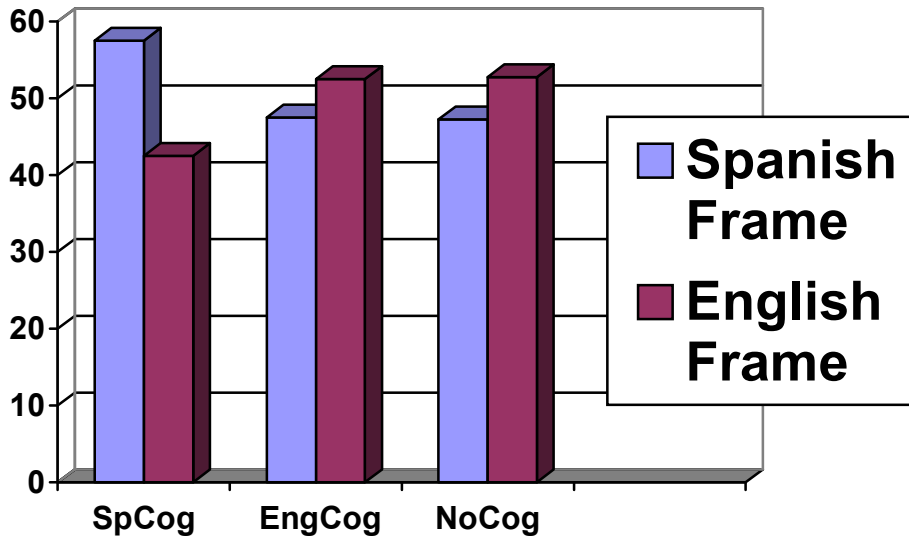
Figure 13: Mean percentages of Spanish frame use per condition from the delayed second testing session

The results of an ANOVA for the delayed second testing session showed that there was a smaller level of cognate status effect than in the first test. It was, however, still significant ($F(2,119) = 4.426$, $p = 0.0151$). While this still indicated that the variation among condition means was significantly greater than expected by chance, the overall variation was less significant than it was in the first testing phase. The details from the ANOVA are presented in Table 8:

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Treatment (between conditions)	2	22.217	11.108
Individual (between subjects)	39	313.47	8.038
Random (residual)	78	195.78	2.510
	119	531.47	

F = 4.426 = MStreatment/MSresidual

Table 8: Intermediate calculations, ANOVA Table for the delayed second testing session

An assumption test was again done to check if the matching of data was effective. The assumption test used another value of F of 3.202 and a different value of p. The assumption test arrived at the p value of < 0.0001, the same as in the first testing session. It was considered extremely significant, and again there was significant variation among means and the matching was apparently effective.

Similarly, the Tukey-Kramer Multiple Comparison Test was performed on the data from the delayed second testing session in order to determine which means were significantly different from other means and the results are presented in Table 9:

Comparison	Mean Difference	q	p value
SpCog vs. EngCog	0.900	3.593	* p<0.05
SpCog vs. NoCog	0.925	3.693	* p<0.05
EngCog vs. NoCog	0.025	00.0998	ns p>0.05

Difference	Mean Difference	95% Confidence Interval	
		From	To
SpCog - EngCog	0.900	0.5178	1.748
SpCog - NoCog	0.925	0.07678	1.773
EngCog - NoCog	0.025	-0.8232	0.8732

Note: If the value of q is greater than 3.386 then the p value is less than 0.05.

Table 9: Tukey-Kramer Multiple Comparisons Test for the delayed second testing session

The results of the Tukey-Kramer Multiple Comparisons test for the delayed second testing session showed a significant difference between the SpCog vs. EngCog scores and the SpCog vs. NoCog scores, both of which had a p value of less than 0.05. While still significant, there was a lesser degree of significance when compared to the first testing session. As in the first testing session results, it should be noted that the EngCog vs. NoCog scores demonstrated no significant difference with a p value of greater than 0.05.

3.2   Analysis of post-test: psychotypological views and comments

The information elicited in the final two sections of the post-test questionnaire provided valuable insight into the thought processes of the subjects as they participated in the experiment. The post-test questionnaire and the subjects' responses were originally in Spanish.

Psychotypological data

The results from the five multiple-choice questions on the psychotypological views and beliefs of the relationships between Spanish, English, and French are presented in Table 10. A complete listing of the subjects' responses may be found in Appendix I.

Question	Options	% Response
Which of the languages is more similar to French?	Spanish English	94.9 5.1
Which languages are the most similar?	French/Spanish French/English Spanish/English	89.7 7.7 2.6
For a native Spanish speaker, which language is easier to learn?	French English	48.7 51.3
For a native English speaker, which language is easier to learn?	Spanish French	38.5 61.5
Historically, like in a family tree, which is the correct relationship among the three languages? (see "trees" in Appendix C)	((Eng, Sp) Fr) (Fr, Eng, Sp) ((Fr, Eng) Sp) ((Fr, Sp) Eng)	10.3 25.6 5.1 59.0

Table 10: Psychotypology results from the post-test questionnaire

Subject comments

Three open-ended questions were presented to the subjects. Subjects were free to answer the questions in as short or as long as a response as they desired. Two of the questions focused on the strategies the subjects may have utilized. The questions were:

1) Did you utilize any special strategy when *studying the words* during the original presentation last week? What were they?

2) Did you utilize any special strategy when *choosing the correct sentence* during the testing sessions? What were they?

The third question allowed the subjects to express any comment or question they may have had during the experiment:

3) Do you have any other comments about the study or your participation?

A complete listing of the subjects' responses to the three questions may be found in Appendix J, and a discussion of those responses may be found in section 4.5.

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The interpretation and implications of the results from both testing sessions and the post-test questionnaire are elaborated on in the next chapter.

4   DISCUSSION

The discussion section focuses on the interpretation of the results with regard to the hypotheses posited. Reference is made to the Hall, Ecke, Sperr, & Hayes (2004) study in which results are compared and discussed, in the context of the Parasitic Model (Hall, 1993, 2002; Hall & Ecke, 2003; Hall & Schultz, 1994). Furthermore, a concurrent study (Hayes, in prep.), which provides additional findings in the area of psychotypology, is discussed. Implications, including those for language acquisition methodologies and future research, are then presented.

4.1   First hypothesis

This experiment investigated the possible connections between L1 or L2 cognate forms and frame acquisition in L3 vocabulary development. The first hypothesis postulated that a similar form representation (cognate form) of a new L3 word and a previously-known L1 or L2 translation equivalent will lead to the initial adoption of the corresponding L1 or L2 frame, when the learner has had recent exposure to these translation equivalents.

The results suggest that there does appear to be a cross-linguistic influence exerted on the selection of the L3 frame effected by the L1 or L2 cognate frame. The results from the first testing session show that 57.58% of the subjects chose the Spanish frame over the English frame in the Spanish cognate condition. Similarly, 55.88% of the subjects chose the English frame in the English cognate condition. There is a significant cognate effect present in the results. The first hypothesis of the experiment has therefore been supported. Evidence for the

Parasitic Model (Hall, 1993), in which learners will assume any two words to be translation equivalents if they share the same form, has been confirmed and expanded. The cognate status of L1 and L2 lexical items during L3 frame acquisition seems to exert cross-linguistic influence within the mental lexicon and gives insight into the organization of the mental lexicon.

The aforementioned question of whether form similarity affects frame use when translation equivalents are provided has been resolved. L1 and L2 lexical entry activation levels were artificially raised in the presentation session via translation equivalents. It was found that when activation levels were high enough in another language, form similarity led to frame inheritance in short term memory (see Figure 14 for an example). In this example, the L3 French verb *obstiner* is presented with its translation equivalents in L1 Spanish (*obstinarse*, which is reflexive) and L2 English (*persist*, which is not reflexive and takes a prepositional complement). These translation equivalents cause spreading activation to the L1 and L2, with the L1 activation being higher due to the cognate status. This form similarity leads to frame inheritance, which in this example is the reflexive.
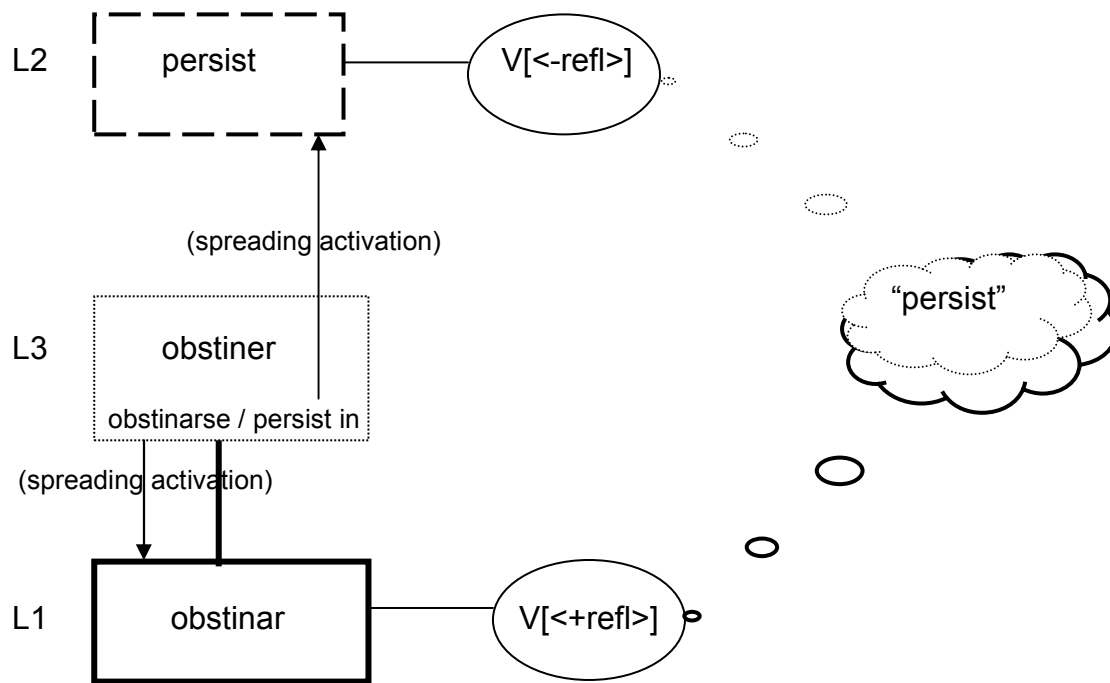
Figure 14: Example of frame inheritance in short-term memory

Interestingly, the results of the delayed second testing session showed an almost equal rate of Spanish frame selection in the Spanish cognate condition (57.50%), while the rate of English frame selection in the English cognate condition diminished (52.5%). The effect is still present a week later, not just immediately following the presentation phase. A major finding of the experiment is that, since there is still a significant difference (meaning there is still some effect), it is not the result of short-term priming only.

The Non-cognate condition in the first testing session showed a greater selection of the English frame (55%) as opposed to the Spanish frame (45%) when given no similarity in form to either English or Spanish. These results are very close to those of the English cognate condition. This suggests that a foreign

or L2 effect may have influenced the subjects. This is further discussed with regard to the psychotypological results in section 4.3. The results of the delayed second testing session showed an English frame selection of 52.78% (dropping 2.22% from the first testing session) and a Spanish frame selection of 47.22% (up 2.22%). A t-test was performed using the results from the Non-cognate conditions from the first testing session and the delayed second testing session. The results of the t-test showed that the change was not significant. These percentage results may indicate that any L2 effect in the Non-cognate condition is short-lived. With time, if subjects are not exposed to input reinforcing the cognate connection (as happened in this experiment, where there was no reinforcement), their selections seem to gravitate toward chance probability (guessing). This may be explained by an L1 effect in which the subjects relied more heavily than in the first test on their L1 Spanish when tested a week after the first testing session. The cognate effect may be only a short-lived phenomenon. Further explanation is merited (see section 4.2).

4.2   Comparison to L3 German

A comparison with the Hall, Ecke, Sperr, & Hayes (2004) study, which used German as the L3, provides an opportunity for insight into the cognate effect using a typologically different L3. The use of a typologically different L3 allows the separation of any L1 or L2 effect from a psychotypological effect. The results of the current study appear to be consistent with those of the German study. Hall, et al. (2004) found "a detectable cognate effect of CLI [Cross-Linguistic Influence] on

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assumptions of grammatical frame" (p. 33) with similar results to all three cognate

conditions in the current French study, although there was a slightly greater

Spanish cross-linguistic cognate effect in the Spanish frame in the French study.

The Non-cognate condition in the German study had a much greater rate of

English frame selection in the first testing session (64.31%) and the delayed

second testing session (57.24%). Interestingly, the activation of translation

equivalents faded more quickly in the current French study than in the Hall, et al.

German study. This may perhaps be because of the subjects' psychotypological

views that German is typologically closer to English than it is to French. The

German study also demonstrated that the cognate effect appeared to be short-

lived, a pattern that the authors explained in relation to the Parasitic Hypothesis

(Hall & Ecke, 2003) involving interlingual connections. Because the connections

formed with the immature L3 lexicon and the L1 and L2 lexicons are tentative, the

exposure of the subjects to the presentation stimuli immediately before the first

testing session enabled the translation equivalents in all three languages to be

highly activated for the first testing session. The connections were weakened over

time, however, and the results from the delayed second testing session show that

some connections may have been lost. Further or continued reinforcement of the

connections would allow the connections to become permanent. As Hall, et al.

(2004) point out, "cognate status does not automatically result in across-the-board

parasitic dependencies" and "CLI is modulated by a host of factors which are

notoriously hard to pin down" (p.38). Some of these factors include age,

motivation, L2 status, amount of exposure, and many others (see Hall & Ecke,

2003 for a more complete listing).

4.3   Second hypothesis

The second hypothesis of this thesis posited that psychotypology

(Kellerman, 1983) would exert a cross-linguistic influence on the choice of frame

by the subjects when the translation equivalents are *not* cognate forms. The Hall,

et al. (2004) study considered the high rate of English frame selection in the Non-

cognate condition to possibly be due to an L2 effect. The consideration of the

psychtypological (P-typ) views elicited from the subjects during the post-test

provided additional insight. Historically, German and English are more closely

related (E-typ). The subjects viewed German to be more similar to English

(81.8%) than to Spanish, and 53.1% of the subjects judged German and English to

be historically more closely related. The authors concluded that a

psychotypological effect was the reason for the higher rate of English frame choice

in the NoCog condition as compared to the EngCog condition. The subjects

seemed to depend on English, which was what they viewed as the typologically

closer language to German, more than on Spanish.

The current experiment, as suggested by the German study, enabled the

potential confirmation of the psychotypological explanation by using French as the

L3 (see Figure 15). French and Spanish are Romance languages and thus are

historically closer, although the French invasion during the Norman conquest led

to the re-lexicalization of English due to substantial borrowing (Stockwell &

Minkova, 2001).
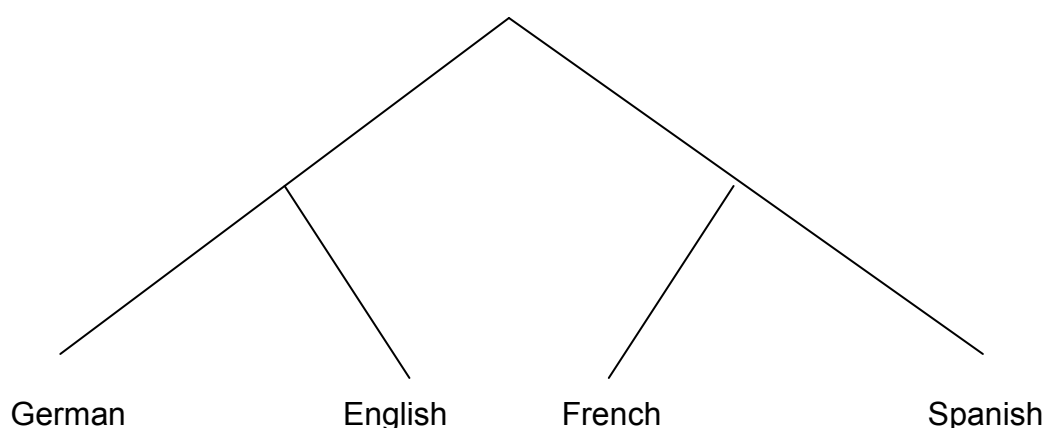
Figure 15: Historical relatedness of Spanish, English, French, and German

Psychotypological cross-linguistic influence would lead to the conclusion that if the

subjects believed that Spanish and French are more closely related, the subjects

would choose the Spanish frame more often when shown a novel French word

with no cognates present. Interestingly, this proved not to be the case.

The psychotypological views held by the subjects demonstrated a strong

belief that French and Spanish were the closest of the three languages. A large

majority, 94.9%, viewed Spanish to be the most similar to French and 89.7%

believed that French and Spanish were more similar than any other combination of

the three. When asked to choose a drawing representing the historically

genealogical relationship of the three languages, 59% chose the drawing with

French and Spanish more closely tied. Only 5.1% chose the drawing that showed

French and English more closely related. The results of this experiment, however, showed that subjects chose the English frame more often (55%) than the Spanish frame (45%) in the Non-cognate condition in the first testing session. This clearly suggests, therefore, that the effect influencing the subjects is not psychotypological, but rather may have been an L2 effect in which the subjects' second language influenced the acquisition of their third (i.e. if the new word is "foreign" and not recognized as a cognate, the learner may rely on their L2 to form a connection). It must be made clear that while it is possible to conclude that the effect seen was not a psychotypological effect, there may be other explanations besides that of an L2 effect, such as a recency effect, conscious or unconscious strategy use or guessing, or an as yet undiscovered effect (cf. Hayes, in prep.). More research is needed to find out what it may be.

The psychotypological views of the subjects thus far, however, are inconsistent with the results from the questions regarding ease of learning. Of the information gathered on the subjects' psychotypological views, two questions received unexpected responses. When asked which language would be easier for a native Spanish speaker to learn, 51.3% answered English and 48.7% answered French, even though the subjects believed overwhelmingly that French and Spanish are more similar. This may be due to the fact that the United States and Mexico are neighboring countries and English is more "internalized" through greater exposure through the media, music, and other sources. Surprisingly, though, when asked which language would be easier to learn for a native English

speaker, 61.5% of the subjects chose French and 38.5% chose Spanish. The concept of psychotypology, therefore, appears to not be as clear as it seemed.

4.4   Additional psychotypological data

Psychotypology, the perception or impression of the individual learner, may be based on cognates or historical and linguistic typology. If a new L3 has more cognates with a learner's L1 than with his/her L2, the learner may assume that the L1 is closer to the L3 than to the L2. Because of borrowing, cognates are logically independent of historical context and cognate status is logically separate from historical typology, although they are closely correlated. Cognates between languages may have been caused by history, but there is no history in the learner's mental lexicon. While languages may not be historically related, a large number of cognates between languages indicates proximity. The other basis of psychotypology may be learned historical typology, information gathered or absorbed by learners relating to the etymology or source of word, and its genetic connectedness, and linguistic typology, relating to word order or structural similarity. This structural similarity also refers to cognates, which are similar in form (Finegan, 1989; Odlin, 1989).

Hayes (in prep.) investigated the possible differences between typology and psychotypology. The subjects were native Spanish speakers (L1), who were advanced English speakers (L2), and were enrolled in a basic German course (L3) at a private Mexican university. The study distinguished three forms of typology and sought to reveal connections between these and L3 vocabulary acquisition.

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The three forms of typology include E-typ (lexical typology of the whole language) and I-typ (typology of words that are in the minds of the learners, including second and third languages), which are both related to the lexicon. The third form, P-typ, relates to the perceptions that learners have about of the relationships the three languages have. With regard to E-typ and I-typ, Hayes found that the proportion of word sources (Germanic, Latinate, and other) in the lexicons was the same as the proportion of the words they knew. Surprisingly, the results suggested that the facts of the language (E-typ) and the actual words the learners know (I-typ) seem to show more Latinate characteristics (as opposed to Germanic) than were expected. Prior to conducting the study, Hayes theorized that the German language would contain more Germanic than Latinate word characteristics.

In a psychotypological survey similar to the one in the post-test of the current experiment, Hayes' results followed those of the Hall, et al. (2004) German study to an even higher degree, with subjects believing that German and English are much more similar (95.4%) and closely related (93.2%) than German and Spanish or Spanish and English. The learners thought that English and German were more closely related than Spanish, and believed that historically that was also true. From the results of the German vocabulary test given the subjects, only 17% of the words they knew were English/German cognates while 40% of the known words were cognates across all three languages. From the results of the English vocabulary test, 39% of the known words were Spanish/English cognates. Based on the corpus of words the subjects knew (and their word sources), they did not seem to have sufficient or overwhelming grounds for assuming that English

and German were much more closely connected than other possibilities. The study did not show any evidence that the psychotypological beliefs proffered by the subjects had derived from subjects' I-typ form of typology. The subjects' perception of the psychotypological relatedness of the three languages does not seem to correspond with the actual facts of the language. The subjects may have been consciously using psychotypology as a basis for their assumptions, but their perception was not based on what they knew. This corresponds with the results found in the current study.

4.5   Subject comments

It seems that in the current study, subjects did not use psychotypology and they also used few conscious strategies to help them make their choices. This supports the hypothesis, which conforms to the Parasitic model idea of unconscious connections. It should be noted that the subjects' post-test comments were regarding the 90 verbs and nouns. Some comments may have been made with both verbs and nouns in mind, or just one or the other. Subjects were asked, "Did you utilize any special strategy when *studying the words* during the original presentation last week? What were they?" and 30% responded with a definite "no". Of the special strategies used, 22.5% of the students responded that they tried to relate the French word (noun or verb) with the translation equivalents provided underneath. One subject actually said, "Yes, identifying (or trying to identify) the cognates". Another 17.5% related the French word only to Spanish, and 5% related it only to English. Only 7.5% of the subjects tried to consciously

memorize the words, but soon found a difficulty in memorizing 90 words. The rest of the subjects mentioned associating the word with something relating to it, such as an idea, thing, context, or situation.

Subjects were then asked, "Did you utilize any special strategy when *choosing the correct sentence* during the testing sessions? What were they?" 30% stated that they chose the one that "sounded the best" while 17.5% were guided by context or "what made the most sense". 12.5% said they utilized no conscious strategy. Other subjects mentioned using logic and trying to remember the words from the presentation phase of the experiment or from their class. One subject commented, "I based it on the relationship with the other languages".

Finally, when subjects were asked, "Do you have any other comments about the study or your participation?", their main observation was that the presentation and testing were long and tiring. Two of the most interesting comments were "That when comparing the words with English, they have a similarity which makes it easier to memorize" (showing a subject's focus on cognate form) and "I don't have a good short-term memory, so I need to review several times if I need to memorize (showing that the subject believes that repeated exposure does strengthen the interlingual connections).

It appears that the subjects in the study utilized a minimal amount of methods or strategies in the experiment. The subjects' post-test comments regarding conscious memorization strategies were similar to those in the Hall, et al. (2004) German study, where only 24.2% mentioned consciously memorizing or remembering the translation equivalents from their L1 or L2.

In sum, the study has shown that there was spreading activation from the novel L3 verb to the L1 or L2 cognate form to the corresponding L1 or L2 frame. Contrary to an anticipated psychotypological effect on L3 frame selection in the non-cognate condition, there appeared to be an L2 effect that influenced subjects' choices.

4.6   Pedagogical implications

Additional teaching methodologies and learning strategies involving the cognate effect to aid L3 learners in vocabulary acquisition may be developed to optimize language learning based on students' styles and strengths. An increased teacher awareness of the Parasitic Model of form-frame-concept representation may lead to decisions about how to present cognate and non-cognate vocabulary, as well as the potential benefits for strategies regarding frame acquisition. Second language teachers could consider teaching frame awareness to their students so students could visualize the form-frame-concept awareness as it relates to their own L1, L2, L3,...Ln. Although L3 verb frames in many cases may coincide with an L1 or L2 cognate form, students (especially adults, who tend to directly substitute a new word for the old, such as saying in their Spanish target language *Gusto bailar* for *I like to dance*, using *gustar* the way *like* is in English) could be encouraged to develop a metalinguistic awareness, such as that the frame of a new L3 word does not always follow its L1 or L2 cognate. This can be complicated, however, as many words have multiple frames, depending on their uses in context.

Instead of battling against an automatic process of how the mind works, perhaps teachers could become unafraid to use students' L1 or L2 in beginning L3 classrooms and realize the benefits of doing so. Translation may be a preferred learning strategy and may prove useful. A learner's L1 (or L2, etc.) should not be banished from the classroom. Cognate recognition could help students connect their L1 or L2 with a new L3 word. For example, L1 Spanish students could put an *-e* on every L3 English word that starts with *st-* in order to connect it with a cognate (such as *student – estudiante*). Students could receive explanation of a subordinate representation linking the L3 word to their L1 or L2 word which then would connect to the concept, perhaps both explaining that this occurs and helping them to create these links.

4.7   Limitations of the study

As noted by the subjects, the presentation and testing phases did seem long to the subjects, although the entire experiment was completed in two 50-minute class periods. Some subjects seemed bored and were not always paying their full attention, and this could have affected the results. Perhaps the number of stimuli could be reduced in the first task, but the risk of losing too many stimuli due to French and English prior knowledge is great. There was also an unnaturalness in the presentation of the novel French verbs with their translation equivalents. Stimulating the activation of lexical entries naturally instead of artificially would have been preferable, perhaps by choosing specific contexts in which these words

would arise. Another possible change is that the order of the sentences within each slide (A/B) in the delayed second testing session could have been altered in the interest of a more complete randomization.

A potential critique for the study could be that the study may have examined only priming and not any other aspect of the organization of the mental lexicon. While the presentation of the translation equivalents of a novel L3 French verb may have primed L1 English and L2 Spanish, the connections forged by an L1 or L2 cognate to a previously unknown L3 verb are new. The L3 verb is being tentatively mapped in to the mental lexicon and the organization of it is being adapted. Furthermore, this experiment demonstrated that, since the effect was still present during the delayed second testing phase, it was not just the result of priming.

4.8   Further study

While this study has added to the area of cross-linguistic influence in the multilingual lexicon with regard to vocabulary development, it is obvious that much more research could be done. The results from the current study, as well as from Hall, et al. (2004) and Hayes (in prep.), clearly show the multiplicity of interrelated elements of cross-linguistic influence in the multilingual lexicon. Further study is needed to achieve a deeper understanding of this area and provide added insight to the architecture of the multilingual lexicon.

An interesting replication study would be one that uses English as an L1, Spanish, French or German as an L2, and a typologically different language from

the L1 or L2 (such as a Slavic language) as an L3, although there is an abundance of research using English as the L1. Also, in a similar study, individual student responses across the immediate and delayed testing sessions could be monitored to explore how his/her responses altered over time.

If the number of stimuli could be kept reasonably low, the addition of a fourth verb condition would prove interesting. A fourth condition in which all three languages contained a cognate verb form would provide additional data into the possible L2 or psychotypological effects that L1 and L2 translation equivalents have on the L3 frame selection. It would prove quite intriguing to compare these results with those of the non-cognate condition utilizing a variety of typologically different languages. Perhaps there would be a greater L1 influence on the L3 since all the verbs would be cognates and the highest activation would be the L1 translation equivalents. This fourth verb condition was not included in this experiment due to the extended duration of presentation and testing phases that this would have incurred.

The concept of psychotypology appears to be assumed as a standard form of cross-linguistic influence. Studies like this one, however, seem to be weakening the unanalyzed version of psychotypology. Additional studies attempting to isolate the possible effects of psychotypology may unravel the complexity of this concept and lead to discoveries of new cross-linguistic influences or further evidence for existing ones.

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Spanish Cognate (SpCog) condition: Experimental stimuli

	SPANISH	ENGLISH	FRENCH	FRAME	EXAMPLES
ba01	amenazar de	threaten with	menacer	de/with	Los fanáticos amenazan de muerte a los traidores.
					The fanatics threaten traitors with death.
					Les fanatiques menacent les traîtres de mort.
					Les fanatiques menacent les traîtres avec la mort.
ba02	calcinarse	burn	calciner	R/-	Todavía se calcinan las casas un día después de la explosion.
					The houses are still burning the day after the explosion.
					Les maisons se calcinent encore un jour après l'explosion.
					Les maisons calcinent encore un jour après l'explosion.
ba03	congelarse	freeze	geler	R/-	En Siberia los trabajadores se congelan cada invierno.
					In Siberia the workers freeze every winter.
					En Sibérie les travailleurs se gèlent chaque hiver.
					En Sibérie les travailleurs gèlent chaque hiver.
ba04	durar	last for	durer	-/for	La junta dura tres dias.
					The meeting lasts for 3 days.
					La réunion dure trois jours.
					La réunion dure pour trois jours.
ba05	lavarse	wash	laver	R/-	Me lavo con un nuevo jabón de Clinique.
					I wash with a new soap from Clinique.
					Je me lave avec un nouveau savon de Clinique.
					Je lave avec un nouveau savon de Clinique.
ba06	manifestarse	demonstrate	manifester	R/-	Los profesores se manifiestan en el Zócalo mañana.
					The teachers demonstrate in the Zocalo tomorrow.
					Les professeurs se manifestent sur le Zócalo demain.
					Les professeurs manifestent sur le Zócalo demain.
ba07	felicitar por	congratulate on	féliciter	por/on	Siempre felicito a mis estudiantes por sus avances.
					I always congratulate my students on their progress.
					Je félicite toujours mes étudiants pour leurs progrès.
					Je félicite toujours mes étudiants sur leurs progrès.
ba08	obstinarse	persist	obstiner	R/-	No te obstines en conservar tu relación con esa mujer.
					Don't persist in maintaining your relationship with that woman.

				Ne t'obstine pas à continuer ta relation avec cette femme.
				Ne obstine pas à continuer ta relation avec cette femme.
ba09	solicitar	ask for	solliciter	-/for	Jean solicita una entrevista con el director.
					Jean asks for an interview with the director.
					Jean sollicite une entrevue avec le directeur.
					Jean sollicite pour une entrevue avec le directeur.
ba10	postularse para	run for	postuler	R/-	Cárdenas se postula de nuevo para la presidencia.
					Cárdenas is running again for the presidency.
					Cárdenas se postule de nouveau pour la présidence.
					Cárdenas postule de nouveau pour la présidence.
ba11	rasurarse	shave	raser	R/-	Juan se rasura cada mañana antes del desayuno
					Juan shaves every morning before breakfast.
					Juan se rase chaque matin avant le petit déjeuner.
					Juan rase chaque matin avant le petit déjeuner.
ba12	reirse	laugh	rire	R/-	Nos reímos mucho cuando vemos el show de los Simpsons.
					We laugh a lot when we watch "The Simpsons".
					Nous nous rions beaucoup quand nous voyons "les Simpsons".
					Nous rions beaucoup quand nous voyons "les Simpsons".
ba13	secarse	dry	sécher	R/-	Las alfombras se secan mejor al sol.
					Carpets dry better in the sun.
					Les tapis se sèchent mieux au soleil.
					Les tapis sèchent mieux au soleil.
ba14	sentirse	feel	sentir	R/-	Me siento muy bien hoy.
					I feel really good today.
					Je me sens très bien aujourd'hui.
					Je sens très bien aujourd'hui.
ba15	vestirse	dress	vêtir	R/-	Edith se viste como Dracula para la fiesta.
					Edith is dressing as Dracula for the party.
					Edith se vêt comme Dracula pour la fête.
					Edith vêt comme Dracula pour la fête.

English Cognate (EngCog) condition: Experimental stimuli

SPANISH		ENGLISH	FRENCH	FRAME	EJEMPLOS
bb01	agriarse	sour	surir	R/-	A veces una botella de vino se agria.
					Sometimes a bottle of wine sours.
					Parfois une bouteille de vin se surit.
					Parfois une bouteille de vin surit.
bb02	burlarse de	mock	moquer	R/- & de/-	Pablo se burla de Susana por su acento.
					Pablo mocks Susana for her accent.
					Pablo se moque de Susana pour son accent.
					Pablo moque Susana pour son accent.
bb03	alegrarse por	rejoice at	réjouir	R/- & por/at	Los ingleses se alegran por la boda del Príncipe Carlos
					The English rejoice at the wedding of Prince Charles.
					Les Anglais se réjouissent pour le mariage du Prince Charles.
					Les Anglais réjouissent au mariage du Prince Charles.
bb04	casarse con	marry	marier	R/- & con/-	Jean se casa con Antoinette en abril próximo.
					Jean marries Antoinette next April.
					Jean se marie avec Antoinette en avril prochain.
					Jean marie Antoinette en avril prochain.
bb05	aterrarse	panic	paniquer	R/-	Marie se aterra cada vez que ve un perro grande.
					Marie panics every time she sees a big bog.
					Marie se panique chaque fois qu'elle voit un gros chien.
					Marie panique chaque fois qu'elle voit un gros chien.
bb06	estacionarse	park	parquer	R/-	Jacques siempre se estaciona en la calle.
					Jacques always parks in the street.
					Jacques se parque toujours dans la rue.
					Jacques parque toujours dans la rue.
bb07	declararse	plead	plaider	R/-	Los asesinos se declaran culpables.
					The murderers plead guilty.
					Les assassins se plaident coupables.
					Les assassins plaident coupables.
bb08	dudar en	hesitate to	hésiter	en/to	Marc duda en pedir la mano de Brigitte.
					Marc hesitates to propose to Brigitte.

					Marc hésite en demander la main de Brigitte.
					Marc hésite à demander la main de Brigitte.
bb09	descuidarse de	neglect	négliger	R/ & de/-	Monique se descuida de sus estudios porque está enamorada.
					Monique is neglecting her studies because she's in love.
					Monique se néglige de ses études parce qu'elle est amoureuse.
					Monique néglige ses études parce qu'elle est amoureuse.
bb10	enjuagarse	rinse	rincer	R/-	La niña siempre se enjuaga bien el cabello después de utilizar el champú.
					The girl always rinses her hair well after using shampoo.
					La fille se rince toujours bien les cheveux après avoir utilisé le shampooing.
					La fille rince toujours bien les cheveux après avoir utilisé le shampooing.
bb11	hospedarse	lodge	loger	R/-	Siempre se hospedan en un hotel de lujo.
					They always lodge in a luxury hotel.
					Ils se logent toujours dans un hôtel de luxe.
					Ils logent toujours dans un hôtel de luxe.
bb12	lamentarse por	regret	regretter	R/- & por/ -	Nos lamentamos por la decisión.
					We regret the decision.
					Nous nous regrettons pour la décision.
					Nous regrettons la décision.
bb13	voltearse	turn	tourner	R/-	En este momento el actor se voltea a la derecha.
					At this moment the actor turns to the right.
					A ce moment l'acteur se tourne à droite.
					A ce moment l'acteur tourne à droite.
bb14	unirse a	join	joindre	R/- & a/-	Mónica se une a un grupo de baille tradicional.
					Monica is joining a traditional dance group.
					Monique se joint à un groupe de danse traditionelle.
					Monique joint un groupe de danse traditionelle.
bb15	apresurarse	hasten	hâter	R/- para/to	Los negociadores se apresuran para aceptar la propuesta.
					The negotiators hasten to accept the proposal.
					Les négociateurs se hâtent pour accepter la proposition.
					Les négociateurs hâtent à accepter la proposition.

Non-Cognate (NoCog) condition: Experimental stimuli

SPANISH		ENGLISH	FRENCH	FRAME	EJEMPLOS
co01	acordarse de	remember	souvenir	R/- & de/ -	Mi abuelita se acuerda de la revolucioón.
					My grandmother remembers the revolution.
					Ma grand-mère se souvient de la révolution.
					Ma grand-mère souvient la révolution.
co02	aflojarse	loosen	relâcher	R/-	Los lazos entre Rusia y Cuba se están aflojando.
					The ties between Russia and Cuba are loosening.
					Les liens entre la Russie et Cuba se relâchent.
					Les liens entre la Russie et Cuba relâchent.
co03	ahogarse	drown	noyer	R/-	Muchos niños se ahogan en ese río.
					Many children drown in that river.
					Beaucoup d'enfants se noient dans cette rivière.
					Beaucoup d'enfants noient dans cette rivière.
co04	aumentarse	increase	majorer	R/-	Se aumenta el precio de gasolina cada mes.
					The price of gas increases every month.
					Le prix de l'essence se majore chaque mois.
					Le prix de l'essence majore chaque mois.
co05	cansarse	tire	lasser	R/-	Mi madre se cansa rápido de las discusiones políticas.
					My mother quickly tires of political discussions.
					Ma mère se lasse rapidement des discussions politiques.
					Ma mère lasse rapidement des discussions politiques.
co06	convertirse en	become	devenir	R/- & en/-	Más europeos se convierten en creedores del Islam.
					More Europeans are becoming believers in Islam.
					Plus d'Européens se deviennent en croyants de l'Islam.
					Plus d'Européens deviennent croyants de l'Islam.
co07	despertarse	wake	réveiller	R/-	Siempre me despierto a las 5am.
					I always wake at 5am.
					Je me réveille toujours à 5 heures du matin.
					Je réveille toujours à 5 heures du matin.
co08	esconderse	hide	cacher	R/-	Los niños se esconden detrás del árbol.
					The children hide behind the tree.

					Les enfants se cachent derrière l'arbre.
					Les enfants cachent derrière l'arbre.
co09	mirar	gaze at	scruter	-/at	El extraño mira la casa del vecino.
					The stranger gazes at the neighbour's house.
					L'étranger scrute la maison du voisin.
					L'étranger scrute à la maison du voisin.
co10	pelearse	fight	battre	R/-	Mis hermanos siempre se están peleando.
					My brothers are always fighting.
					Mes frères se battent toujours.
					Mes frères battent toujours.
co11	pasearse	stroll	balader	R/-	Mis abuelos se pasean por la playa los lunes.
					My grandparents stroll on the beach on Mondays
					Mes grands-parents se baladent sur la plage le lundi.
					Mes grands-parents baladent sur la plage le lundi.
co12	probar	try on	essayer	-/on	Samantha prueba una nueva blusa cada mes.
					Samantha tries on a new blouse every month.
					Samantha essaie un nouveau chemisier chaque mois.
					Samantha essaie en un nouveau chemisier chaque mois.
co13	robarse	steal	voler	R/-	Los ladrones se roban todo de las tiendas de esa zona.
					The thieves steal everything from the shops in that area.
					Les bandits se volent tout des magasins de ce quartier.
					Les bandits volent tout des magasins de ce quartier.
co14	romperse	break	casser	R/-	Robert se rompe un dedo cada vez que esquia.
					Robert breaks a finger every time he goes skiing.
					Robert se casse un doigt chaque fois qu'il fait du ski.
					Robert casse un doigt chaque fois qu'il fait du ski.
co15	soñar con	dream of	rêver	con/of	Suena diariamente con Claudia Schiffer.
					He dreams daily of Claudia Schiffer.
					Il rêve quotidiennement avec Claudia Schiffer.
					Il rêve quotidiennement de Claudia Schiffer.

Distractor Nouns: Experimental stimuli

	SPANISH	ENGLISH	FRENCH	FRAME	EJEMPLOS
nn01	el anillo	ring	la bague	m/f	Jeanne admire la bague de mariage.
					Jeanne admire le bague de mariage.
nn02	el barrio	district	le quartier	m/m	Je vis dans un quartier tranquille.
					Je vis dans une quartier tranquille.
nn03	la bebida	drink	la boisson	f/f	La boisson alcoolisée est dangereuse pour la santé.
					Le boisson alcoolisé est dangereux pour la santé.
nn04	la bolsa	bag	le sac	f/m	Béatrice porte un sac en plastique.
					Béatrice porte une sac en plastique.
nn05	el caballo	horse	le cheval	m/m	Le cheval galope très vite.
					La cheval galope très vite.
nn06	la calle	road	la rue	f/f	Jacques rencontre Marie dans la rue.
					Jacques rencontre Marie dans le rue.
nn07	la carne	meat	la viande	f/f	Les cannibals aiment la viande fraîche.
					Les cannibals aiment le viande frais.
nn08	la cartera	wallet	le portefeuille	f/m	Henri perd son portefeuille.
					Henri perd sa portefeuille.
nn09	la casa	house	la maison	f/f	Christine et Marc habitent dans une maison à la campagne.
					Christine et Marc habitent dans un maison à la campagne.
nn10	el césped	lawn	la pelouse	m/f	La pelouse de Wimbledon est verte.
					Le pelouse de Wimbledon est vert.
nn11	el coche	car	la voiture	m/f	J'aime voyager dans la voiture de mon père.
					J'aime voyager dans le voiture de mon père.
nn12	la comida	meal	le repas	f/m	Un repas au restaurant coûte cher.
					Une repas au restaurant coûte chère.
nn13	el cuadro	painting	le tableau	m/m	Le tableau de Picasso est cubiste.
					La tableau de Picasso est cubiste.
nn14	el cuarto	room	la chambre	m/f	Pourrais-tu ranger ta chambre?
					Pourrais-tu ranger ton chambre?
nn15	el dibujo	picture	le dessin	m/m	Je voudrais voir ton dessin de Johnny Depp.

					Je voudrais voir ta dessin de Johnny Depp.
nn16	el domingo	Sunday	le dimanche	m/m	Je joue au tennis le dimanche.
					Je joue au tennis la dimanche.
nn17	la felicidad	happiness	le bonheur	f/m	Le bonheur n'existe pas.
					La bonheur n'existe pas.
nn18	el frío	cold	le froid	m/m	Je déteste le froid.
					Je déteste la froid.
nn19	el helado	ice cream	la glace	m/f	Daniel préfère la glace au chocolat.
					Daniel préfère le glace au chocolat.
nn20	la huelga	strike	la grève	f/f	Les travailleurs font la grève depuis une semaine.
					Les travailleurs font le grève depuis une semaine.
nn21	la joya	jewel	le bijou	f/m	Les filles observent le bijou dans la vitrine.
					Les filles observent la bijou dans la vitrine.
nn22	la leche	milk	le lait	f/m	Le chat boit le lait frais.
					Le chat boit la lait fraîche.
nn23	el lugar	place	le lieu	m/m	Je te présente mon lieu favori.
					Je te présente ma lieu favorite.
nn24	la llave	key	la clé	f/f	J'oublie toujours ma clé.
					J'oublie toujours mon clé.
nn25	la lluvia	rain	la pluie	f/f	Gene Kelly danse sous la pluie.
					Gene Kelly danse sous le pluie.
nn26	la maleta	suitcase	la valise	f/f	Ma valise est très lourde.
					Mon valise est très lourd.
nn27	la neblina	fog	le brouillard	f/m	Les autos disparaissent dans le brouillard.
					Les autos disparaissent dans la brouillard.
nn28	la oveja	sheep	le mouton	f/m	Le mouton est dans le champ.
					La mouton est dans le champ.
nn29	la palabra	word	le mot	f/m	Je ne connais pas le mot.
					Je ne connais pas la mot.
nn30	el paseo	walk	la promenade	m/f	Paul fait une promenade le dimanche.
					Paul fait un promenade le dimanche.

nn31	el pastel	cake	le gâteau	m/m	Ses enfants mangent un gâteau ce soir.
					Ses enfants mangent une gâteau ce soir.
nn32	la pesadilla	nightmare	le cauchemar	f/m	Il fait un cauchemar chaque nuit.
					Il fait une cauchemar chaque nuit.
nn33	la primavera	spring	le printemps	f/m	Le printemps arrive!
					La printemps arrive!
nn34	el queso	cheese	le fromage	m/m	Mon père adore le fromage.
					Mon père adore la fromage.
nn35	la rana	frog	la grenouille	f/f	La grenouille se transforme en princesse.
					Le grenouille se transforme en prince.
nn36	el regalo	gift	le cadeau	m/m	Rémy joue avec le cadeau de sa sœur.
					Rémy joue avec la cadeau de sa sœur.
nn37	el reloj	watch	la montre	m/f	Ma montre est cassée.
					Mon montre est cassé.
nn38	el reparto	delivery	la livraison	m/f	Sophie oublie la livraison chez Antoine.
					Sophie oublie le livraison chez Antoine.
nn39	el rostro	face	le visage	m/m	Il regarde le visage de Florence avec amour.
					Il regarde la visage de Florence avec amour.
nn40	el sombrero	hat	le chapeau	m/m	L'enfant porte le chapeau de son père.
					L'enfant porte la chapeau de son père.
nn41	la tarde	evening	le soir	f/m	Elle regarde la télévision le soir.
					Elle regarde la télévision la soir.
nn42	el tiburón	shark	le requin	m/m	Le requin a de grandes dents.
					La requin a de grandes dents.
nn43	la tienda	store	le magasin	f/m	Le magasin de jouets se trouve derrière le palais.
					La magasin de jouets se trouve derrière le palais.
nn44	la uva	grape	le raisin	f/m	Le vin est fait avec le raisin.
					Le vin est fait avec la raisin.
nn45	la vez	time	la fois	f/f	Pierre écrit en français pour la première fois.
					Pierre écrit en français pour le premier fois.

Spanish cognate (SpCog) condition: cognate criteria analysis

% shared phonemes

1 amenazar   a   **m**   **e**   **n**   **a**   *z   (ar)
   threaten
   menacer   **m**   **e**   **n**   **a**   *c   (er)   82%

2 calcinar   **c**   **a**   **l**   **c**   **i**   **n**   (ar)
   burn
   calciner   **c**   **a**   **l**   **c**   **i**   **n**   (er)   100%

3 congelar   [con]   **g**   **e**   **l**   (ar)
   freeze
   geler   **g**   **e**   **l**   (er)   75%

4 durar   **d**   **u**   **r**   (ar)
   last
   durer   **d**   **u**   **r**   (er)   100%

5 lavar   **l**   **a**   **v**   (ar)
   wash
   laver   **l**   **a**   **v**   (er)   100%

6 manifestar   **m**   **a**   **n**   **i**   **f**   **e**   **s**   **t**   (ar)
   demonstrate
   manifester   **m**   **a**   **n**   **i**   **f**   **e**   **s**   **t**   (er)   100%

7 felicitar   **f**   **e**   **l**   **i**   **c**   **i**   **t**   (ar)
   congratulate
   féliciter   **f**   **é**   **l**   **i**   **c**   **i**   **t**   (er)   100%

8 obstinar   **o**   **b**   **s**   **t**   **i**   **n**   (ar)
   persist
   obstiner   **o**   **b**   **s**   **t**   **i**   **n**   (er)   100%

9 solicitar   **s**   **o**   *l   **i**   **c**   **i**   **t**   (ar)
   ask
   solliciter   **s**   **o**   *ll   **i**   **c**   **i**   **t**   (er)   93%

10 postular   **p**   **o**   **s**   **t**   **u**   **l**   (ar)
   run
   postuler   **p**   **o**   **s**   **t**   **u**   **l**   (er)   100%

11 rasurar   **r**   **a**   **s**   u   r   (ar)
   shave
   raser   **r**   **a**   **s**   (er)   60%

12 reír   **r**   e   (í   r)
   laugh
   rire   **r**   i   (re)   50%

13 secar   **s**   **e**   *c   (ar)
   dry
   sécher   **s**   **é**   *ch   (er)   83%

14 sentir   **s**   **e**   **n**   **t**   (ir)
   feel
   sentir   **s**   **e**   **n**   **t**   (ir)   100%

15 vestir   **v**   **e**   s   **t**   (ir)
   dress
   vêtir   **v**   **é**   **t**   (ir)   75%

Key:
c = identical (counted as 1)
* = phonological similarity (counted as 0.5)
v = vowel in the same segment (counted as 0.5)
_ = part of neighboring phomene (not counted)
( ) = inflection (not counted)
[ ] = transparent prefix/suffix (counted as 1 item)

Spanish/French
Average % shared = 87.9%

Sesión de Prueba

Últimos cuatro dígitos de tu número de estudiante: ☐☐☐☐

A continuación verán en la pantalla pares de oraciones que incluyen las palabras que acaban de estudiar.

Por favor indique con un círculo junto al número correspondiente cual de las oraciones (A o B) utiliza la palabra correctamente.

1	A	B	16	A	B	31	A	B
2	A	B	17	A	B	32	A	B
3	A	B	18	A	B	33	A	B
4	A	B	19	A	B	34	A	B
5	A	B	20	A	B	35	A	B
6	A	B	21	A	B	36	A	B
7	A	B	22	A	B	37	A	B
8	A	B	23	A	B	38	A	B
9	A	B	24	A	B	39	A	B
10	A	B	25	A	B	40	A	B
11	A	B	26	A	B	41	A	B
12	A	B	27	A	B	42	A	B
13	A	B	28	A	B	43	A	B
14	A	B	29	A	B	44	A	B
15	A	B	30	A	B	45	A	B

46	A	B	61	A	B	76	A	B
47	A	B	62	A	B	77	A	B
48	A	B	63	A	B	78	A	B
49	A	B	64	A	B	79	A	B
50	A	B	65	A	B	80	A	B
51	A	B	66	A	B	81	A	B
52	A	B	67	A	B	82	A	B
53	A	B	68	A	B	83	A	B
54	A	B	69	A	B	84	A	B
55	A	B	70	A	B	85	A	B
56	A	B	71	A	B	86	A	B
57	A	B	72	A	B	87	A	B
58	A	B	73	A	B	88	A	B
59	A	B	74	A	B	89	A	B
60	A	B	75	A	B	90	A	B

Retroalimentación

Últimos cuatro dígitos de tu número de estudiante: ☐☐☐☐

1. ¿Utilizaste alguna estrategia especial al *estudiar las palabras* en la presentación original de la semana pasada? ¿Cuál(es)?

....

....

....

....

2. ¿Utilizaste alguna estrategia especial al *escoger la oración correcta* en las sesiones de prueba? ¿Cuál(es)?

....

....

....

....

3. ¿Tienes algún otro comentario sobre el estudio o tu participación?

....

....

....

....

Prueba final de vocabulario

Últimos cuatro dígitos de tu número de estudiante: ☐☐☐☐

1. Para cada palabra de francés, por favor indica si estás muy seguro(a) de *haberla visto antes de este estudio*. Luego escribe su equivalente en español.

	Palabra	¿La viste antes? (✓)		Equivalente en español
1	bague	sí ☐	no ☐	
2	balader	sí ☐	no ☐	
3	battre	sí ☐	no ☐	
4	bijou	sí ☐	no ☐	
5	boisson	sí ☐	no ☐	
6	bonheur	sí ☐	no ☐	
7	brouillard	sí ☐	no ☐	
8	cacher	sí ☐	no ☐	
9	cadeau	sí ☐	no ☐	
10	calciner	sí ☐	no ☐	
11	casser	sí ☐	no ☐	
12	cauchemar	sí ☐	no ☐	
13	chambre	sí ☐	no ☐	
14	chapeau	sí ☐	no ☐	
15	cheval	sí ☐	no ☐	
16	clé	sí ☐	no ☐	
17	dessin	sí ☐	no ☐	
18	devenir	sí ☐	no ☐	
19	dimanche	sí ☐	no ☐	
20	durer	sí ☐	no ☐	
21	essayer	sí ☐	no ☐	
22	féliciter	sí ☐	no ☐	
23	fois	sí ☐	no ☐	
24	froid	sí ☐	no ☐	
25	fromage	sí ☐	no ☐	
26	gâteau	sí ☐	no ☐	
27	geler	sí ☐	no ☐	
28	glace	sí ☐	no ☐	
29	grenouille	sí ☐	no ☐	

	Palabra	¿La viste antes? (✓)		Equivalente en español
30	grève	sí ☐	no ☐	
31	hâter	sí ☐	no ☐	
32	hésiter	sí ☐	no ☐	
33	joindre	sí ☐	no ☐	
34	lait	sí ☐	no ☐	
35	lasser	sí ☐	no ☐	
36	laver	sí ☐	no ☐	
37	lieu	sí ☐	no ☐	
38	livraison	sí ☐	no ☐	
39	loger	sí ☐	no ☐	
40	magasin	sí ☐	no ☐	
41	maison	sí ☐	no ☐	
42	majorer	sí ☐	no ☐	
43	manifester	sí ☐	no ☐	
44	marier	sí ☐	no ☐	
45	menacer	sí ☐	no ☐	
46	montre	sí ☐	no ☐	
47	moquer	sí ☐	no ☐	
48	mot	sí ☐	no ☐	
49	mouton	sí ☐	no ☐	
50	négliger	sí ☐	no ☐	
51	noyer	sí ☐	no ☐	
52	obstiner	sí ☐	no ☐	
53	paniquer	sí ☐	no ☐	
54	parquer	sí ☐	no ☐	
55	pelouse	sí ☐	no ☐	
56	plaider	sí ☐	no ☐	
57	pluie	sí ☐	no ☐	
58	portefeuille	sí ☐	no ☐	
59	postuler	sí ☐	no ☐	
60	printemps	sí ☐	no ☐	

	Palabra	¿La viste antes? (✓)		Equivalente en español
61	promenade	sí ☐	no ☐	
62	quartier	sí ☐	no ☐	
63	raisin	sí ☐	no ☐	
64	raser	sí ☐	no ☐	
65	regretter	sí ☐	no ☐	
66	réjouir	sí ☐	no ☐	
67	relâcher	sí ☐	no ☐	
68	repas	sí ☐	no ☐	
69	requin	sí ☐	no ☐	
70	réveiller	sí ☐	no ☐	
71	rêver	sí ☐	no ☐	
72	rincer	sí ☐	no ☐	
73	rire	sí ☐	no ☐	
74	rue	sí ☐	no ☐	
75	sac	sí ☐	no ☐	
76	scruter	sí ☐	no ☐	
77	sécher	sí ☐	no ☐	
78	sentir	sí ☐	no ☐	
79	soir	sí ☐	no ☐	
80	solliciter	sí ☐	no ☐	
81	souvenir	sí ☐	no ☐	
82	surir	sí ☐	no ☐	
83	tableau	sí ☐	no ☐	
84	tourner	sí ☐	no ☐	
85	valise	sí ☐	no ☐	
86	vêtir	sí ☐	no ☐	
87	viande	sí ☐	no ☐	
88	visage	sí ☐	no ☐	
89	voiture	sí ☐	no ☐	
90	voler	sí ☐	no ☐	

2. Para cada palabra de inglés, por favor indica si la conociste *antes de verla en este estudio*.

	Palabra	¿La conociste antes? (✔)	
1	ask for	sí ☐	no ☐
2	bag	sí ☐	no ☐
3	become	sí ☐	no ☐
4	break	sí ☐	no ☐
5	burn	sí ☐	no ☐
6	cake	sí ☐	no ☐
7	car	sí ☐	no ☐
8	cheese	sí ☐	no ☐
9	cold	sí ☐	no ☐
10	congratulate on	sí ☐	no ☐
11	delivery	sí ☐	no ☐
12	demonstrate	sí ☐	no ☐
13	district	sí ☐	no ☐
14	dream of	sí ☐	no ☐
15	dress	sí ☐	no ☐
16	drink	sí ☐	no ☐
17	drown	sí ☐	no ☐
18	dry	sí ☐	no ☐
19	evening	sí ☐	no ☐
20	face	sí ☐	no ☐
21	feel	sí ☐	no ☐
22	fight	sí ☐	no ☐
23	fog	sí ☐	no ☐
24	freeze	sí ☐	no ☐
25	frog	sí ☐	no ☐
26	gaze at	sí ☐	no ☐
27	gift	sí ☐	no ☐
28	grape	sí ☐	no ☐
29	happiness	sí ☐	no ☐
30	hasten	sí ☐	no ☐

	Palabra	¿La conociste antes? (✔)	
31	hat	sí ☐	no ☐
32	hesitate to	sí ☐	no ☐
33	hide	sí ☐	no ☐
34	horse	sí ☐	no ☐
35	house	sí ☐	no ☐
36	ice cream	sí ☐	no ☐
37	increase	sí ☐	no ☐
38	jewel	sí ☐	no ☐
39	join	sí ☐	no ☐
40	key	sí ☐	no ☐
41	last for	sí ☐	no ☐
42	laugh	sí ☐	no ☐
43	lawn	sí ☐	no ☐
44	lodge	sí ☐	no ☐
45	loosen	sí ☐	no ☐
46	marry	sí ☐	no ☐
47	meal	sí ☐	no ☐
48	meat	sí ☐	no ☐
49	milk	sí ☐	no ☐
50	mock	sí ☐	no ☐
51	neglect	sí ☐	no ☐
52	nightmare	sí ☐	no ☐
53	painting	sí ☐	no ☐
54	panic	sí ☐	no ☐
55	park	sí ☐	no ☐
56	persist	sí ☐	no ☐
57	picture	sí ☐	no ☐
58	place	sí ☐	no ☐
59	plead	sí ☐	no ☐
60	rain	sí ☐	no ☐

	Palabra	¿La conociste antes? (✓)	
61	regret	sí ☐	no ☐
62	rejoice at	sí ☐	no ☐
63	remember	sí ☐	no ☐
64	ring	sí ☐	no ☐
65	rinse	sí ☐	no ☐
66	road	sí ☐	no ☐
67	room	sí ☐	no ☐
68	run for	sí ☐	no ☐
69	shark	sí ☐	no ☐
70	shave	sí ☐	no ☐
71	sheep	sí ☐	no ☐
72	sour	sí ☐	no ☐
73	spring	sí ☐	no ☐
74	steal	sí ☐	no ☐
75	store	sí ☐	no ☐
76	strike	sí ☐	no ☐
77	stroll	sí ☐	no ☐
78	suitcase	sí ☐	no ☐
79	Sunday	sí ☐	no ☐
80	threaten with	sí ☐	no ☐
81	time	sí ☐	no ☐
82	tire	sí ☐	no ☐
83	try on	sí ☐	no ☐
84	turn	sí ☐	no ☐
85	wake	sí ☐	no ☐
86	walk	sí ☐	no ☐
87	wallet	sí ☐	no ☐
88	wash	sí ☐	no ☐
89	watch	sí ☐	no ☐
90	word	sí ☐	no ☐

3. Tus estudios del inglés y otros idiomas.

(a) *¿Cuál fue tu última clase de inglés?*

LE 201   Semestre/Año _____   Calificación_____

LE 301-308   Semestre/Año _____   Calificación_____

(Otra institución   _____

Curso/Nivel _____

           Semestre/Año _____   Calificación_____)

(b) *Si has presentado el TOEFL, escribe aquí el puntaje más alto que has obtenido (puede ser aproximado).*

Versión escrita   _____

Versión computadora   _____

(c) *¿Cuáles otros idiomas has estudiado? ¿Durante cuánto tiempo?*

Idioma: _____

Tiempo de estudio: _____

Nivel alcanzado: _____

4. Tu percepción acerca de la relación entre el español, el inglés y el francés (indica tu respuesta con una cruz en el recuadro).

    En tu opinión:

(a) *¿Cuál de los idiomas es más parecido al francés?*

☐ español   ☐ inglés

(b) *¿Cuáles idiomas son los más parecidos (indica una opción):*

☐ francés/español   ☐ francés/inglés   ☐ español/inglés

(c) *Para un hablante nativo de español, ¿cuál idioma es más fácil de aprender?*

☐ francés   ☐ inglés

(d) *Para un hablante nativo de inglés, ¿cuál idioma es más fácil de aprender?*

☐ español   ☐ francés

(e) *Históricamente, como en un árbol genealógico, ¿cuál es la relación correcta entre los tres idiomas?*

☐

inglés   español   francés

☐

francés   inglés   español

☐

francés   inglés   español

☐
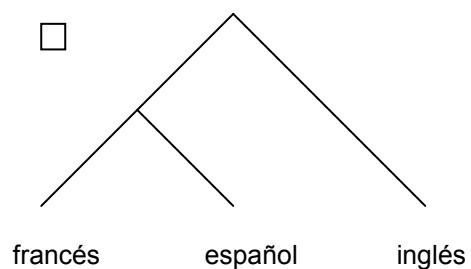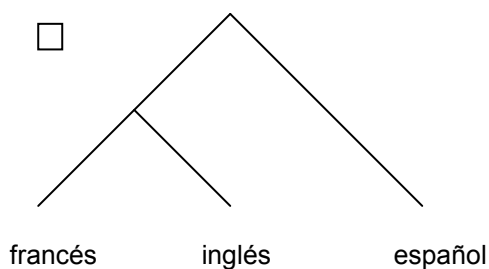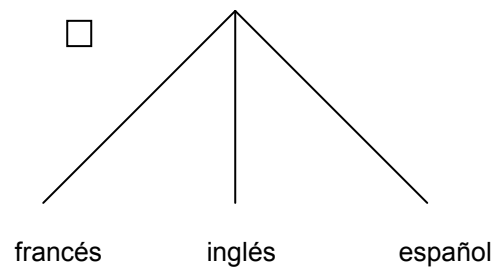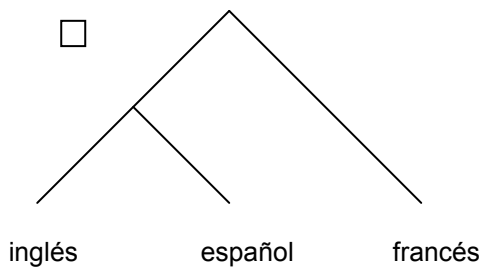
francés   español   inglés

A continuación van a ver una serie de palabras en francés.

Para ayudarles a aprender las palabras, se presentan con sus equivalentes en español e inglés.

Por ejemplo:

le mur

pared / wall

Favor de estudiar las palabras cuidadosamente

Luego de la presentación habrá una sesión de prueba.

Verán a continuación pares de oraciones que incluyen las palabras que acaban de estudiar.

Por favor indique en su hoja de respuestas cual de las oraciones (A o B) utiliza la palabra correctamente..

Complete data from first testing session   42 subjects x 15 stimuli   Not all used in statistical analysis

Block ba

	ba01 menacer	ba02 calciner	ba03 geler	ba04 durer	ba05 laver	ba06 manifester	ba07 féliciter	ba08 obstiner	ba09 solliciter	ba10 postuler	ba11 raser	ba12 rire	ba13 sécher	ba14 sentir	ba15 vêtir	SUM
S1	1	0	0	1	1	0	0	1	1	1	0	0	1	1	1	9
S2	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	13
S3	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	14
S4	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	5
S5	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	13
S6	1	1	1	0	0	0	1	1	1	1	1	0	1	0	1	10
S7	0	1	1	1	0	1	0	1	1	1	1	0	1	1	1	11
S8	1	0	0	1	1	1	1	0	0	1	1	0	1	0	1	9
S9	1	1	0	1	1	1	1	0	1	1	0	1	0	1	1	12
S10	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	13
S11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
S12	0	1	0	1	1	1	0	1	0	1	1	0	1	1	0	10
S13	1	1	1	1	1	1	0	1	0	1	1	0	1	1	1	13
S14	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	12
S15	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	11
S16	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	12
S17	1	1	0	1	0	1	1	1	1	1	0	0	1	0	1	10
S18	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	12
S19	0	1	1	0	1	1	1	1	1	1	0	1	0	1	0	10
S20	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	3
S21	1	0	0	1	1	1	1	0	1	1	0	0	0	0	0	6
S22	0	1	0	1	1	1	1	1	0	1	0	1	0	0	1	9
S23	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	13
S24	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	13
S25	1	1	1	1	1	0	1	0	1	0	0	1	0	0	0	8
S26	1	1	0	1	1	1	0	1	1	1	1	0	0	0	0	9
S27	0	1	1	0	1	0	0	1	0	0	0	0	1	1	0	6
S28	1	0	1	1	1	1	1	0	1	1	0	0	1	0	0	10
S29	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	13
S30	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	13
S31	0	0	0	1	0	1	1	0	1	1	1	0	0	1	0	7
S32	0	1	0	0	1	1	0	1	0	1	1	1	1	1	0	10
S33	0	1	1	0	1	1	1	1	1	1	1	0	1	1	0	11
S34	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	14
S35	0	0	0	1	0	0	1	0	1	0	1	1	1	1	0	7
S36	0	0	1	0	0	0	1	0	1	1	0	1	1	0	0	6
S37	0	1	0	0	0	0	1	1	1	1	1	1	1	0	0	8
S38	0	1	0	1	0	1	0	1	1	0	1	0	1	0	1	8
S39	1	1	0	1	1	1	0	0	1	1	0	0	0	1	0	8
S40	1	1	1	1	1	1	0	1	1	1	0	0	0	1	0	11
S41	1	0	1	1	1	0	1	1	0	1	1	0	0	0	1	9
S42	0	1	1	0	1	1	1	0	1	1	1	0	1	0	1	10
Σ	24	29	24	36	32	30	33	25	39	34	28	24	20	28	20	
median	28															
mean	28															

Block bb

	bb01 surir	bb02 moquer	bb03 réjouir	bb04 marier	bb05 paniquer	bb06 parquer	bb07 plaider	bb08 hésiter	bb09 négliger	bb10 rincer	bb11 loger	bb12 regretter	bb13 tourner	bb14 joindre	bb15 hâter	SUM
S1	0	1	1	0	0	0	1	0	0	1	1	0	1	0	1	7
S2	0	0	1	0	1	1	0	1	0	1	1	0	0	1	1	8
S3	0	1	1	1	0	0	1	1	1	0	1	1	0	1	1	10
S4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
S5	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	9
S6	1	0	0	1	1	1	1	0	0	0	1	1	0	0	1	8
S7	0	0	1	0	1	1	1	1	0	1	1	0	1	0	0	8
S8	0	1	1	0	0	1	0	0	1	1	0	1	0	0	0	6
S9	0	1	1	1	0	1	1	0	1	1	0	1	1	0	0	9
S10	0	0	1	0	0	1	1	0	0	1	1	0	0	0	1	6
S11	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	12
S12	0	0	1	1	1	1	1	0	0	1	1	0	0	0	0	7
S13	0	1	0	1	1	0	0	0	1	1	1	1	0	1	1	9
S14	1	1	1	0	1	1	1	1	1	0	1	1	1	1	0	12
S15	1	1	1	1	1	0	1	0	1	0	1	0	0	0	1	10
S16	1	1	0	1	1	1	0	1	1	0	1	0	1	0	1	10
S17	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	3
S18	0	1	1	1	0	1	1	0	1	1	0	0	1	0	0	8
S19	0	1	1	1	0	1	1	1	1	0	1	1	1	0	0	10
S20	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3
S21	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	7
S22	0	0	0	0	0	0	1	0	1	1	1	0	1	0	1	6
S23	1	1	1	1	0	0	0	0	0	0	1	0	1	0	0	6
S24	0	1	1	0	1	0	0	1	0	0	1	0	1	0	1	7
S25	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	3
S26	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	5
S27	0	1	1	0	1	0	1	1	1	0	1	1	0	0	1	9
S28	0	1	1	0	1	1	1	1	0	0	1	0	1	0	1	9
S29	0	1	1	1	0	1	0	1	1	0	1	0	1	0	1	9
S30	0	1	1	1	0	1	0	1	1	0	1	0	1	1	0	9
S31	0	1	1	0	1	1	1	0	0	0	0	1	0	0	0	7
S32	0	1	1	1	1	1	1	1	1	0	1	0	1	0	1	11
S33	0	1	1	1	1	1	1	0	0	0	0	1	0	1	0	8
S34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
S35	0	0	0	1	1	1	1	1	0	0	1	1	1	0	0	8
S36	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	6
S37	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	7
S38	0	1	1	0	1	1	1	0	0	0	0	0	1	1	1	8
S39	0	1	1	0	0	0	0	1	1	0	1	0	1	1	1	8
S40	1	1	1	0	0	0	0	0	0	0	1	1	1	1	0	7
S41	0	1	0	0	1	0	0	1	0	0	0	1	0	0	0	4
S42	1	1	0	1	1	1	0	0	0	0	0	1	1	0	0	8
Σ	11	24	31	24	23	23	25	29	14	23	26	21	17	17	15	
median	23															
mean	22															

Block co

	co01 souvenir	co02 relâcher	co03 noyer	co04 majorer	co05 lasser	co06 devenir	co07 réveiller	co08 cacher	co09 scruter	co10 battre	co11 balader	co12 essayer	co13 voler	co14 casser	co15 rêver	SUM
S1	1	1	1	0	0	0	1	0	0	1	0	1	0	0	1	7
S2	0	1	1	1	0	0	1	0	1	0	0	1	0	1	0	7
S3	1	0	1	1	0	0	0	1	0	0	0	0	1	0	0	5
S4	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	3
S5	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	4
S6	0	1	0	0	0	1	0	1	1	0	1	1	1	1	1	9
S7	1	1	1	1	0	1	0	0	0	1	0	0	0	0	0	6
S8	1	1	1	1	1	1	0	0	0	1	0	0	1	0	0	8
S9	1	1	1	0	0	0	1	0	1	0	1	1	0	0	1	8
S10	0	0	0	1	0	0	1	0	0	1	0	1	1	1	0	6
S11	1	1	1	0	1	1	1	0	1	0	1	0	1	1	1	11
S12	1	1	0	0	1	1	0	0	0	0	0	1	1	0	1	7
S13	0	1	1	1	0	0	0	0	0	1	0	1	0	1	1	7
S14	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	12
S15	0	1	0	0	1	0	1	1	1	1	0	1	0	0	1	8
S16	1	1	1	1	1	1	0	1	0	0	1	0	0	1	1	10
S17	1	1	0	0	0	1	1	0	1	1	0	1	0	1	0	8
S18	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0	7
S19	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	4
S20	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
S21	1	1	0	0	0	0	0	1	0	1	1	1	0	1	0	7
S22	1	1	0	0	0	1	0	0	0	1	0	1	1	0	1	7
S23	1	0	0	0	0	1	1	1	0	1	0	0	0	0	0	6
S24	0	0	1	0	0	0	1	0	1	0	1	0	1	0	0	5
S25	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	4
S26	0	0	1	0	0	0	0	0	1	0	0	1	0	1	1	5
S27	0	0	0	1	0	0	1	0	1	1	1	1	0	0	1	6
S28	0	0	1	0	0	0	0	1	0	1	1	1	0	0	1	6
S29	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	12
S30	0	1	1	0	1	1	1	0	1	0	1	1	1	0	1	10
S31	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	4
S32	1	0	1	1	0	0	1	1	0	0	1	0	0	0	1	7
S33	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	4
S34	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	13
S35	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	3
S36	0	1	1	1	1	0	0	0	0	1	1	0	1	1	0	8
S37	0	0	1	0	0	0	1	1	0	1	0	1	1	1	1	8
S38	1	1	1	1	0	0	0	0	0	0	1	0	1	0	0	6
S39	1	1	0	1	0	0	0	0	0	0	0	1	1	1	0	6
S40	0	0	1	0	1	1	0	0	1	1	0	1	1	0	0	7
S41	0	1	0	0	0	0	1	1	1	0	0	1	0	1	0	6
S42	0	1	1	1	1	0	0	1	0	1	0	1	0	1	0	8
Σ	16	26	20	15	13	15	22	22	15	24	14	26	15	21	23	
median	20															
mean	19															

Complete data from delayed second testing session   42 subjects x 15 stimuli   Not all used in statistical analysis

Block ba

	ba01 menacer	ba02 calciner	ba03 geler	ba04 durer	ba05 laver	ba06 manifester	ba07 féliciter	ba08 obstiner	ba09 solliciter	ba10 postuler	ba11 raser	ba12 rire	ba13 sécher	ba14 sentir	ba15 vêtir	SUM
S1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	12
S2	0	1	1	1	1	1	1	0	1	1	1	0	0	1	1	11
S3	0	1	1	1	1	1	1	1	0	1	0	1	0	1	0	10
S4	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3
S5	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	13
S6	0	1	1	1	1	1	0	1	1	1	0	0	1	0	1	10
S7	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	12
S8	1	1	0	1	0	1	1	1	1	1	0	0	1	1	1	11
S9	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	12
S10	0	0	0	1	1	1	0	1	1	1	1	1	0	0	1	9
S11	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	13
S12	0	1	1	1	0	1	1	1	1	1	0	1	1	1	1	12
S13	0	1	1	1	1	0	1	1	1	0	1	1	0	1	0	10
S14	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	11
S15	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	12
S16	0	0	1	1	1	0	1	1	1	1	0	1	0	1	0	9
S17	0	1	1	0	0	1	1	0	1	1	1	0	0	1	0	8
S18	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	13
S19	1	1	1	1	0	0	0	1	1	0	0	0	1	0	0	7
S20	0	1	0	0	1	0	1	1	1	1	0	0	0	0	0	6
S21	1	0	0	1	0	0	1	0	1	0	0	0	0	1	0	5
S22	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1	5
S23	0	0	1	1	1	0	1	0	1	0	1	1	1	1	1	11
S24	1	1	0	1	1	0	0	0	1	1	0	1	1	1	1	10
S25	0	1	1	1	1	1	1	1	0	0	1	1	0	1	1	11
S26	1	1	0	0	1	1	0	0	1	0	0	0	1	1	1	8
S27	0	1	1	1	1	1	1	0	1	0	1	1	0	1	1	11
S28	1	1	1	1	0	1	1	0	1	1	1	0	1	1	0	11
S29	1	0	1	1	0	1	1	1	1	0	1	1	1	1	0	11
S30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
S31	1	0	0	1	1	1	0	0	1	0	1	0	0	0	1	8
S32	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	13
S33	0	1	1	1	1	1	1	1	1	1	0	0	1	0	1	11
S34	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	14
S35	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	4
S36	0	1	0	1	1	1	1	1	1	1	1	1	0	0	1	11
S37	0	0	1	0	1	1	0	1	0	0	0	1	0	0	1	6
S38	1	0	1	1	0	1	0	1	1	0	0	1	0	0	1	8
S39	0	0	0	0	1	1	0	1	0	1	1	1	1	1	0	9
S40	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	10
S41	1	1	1	1	1	0	1	0	1	1	0	0	0	0	1	10
S42	0	1	0	0	0	1	1	1	1	1	0	1	1	1	1	10
Σ	20	29	23	34	32	32	30	28	37	34	20	21	24	30	22	
median	29															
mean	28															

Block bb

	bb01 surir	bb02 moquer	bb03 réjouir	bb04 marier	bb05 paniquer	bb06 parquer	bb07 plaider	bb08 hésiter	bb09 négliger	bb10 rincer	bb11 loger	bb12 regretter	bb13 tourner	bb14 joindre	bb15 hâter	SUM
S1	0	1	0	0	0	1	0	1	0	0	1	1	1	0	0	6
S2	1	0	1	1	1	0	1	1	0	1	0	0	0	0	0	7
S3	0	0	1	1	1	0	1	1	1	1	1	1	0	1	1	11
S4	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
S5	0	1	1	1	0	1	1	1	0	1	1	0	0	1	0	9
S6	0	0	0	1	1	1	1	0	0	1	1	0	0	1	0	7
S7	0	1	1	1	1	0	1	1	0	1	0	0	0	0	0	7
S8	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	8
S9	0	1	1	1	1	1	1	1	0	1	0	0	1	1	0	10
S10	0	1	1	0	1	1	1	1	0	1	1	1	0	0	1	10
S11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
S12	0	0	1	1	1	1	0	1	1	1	1	0	1	0	0	9
S13	0	1	1	1	1	0	1	0	1	0	0	0	1	0	1	8
S14	0	1	1	1	0	1	1	0	1	1	1	1	0	0	0	9
S15	1	0	1	0	1	1	1	1	0	1	1	0	0	0	1	9
S16	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13
S17	0	0	1	1	1	1	0	1	0	1	1	0	0	0	0	7
S18	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
S19	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3
S20	0	0	1	0	1	0	0	1	0	0	0	0	1	0	1	5
S21	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
S22	0	0	1	1	1	0	1	0	0	1	0	1	0	1	1	8
S23	1	1	0	0	1	0	1	1	1	1	1	1	1	0	1	12
S24	0	1	0	1	1	1	1	1	1	0	1	0	0	0	1	9
S25	0	0	1	0	1	0	0	0	0	1	0	1	0	0	1	5
S26	0	0	1	0	0	0		1	0	1	0	1	1	1	0	6
S27	1	1	1	0	1	1	1	1	1	0	1	1	1	1	0	12
S28	0	1	0	0	0	0	0	1	0	0	0	0	1	0	1	4
S29	0	1	1	0	1	1	0	1	1	0	1	0	1	1	1	11
S30	0	1	1	1	0	1	1	0	1	0	1	0	0	1	0	8
S31	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	4
S32	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13
S33	0	1	1	1	1	1	0	0	0	1	0	0	0	0	1	7
S34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
S35	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	5
S36	0	0	1	0			0	1	0	1	0	1	0	0	0	5
S37	1	0	0	0	1	1	1	1	1	0	1	1	0	0	1	9
S38	0	1	1	1	1	0	0	1	0	1	1	0	1	0	0	9
S39	0	1	0	1	1	1	0	0	0	1	1	1	0	0	0	8
S40	0	0	1	0	1	1	1	0	1	0	1	1	1	1	1	11
S41	0	1	1	1	1	0	0	0	1	0	1	0	0	0	0	6
S42	0	1	1	1	1	0	0	1	0	1	0	1	1	0	0	9
Σ	8	23	30	24	29	23	29	33	16	27	24	20	13	22	15	
median	23															
mean	22															

Block co

	co01 souvenir	co02 relâcher	co03 noyer	co04 majorer	co05 lasser	co06 devenir	co07 réveiller	co08 cacher	co09 scruter	co10 battre	co11 balader	co12 essayer	co13 voler	co14 casser	co15 rêver	SUM
S1	1	1	1	0	1	0	1	1	0	0	0	1	0	0	1	8
S2	0	1	0	0	0	0	1	1	0	0	1	1	1	0	1	7
S3	0	1	0	1	0	0	1	0	0	1	0	0	1	1	1	7
S4	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
S5	0	0	1	1	1	1	1	1	0	1	1	0	0	0	0	8
S6	1	1	1	0	0	0	0	1	1	0	1	1	1	1	0	9
S7	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	6
S8	0	1	0	1	0	1	0	0	0	0	1	1	0	1	1	7
S9	0	1	1	0	1	0	1	1	0	1	0	0	0	1	0	8
S10	0	0	0	0	1	0	1	1	0	1	1	1	0	0	1	7
S11	0	0	1	1	1	1	1	1	0	1	0	1	0	0	1	9
S12	0	0	0	1	1	0	1	0	1	0	1	0	0	1	1	6
S13	0	0	1	0	1	1	1	1	0	1	1	1	1	0	0	9
S14	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	10
S15	0	1	0	1	0	1	1	1	1	0	1	0	0	0	1	8
S16	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	3
S17	1	1	0	0	0	1	0	1	0	0	0	1	1	0	0	6
S18	1	0	0	0	0	0	1	0	1	0	0	1	0	0	1	5
S19	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
S20	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	2
S21	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	3
S22	0	1	1	0	0	0	1	0	0	1	0	0	1	0	0	5
S23	1	1	1	1	0	0	1	0	1	0	1	0	1	1	0	8
S24	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	5
S25	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	10
S26	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	5
S27	0	1	1	1	0	0	1	1	1	1	1	1	0	0	0	9
S28	0	1	0	1	0	1	0	1	0	1	0	0	1	1	1	8
S29	0	1	1	1	1	1	1	1	0	1	0	1	1	0	1	11
S30	0	1	1	1	0	1	1	1	0	0	1	1	0	1	1	10
S31	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	5
S32	1	1	1	0	1	0	1	0	1	0	1	0	0	0	1	9
S33	1	1	1	0	1	1	1	0	0	1	1	0	1	0	1	10
S34	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	14
S35	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	4
S36	1	1	1	1	1	1	0	1	1	0	1	1	0	0	1	11
S37	1	1	1	1	0	0	1	0	1	1	1	1	0	0	0	9
S38	1	1	0	1	0	1	0	0	0	0	1	0	1	1	1	8
S39	0	1	1	1	0	1	0	0	0	0	1	0	0	0	1	6
S40	0	1	0	1	1	0	1	1	0	1	0	1	0	1	0	8
S41	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	4
S42	1	1	1	1	0	1	0	1	0	1	0	0	1	0	0	8
Σ	14	29	19	18	16	24	28	20	17	21	16	28	17	15	17	
median	18															
mean	20															

Reported English level

S1	Preparatoria. Avanzado	
S2	TOEFL 480 pts	versión escrita
S3	Cambridge's CAE	
S4	LE-201. Calif: 8.7	
S5	LE-201. Calif: 9.5	
S6	LE-201. Calif: 8.5	
S7	LE-201. Calif: 8.8	
S8	LE-201. Calif: 9.4	
S9	LE-308. Calif: 9	
S10	LE-201. Calif: 9.2	
S11	LE-201. Calif: 9.2	
S12	LE-201. Calif: 8.6	
S13	LE-201. Calif: 8.6	
S14	TOEFL 1500 pts (?)	versión escrita
S15	TOEFL 550 pts	versión escrita
S16	LE-201. Calif: 9.5	
S17	2 niveles después del PET	en el Anglo
S18	Preparatoria. Avanzado	
S19	LE-201. Calif: 8.3	
S20	LE-201. Calif: 9	
S21	SIN INFORMACIÓN	
S22	LE-201. Calif: 9.1	
S23	TOEFL 540 pts	versión escrita
S24	LE-301 Calif: 9	
S25	TOEFL 580 y 560	en versión escrita y computadora respectivamente.Toma LE-301 ahora
S26	Preparatoria. Avanzado	
S27	LE-201. Calif: 9.6	
S28	TOEFL 501 y 88	en versión escrita y computadora respectivamente.
S29	LE-201. Calif: 9	
S30	TOEFL 550 pts	
S31	TOEFL 600 y 600	en versión escrita y computadora respectivamente.
S32	Preparatoria. Avanzado	
S33	LE-201. Calif: 8.9	
S34	LE-301 Calif: 8.8. TOEFL 627	
S35	LE-201. Calif: 8.5	
S36	TOEFL 570 pts	
S37	LE-201. Calif: 9.6	
S38	TOEFL 568 pts	
S39	LE-308. Calif: 8.5	
S40	LE-201. Calif: 8.8	
S41	LE-201. Calif: 8	
S42	LE-201. Calif: 7.7	

English vocabulary: prior knowledge (0 = no, 1 = yes)

	ask for	become	break	burn	congratulate or	demonstrate	dream of	dress	drown	dry	feel	fight	freeze	gaze at	hasten
S1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S4	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S6	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S8	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S9	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S10	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1
S11	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S12	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0
S13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S16	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S19	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S20	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S24	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S27	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S28	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S29	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1
S30	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S33	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S37	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
S38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S39	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0
S40	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S41	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
S42	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1
Σ	42	42	42	42	42	41	41	42	39	42	42	42	41	19	22

	hesitate to	hide	increase	join	last for	laugh	lodge	loosen	marry	mock	neglect	panic	park	persist	plead
S1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S2	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0
S3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S4	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1
S5	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S6	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
S7	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
S8	0	1	1	1	1	1	0	1	0	1	1	1	1	1	0
S9	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
S10	0	1	1	1	1	1	0	0	1	0	0	1	1	1	0
S11	0	1	1	1	1	1	0	1	0	1	0	1	1	1	0
S12	0	1	1	1	0	1	0	1	0	0	1	1	1	1	0
S13	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S14	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1
S15	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
S16	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1
S17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S19	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
S20	0	1	1	1	0	1	0	0	1	0	0	1	1	1	0
S21	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
S22	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1
S23	1	1	1	1	1	1	0	1	0	0	1	1	1	1	0
S24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S26	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
S27	0	1	1	1	1	1	0	1	0	0	0	1	1	1	0
S28	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
S29	0	1	1	1	1	1	0	0	1	0	1	1	1	1	0
S30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S31	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0
S32	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1
S33	0	1	1	1	0	1	0	0	1	0	1	1	1	1	0
S34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
S35	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0
S36	1	1	1	1	1	1	1	1	1		1	1	1	1	1
S37	0	1	1	1	1	1	0	1	0	1	0	1	1	1	1
S38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S39	0	1	1	1	1	1	0	1	0	1	0	1	1	1	1
S40	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1
S41	0	1	1	1	1	0	0	0	1	0	0	1	1	1	0
S42	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0
Σ	25	42	42	42	39	41	21	36	42	21	30	42	42	42	21

	regret	rejoice	remember	rinse	run for	shave	sour	steal	stroll	threaten with	tire	try on	turn	wake	wash
S1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
S2	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1
S3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S4	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
S5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S7	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
S8	1	0	1	0	1	1	1	1	0	1	1	1	1	1	1
S9	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1
S10	0	0	1	0	1	0	0	1	0	1	1	1	1	1	1
S11	1	0	1	0	1	0	0	1	0	0	0	1	1	1	1
S12	0	0	1	0	1	0	0	1	1	0	0	1	1	1	1
S13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S14	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
S15	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1
S16	1	0	1	1	1	1	0	1	0	1	1	1	1	1	1
S17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S19	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
S20	0	0	1	0	0	1	1	0	0	0	0	1	1	1	1
S21	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
S22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S23	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
S24	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
S25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S26	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1
S27	0	0	1	1	1	1	0	1	0	0	1	1	1	1	1
S28	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
S29	1	0	1	0	1	0	1	0	1	1	1	1	1	1	1
S30	1	0	1	1	1	1	0	1	1	0	1	1	1	1	1
S31	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1
S32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S33	0	0	1	0	1	0	0	1	0	0	1	1	1	1	1
S34	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1
S35	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1
S36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S37	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
S38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
S39	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1
S40	1	0	1	1	1	1	1	1	0	0	1	1	1	1	1
S41	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1
S42	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
Σ	34	24	42	33	41	37	29	42	24	34	39	41	42	42	42

French vocabulary: prior knowledge (0 = no, 1 = yes)

	ba01 menacer	ba02 calciner	ba03 geler	ba04 durer	ba05 laver	ba06 manifester	ba07 féliciter	ba08 obstiner	ba09 solliciter	ba10 postuler	ba11 raser	ba12 rire	ba13 sécher	ba14 sentir	ba15 vêtir	
S1	0	0	0	1	0	0	1	0	1	0	0	0	0	1	0	
S2	0	1	0	1	1	1	1	0	1	1	1	0	0	1	0	
S3	0	0	0	0	0	0		1	1	0	0	0	0	0	0	*no contestó felliciter
S4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*puso que no había visto las palabras y sin embargo puso el significado correcto
S5	0	0	0	1	1	1	1	0	0	1	0	1	0	1	1	
S6	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	
S7	0	1	0	0	0	1	1	1	1	1	1	0	0	0	1	
S8	0	1	0	0	1	1	1	1	1	1	0	1	1	0	0	
S9	1	1	0	1	0	1	0	0	0	1	0	0	0	1	0	
S10	0	1	0	1	0	1	1	1	1	1	1	0	0	1	0	
S11	1	1	1	0	1	1	1	1	0	0	0	1	0	0	0	*puso que no había visto 'sentir' y 'raser' pero puso significados correctos
S12	0	1	0	1	0	1	1	0		0	0	0	0	1	1	
S13																*checar respuestas. Examen muy raro
S14	1	1	0	0	1	1	1	0	1	1	0	0	0	0	0	
S15	0	0	0	1	1	1	1	0	1	1	1	1	0	1	1	
S16	0	0	0	1	1	1	1	0	1	1	0	0	0	1	0	*puso que sí sabía 'geler' pero la respuesta es incorrecta
S17	0	0	1	0	0	1	1	0	1	1	0	0	0	1	0	
S18	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	
S19	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	
S20	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	
S21	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	*puso que sí conocía 'raser' perono puso definición
S22	0	0	1	1	1	1	1	0	1	0		0	0	0		*no contestó 'vêtir' y 'raser'
S23	0	0	0	0	0	0	0	0	1	0	0	0	0	0		*no contrstó 'vêtir'
S24	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	
S25	0		0	0	1	0	1	0	1	0	0	0	0	1	0	
S26	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	*puso que no había visto 'raser' pero puso significado correcto, no contestó calciner
S27	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	
S28	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	
S29	0	1	0	1		1	1	1	1	1	0	0	0	0	0	
S30	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	*no contestó 'laver', no puso definición de obstiner
S31	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	
S32	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	
S33	0	1	0	0	1	1	1	0	1	0	0	0	0	0	0	
S34	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
S35	0	1	0	1	0	1	1	1	0	1	0	0	0	1	0	*en casi todas contestó que no las había visto pero sí les puso la definición correcta
S36	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	
S37	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	
S38	0	1	1	0	1	1	1	1	1	1	0	0	0	0		*no contestó ´vêtir'
S39	0	1	0	0	0	1	1	1	1	1	0	0	0	1	0	
S40	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0	
S41	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	
S42	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	
Σ	7	22	10	19	22	29	35	20	31	23	9	10	3	23	5	

MEDIANA 20

	bb01 surir	bb02 moquer	bb03 réjouir	bb04 marier	bb05 paniquer	bb06 parquer	bb07 plaider	bb08 hésiter	bb09 négliger	bb10 rincer	bb11 loger	bb12 regretter	bb13 tourner	bb14 joindre	bb15 hâter	
S1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
S2	0	1	0	1	0	1	0	0	0	0	0	1	1	0	0	*puso que sí había visto moquer pero puso significado incorrecto
S3	0	0	0	1	1	0	0	0	0	0	0		0	0		
S4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
S5	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	*puso que sí había visto 'regretter' pero puso significado incorrecto
S6	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	
S7	0	1	0	1	1	1	0	0	0	0	0	1	0	1	0	*puso que síhabía visto 'joindre' pero puso significado incorrecto
S8	0	0	0	1	1	1	0	1	1	0	0	1	0	0	1	*puso que sí había visto 'hâter' y 'hésiter' pero no puso significado
S9	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	
S10	1	1	0	1	1	1	0	0	0	0	0	1	1	0	0	*puso que sí había visto 'surir'y 'tourner' pero puso el significado incorrecto
S11	0	0	0	1	1	1	0	0	1	0	0	0	1	1	0	*puso que sí había visto joindre pero puso el significado incorrecto
S12	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	*significado incorrecto de rincer
S13																*checar respuestas. Examen muy raro
S14	0	1	0	1	1	1	0	1	0	0	1	0	0	1	1	*puso que sí conocía hâter y hésiter pero no puso significados
S15	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	*puso que sí había visto 'loger' pero puso significado incorrecto
S16	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	*puso que sí había visto'regretter' pero no puso definición
S17	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	*puso que sí había visto 'négliger' pero puso definición incorrecta
S18	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	
S19	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	*puso que sí había visto 'négliger' pero puso definición incorrecta
S20	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
S21	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	*puso que sí había visto hâter, réjoir, rincer, sourir y négliger pero puso definición incorrecta o no puso definición
S22	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
S23	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
S24	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
S25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	*puso que no había visto regretter y rincer pero puso definición correcta
S26	0	0	0	1	1	0	1	0	0	0	1	0	1	0	0	*puso que sí había visto palider pero puso definición incorrecta y puso que sí a tourner pero sin definición
S27	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	*puso sí a regretter pero definición incorrecta
S28	0	0	1	1	1	1	0	0	1	0	0	1	1	0	0	*puso sí a négliger, regretter, tourner y réjoir pero con definición incorrecta
S29	0	0	0	1	1	1	0	0	1	0	1	1	0		0	*no contestó joindre, puso sí a loger y regretter con definición incorrecta, puso sí a négliger sin respuesta
S30	0	0	0	1	1	1	0	1	0	0	0	0	1	1	0	
S31	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	
S32	0	0	0	1	1	1	0	1	0	1	0	1	1	0	1	*puso sí a hâter pero con definición incorrecta
S33	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	
S34	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	*puso que no a varias palabras pero sí puso definición correcta
S35	0	0	0	1	1	1	0	0	1	0	0	0	1	0	0	*puso sí a négliger pero definición incorrecta
S36	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	
S37	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	*puso que sí a négliger, paniquer con definición incorrecta
S38	0	1	1	1	1	1	0	1	0	0	0	1	1	1	1	*puso sí a tourner con definición incorrecta
S39	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	*puso sí a opaniquer, sourir pero definición incorrecta
S40	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
S41	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	*puso sí a sourir con definición ncorrecta
S42	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	*puso sí a regretter y sourir pero definición incorrecta
Σ	1	6	3	38	25	23	2	10	10	3	6	13	15	9	5	
MEDIANA																

	co01 souvenir	co02 relâcher	co03 noyer	co04 majorer	co05 lasser	co06 devenir	co07 réveiller	co08 cacher	co09 scruter	co10 battre	co11 balader	co12 essayer	co13 voler	co14 casser	co15 rêver	
S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S2	1	0	0	0	0	1	1	0	0	1	0	1	0	0	0	puso sí a devenir, pero definición incorrecta. Souvenir=recuerdo
S3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Souvenir=recuerdo
S4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Puso sí a souvenir sin definición
S5	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	Puso sí a relâcher, definición incorrecta. Souvenir=recuerdo
S6	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	Puso sí a cacher, pero definición incorrecta
S7	1	0	0	1	0	0	1	0	0	0	0	1	0	0	0	Puso sí a majorer y réveiller,definición incorrecta. Souvenir=recuerdo
S8	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	Puso sí a casi todas pero sin definición o definición incorrecta
S9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S10	1	0	0	0	1	1	1	0	0	0	0	1	0	0	0	Puso sí a lasser, souvenir y noyer pero con definición incorrecta
S11	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	Puso sí a essayer y rêver con definición incorrecta
S12	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	Puso sía majorer con definición incorrecta
S13																*checar respuestas. Examen muy raro
S14	1	0	0	1	0	1	0	1	0	1	0	1	0	0	0	Puso sí a muchas respuestas pero sin definición o definición incorrecta
S15	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	Majorer con definición incorrecta
S16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Puso sí a souvenir sin definición
S17	1	0	0	1	0	0	0	0	0	0	1	0	1	1	0	Casser, majorer y balader con definiciones incorrectos.Souvenir=recuerdo
S18	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
S19	1	0	0	1	0	0	1	0	1	0	0	1	0	0	0	Majorer, souvenir y réveiller con definición incorrecta. Puso sí a escrouter pero sin definición
S20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S21	1	0	0	1	1	1	0	1	0	1	1	1	0	0	0	Majorer definición incorrecta, souvenir=recuerdo
S22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Souvenir=recuerdo
S23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S24	1	0	0	0	0	0		0	0	0	1	0	0	1	0	Puso sí a balader, casser pero no puso definición; puso no a voler con definición correcta y souvenir=recuerdo
S25	0	0	0	0	0	0	1		0	0	0	1	0	0	0	Puso sí a essayer pero sin definición, puso no a rêver pero sí puso definición. No cintestó algunas
S26	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	Puso sí a balader con definición incorrecta, souvenir=recuerdo
S27	1	0	0		0	1	0	0	0	0	0	0	1	0	0	Puso sí a souvenir sin definición
S28	1	0	0	0	1	0	0	0	0	0	0	1	1	0	1	Puso sí a lasser con definición incorrecta, souvenir=recuerdo
S29	1	0	0	0	1	1	0	0	0	0	0		0		0	puso sí a devenir, lasser pero definición incorrecta. Souvenir=recuerdo
S30	1	0	0	1	0	0	1	0	0	0	0	1	0	0	1	Puso sí a majorer con definición incorrecta souvenir=recuerdo
S31	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	Puso sí a devenir pero sin definición, majorer con definición incorrecta, souvenir=recuerdo
S32	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	Casser,majorer,voler con definición incorrecta. Souvenir=recuerdo
S33	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	Majorer con definición incorrecta
S34	1	0	0	1	0	1	1	1	0	0	0	0	0	1	0	Puso no a varias palabras pero sí puso definición correcta.Checra respuestas
S35	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	Puso sí a voler pero puso definición equivocada
S36	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Souvenir=recuerdo
S37	1	0		0	0	0	0	0	0	0	0	1	0	0	0	
S38	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	
S39	1	0	0	0	0		0	0	1	0	0	1	0	0	0	Puso sí a scruter con definición equivocada, souvenir=recuerdo
S40	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	Souvenir=recuerdo, voler con definición incorrecta
S41	1	0	1	1	0	1	1	1	0	0	0	1	1	1	1	Devenir, majorer, noyer con definición errónea, souvenir=recuerdo
S42	0	1	0	1	0	0	1	0	0	1	1	1	0	0	0	Balader, battre, essayer, majorer, relâcher, réveiller con definición errónea
Σ	32	3	3	16	5	11	12	6	2	5	5	24	9	6	7	

Data from first testing session   40 subjects x 9 stimuli   Used in statistical analysis

	menacer ba01	calciner ba02	geler ba03	obstiner ba08	raser ba11	rire ba12	sécher ba13	sentir ba14	vêtir ba15	SUM
S1	1	0	0	1	0	0	1	1	1	5
S3	1	1	1	1	1	1	0	1	1	8
S4	0	0	0	0	0	1	0	0	0	1
S5	1	1	1	1	1	1	0	1	1	8
S6	1	1	1	1	1	0	1	0	1	7
S7	0	1	1	1	1	0	1	1	1	7
S8	1	0	0	0	0	0	1	1	0	3
S9	1	1	0	1	0	1	0	1	1	6
S10	1	1	1	1	1	0	1	0	1	7
S11	1	1	1	1	1	1	1	1	1	9
S12	0	1	0	0	1	1	0	1	0	4
S14	1	1	1	0	1	1	0	0	1	6
S15	0	0	1	1	1	0	1	1	0	5
S16	1	1	1	1	1	0	1	0	0	6
S17	1	1	0	0	1	0	0	1	1	5
S18	0	1	1	1	0	0	1	1	1	6
S19	0	1	1	1	1	1	0	0	0	5
S20	0	0	0	0	0	0	0	0	0	0
S21	1	0	0	0	0	0	0	0	0	1
S22	0	1	0	1	0	1	0	0	1	4
S23	1	1	0	1	1	1	0	1	1	7
S24	1	1	1	1	1	0	1	1	1	8
S25	1	1	1	0	0	1	0	0	0	4
S26	1	1	0	1	1	0	0	0	0	4
S27	0	1	1	1	0	0	1	1	0	5
S28	1	0	1	0	1	0	0	1	1	5
S29	0	1	1	1	0	1	1	1	1	7
S30	1	0	1	1	1	1	1	1	1	8
S31	0	0	0	0	1	0	0	1	0	2
S32	0	1	1	1	1	1	1	1	0	7
S33	0	1	0	0	1	1	1	1	0	5
S34	1	1	1	1	1	1	1	1	1	9
S35	0	0	0	0	1	1	1	1	0	4
S36	0	0	1	0	0	1	1	0	0	3
S37	0	1	0	1	1	1	1	0	0	5
S38	0	1	0	1	0	1	0	1	0	4
S39	1	1	0	0	0	1	0	0	0	3
S40	1	1	1	1	1	0	0	1	0	6
S41	1	0	1	0	1	0	0	0	1	4
S42	0	1	1	0	1	1	0	1	0	5
Σ	22	28	23	24	27	22	18	26	18	
median	23									
mean	23									

	surir bb01	parquer bb06	hésiter bb08	négliger bb09	rincer bb10	regretter bb12	tourner bb13	joindre bb14	hâter bb15	SUM
S1	0	0	0	0	1	0	1	0	1	3
S3	0	0	1	1	0	1	1	0	1	5
S4	0	0	0	0	0	1	0	0	0	1
S5	0	1	1	0	1	0	0	1	0	4
S6	1	1	0	0	0	1	0	0	1	4
S7	0	1	0	1	1	1	0	1	0	5
S8	0	0	1	1	0	0	0	0	0	2
S9	1	0	0	1	0	1	1	0	0	4
S10	1	0	0	0	1	0	0	0	1	3
S11	1	1	1	1	1	1	0	1	0	7
S12	0	1	0	0	1	0	0	0	0	2
S14	1	1	1	1	0	1	1	0	1	7
S15	1	0	1	0	1	0	0	0	1	4
S16	1	1	1	1	1	1	1	0	0	7
S17	1	0	1	0	0	0	0	0	0	2
S18	0	1	1	0	1	0	0	1	0	4
S19	0	1	1	1	1	1	0	1	0	6
S20	0	0	1	0	0	0	0	0	0	1
S21	1	1	1	0	1	0	0	0	1	5
S22	0	0	1	1	1	1	0	1	1	6
S23	1	0	0	0	0	1	0	1	0	3
S24	0	0	1	0	1	0	1	1	0	4
S25	0	0	0	0	0	0	0	1	0	1
S26	0	0	1	0	1	0	0	0	0	2
S27	0	1	1	0	1	0	0	0	1	4
S28	0	1	1	0	1	1	1	0	0	5
S29	0	0	1	0	1	0	1	0	1	4
S30	0	0	1	1	0	0	1	0	0	3
S31	0	1	1	0	0	1	0	0	0	3
S32	0	1	1	1	1	1	1	0	0	6
S33	1	0	0	0	1	0	1	0	0	3
S34	1	1	1	1	1	1	1	1	1	9
S35	0	1	1	0	0	1	1	0	0	4
S36	0	1	0	1	0	1	0	0	0	3
S37	0	1	0	0	0	1	1	0	1	4
S38	0	1	1	0	0	0	1	1	0	4
S39	0	0	0	1	1	0	1	1	0	4
S40	1	0	0	0	0	1	1	1	0	4
S41	0	0	1	0	0	1	0	0	0	2
S42	1	1	1	0	0	0	1	1	0	5
Σ	11	22	27	13	21	20	17	15	13	
median	17									
mean	18									

	relâcher co02	noyer co03	majorer co04	lasser co05	devenir co06	cacher co08	battre co10	voler co13	casser co14	SUM
S1	1	1	0	0	0	0	1	0	0	3
S3	0	1	1	0	0	1	0	0	1	4
S4	0	0	0	0		0	0	0	0	0
S5	1	1	0	0	1	0	0	0	0	3
S6	1	0	0	0	1	1	0	1	1	5
S7	1	1	1	0	1	0	1	0	0	5
S8	1	0	0	0	0	1	1	1	0	4
S9	1	1	0	0	0	1	1	1	0	5
S10	0	0	1	0	0	0	1	1	1	4
S11	1	1	0	1	1	0	1	0	1	6
S12	1	0	0	1	1	0	0	1	0	4
S14	0	0	1	1	1	1	1	1	1	7
S15	1	0	0	1	0	1	1	0	0	4
S16	1	1	1	1	1	1	0	0	1	7
S17	1	0	0	0	1	1	0	1	0	4
S18	0	1	0	0	1	0	1	0	0	3
S19	0	0	0	0	1	1	1	0	0	3
S20	0	0	1	0	0	0	0	0	0	1
S21	1	0	0	0	0	1	1	0	1	4
S22	1	0	0	0	0	0	1	1	0	3
S23	0	0	0	0	1	1	1	0	1	4
S24	0	1	0	0	0	1	1	0	1	4
S25	0	0	0	0	0	0	0	1	0	1
S26	0	1	0	0	0	0	0	0	1	2
S27	0	0	0	1	0	1	1	0	0	3
S28	0	0	0	1	0	1	0	0	0	2
S29	1	1	1	1	1	0	1	1	1	8
S30	1	1	0	0	1	1	0	1	1	6
S31	1	0	0	0	1	0	1	0	0	3
S32	0	1	1	0	0	1	0	0	0	3
S33	1	0	0	0	0	1	1	0	0	3
S34	1	1	0	1	1	1	1	1	1	8
S35	0	0	0	0	0	0	0	1	0	1
S36	1	1	1	1	0	0	1	1	1	7
S37	0	1	0	0	0	1	1	1	1	5
S38	1	1	1	0	0	0	0	0	1	4
S39	1	0	1	1	0	0	0	0	1	4
S40	1	0	1	1	0	1	0	1	0	5
S41	1	0	0	0	0	1	0	0	1	3
S42	1	1	1	1	0	1	1	0	1	7
Σ	24	18	13	13	15	22	23	15	19	

Data from delayed secong testing session   40 subjects x 9 stimuli   Used in statistical analysis

	ba01 menacer	ba02 calciner	ba03 geler	ba08 obstiner	ba11 raser	ba12 rire	ba13 sécher	ba14 sentir	ba15 vêtir	SUM
S1	1	1	1	1	1	0	0	1	1	7
S3	0	1	1	1	0	1	0	1	0	5
S4	1	0	0	0	0	0	0	0	0	1
S5	1	1	1	1	1	0	1	1	1	8
S6	0	1	1	0	1	0	0	1	0	4
S7	1	1	0	1	0	1	0	1	1	6
S8	1	1	0	1	0	0	1	1	1	6
S9	1	1	0	1	0	0	1	1	1	6
S10	0	0	0	1	1	1	0	0	1	4
S11	1	1	1	1	1	1	1	1	1	9
S12	0	1	1	1	1	0	1	1	1	7
S14	1	1	1	1	1	1	0	0	0	6
S15	0	1	1	1	1	0	1	1	0	6
S16	0	0	1	1	0	1	0	1	0	4
S17	0	1	1	0	1	0	1	1	0	5
S18	0	1	1	1	1	0	1	1	1	7
S19	1	1	1	1	0	0	1	0	0	5
S20	0	1	0	1	0	0	0	0	0	2
S21	1	0	0	0	0	0	0	1	0	2
S22	0	0	0	0	0	0	0	0	0	0
S23	0	0	1	0	0	1	1	1	1	5
S24	1	1	0	0	0	1	1	1	1	6
S25	0	1	1	1	1	1	0	1	1	7
S26	1	1	0	0	0	0	1	1	1	5
S27	0	1	1	0	0	1	1	0	1	5
S28	1	1	1	0	0	0	1	1	1	6
S29	1	0	1	1	1	0	1	1	1	7
S30	1	1	1	1	1	1	1	1	1	9
S31	1	0	0	0	0	1	0	0	1	3
S32	1	1	1	1	0	1	1	1	0	7
S33	0	1	0	1	0	1	1	0	1	5
S34	1	1	1	1	1	1	1	1	1	9
S35	0	0	0	0	0	1	0	0	0	1
S36	0	1	0	1	1	1	1	0	0	5
S37	0	0	1	1	1	0	0	1	0	4
S38	1	0	0	1	0	0	0	1	0	3
S39	0	0	0	0	1	1	1	1	0	4
S40	0	0	0	1	1	1	1	1	0	5
S41	1	1	1	1	1	0	0	0	0	5
S42	0	1	0	1	0	1	1	1	1	6
Σ	20	27	22	27	19	20	23	28	21	
median	22									
mean	23									

	bb01 surir	bb06 parquer	bb08 hésiter	bb09 négliger	bb10 rincer	bb12 regretter	bb13 tourner	bb14 joindre	bb15 hâter	SUM
S1	0	1	0	0	1	1	0	0	0	3
S3	0	0	1	1	1	1	1	0	1	6
S4	0	0	1	0	0	0	0	1	0	2
S5	0	1	1	0	1	0	0	1	0	4
S6	0	1	0	0	1	0	0	1	0	3
S7	0	1	0	1	0	0	0	0	0	2
S8	0	1	1	0	1	0	0	0	1	4
S9	0	1	1	0	1	0	1	1	0	5
S10	0	1	1	0	1	1	0	0	1	5
S11	1	1	1	1	1	1	1	1	1	9
S12	0	1	1	1	1	0	1	0	0	5
S14	0	1	1	0	1	1	0	0	0	4
S15	1	1	1	0	1	0	0	0	1	5
S16	0	1	1	0	1	1	1	1	1	7
S17	0	1	1	0	1	0	0	0	0	3
S18	0	0	1	0	1	0	0	0	0	2
S19	1	0	0	0	0	1	0	0	0	2
S20	0	0	1	0	0	1	0	0	1	3
S21	0	0	1	1	0	0	0	0	0	2
S22	0	0	1	0	0	1	0	1	1	4
S23	1	1	1	1	1	1	0	1	1	8
S24	0	1	1	0	1	0	0	1	0	4
S25	0	0	0	0	1	1	0	1	0	3
S26	0	0	1	0	1	1	1	1	0	5
S27	1	1	1	1	0	1	1	1	0	7
S28	0	0	0	0	0	1	0	0	1	2
S29	0	0	1	1	1	0	1	1	1	6
S30	0	0	1	0	0	0	0	1	0	2
S31	0	0	1	0	0	0	0	1	0	2
S32	0	1	1	0	1	1	1	1	1	7
S33	1	1	0	0	0	0	0	0	0	2
S34	1	1	1	1	1	1	1	1	1	9
S35	0	1	1	0	1	0	0	1	0	4
S36	0		1	0	0	0	0	0	0	1
S37	1	1	1	1	1	0	0	1	1	7
S38	0	0	1	1	0	0	1	1	0	4
S39	0	1	0	1	1	1	0	0	0	4
S40	0	1	0	1	1	1	1	1	1	7
S41	0	0	1	0	1	0	0	0	0	2
S42	0	0	1	1	1	1	1	0	0	5
Σ	7	23	32	15	26	19	13	21	15	
median	19									
mean	19									

	co02 relâcher	co03 noyer	co04 majorer	co05 lasser	co06 devenir	co08 cacher	co10 battre	co13 voler	co14 casser	SUM
S1	1	1	0	1	0	1	0	0	0	4
S3	1	0	1	0	0	0	1	1	1	5
S4	0	0	0	0	0	0	0	0	0	0
S5	0	1	1	1	1	1	1	0	0	6
S6	1	1	0	0	0	1	0	1	1	5
S7	1	0	1	1	1	1	1	0	0	6
S8	1	0	1	0	1	0	1	0	1	5
S9	0	1	0	0	1	1	1	1	0	5
S10	0	0	0	1	0	1	1	0	0	3
S11	0	1	1	1	1	1	1	0	0	6
S12	0	0	1	0	1	1	1	1	1	6
S14	1	0	0	1	1	1	1	0	1	6
S15	1	0	0	1	0	1	1	0	0	4
S16	0	0	0	0	0	0	1	0	0	1
S17	1	0	0	0	1	1	0	1	0	4
S18	1	0	0	0	0	0	0	0	0	1
S19	1	0	0	0	1	0	0	0	0	2
S20	0	0	1	0	0	0	0	0	0	1
S21	1	0	0	0	0	0	0	0	0	1
S22	1	1	0	0	0	0	0	0	0	2
S23	1	1	1	0	0	0	0	1	1	5
S24	1	0	0	1	1	0	0	0	0	3
S25	1	0	0	0	1	0	1	1	0	4
S26	0	0	0	0	1	0	1	0	0	2
S27	1	1	1	0	0	1	1	0	0	5
S28	1	0	0	1	1	1	1	0	0	5
S29	1	1	0	1	1	0	1	1	1	7
S30	1	1	1	0	1	1	0	0	1	6
S31	0	1	0	1	0	1	0	1	0	4
S32	1	1	1	0	1	0	1	0	1	6
S33	1	1	0	1	1	0	0	1	1	6
S34	1	1	1	1	1	1	1	1	1	9
S35	0	0	0	0	0	1	0	0	1	2
S36	1	1	1	1	1	1	0	0	0	6
S37	1	1	1	0	0	0	1	0	0	4
S38	1	0	1	0	1	0	1	1	1	6
S39	1	1	1	0	0	0	0	1	0	4
S40	1	0	1	1	0	1	1	1	0	6
S41	0	0	0	0	1	0	0	0	1	2
S42	1	1	1	0	1	0	0	1	0	5
Σ	28	18	18	15	23	19	20	15	14	

Psychotypological Views

S#	(a)		(b)			(c)		(d)		(e)			
	Es	Ing	Fra/Esp	Fra/Ing	Es/Ing	Fra	Ing	Es	Fra	1	2	3	4
1	1		1				1		1			1	
2	1		1			1		1			1		
3	removed from experiment												
4	1		1			1			1				1
5	1		1			1		1					1
6	1		1				1	1			1		
7	1			1			1		1		1		
8	1		1				1		1		1		
9	did not respond												
10	1		1			1			1		1		
11	1		1			1			1				1
12	1		1				1	1					1
13	removed from experiment												
14	1		1				1	1					1
15	1		1			1		1					1
16	1		1				1		1				1
17	1		1				1		1				1
18	1		1			1		1					1
19	1		1				1		1				1
20	1		1				1		1		1		
21	1		1				1		1				1
22		1		1			1		1			1	
23	1		1			1			1				1
24	1		1			1			1				1
25	1		1				1	1					1
26	1		1				1	1					1
27	1		1				1		1		1		
28	1		1			1			1				1
29	1		1				1	1					1
30	1		1			1		1			1		
31	1		1			1		1					1
32	1		1				1		1	1			
33		1		1			1		1		1		
34	1		1			1			1				1
35	1		1			1			1				1
36	1				1		1		1	1			
37	1		1				1	1					1
38	1		1			1			1		1		
39	1		1			1			1	1			
40	1		1			1			1	1			
41	1		1			1		1					1
42	1		1			1		1					1

FCTF Retroalimentación

Subject	1. ¿Utilizaste alguna estrategia especial al *estudiar las palabras* en la presentación original de la semana pasada? ¿Cuál (es)?	2. ¿Utilizaste alguna estrategia especial al escoger la oración correcta en las sesiones de prueba? ¿Cuál (es)?	3. ¿Tienes algún otro comentario sobre el estudio o tu participación?
1	Relacionaba los que se parecían al idioma de abajo. Es decir, si la palabra se parecía to join más que la de español, en esa me acordaba. Hacía oraciones en la mente.	Usé varias. Algunas veces (cuando no me acordaba del artículo) la que "sonara" mejor. En otras, el cómo se diría español.	Me parece interesante sobre todo por que me acordé del significado de muchas palabras, aunque el uso en las oraciones no haya el mejor /el correcto.
2	Ver si se parecían al español.	Traducir al español para ver si el género era masculino o femenino y algunas veces recordar la pronunciación para identificar el género.	Me costó más trabajo recordar algunas palabras que vimos el lunes pasado, de algunas no recordé lo que significaba y adiviné la respuesta por el contexto que acompañaba la palabra.
3	Sí, relacionarlas con el inglés	Pues fijándome en la gramática del español y traduciéndolo	Que al comparar las palabras con el inglés tienen un parecido lo cuál hace que sea más fáciles de memorizar.
4	Al principio intentaba recordar cada palabra, pero conforme avanzaban (aparecían más palabras) era un poco difícil hacerlo.	En algunas frases lo relacionaba con el español en otras elegía la forma distinta a como yo lo usaría en español ¿?	Está bien, pero no se cuál sea el fin de todo esto y si me gustaría saberlo.
5	No, simplemente traté de comparar algunas con el español para así recordarlas más fácilmente.	En algunas que se trataba de escoger el artículo correcto, y sabía lo que significaba, comparaba cuál sería el artículo en español y así lo ponía en francés.	No, solo que fue algo muy rápido para recordar todas las palabras pero traté de escoger la respuesta correcta, es decir, no lo hice al azahar.
6	Vinculo las palabras del inglés al francés	La que sonara mejor y según el significado fuera la correcta.	No, ninguno
7	No, solo traté de asociarlas con algún parecido al español o al inglés.	No, solo traté de escoger la que tuviera más sentido.	No, considero que este tipo de pruebas son útiles ya que en este caso considero haber aprendido vocabulario.
8	Solamente traté de asociar la palabra en francés con el significado en español pero imaginándome la situación o el objeto en mi mente.	No, sólo traté de que fueran de acuerdo al contexto de la oración.	En realidad no, sólo que no fueron tantas palabras.
9	Asociar las palabras con algo relacionado.	Tratar de reconocer las palabras y ver en cual de las dos oraciones tenia más sentido por su estructura.	
10	Asociarlo con alguna idea que se me viniera en ese momento.	Contexto (revisarlo) Ver el género (F o M)	No
11	Repetir varias veces o asociarlas con su significado en español o en inglés.	La que fuera más parecida al español o que se la pronunciación fuera mejor.	Es una manera de aprender vocabulario
12	Traté de encontrarles algún parecido en español para poder recordarlas más fácilmente.	Escoger aquella que sonara mejor- tratar de recordar las palabras y su significado	Ninguno

13	Sí, cuando estaban los verbos, la traducía en español, para poner el verbo ser, o no ponerlo. Y cuando la palabras acababa con "e" ponía la.	Sí, la misma de la semana pasada	No se qué hice, o como ayudé al experimento
14	Solo traté de relacionar las palabras en francés con las de español e inglés	Me basé en la relación con los otros idiomas	No conozco gran parte del vocabulario utilizado
15	No, realmente solo traté que sonara parecido la palabra a la traducción	Saber si era femenino o masculino la palabra y si hablaba en futuro	Fue un poco difícil escoger oraciones que tenían antes "se"
16	Tratar de ver si la terminación de las palabras tenían alguna relación con el artículo	Recordar las palabras que sabía y checar la terminación de algunas	No, solo que es un poco cansado, pues es mucho la cantidad de palabras a recordar y analizar
17	Ninguna	Ninguna, traté de hacerlo por lógica	No
18	Visualizar, memorizar y adaptarlo al español	Cómo sonaba mejor para mí y cosas que recordaba como eran	Tal vez, debí poner más atención a los artículos
19	No, realmente solo me fijé en los significados francés-español	Sí, me fijé que diferencias había y pensé en la palabra en español y así decidí el artículo	Creo que mi participación no fue buena, pues no recordé muchas palabras y me pareció largo, por un momento me dio sueño
20	Si, el relacionarlas con el significado en español y el de inglés	No precisamente, solo tratar de recordar el significado	Si que es bueno cuando se aprende un idioma ayudarse de otro que uno conoce, las relaciono con las palabras más fácilmente
21	No, ninguna, solo traté de relacionar las palabras en francés con la que más se pareciera en español o inglés	Sí, solo ponía las que no eran con "se" en el caso de los verbos porque casi ninguno llevaba "se" al ver las palabras	Pues que habían cosas que de plano no tenía idea ja y pues de plano no sabía que contestar
22	Tratar de ubicar la palabra con alguna cosa o algo	En la mayoría trataba de ubicar si era femenino o masculino o por como se escuchara mejor	Que en ocasiones es tedioso y cansado
23	Sólo tratar de recordarlas, asociar el significado con una cosa relacionada	No, solo relacionarla con el significado de las palabras	Es interesante lo que hacemos, sólo me gustaría saber que se hace con estos estudios
24	Relacionarlas cosas en español y concentrarme mucho	Lógica y si no, utilicé "de tin-marin"	Confundí muchas palabras
25	Si, me traté de memorizar la traducción de la palabra	La que me sonara más natural	Esta bien loco
26	No, solo las observé	Si, me guié por el contexto	No
27	Tratar de asociar esas palabras con alguna situación	Tratar de recordar el significado de la palabra	Me pareció que no pude recordar gran parte de las palabras
28	Contexto de palabras es decir si no sabía lo que significaba alguna, leía las otras e intentaba formar la idea	Contexto de palabras e identificar su idea un adjetivo o proverbio masculino o femenino según la palabras que le seguía a dichos proverbios o adjetivos	Me agrada que haga este tipo de cosas para el mejoramiento académico

29	No	Intentaba traducirla al español y determinar cual sonara mejor	Me gustaría saber el objetivo del estudio
30	No	Traducir al español	No
31	Sí, identificando (o tratando de identificar) los cognados	Si, las que no recordaba los leí completas y traté de escoger la que me sonara más natural	Me hubiera gustado poder ver de nuevo las primeras dispositivas con las palabras en la segunda sesión
32	Sí, relacionarlas con una palabra con la que este familiarizada	Solo escoger la que sonara más lógica	
33	Acordándome de su representación	Para ver cual se veía o se oía mejor	Fue interesante porque tuviste que utilizar tu memoria bastante
34	A veces hice contrastes entre el género que tienen en francés y en español	Leerla completa porque podía haber errores en otras partes de ella que no fueran la palabra estudiada	No tengo buena memoria a corto plazo, así que necesito repasar varias veces si necesito memorizar
35	No ninguna	Pues sentido común	No
36	Que las palabras con terminación en "e" la mayoría de las veces son femeninas	La que mejor se escuchara según yo	No
37	No ninguna	No ninguna	No
38	No	No	Me sentí insegura por que solo aprendí el significado y no si era femenino o masculino
39	La relación con las otros idiomas en su estructura	La relación con el contexto de la oración	Es demasiado largo, 90 palabras! Para concentrarte es difícil
40	Relacionarlas con el español, pero solo la palabra, ni si era masculino o femenino	Por algunas reglas que hemos visto en clase	Pues no sabemos para que servirán los resultados obtenidos y en que nos beneficia como estudiantes
41	Sólo en algunas palabras para distinguir masculino y femenino, la terminación "e", o recordar la misma palabras en otras frases que ya he utilizado	Otra oración que ya había utilizado antes	No, sólo la concordancia y tratar no memorizar pero sí recordar
42	Reflexión. Relación	Tratar de recordar lo aprendido la semana pasada	No