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Structural and conceptual effects in cross-linguistic priming in Italian-English late bilinguals

Micol Zanaga

Supervisor
Prof. Giulia Bencini

Co-supervisors
Prof. Virginia V. Valian
Michaela M. Vann, PhD Student in Language Sciences

Student number
854712

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In the lives of individuals and societies, language is a factor of greater importance than any other. For the study of language to remain solely the business of a handful of specialists would be a quite unacceptable state of affairs.

Ferdinand de Saussure

Abstract

The purpose of the thesis is to investigate the mental representation of passive sentence structures in late bilinguals using a cross-linguistic structural priming paradigm.

An experiment was conducted on adult Italian-English late bilinguals with intermediate to high English proficiency. Participants were presented first with two English sentences they had to read out loud, then with a picture that they were required to describe using an Italian sentence. The results showed that between-languages priming of passives occurs, providing thus evidence that the syntactic representation of the passive structure is shared between similar structures across languages (Hartsuiker et al., 2004) in bilinguals with intermediate-high L2 proficiency.

This thesis also explores whether or not animacy manipulation has an effect on the priming of passive sentence, and it does so by inserting two different animacy conditions: transitive sentences containing inanimate agent and animate patient (InAn), and transitive sentences containing inanimate agent and patient (InIn). The results showed a slight numerical difference between the proportions of passives used in the two animacy conditions in the choice of the syntactic structure: a higher number of passives was produced after primes with an animate patient and an inanimate agent. However, this difference was not significant.

Keywords: *bilingualism; second language learning; cross-linguistic syntactic priming; language proficiency; passive sentences; animacy; explicit memory; psycholinguistics; syntax.*

Italian Summary

Buona parte della ricerca in merito alla rappresentazione sintattica negli individui bilingui propende per una rappresentazione integrata delle due (o più) lingue parlate (*the shared-syntax account*; Hartsuiker et al., 2004). Secondo questa ipotesi, esiste un unico magazzino di memoria in cui le informazioni sintattiche sono condivise tra le lingue ed esiste, inoltre, un unico lessico integrato per entrambe le lingue. Questa ipotesi si contrappone alla teoria secondo cui la rappresentazione sintattica non sia integrata, quindi che le due lingue del/la parlante siano separate all'interno della memoria bilingue (*the separate-syntax account*; Ullman, 2001).

Nel caso specifico di apprendenti tardivi di una lingua non nativa, i soggetti di cui tratta questa tesi, l'ipotesi più avvalorata è quella secondo cui l'integrazione tra le lingue sia influenzata dalla competenza nella L2 (Van Hell & Dijkstra, 2002). Infatti, è ampiamente dimostrato che il priming strutturale si verifichi maggiormente nei parlanti L2 più competenti, mentre esso sia pressoché nullo nei parlanti L2 meno competenti (Bernolet, Hartsuiker & Pickering, 2013; Hartsuiker & Bernolet, 2017). L'ipotesi teorica di van Gompel e Arai (2017) è che i parlanti L2 abbiano inizialmente rappresentazioni strutturali separate nella L1 e nella L2 e che vengano condivise solo quando i parlanti diventano più competenti nella L2. Durante il primo stadio di apprendimento della L2, le parole nella L2 sono rappresentate senza che ci siano connessioni alle strutture. Successivamente i bilingui connettono le parole nella L2 a rappresentazioni strutturali, ma esse non sono ancora condivise tra le lingue né sono completamente specifiche a livello lessicale. Nello stadio finale, quando le rappresentazioni sintattiche nella L2 sono sviluppate, le rappresentazioni strutturali della L1 e della L2 sono eventualmente integrate tra le lingue. Sono diversi gli studi (Bernolet et al., 2013; Vasilyeva et al., 2010) che avvalorano l'ipotesi di una sintassi integrata. Vasilyeva et al. (2010), per esempio, dimostrano che, se i bambini non condividessero rappresentazioni sintattiche integrate, non sarebbero in grado di astrarre una struttura specifica da una frase nella L1 e riprodurla in una frase scollegata nella L2.

Questa tesi si propone di investigare, attraverso il paradigma del priming strutturale cross-linguistico, la rappresentazione astratta della frase passiva nei

soggetti bilingui, nella fattispecie se le rappresentazioni sintattiche nelle due lingue sono mantenute separate nella mente bilingue o se invece sono immagazzinate insieme. Studi sul priming sintattico hanno dimostrato che gli individui monolingui sono in grado di rappresentare a livello mentale il passivo a un'età molto precoce (Bencini & Valian, 2008; Shimpi et al., 2007), scardinando così l'ipotesi empirista che attribuisce un ruolo focale all'input linguistico. A partire da questa assunzione, si vuole verificare che la rappresentazione mentale del passivo sia condivisa nelle due lingue del/la parlante bilingue e se, inoltre, la competenza linguistica nella L2 influenzi questo processo di integrazione (Bernolet et al., 2013).

L'esperimento proposto è basato su un paradigma di priming sintattico di tipo cross-modale proposto da Bock et al. (2007) e testa frasi transitive attive e passive in adulti bilingui Italiano-Inglese. Lo studio esamina che si verifichi il priming sintattico tra le due lingue. Indaga, inoltre, se l'animatezza abbia effetto sulla magnitudine del priming delle frasi passive.

All'esperimento hanno preso parte 20 maggiorenni italiani (età media: 25;8) con una competenza medio-alta nella lingua inglese (dal livello B1 al C2 del CEFR). I partecipanti sono stati reclutatati attraverso conoscenze personali e annunci rivolti agli studenti iscritti ai corsi di laurea sia triennale che magistrale del Dipartimento di Studi Linguistici e Culturali Comparati dell'Università Ca' Foscari di Venezia. Il materiale era composto di 56 frasi totali. Alle 28 frasi prime sono seguite 28 immagini target colorate. Di questi 28 items, 16 erano frasi transitive (8 attive e 8 passive) e 12 frasi dative (6 PD e 6 DO) che sono state usate come frasi di controllo. Le rimanenti 28 frasi erano fillers. Il design dell'esperimento era di tipo 2x2, in cui le due variabili indipendenti erano il tipo di costruzione, attiva o passiva, e la condizione di animatezza. L'animatezza è stata controllata inserendo metà delle frasi attive con agente inanimato e paziente animato (InAn) e l'altra metà con agente inanimato e paziente inanimato (InIn). La stessa configurazione è stata applicata anche per le frasi passive. I verbi delle frasi sperimentali erano di tipo azionale (tranne uno, *scare*) e coniugati al tempo inglese *present continuous* per quanto concerne le frasi attive, in contrasto con i fillers che avevano, invece, il tempo *present simple*. A ciascuno dei gruppi è stata assegnata una lista differente, in cui gli stessi stimoli sono controbilanciati. Gli stimoli sono stati organizzati in gruppi di tre,

ottenendo un ordine pseudo-randomizzato. L'esperimento è classificabile come *within-subjects* con controllo interno all'esperimento, ovvero nella produzione di frasi attive e frasi passive.

La procedura è consistita nel presentare ai partecipanti inizialmente due frasi in inglese (un *filler* e un *prime*), ciascuna abbinata a un'immagine a colori, e successivamente un'immagine target abbinata a un verbo italiano al tempo infinito. Il compito dei partecipanti era utilizzare il verbo riportato per comporre una frase che descrivesse l'azione rappresentata nell'immagine. Gli items si presentavano come nell'esempio seguente:

Frase filler	*The boy is playing with the train*
Frase prime	*The boat is pulling the woman*
Immagine target	rope trip boy.bmp
Verbo suggerito	inciampare

L'esperimento ha avuto una durata totale di circa 30 minuti. Essendo impossibilitati ad accedere al laboratorio linguistico di Ateneo, Bembo Lab, il test è stato sviluppato attraverso il software PsychoPy, ideato da Jonathan Pierce presso la University of Nottingham. Il questionario, d'altro canto, è stato creato con l'ausilio di Qualtrics. Il test è stato somministrato singolarmente attraverso il link l'accesso alla piattaforma Pavlovia (fornito dalle sperimentatrici) dal proprio pc personale.

Prima dell'erogazione dell'esperimento definitivo, è stato somministrato un esperimento pilota che verificasse il benessere e le reazioni dei partecipanti atte ad apportare modifiche successive che ottimizzassero l'esperimento finale. L'esperimento pilota prevedeva 28 frasi prime in inglese e 28 immagini target accoppiate al corrispondente verbo italiano all'infinito. La procedura era corrispondente a quella dell'esperimento finale: i partecipanti dovevano leggere la frase prime in inglese e descrivere con una frase in italiano (che contenga il verbo fornito) l'immagine target. In questo caso non c'è stata alcuna manipolazione dei tratti di animatezza. L'esperimento era seguito, già in questa fase, dal questionario

demografico. La durata dell'esperimento pilota è stata di circa 15 minuti. Inoltre, una fase di norming delle immagini ha permesso di esaminare la preferenza di base dei partecipanti per le strutture transitive. Ai/lle partecipanti è stato, inoltre, somministrato un questionario demografico che indagava il loro profilo linguistico.

L'esperimento mostra che il priming cross-linguistico delle frasi passive si verifica, confermando l'ipotesi che la rappresentazione sintattica della struttura passiva è integrata tra le due lingue nei parlanti L2 con una competenza intermedia o alta nella loro L2.

La tesi si proponeva, inoltre, di verificare se la manipolazione del tratto di animatezza abbia un effetto sul priming delle frasi passive, attraverso l'inserimento di due diverse condizioni di animatezza: frasi transitive contenenti agente inanimato e paziente animato (InAn) e frasi transitive con agente e paziente inanimato (InIn). L'analisi statistica non rileva in questo caso una differenza significativa tra le due condizioni di animatezza, perciò il priming non risulta essere particolarmente influenzato dall'animatezza. Si ipotizza che l'effetto di animatezza sulla struttura sintattica sia carente, perché le frasi transitive soggette a manipolazione semantica non sono sufficienti. Si propone, perciò, un design più dettagliato che indaghi nel dettaglio l'animatezza per verificare quale sia il comportamento dei parlanti L2, se sia più paragonabile a quello degli adulti monolingui (Bock et al, 1992) oppure a quello dei bambini (Gámez & Vasilyeva, 2015).

Chapter 1: Introduction

1.1 Aims of the thesis

This thesis aims to investigate issues relating to accessing structures and processing them online in late bilingual speakers of English.

Considering that the native-like proficiency in two languages is indeed rare, the term bilingualism has come to define "the regular use of two (or more) languages" (Grosjean, 1992). One is considered bilingual both when he/she acquires two languages at the same time or prior to one year of age (simultaneous bilingualism) or when he/she learns a second language sometime after acquiring their first one (sequential bilingualism). In general, children who acquire the L2 after 5 years of age are not considered native speakers of that language, even if they might have a high proficiency. The reason behind this is that it has been proved that the brain organization is different for L2 acquisition after age 5, and native-like organization for language is no more possible (De Houwer, 2005; Weber-Fox & Neville, 1996). In the current study, the term "late bilinguals" is used in the accepted meaning of individuals who started learning English during infancy or childhood, and it is alternatively used with the term "L2 speakers" or "L2 learners of English".

The present thesis deals with a structure frequently investigated in the field of language acquisition and priming studies: the passive. Passive sentences are structures composed by a transitive verb and two NPs, one of which receiving thematic role of patient or theme by the verb, and the other receiving thematic role of agent. The Italian passive sentence is characterized by an auxiliary (usually *essere* or *venire*) with phi-traits which agree in number and person with the phi-traits of the subject.

In language acquisition research it is vastly argued that, in order to produce a passive structure instead of its active equivalent, children need to have an abstract syntactic representation. Two are the main positions on the acquisition of abstract syntactic representation: nativism and empiricism (or usage-based theory). Nativists like Chomsky and Pinker proposed that the child is born with innate grammatical principles which guide rapid language acquisition (Pinker, 1994). The

child's exposure to a specific language just triggers the parameters, i.e. what determines syntactic variability amongst languages, to adopt the correct setting. Conversely, empiricists assumed that language is a learned behavior, in other words that children first acquires item-based schemas through exposition, and then from these schemas they are able to generalize abstract syntactic representations, when they acquire enough evidence for a structure (Tomasello, 2000). Therefore, according to the empiricist position, children's acquisition and production of passives is connected to the amount of input they undergo.

However, both English- and Italian-speaking children generally hear very few passives. The passive structure expresses the same basic meaning as the active correspondent, but it is more complex: they are independent sentences with short-distance syntactic dependence with a non-canonical order of constituents and mapping of thematic roles (the subject receives the patient or theme role, the object receives the agent or cause role).

In general, passive sentences are considered to be more difficult than active sentences, and to be acquired in a later stage. Especially in early studies, inconsistent comprehension and infrequent production of passives was attested in children younger than 5 years of age (Fraser, Bellugi & Brown, 1963). However, more recent studies provided evidence of the production of this construction at a younger age (Bencini & Valian, 2008).

It must be taken into account that children's acquisition of passives has both semantic and structural variations. According to Maratsos et al. (1985), children generally understand passives better with actional verbs than with non-actional verbs, which are produced quite late in children's language development. Moreover, it was proved that short passives (passive sentences without the *by*-phrase) are more frequently and earlier comprehended and produced than full passives. Last, English-speaking children prefer *get*-passives to *be*-passives in English (Harris & Flora, 1982; Marchman et al., 1991), and Italian-speaking children tend to interpret *venire*-passives as verbal passives more than *essere*-passives.

One of the main issues of this study is to inquire whether passive sentences can be primed between languages, despite a baseline preference in adults of active over passive sentences. It does so by exploiting a between-languages syntactic priming

experiment, also called cross-linguistic priming experiment. In this respect, the thesis aims to examine the possibility that bilinguals share passive structures between their languages.

The most debated topic in psycholinguistics is the extent to which the syntax of two languages is integrated, namely if bilinguals have separate stores for their languages or if they have a single store for at least some aspect of language. The two main hypotheses when it comes to bilinguals' syntactic representation are: the separate-syntax account, according to which the syntactic representations in the two (or more) languages are kept separately within the bilingual memory (Ullman, 2001), and the shared-syntax account, according to which the syntactic representations are stored together (Hartsuiker et al., 2004). To date, a great number of studies supports the fully integrated syntax account not only in the case of bilingual speakers, but even in the case of L2 speakers (Bernolet et al., 2013, Hwang et al., 2018).

1.2 Overview of the thesis

The following chapters are dedicated to a literature review that first analyzes. In Chapter 2, I report the findings from previous literature into acquisition and representation of the passives. Chapter 3 exposes the experimental paradigm, the cross-linguistic structural priming. The chapter presents the main account and studies on this priming model and on how bilinguals represent syntactic structures between languages.

The next chapter is devoted to the experimental study. Chapter 4 illustrates the experiment based on a spoken to written cross-modal syntactic priming paradigm built by Bock et al. (2007). It also displays the preliminary piloting phase and the image norming phase carried out in order to assess participants' baseline preference for transitive structures. The norming phase revealed that participants prefer to produce active sentences, when they are not primed. However, the same participants were able to use passive sentences to describe the same pictures, when primed. The experiment investigates if there is between-languages priming and if

animacy manipulation influences the preference of a transitive structure over another.

At last, Chapter 5 summarizes the findings previously presented and discusses limitations of the study and directions for future research.

Chapter 2: The passive

2.1 The acquisition of passives

Passive constructions are recognized to be acquired later. This is mainly due to its structural complexity and marked word order that make it a more difficult construction for children than active is (Beilin & Sack, 1975). The late acquisition prediction is supported by early research in the field. In fact, although children before the age of 5 comprehend and produce actives, they have difficulties in understanding passives, and they are less likely to produce them. For instance, Menyuk (1963) discovered that, in spontaneous speech, children aged 3 to 4 produced on average less passives than children aged 6 to 7. Moreover, further research demonstrated that children mistakenly interpreted and produced passives until much older than 3 years of age. They often produced reversed passives instead or they mis-interpreted reversible passives as active sentences.

However, later studies challenged this hypothesis, finding evidence that that children start producing passives at around 3 years of age in their spontaneous speech (Budwig, 1990, 2001; Slobin, 1994). Nevertheless, at this age their production of passives contains either an incorrect participle form or the transitive use of a nonexistent transitive verb. Considering that it is unlikely for children to have heard adults producing these forms, this phenomenon supports the nativist account, i.e. that children have an innate abstract syntactic representation for the passive construction. A number of studies provide evidence for the early production of passive in children between 3 and 4 years, production that is favored through a variety of elicited production experiments, such as syntactic priming (Bencini & Valian, 2008; Shimpi et al, 2007). This kind of evidence questions the empiricist position and the alleged role of input in language acquisition.

One plausible hypothesis to explain that passive is not absent from 3- and 4-year-olds' speech is that children's acquisition of the passive is a process made of more than one stage. In other words, children would acquire a syntactic representation for the phrase structure early, but the complete mastery of its

semantic and pragmatic aspects requires more time. This explanation would also shed light on children's reversal of passives in comprehension and production.

The well-known debate on the nature of the acquisition of passive sentences led to a number of linguistic and psycholinguistic research on the acquisition of this structure across different languages addressing both comprehension and production. The two major accounts propose that the acquisition of passives is either semantically (Maratsos et al., 1985) or syntactically constrained (Borer & Wexler, 1987).

According to Maratsos et al. (1985), children are able to comprehend only passive structures containing actional verbs (1a). By the age of 4, children develop good competence of passives with actional verbs but non-actional verbs (1b). Non-actional verbs, in fact, are still problematic at 6 or 7 years of age, and they are not fully mastered before age 9 or 11.

(1) a. The boy was kicked by the cow.

b. The mail carrier was scared by the dog.

On one hand, a number of studies supported Maratsos et al. (1985)'s account on children's preference in producing passives with actional verbs over non-actional verbs (Pinker et al., 1987; Budwig, 1990; Marchman et al., 1991; Budwig, 2001). On the other hand, Messenger et al. (2012) argued that children have an adultlike syntactic representation of passives in both comprehension and production tasks. Their representation is, therefore, not semantically constrained, as Maratsos suggested, but independent of the verb class tested.

Moreover, Maratsos et al. (1985) hypothesized that children have a better comprehension of passives lacking *by*-phrase, the so-called short passives (2a), than passive containing it, or long passives (2b).

(2) a. The package was delivered.

b. The florist is wounded by the rose.

When talking about short vs. long passives, it must be taken into account that, in some languages like English and Italian, the short passive can be ambiguous in its interpretation: it can be treated either as an adjectival or as a verbal passive (3a). Inserting the *by*-phrase makes the passive no longer ambiguous, leaving space only for an eventive reading (3b).

(3) a. The vase is broken.
b. The vase is broken by Anna.

Following Maratsos et al., Borer & Wexler (1987) claimed that children are only able to master adjectival passives before age 5 or 6. However, some studies found that the difference between short and long passives (2) is not statistically significant. Orfitelli (2012), for instance, tested the comprehension of verbal passive in English children 4-6;11 using a binary picture-matching task, with both actional and non-actional verbs, and with and without *by*-phrase. She discovered that most children at 4 or 5 years of age performed above-chance on both short and long passives, and that they performed at ceiling at 6 years old.

Other studies (Crain et el., 1987; O' Brien et al., 2006; Pinker et al., 1987) supported this view, proving that English-speaking 4-year-old children comprehend and produce long and short eventive passive sentences with actional and non-actional verbs, if the experimental conditions are pragmatically well-formed. Bencini and Valian (2008) and Manetti (2013), using syntactic priming tasks, concluded that 3- and 4-year-olds have full representation of passive structure.

The findings concerning Italian mostly mirror the speculations about English. Ciccarelli (1998) found that children aged 4 are at chance level in the production of passive sentences, improving their competence at around 5 or 6 years old. More specifically, Chilosi and Cipriani (2006) discovered that it is at 5;6 that children acquire reversible passives (4).

(4) Il ragazzo è spinto dalla ragazza
'The boy is pushed by the girl'

Moreover, from Manetti (2013)'s work emerged that children are already able to produce passive sentences at 3;6. Children thus develop a good mastery of the passive structure very early on.

In expressing the passive, both English and Italian use the auxiliary *be*/*essere*. As already mentioned, in these languages verbal and adjectival passive constructions are not morphologically distinct. In Italian, sentences with *essere* are ambiguous (5a), because *rotto* can be read either as an adjective or as a verb, it can thus have a stative, a resultative or an eventive reading. Some ways of disambiguation are the use of a *by*-phrase (5b), a manner adverb (5c) or the auxiliary *venire* (5d), which is only compatible with the eventive reading.

In sentences with *essere* or with *venire*, the internal argument of the active verb (*Anna rompe il vaso*) becomes the subject of the passive sentence, in either postverbal (*Viene rotto il vaso*) or preverbal (*Il vaso viene rotto*) position. It also triggers agreement on the inflected verb. However, they do differ in aspectual properties: *venire*-passives are in fact preferred in progressive contexts in the present tense.

(5) a. Il vaso è rotto
'The vase is broken'
b. Il vaso è rotto da Anna
'The vase is broken by Anna'
c. Il vaso è rotto maldestramente
'The vase is clumsily broken'
d. Il vaso viene rotto
'The vase gets broken'

It is important to notice that *venire*-passives are not the exact equivalents of English *get*-passives, since the external argument of *get*-passives is not syntactically active.

The role of *venire*-passives is focal in the understanding of children's acquisition of the passive. As Volpato et al. (2016) demonstrated, if Italian children comprehend and produce passive sentences with *venire*, they do have an early syntactic representation of verbal passives.

2.2 Theoretical accounts on the acquisition of passives

Borer and Wexler (1987) proposed the so-called A-Chain Maturation Hypothesis, according to which the alleged difference in the acquisition of actional and non-actional passives would provide evidence for a maturation theory of language acquisition. In other words, children are able to access a certain grammatical principle only when its component parts are available. Thus, considering that children cannot master verbal passives until age 5 or 6, before this age, the only passives they manage to comprehend and produce are adjectival passives.

As mentioned above, verbal and adjectival passives have the same surface structure but different syntactic representations. In verbal passives, the internal argument raises to the subject position, while the external theta role, absorbed by the passive morphology, is omitted or transmitted to the *by*-phrase (Jaeggli, 1986). Conversely, in adjectival passives, the complement of *be* is an adjective; therefore there is no movement taking place. Thus, children younger than 5 analyze verbal passives as adjectival passives, since the latter do not require A-chains. The ability to form argument A-chains becomes available at around 5 years old. Consequently, young children have a wider comprehension of actional verb passives, since actional verb participles may be used adjectivally. They perform, instead, poorly with non-actional verbal passives since they do not make good adjectival passives.

Although supporting evidence for the A-Chain Maturation Hypothesis is provided from Hebrew, Greek and Russian, conflicting data comes from French, Sesotho, Inuktitut and Kiche' Mayan. Moreover, this approach does not justify and explain the adultlike behavior children have in other A-chain constructions, such as reflexive-clitic constructions (Snyder & Hyams, 2014) and subject-to-subject raising (Beck, 2006; Orfitelli, 2012).

Finally, Borer and Wexler's theory predicted that children should not produce or comprehend long verbal passives before 5 years of age. However, despite the prevalence of short passives amongst earliest passive utterances, evidence is provided that children both comprehend and produce long passives from before 5 (Maratsos & Abramovitch, 1975; Crain et al., 1987; Budwig 1990, 2001).

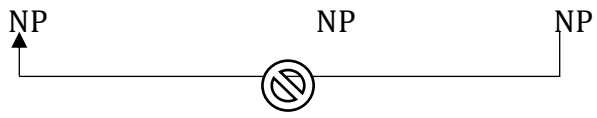
However, Collins (2005) proposed a new analysis stating that passive sentences are derived in some local step, the so-called *smuggling*. More specifically, the external argument of the passive is merged with v', while *by* for long passives (6a) and *0* for short passives (6b) are merged as the heads of the passive VoiceP projection.

(6) a. [$_{voiceP}$ by [$_{vP}$ Anna [$_{VP}$ broken the vase]]]
b. [$_{voiceP}$ 0 [$_{vP}$ PRO [$_{VP}$ broken the vase]]]

In this account, no difference is expected between long and short passives since they have the same derivation.

Nevertheless, the problem here is that locality principles block the movement of the object NP from the merge position within VP to SpecTP. In fact, the external argument in SpecvP represents an intervening element for the movement of the object NP to a higher position:

(7) a. [$_{TP}$ The vase was [$_{VoiceP}$ by [$_{vP}$ Anna [$_{VP}$ broken the vase]]]]
b. [$_{TP}$ The vase was [$_{VoiceP}$ 0 [$_{vP}$ PRO [$_{VP}$ broken the vase]]]]



Therefore the only option would be that passive sentences are derived in more local steps. The VP chunk containing the verb and the object moves leftward to smuggle the subject in the vP-internal position, and a second step makes the object reach the SpecTP position at the left edge of the sentence:

(8) a. [$_{TP}$ <u>The vase</u> was [$_{VoiceP}$ broken ~~the vase~~ by [$_{vP}$ Anna ~~broken the vase~~]]]
b. [$_{TP}$ <u>The vase</u> was [$_{VoiceP}$ broken ~~the vase~~ 0 [$_{vP}$ PRO ~~broken the vase~~]]]

Following Collins (2005), Orfitelli (2012) theorized the Argument Intervention Hypothesis, according to which there is a delayed acquisition of the syntactic structure involving A-chain movement in young children. In particular, they show

delayed comprehension of non-actional verb passives both with and without the *by*-phrase. Orfitelli stated that also the unpronounced *by*-phrases are syntactically active and give rise to intervention effects, unlike agentive arguments. However, two further assumptions are needed for this hypothesis. First, it assumes that only the experiencer argument of non-actional verbs can gives to intervention effects, while the agentive arguments do not. Second, Argument Intervention hypothesis is subject to maturation, thus it is no longer active in adults. Being a maturational account, it predicts delays in every language. But this is not true for Italian children, who have an above chance comprehension of non-actional verb passives (Volpato et al., 2016).

Further research made by Snyder and Hyams (2014) agreed that children are not able to have access to smuggling before age 6. However, they suggested that intervention effects are only found when the two nominal arguments share the same features. Thus children behave adultlike when the internal argument moved to SpecTP has a topic feature. If this is true, no differences should be found between long and short passives and between actional and non-actional passives as long as the derived subject is a topic. However, despite not finding asymmetry between long versus short passives in Italian, Volpato et al. (2016) found asymmetry between actional vs non-actional found with topic-derived subjects.

Chapter 3: Cross-linguistic structural priming: a tool to investigate abstract syntactic representation

3.1 The shared-syntax model

The level of integration of two (or more) languages is one of the most debated topics in the fields of psycholinguistics and bilingualism. Contemporary researchers have been trying for decades to prove whether bilingual speakers have separate memory stores for their languages, or they have only one store containing at least certain aspects of language.

The two main hypotheses when it comes to bilinguals' syntactic representation are: (a) the syntactic representations in the two (or more) languages are either kept separately within the bilingual memory or (b) they are stored together.

The first account, the separate-syntax account, argues that syntactic information is stored and accessed separately for the two languages, in particular there are two memory stores, one for each language (De Bot, 1992; Ullman, 2001). In this model, similar structures shared across the two languages are represented twice. According to De Bot (1992), the grammatical encoding processes that frame sentence structures are separate in L1 and L2. Therefore, also grammatical processes and representations are kept separate in L1 and L2 during L2 acquisition. This model predicts the impossibility of syntactic transfer, since L1 grammar does not influence syntactic processing in the L2. Another version of the separate-syntax account proposes that both language distance and proficiency seem to affect the degree of separation in syntactic processing. For instance, typologically similar languages have a smaller degree of separation, and early or balanced bilinguals have a greater degree of separation. This latter statement predicts the decrease of syntactic transfer with an increase in L2 proficiency (MacWhinney, 1997).

On the contrary, the shared-syntax model accounts for the presence of a single memory store in which the syntactic structures are integrated and represented once. This model proposes that syntactic representations are shared between languages in bilingual speakers, and that the grammar of the L1 impacts the syntactic processing of the L2.

These main hypotheses have been tested through the paradigm of syntactic priming. Syntactic priming is the tendency that speakers have to repeat a certain syntactic structure despite the content words of a previous utterance (Bock, 1986). Priming can occur with a language or between languages. In the latter case, the paradigm is better-known as cross-linguistic syntactic priming, in which both speakers' languages are involved in the execution of the priming task. The only model that predicts the existence of cross-linguistic syntactic priming is the shared-syntax account.

Hartsuiker et al. (2004) dealt with the unsolved issue of shared syntactic information in bilinguals. Their experiment consisted of a dialogue game in which two bilingual (Spanish-English) interlocutors described some cards to one another, with the confederate speaking Spanish and the naïve participant speaking English. The prime sentences were Spanish active and passive transitive sentences and intransitive sentences. The results revealed a priming effect in two moderately related languages: Spanish-English bilinguals were more likely to produce English passive sentences following a Spanish passive sentence than following a Spanish intransitive or active sentence. The tendency to use an equivalent structure in English following a Spanish prime is an evidence that syntactic information is shared between Spanish and English.

The shared-syntax model was developed by Hartsuiker et al. (2004), following Pickering and Branigan (1998)'s model of lexical representation. Pickering and Branigan's lexicalist model interpreted syntactic priming as an effect of residual activation of syntactic representations, which are connected to the lexical representations of verbs. Lemma nodes are directly connected to combinatorial nodes, i.e. nodes that encode syntactic information, and to other nodes, e.g. nodes specifying a grammatical category, and their connections are reinforced when the syntactic representations are simultaneously active. In addition, combinatorial nodes are shared between lemmas, therefore every verb available in the passive is linked to the same passive node.

Hartsuiker et al. (2004) extended this proposal to lexical-syntactic representations in bilingual speakers. More specifically, in their study, the researchers interpreted lemmas for English and Spanish verbs as being connected

to both the same category node and combinatorial nodes. They stated that the constructing process of a sentence structure is guided by the lexicon, in other words it is the association of syntactic information and lexical representation that is responsible for the construction of the structure (Vigliocco & Hartsuiker, 2002). Moreover, the activation of the grammatical structure, which is unspecified for languages, is triggered by the activation of the lemma and one of the combinatorial nodes, while the choice of the lexical items inserted into the structure determines the language of the utterance.

Hartsuiker et al. (2004)'s account on the bilingual lexicon is portrayed in Figure 1, in which the verbs *to hit* and *to chase*, and their Spanish translation equivalents *golpear* and *perseguir* are linked to the same combinatorial nodes, namely ''Active'' and ''Passive'', and to the same categorical node ''Verb''. As it can be observed, each lemma node is linked to a conceptual node ("HIT (X, Y)"), a category node ("Verb"), combinatorial nodes ("Active" or "Passive") and a language node (British or Spanish). While *hit* and *golpear* are connected to one semantic node, *chase* and *perseguir* are connected to another semantic node.

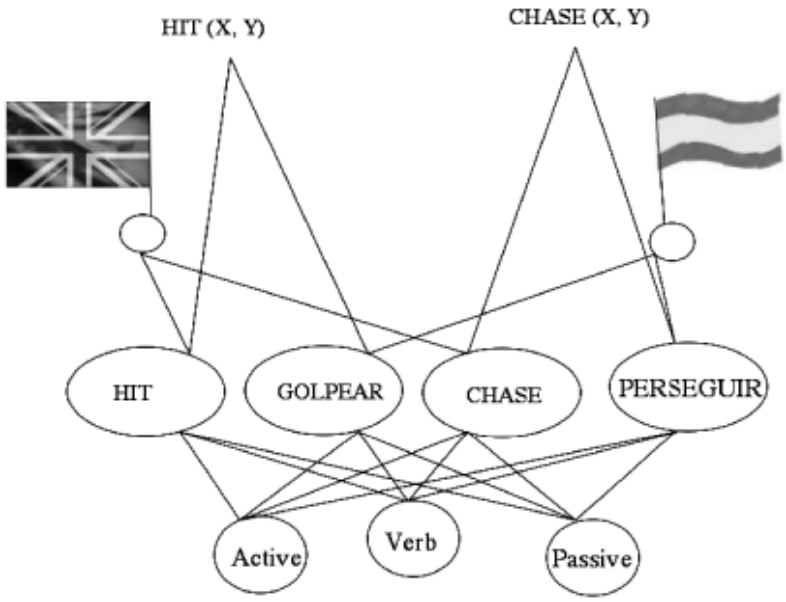


Fig 1. Hartsuiker et al. (2004)'s example of lexical entries for "to chase" and "to hit" in a shared-syntax account of bilingual representation.

Evidence for the shared-syntax model comes from a great number of studies, among all Vasilyeva et al. (2010). In this cross-linguistic priming study with Spanish-English children, the experimenters described some pictures to the children in one language and asked them to describe the pictures using the other language. The precondition for priming to happen is that children have an abstract representation of the target syntactic structure in both languages, and that they are able to integrate the equivalent structures across languages. Despite being able to distinguish their languages from a young age, children's brains do not regard the two language systems as entirely independent. In fact, cross-linguistic transfer is related to the degree of overlap that is present at the structural and pragmatic levels between the languages. Against Tomasello (2003), which stated that early syntactic representation is lexically based, a number of studies proved the young children's ability to make a connection between sentences with a similar syntactic structure is independent of their lexical items (Huttenlocher et al., 2004; Shimpi, Gámez, Huttenlocher & Vasilyeva, 2007; Thothathiri & Snedeker, 2008a). Vasilyeva and colleagues' results in the Spanish-to-English priming condition proved that 5- and 6-year-old bilinguals have adult-like syntactic representations: processing Spanish sentences with a passive led to the activation of the corresponding English form. The outcomes of the study provided evidence that children have an abstract representation of the passive that is independent of lexical items and integrated across languages.

3.2 Syntactic representation in L2 learners and the role of L2 proficiency

So far, the problem of syntactic representation has been addressed mainly to early bilinguals. Is the situation any different when it comes to late bilinguals, i.e. late learners or speakers of a non-native language? The issue with L2 speakers is whether or not syntactic representation is shared for them also, and whether the integration of the two languages may be affected by the level of proficiency in the L2

(Van Hell & Dijkstra, 2002). Since late bilinguals already possess the knowledge of L1 syntax, the acquisition of L2 syntax may be different from the acquisition of L1 syntax. However, the existence of cross-linguistic syntactic priming for syntactically similar structures in bilinguals would suggest that every bilingual has a shared syntactic representation of similar structures between their two languages (Hartsuiker & Pickering, 2008).

Bernolet et al. (2013) assumed that there are two possibilities when it comes to L2 learners' syntactic representation. The first one is that they originally represent new L2 constructions separate from L1 constructions, independent of any difference or similarity between the constructions. In a later stage, similar constructions are merged into one representation. Thus, more proficient bilinguals would achieve a stronger cross-linguistic priming effect than less proficient bilinguals. The second option is that L2 speakers represent both L1 and L2 construction together from the very beginning, in other words they only need access to the present combinatorial nodes in order to process L2 constructions. Unlike the first one, this account predicts cross-linguistic priming, regardless of the proficiency in the L2.

In their study on Dutch-English late bilinguals, Bernolet et al. (2013) considered the shared-syntax model (Hartsuiker et al., 2004) as the ultimate state of bilingual memory. The thesis they adopted is that initially L2 learners have lexically specific representations of new L2 syntactic structures, which are and not shared between languages. These representations eventually become abstract and shared between languages. Although the mechanism behind this process is not clear yet, it may be influenced by the frequency of appearance of the L2 structures, i.e. very frequent structures in the L2 are represented faster than less frequent ones. It is still to investigate whether L2 speakers abstract over lexical items and languages at same time or in consecutive stages of L2 acquisition. However, according to Bernolet et al. (2013), it is likely that this process occurs simultaneously.

Contrasting Hartsuiker et al. (2004) and Hartsuiker and Pickering (2008), Bernolet et al. (2013) found that the cross-linguistic priming is affected by L2 proficiency. During L2 acquisition, L2 learners are involved in a learning process thanks to which from language-specific, item-based linguistic patterns they develop

abstract syntactic representations shared between their languages. In this phase the strength of the prime depends on the speakers' level of L2 proficiency. Proficiency ceases to be an influence only when the syntactic representations are fully shared.

It follows that the development of structural representations in late bilinguals is different depending on the specific developmental stage they are in. Hartsuiker and Bernolet (2015) constructed a model to explain how late L2 syntactic acquisition may work, interpreting Hartsuiker et al. (2004)'s shared-syntax account as the final stage of bilingual language development. At the beginning, L2 lexical representations are not connected to syntactic information, namely verb lemmas are not linked to, e.g., active and passive structures. At this stage, L2 learners have two options: transferring L1 syntax to L2 or imitating a structure they may have heard native or proficient speakers use. In other words, no cross-linguistic structural priming is predicted here. The following stage sees a development of abstract syntactic representations in the L2, a process that requires minimum exposure to structures. Connections are made between combinatorial nodes, probably representing similar structures in the L1, and verbs they co-occur with. Combinatorial nodes for highly frequent structures are created first (as it can be observed in the second state of Fig. 2, the X-node is present, whereas the Y-node is not). However, these representations are still language- and item-specific, and they are not shared between languages. Consequent to adequate exposure to the L2, bilinguals add combinatorial nodes also for less frequent structures, which are still item-specific as well. In this third state, there might be item-specific priming based on residual activation of syntactic nodes. In the fourth stage, structures X and Y are abstracted across multiple words in the L2. Both item-specific and abstract priming is now expected in the L2, so there is a lexical boost to priming. Abstraction across words within a language and between languages. Hence, L1 and L2 structural representations are abstracted within a language and between languages.

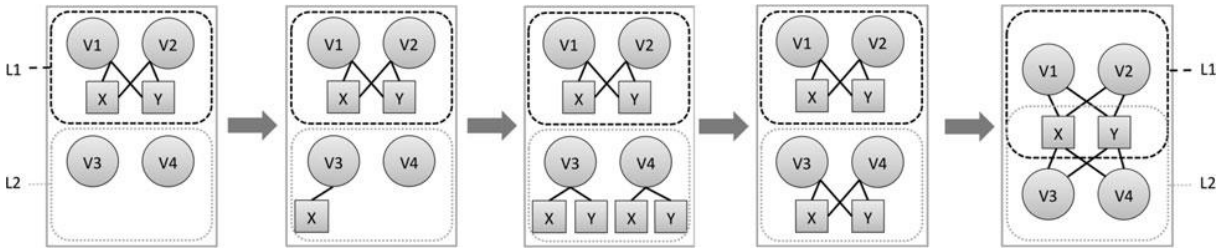


Fig. 2. Hartsuiker and Bernolet (2015)'s developmental model. V1 and V2 are verbs in the L1, while V3 and V4 are verbs in L2. X and Y are combinatorial nodes. Only lexical and combinatorial nodes are represented.

Further evidence supporting the pivotal role of L2 proficiency in cross-linguistic structural priming comes from Hwang et al. (2018). The studies analyzed so far (e.g. Bernolet et al., 2013) revealed an influence of L2 proficiency on structural priming in typologically similar languages. Hwang et al. (2018) looked into typologically different languages, namely Korean and English, to verify whether there is an effect of language proficiency. Therefore, Hwang and colleagues used two experiments to examine how late Korean-English bilinguals with lower-intermediate to advanced English proficiency represent and process similar and different structures between the two languages.

Experiment 1 was a cross-linguistic structural priming, where Korean active or passive sentences were used to prime English active or passive sentences. The results showed a significant effect of priming of passive structures, independent of the different word order between Korean and English, thus endorsing the thesis that cross-linguistic structural priming is independent of word order. Moreover, the finding that the priming effect increases in proportion to English proficiency implies that Korean-English bilinguals develop shared representations of transitive structures that are similar (transitives) in the two languages, as they mature a higher proficiency in English. In conclusion, this outcome suggested that a range of structures are represented and shared across typologically different languages if an L2 structure is sufficiently similar to an L1 structure, namely they are similar in terms of functional relations, thematic role orders or information structure.

Experiment 2 extended the inquiry to different constructions between L1 and L2, namely causative structures that are expressed with a causative sentence in

English, but with a transitive sentence in Korean. They used a sentence-picture verification task, in which a picture depicting a causative event was paired either with an English active sentence or an English causative sentence. Participants had to decide whether the sentence they were given matched the picture. On average, proficient bilinguals tended to accept more correct than incorrect descriptions for intransitive and transitive trials. Moreover, they tended to recognize a causative sentence as suitable for a causative event, as proficiency increased. These results are perfectly in line with the assumption that comprehension and production of a L2 structure increase as L2 proficiency increases.

However, Hwang et al. (2018) found a higher number of syntactic transfer errors in more proficient Korean-English speakers: they were more likely to accept an active structure for describing a causative event than less proficient speakers. Nevertheless, the transfer errors are compatible with the shared-syntax account. In fact, according to the shared-syntax account, a causative event can trigger both an active structure and a causative structure in proficient bilinguals, since Korean uses active structures to express both transitive and causative structures. Nevertheless, the strong relation between a causative event and an active transitive structure in Korean activates an active structure in English, leading to transfer errors.

The experiments conducted by Hwang and colleagues indicated that proficient bilinguals have shared representations between languages for both different and similar constructions. Moreover, the proportional increase of proficiency and transfer errors provides evidence for the high integration of the bilingual mind, in line with the shared-syntax account.

Furthermore, van Gompel and Arai. (2017) investigated if syntactic representations are fully shared between languages, since this would imply the existence of a single combinatorial node. Research showed that identical structures in L1 and L2 have a single and shared mental representation, whereas, when it comes to similar but not fully shared structures, the conclusions are unclear. Kantola and van Gompel (2011) hypothesized that syntactic structures are not fully shared but merely connected. According to this hypothesis, cross-linguistic priming would be determined by an activation of a related but still separate representation from a language to another. Thus, this account predicts a smaller priming between

languages, caused by the connection between related structures, than within languages, priming that is triggered by a residual activation of a single combinatorial node. Conversely, the shared-syntax account, as discussed above, prescribes a priming effect equally strong between and within languages, as it is assumed to be driven by residual activation of a single combinatorial node shared between languages (e.g. Kantola & van Gompel, 2011; Hartsuiker et al., 2016).

There is contrasting evidence that cross-linguistic priming may require fully identical structure to occur (Bock & Loebell, 2003; Bernolet et al., 2007; Jacob et al., 2017). Altogether, it seems that priming between languages is also found when prime and target have not a fully identical structure. However, since it may be weaker than priming between structures with identical internal structure, the hypothesis is that these structures are connected but not fully shared.

3.3 Animacy effects on sentence production

3.3.1 Main hypotheses on animacy effects

A number of studies in linguistics and psycholinguistics have tried to define the relation between semantic and syntactic processes that are involved in language production. This section will focus, in particular, on the possibility that a semantic property like animacy affects the choice of the syntactic form of a sentence.

Research exploring spontaneous sentence production in children and adults identified a so-called "animate first" tendency in word order, namely the phenomenon whereby animate characters are more likely to appear in the first position in speakers' production (Prat-Sala et al., 2000). This tendency is possibly due to conceptual accessibility and/or salience of animate concepts. According to Keil (1979), humans know and experience more animate characters than inanimate characters. Therefore, animate entities are the most easily recalled lexical items since the information about the animate patient is accessible early in the syntactic stage of processing, thus enhancing the preference of a structure with the patient in the first position. Animates are also more likely than inanimates to be assigned to subjects. This propensity would explain why a bias toward passive structures is

found in the description of pictures with animate patient and inanimate agent (Bock, 1986b; Bock, Loebell & Morey, 1992). In fact, the passive construction allows the assignment of animate characters to subjects, which occur in a sentence-initial position.

Research still lacks unanimity in identifying the role of animacy on sentence structure. Ferreira (1994) explained animacy effects as thematic role assignment, Bock et al. (1992) and McDonald et al. (1993) as grammatical function assignment, whereas other research (Prat Sala et al., 2000; Feleki & Branigan, 1997) studied animacy effects on word order.

Ferreira (1994) hypothesized that animate entities are assigned agent role, and agents occur in the first position in the sentence. However, many studies ruled out this thesis showing that animacy effects tend to increase the preference of passive structure, which have the patient in the initial position.

The grammatical function assignment hypothesis claims that animates are the easiest items to access, thus they are the first to be retrieved and to undergo functional processing (Bock et al., 1992). Furthermore, it points out that the more items are accessible the more likely they are to be assigned to higher grammatical relations. McDonald et al. (1993) justified the link between animacy and subjecthood with the above-mentioned "animate first" tendency: animate entities are likely to occur in the first position in the sentence. Moreover, they tend to be chosen as subjects in English, because of animacy influencing function assignment.

Finally, the animacy effect on word order is based on the assumption that items that are conceptually accessible, in addition to being retrieved first and undergoing grammatical encoding first, tend to occur in early word order positions. Prat Sala and Branigan (2000) discovered that more passives were produced when there was an animate patient in English. On the other hand, more dislocated sentences were produced when the patient was animate than when it was inanimate in Spanish. Therefore, Prat Sala and Branigan (2000)'s conclusion was that conceptual accessibility affected grammatical function assignment and word order in both English and Spanish.

3.3.2 Animacy effects on syntactic priming

The structural priming paradigm is one of the most efficient methodological tools that has been exploited to investigate syntactic processing and its relation to semantic levels of processing (Pickering & Ferreira, 2008). Salient distinctions were found in animate versus inanimate objects.

Bock et al. (1992) investigated the hypothesis that syntactic priming is dependent on semantic information. Their priming study with transitive sentences manipulated the animacy of the arguments, comparing animate vs inanimate subjects. While they found a general tendency for primes with animate subjects to elicit more responses with animate subjects (and vice versa), this tendency was not affected by the syntactic structure of the prime. In fact, both animate subjects of passive primes and animate subjects of active primes were able to elicit animate subjects in active targets. Moreover, also the priming of the sentence structures was not related to the conceptual features of the subjects. In synthesis, they discovered no interaction between animacy traits and syntactic priming was found.

However, Gámez and Vasilyeva (2015) argued that some aspects of Bock et al. (1992)'s method may be responsible for the absence of this interaction. In fact, they had different animacy characters in the primes, but the same in the target pictures, which appears to influence sentence production. In addition, Bock et al. (1992)'s experiment was run on monolingual adults, while Gámez and Vasilyeva (2015) tested children between 4 and 5 years of age. In their experiments, where the animacy of characters was changed in the prime and target sentences, Gámez and Vasilyeva obtained a stronger priming effect when prime and target had animate patient and inanimate agent than vice versa. Passive production, in fact, seems to be facilitated by a concurrence of syntactic and semantic features. In experiment 2, where the animacy of the agent/patient in the prime was crossed with that of the target, they found that children tended to produce more passive sentences when the target had an animate patient than with an inanimate patient, especially in the matched condition. Their results indicate that syntactic and semantic features of the prime influence the production of a passive construction.

Another study that found animacy effects on syntactic priming is Ziegler and Snedeker (2018), in which animacy matches were recognized to impact the priming of locatives by locatives and datives by locatives.

However, Chen et at. (2020) argued that these pieces of evidence would prove not an effect of animacy on syntactic structure, but an effect of animacy on thematic roles instead. Indeed, most studies on Germanic languages concluded that syntactic priming is independent of semantics (Pickering & Branigan, 1998). Animacy is, in fact, argued to be semantic information represented in the conceptual stratum and not in the combinatorial node. Therefore, semantic priming would be an independent event, supporting the hypothesis that syntax and semantics are separate (Branigan & Pickering, 2017). Chen et al. (2020) provided evidence supporting this theory. Chen and colleagues created two structural priming studies examining the production of dative sentences in Mandarin. Syntax in Mandarin is sensitive to semantic information, like animacy features, thus it is possible that in this language syntactic and semantic information are part of an integrated representation. However, experimental results supported Branigan and Pickering (2017)'s hypothesis for the separation of syntax and semantics. Chen and colleagues' proposal is that verb lemmas are connected to combinatorial nodes, which specify syntactic information but not animacy information. Therefore, there would be nodes corresponding to PO constructions, DO constructions, and PO-AR constructions (Prepositional Object-Animacy Reversed, i.e. the condition where there is a NP followed by a PP after the verb, but with an animate theme followed by an inanimate recipient), but all these nodes would be independent of animacy. This evidence led them to support the universality of the separation of syntactic and semantic representations.

Other studies that address this issue, such as Buckle et al. (2017) proposed that sentence production is related to the activation of semantic information, such as animacy, and syntactic frames specifying an order for grammatical functions, such as subject before object. Buckle and colleagues assessed how animacy-semantic role mappings in dative prime sentences and target scenes impact the preference of a syntactic structure over another and the noun order as a function of animacy. Their experiments compared prototypical vs non-prototypical animacy mappings for

themes and goals, but also matched vs mismatched animacy mappings across the prime and target scenes. In addition, the DO primes or PD primes had either an animate-inanimate or inanimate-animate post-verbal noun order. Buckle et al. (2017)'s results showed that 3-year-olds were influenced by prime structure, prime animacy-semantic role mappings and prime-target match in their structural priming. 3- and 5-year-olds produced more AnIn noun orders compared to InAn noun orders after having received priming with AnIn noun orders. Conversely, in adults was found neither evidence of noun animacy order priming effects nor effect of animacy-semantic role mappings on target animacy noun order. Moreover, adults produced AnIn targets after having received any prime type, whereas young children showed a higher preference for AnIn responses with targets with animate themes and inanimate goals than for targets with inanimate themes and animate goals. Therefore, children generally tended to place themes before goals regardless of the animacy-semantic role mappings of the prime sentence. Buckle and colleagues concluded that animacy effects on priming decrease with age as well as sensitivity to semantic content in sentences.

However, other priming studies, such as Bencini and Valian (2008), found that young children are not semantically influenced in syntactic priming.

As it may be clear at this point, there is mixed evidence on the role of semantics in structural priming. Difference results on animacy effects may be due to the different syntactic structures (e.g. transitives vs. datives) investigated, to experimental methods, to the age range of the speakers or to their language background. The question is how the population studied in this thesis, L2 Italian speakers of English, behaves in priming studies that manipulate animacy.

Despite not being a priming experiment but a picture description task, Solak (2007) provided interesting results in examining animacy effect on sentence structure preference in L2 English learners of Turkish. The most proficient group of L2 English learners of Turkish (level-3) exhibited a high production of passive sentences in the presence of animate patients, supporting the theory that animacy affects sentence structure. However, the groups with lower proficiency levels and native speakers of Turkish showed no animacy effects. These results are in line with the grammatical function assignment hypothesis (McDonald et al., 1993; Bock &

Warren, 1985), according to which animate patients, being more accessible than inanimate agents, receive a higher grammatical function. This would explain why L2 English speakers of Turkish preferred passive constructions in the InAn condition: passive sentences allow the occurrence of animate patients in subject positions. Nevertheless, the preference for passive structures with animate patients could also be explained in terms of animacy effects on word order. In fact, the hypotheses are that animate objects are retrieved first (a) in the functional processing that assigns them the subject position, (b) in the positional processing that make them appear in the sentence-initial position (Branigan et al., 2007).

In Chapter 5, I will investigate whether L2 speakers' choice of syntactic structure is influenced by animacy manipulation also in priming experiments.

Chapter 4: The present study

4.1 Introduction

Analyses of spontaneous speech demonstrated that passives are seldom produced in spoken English (Svartvik 1966, Brown 1973, Gordon & Chafetz 1990). Despite this condition, some studies were able to prime passives in very young children (Bencini & Valian, 2008; Shimpi et al., 2007), indicating that they already have an innate, abstract representation of a structure they rarely encountered. This result is mostly found applying the syntactic priming paradigm, which can be defined as the tendency to repeat a sentence structure they have been previously exposed to (Bock, 1986). This paradigm thus helps scholars to recognize some of the representations that humans build while comprehending or producing language.

Knowing that typically-developing humans acquire an abstract representation of the passive very early in life, the purpose of the experiment is to establish whether this representation of the passive is shared between the L1 and the L2 of a bilingual subject. The cross-linguistic syntactic priming experiment we used is based on a spoken to written cross-modal syntactic priming paradigm designed by Bock et al. (2007), and it is applied to Italian-English late bilingual speakers.

In the present study, a priming effect is predicted with more passive sentences following passive primes than active primes, even if a number of studies has shown a smaller priming effect for active and passive sentences in adult experiments (Bock, 1986) than children experiments (Bencini & Valian, 2008). These findings are compatible with the stronger priming effects found in impaired populations, e.g. aphasic patients (Hartsuiker & Kolk, 1998), or non-native speakers (Flett, 2006). However, these discrepancies may be attributed to the scoring criteria or to the methodological differences between these studies, therefore comparison has limits.

Considering that all the participants that took part in this study have an intermediate-high proficiency in English, their level of integration is predicted to be high.

In addition, we examine the effect of animacy on passive priming by manipulating the animacy traits. We expect a larger priming of passive sentences in

the InAn condition, i.e. in sentences containing an inanimate agent and an animate patient, than in the InIn condition (inanimate agent and patient). Animates objects are in fact argued to be the easiest lexical items to recall, due to their conceptual accessibility and salience (as we have seen in Ch. 3.4).

4.2 Method

4.2.1 Participants

Twenty Italian-English bilingual adults took part in the experiment. They were recruited both from personal contacts and through advertisements on social media directed mainly to BA and MA students of the Department of Linguistic and Comparative Studies of Ca' Foscari University of Venice. Before taking the experiment, they were asked to fill in an online questionnaire concerning their linguistic background. They were aged between 22 and 39 (mean age 25;8) (see table 1). All participants spoke at least Italian as their first language and had an intermediate-high proficiency in English (B1 to C2 CEFR level). Most of them were exposed to English at a young age (mean age 6;05) (see table 2).

Participants				
ID	**Age**	**L1**	**L2**	**English CEFR Level**
1008	32	Italian	English	B2
1009	24	Italian	English	B2
1010	25	Italian	English	B2
1011	39	Italian	English	C1
1013	32	Italian	English	C1
1018	27	Italian	English	C1
1021	25	Italian	English	C1
1024	23	Italian	English	B2
1025	24	Italian	English	C1
1026	24	Italian	English	C2
1027	23	Italian	English	C1
1030	23	Italian	English	B2
1049	24	Italian	English	C2
1052	24	Italian	English	C1

1080	24	Italian	English	C1
1082	28	Italian	English	C2
1090	25	Italian	English	B1
1095	25	Italian	English	B1
1107	23	Italian	English	C1
1112	22	Italian	English	C1

Table 1. Participants' overview

Participants			
ID	**Age of exposure**	**Use**	**Proficiency**
1008	8	5.4 (1.34)	4 (0.81)
1009	8	5.2 (1.30)	6.2 (0.95)
1010	5	4.6 (2.07)	5.6 (0.81)
1011	6	6.6 (0.89)	5.7 (0.95)
1013	9	5.2 (1.48)	6 (0)
1018	4	3.6 (2.79)	5.5 (0.6)
1021	5	5 (1.58)	5.5 (0.57)
1024	3	3.8 (0.83)	4.5 (1)
1025	6	4.2 (2.16)	5.7 (0.5)
1026	5	4.6 (1.14)	6.7 (0.5)
1027	6	5.6 (1.67)	5.5 (0.81)
1030	3	6 (0.70)	6 (0.81)
1049	6	5.8 (0.83)	5.7 (0.5)
1052	7	3.6 (0.89)	5.2 (0.5)
1080	6	4.6 (1.14)	5.2 (0.95)
1082	6	3.8 (1.78)	6.7 (0.5)
1090	6	1.4 (0.60)	3 (0.82)
1095	8	1.7 (0.88)	4 (0.82)
1107	6	5.8 (1.78)	6 (0)
1112	8	4.4 (1.51)	6 (0)

Table 2. Mean and (SD) of participants' responses on age of exposure to English, use of English and self-rate language proficiency.

4.2.2 Design

The experiment was a within-subject experiment, namely every participant underwent the same experimental conditions. It had a 2x2 design, in which the two independent variables were the type of construction (active vs. passive) and the animacy condition (InAn vs. InIn).

	Prime Sentences	
Animacy		
	Active	Passive
InAn	*The boat is pulling the woman*	*The baby is rocked by the cradle*
InIn	*The truck is dumping the dirt*	*The ball is bounced by the racket*

Table 3. Experimental conditions

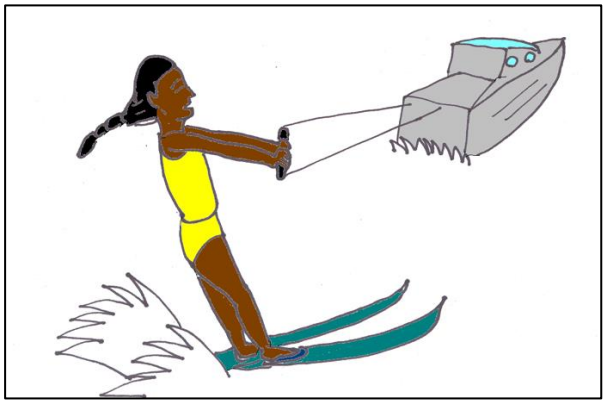
4.2.3 Items

The material was composed of 56 sentences in total, of which 28 prime sentences were followed by 28 colored target pictures. The 28 prime sentences were divided in the following way: 16 were transitive sentences (8 actives and 8 passives) and 12 dative sentences (6 prepositional datives and 6 double-object datives). The latter were used as control sentences. The remaining 28 sentences were fillers. Each item was composed of one filler sentence (and picture), one prime sentence (and picture) and one target picture (see example in Table 4, Fig. 3 and Fig. 4).

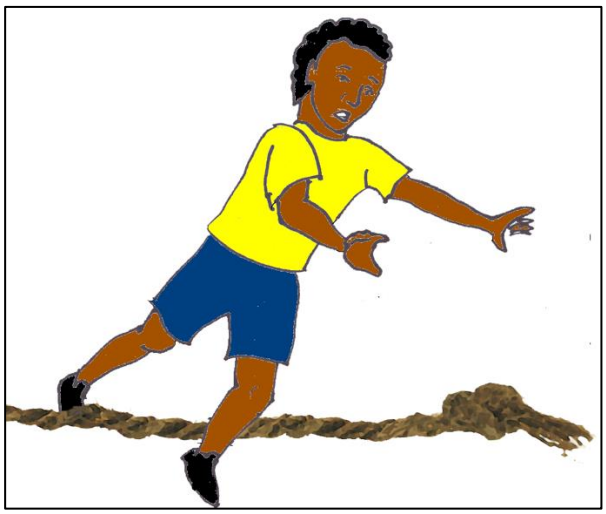
Filler sentence	*The boy is playing with the train*
Prime sentence	*The boat is pulling the woman*
Target picture	rope trip boy.bmp
Verbhint	inciampare

Table 4. Item example

FILLER: ***The boy is playing with the train***

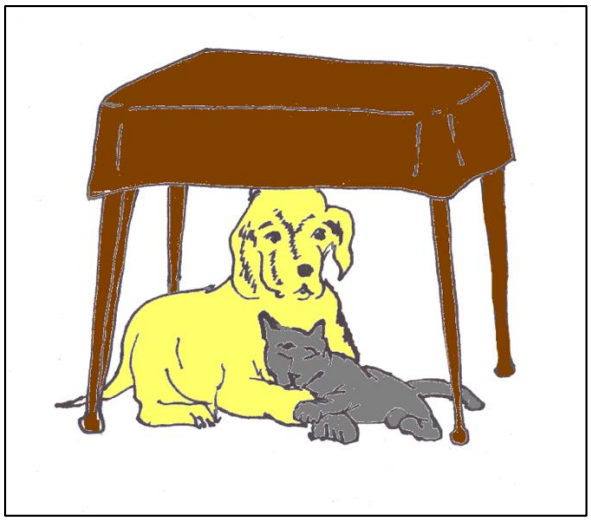


PRIME: ***The boat is pulling the woman***



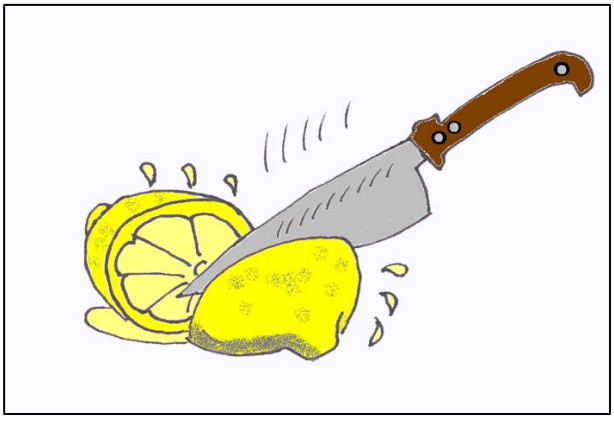
TARGET: rope trip boy.bmp (verbhint: ***inciampare*****)**

Fig. 3. Sample priming block in the InAn condition



FILLER: ***The cat and the dog are under the table***

PRIME: ***The presents are carried by the wagon***



TARGET: knife slice lemon.bmp (verbhint: *tagliare*)

Fig. 4. Sample priming block in the InIn condition

The prime sentences were in English and contained 27 actional verbs and one non-actional verb (*scare*). The verbs were used one time each in prime sentences. The verb was never shared between the prime and the target in order to ensure that the priming effect was not item-specific but due to abstract syntactic representations (Tomasello, 2000).

Each pair of prime and target items portrayed different agents and patients. There were only human characters and non-human objects. Animacy was controlled by having half of the active sentences with an inanimate agent and an animate patient, and the other half with an inanimate agent and an inanimate patient. The same configuration applied to the passive sentences.

Moreover, in order to counterbalance the experiment, items were presented in four different lists.

4.2.4 Procedure

After having completed the language profile questionnaire mentioned above in Qualtrics, participants were sent a link to a consent form that later gave them access to the experiment in the online platform Pavlovia. The experiment started with a practice trial, in which they saw an English sentence paired with a colored picture and then another colored picture they had to describe with an Italian sentence.

After the practice trial, participants were first shown a picture and an English filler sentence, then another picture matched with English prime sentence. Next they were presented with a target picture, which they were asked to describe with an Italian sentence using the suggested verb (see Fig. 3 and Fig. 4, see Appendix A for the full list of items). Thus, the direction of the experiment was from their L2 to their L1. They had about 30 seconds to type the target sentence on their personal computers. At the end of the experiment, participants were given the aims of the study and were asked permission to participate in further experimental research.

4.2.5 Image Norming Phase

In order to assess Italian speakers' baseline preference for transitive sentences, an image norming phase was carried out. 10 adult Italian speakers (mean age: 30;5)

were administered a picture description task, where they had to describe the target images later used in the experiment phase with an Italian sentence. They were only given a verb-hint. The procedure is the same that we used for the experiment. Another group of 10 adult Italian speakers (mean age: 38;6) were administered the same task, but they had to describe the images with an English sentence.

The norming phase revealed that participants prefer to produce active sentences, when they are not primed (see Table 5). *Other* descriptions, namely the ones that do not correspond to actives or passives, are the most frequent responses. Despite being the least preferred, passive descriptions are not infrequent.

Target Language	**Target description**		
	Active	Passive	Other
Italian	0.38 (0.49)	0.16 (0.36)	0.44 (0.50)
English	0.27 (0.45)	0.13 (0.33)	0.60 (0.49)

Table 5. Mean proportion and (S.D.) of transitive response in the Norming Phase (Strict scoring)

In table 6, *Strict passive* descriptions are analyzed in detail. Italian speakers tend to use more passives in the description of specific items, both in Italian and in English. The picture *news shock man* is mostly described using a passive structure.

Target Picture	**Strict Passive**	
	Italian	**English**
alarm awake man.bmp	0.10 (0.32)	0.10 (0.32)
ball hit boy.bmp	0.20 (0.42)	0.50 (0.53)
crayon color star.bmp	0.10 (0.32)	0 (0)
feather tickle girl.bmp	0.20 (0.42)	0.20 (0.42)
hammer crack egg.bmp	0.10 (0.32)	0.10 (0.32)
hose spray firefighter.bmp	0.10 (0.32)	0.11 (0.33)
knife peel apple.bmp	0.10 (0.32)	0 (0)
knife slice lemon.bmp	0.10 (0.32)	0 (0)
lightning strike man.bmp	0.20 (0.42)	0.33 (0.5)
news shock man.bmp	0.50 (0.53)	0.40 (0.52)
police follow car.bmp	0.10 (0.32)	0.20 (0.42)

rock break window.bmp	0.30 (0.48)	0.10 (0.32)
rope tie man.bmp	0.20 (0.42)	0 (0)
rope trip boy.bmp	0 (0)	0 (0)
truck tow car.bmp	0.20 (0.42)	0 (0)
wrecking ball smash building.bmp	0 (0)	0 (0)

Table 6. Mean proportion and (S.D.) of Strict Passive productions by item in the Norming Phase

The same situation can be observed in the Lax scoring of passives. Again, in Italian as well as in English the item *news shock man* has a high percentage of productions (80% in Italian, 50% in English). In the Lax scoring, also the items *lightning strike man* (70% in Italian, 56% in English) and *ball hit boy* (60% in English) appear to be described with a passive structure. It is interesting to note that an item like *lightning strike man* is often produced as a truncated passive in the norming phase (50%).

Target Picture	**Lax Passive**	
	Italian	**English**
alarm awake man.bmp	0.40 (0.52)	0.20 (0.42)
ball hit boy.bmp	0.20 (0.42)	0.60 (0.52)
crayon color star.bmp	0.20 (0.42)	0.20 (0.42)
feather tickle girl.bmp	0.30 (0.48)	0.20 (0.42)
hammer crack egg.bmp	0.30 (0.48)	0.10 (0.31)
hose spray firefighter.bmp	0.20 (0.42)	0.22 (0.44)
knife peel apple.bmp	0.20 (0.42)	0.20 (0.42)
knife slice lemon.bmp	0.20 (0.42)	0.10 (0.32)
lightning strike man.bmp	0.70 (0.48)	0.56 (0.53)
news shock man.bmp	0.80 (0.42)	0.50 (0.53)
police follow car.bmp	0.10 (0.32)	0.20 (0.42)
rock break window.bmp	0.40 (0.52)	0.20 (0.42)
rope tie man.bmp	0.30 (0.48)	0.50 (0.53)
rope trip boy.bmp	0 (0)	0 (0)
truck tow car.bmp	0.30 (0.48)	0.10 (0.32)
wrecking ball smash building.bmp	0.50 (0.53)	0.30 (0.48)

Table 7. Mean proportion and (S.D.) of Lax Passive productions by item in the Norming Phase

The increased production of passives describing some of the pictures may depend on the fact that these pictures or the verb we suggested biased for a passive response. This issue will be taken into consideration in the comparison with the experiment results.

4.2.6 Piloting Phase

Before administering the experiment, 5 adult Italian speakers (mean age: 26;4) volunteered to pilot the experiment, giving the experimenters their feedback. The procedure and design were the same as the experiment.

The feedback allowed the experimenters to fix some issues concerning the layout of the experiment: a black line was added to clarify the place where to type the sentence description. A guided demo was added in order to further simplify the task. The instructions were made clearer and some keywords were highlighted. Moreover, the total duration of the task was added in the instruction section. While the time on the screen of fillers and primes lasted 7 seconds, the time on the screen of the sentence description was increased from 20 seconds to 30 seconds to give more time to complete the task. After the modifications, other volunteers piloted the new version and had positive comments on the experiment.

4.3 Results

4.3.1 Scoring

Two sets of scoring criteria were used: *Strict* scored full transitives only, i.e. sentences containing an agent and a patient, while *Lax* scored any other description, e.g. incomplete descriptions, truncated passives, instrumental passives, etc.

In the Strict coding, participants' descriptions were scored for syntactic form as *active*, *passive* or *other*. Sentences were scored as *active* if they contained the agent of the action, a transitive verb and the patient of the action as the direct object. Responses scored as *passive* were composed of a patient in subject position, a passive auxiliary (*essere* or *venire*) and the past participle form of a transitive verb,

followed by the agent expressed in a post-verbal prepositional phrase. The remaining descriptions were scored as *other*: incomplete descriptions, those containing an intransitive verb, truncated passives, sentences with missing or with a different thematic role, or having reverse roles (see Table 8 for the full scoring criteria).

In the Lax coding, to be scored as *passive* the responses had the patient in subject position, a passive auxiliary (*essere* or *venire*) and the past participle of a transitive verb, optionally followed by the agent or instrument expressed in a prepositional phrase introduced by the preposition *da* ('by') or *con* ('with'). This label thus included truncated passives and instrumental passives. Moreover, a further distinction was made distinguishing passives containing the auxiliary *essere* ('be') and *venire* ('get') (see table 8 for the full scoring criteria).

It must be noted that the item *rope trip boy* (see Fig. 3 and Appendix A) is problematic, since it is a transitive verb in English but an intransitive verb in Italian. In the active form, a participant was likely to produce a sentence such as *il ragazzo inciampa sulla corda* with a prepositional phrase introduced by the preposition *su* ('over'). In the passive form, they were likely to produce a causative structure like *la corda ha fatto inciampare il ragazzo*; however, this response is not found in any of the participants. For the above-mentioned reason, all correct Italian productions with the verb *inciampare* ('trip') have been scored as *other*.

Label	**Criteria**	**Example Utterance**	Strict	Lax
Strict Active	full DP (agent), transitive verb and full DP (patient)	*La gru sta distruugendo l'edificio*	x	
Strict Passive	full DP (patient), passive auxiliary and past participle of a transitive verb, agent expressed by a prepositional phrase introduced by *da* ('by')	*L'uomo è stretto da una corda*	x	

Strict Other	incomplete descriptions, with an intransitive verb, truncated passive, sentences missing or with a different thematic role or with a reversed role, sentences with pronouns as agent/patient	*Qualcuno sta colorando di giallo una stella*	x	
Lax Passive	all passive descriptions, including truncated and instrumental passives	*Il gomito del ragazzo è centrato da una pallina*		x
Essere Passive	passive sentence with the auxiliary *essere*	*Il ragazzo è scioccato dalle notizie*		x
Venire Passive	passive sentence with the auxiliary *venire*	*L'uomo viene stretto dalla corda*		x
Truncated Passive	passives without the agent expressed	*Il palazzo viene distrutto*		x
Instrumental Passive	passive with agent expressed by a prepositional phrase introduced by *con* ('with')	*la mela è sbucciata con un coltello*		x
Role Reversal	agent and patient are reversed	*La palla viene centrata*		x
Incomplete Role	description where agent/patient is missing, where another agent/patient not depicted in the sentence is inserted or where a different thematic role is used	*Il ragazzo inciampa*		x
False Start	the subject starts out with a sentence and then changes it	*Il limon il coltello taglia il limone*		x
Ungrammatical	not conforming to grammatical rules			x

Table 8. Scoring criteria

4.3.2 Results

Table 9 shows the proportions of all the responses analyzed in the Strict scoring. It can be observed that participants produced more *active* responses following active primes (60% vs. 40%), and similarly they produced more *passive* responses after

passive primes (32% vs. 13%). Moreover, participants produced a significant number of sentences scored as *other*, which was a bit larger following passive primes than active primes (28% vs. 26%).

Prime	**Target description**		
	Active	Passive	Other
Active	0.60 (0.49)	0.13 (0.34)	0.26 (0.44)
Passive	0.40 (0.49)	0.32 (0.47)	0.28 (0.45)

Table 9. Mean proportion and (S.D.) of transitive responses in the Strict Coding

Table 10 displays participants' responses following active and passive primes and in two different animacy conditions: the InAn condition and the InIn condition. The table shows a preference of *active* in the InIn condition, especially following active primes (70% vs. 48%), but it is also reported following passive primes (55% vs. 27%). Conversely, *passive* responses are slightly more frequent, after passive primes, in the InAn condition (33% vs. 31%). Likewise, *other* responses are preferred in the InAn condition both after active primes (40% vs. 15%) and after passive primes (38% vs. 15%).

Prime	**Animacy**	**Target description**		
		Active	Passive	Other
Active	InAn	0.48 (0.50)	0.11 (0.31)	0.40 (0.49)
	InIn	0.70 (0.45)	0.15 (0.36)	0.15 (0.36)
Passive	InAn	0.27 (0.44)	0.33 (0.47)	0.38 (0.48)
	InIn	0.55 (0.50)	0.31 (0.46)	0.15 (0.35)

Table 10. Mean proportion and (S.D.) of transitive responses in the Strict scoring in the different animacy conditions

Proportion of actives

As already mentioned, active sentences primed more active sentences than passive sentences. Participants produced 60% *active* responses following active primes, while only 40% *active* responses after passive primes.

Table 10 highlights the preference of *active* descriptions in the InIn condition with both active (70%) and passive prime (55%). In contrast, in the InAn condition, *active* responses were respectively 48% after active primes and 27% after passive primes.

Proportion of passives

This paragraph analyzes the proportion of passive responses both in the Strict and in the Lax scoring. As we have seen, passive primes triggered more passive responses than active responses. This can be observed with *Strict passives*, where 13% passive productions followed active primes, whereas 32% passive productions followed passive primes. The priming effect in *Lax Passives* is even larger, with 23% of *Lax passives* after active primes and 43% after passive primes.

Moreover, table 11 presents a comparison between the most frequent auxiliary used in Italian to construct the passive form of a verb: *essere* and *venire* (see 2.1 for the distinction between the two auxiliaries). Passive sentences containing the auxiliary *essere* were preferred over passive sentences with the auxiliary *venire*. While passive responses containing *essere* were 16% after active primes and 33% after passive primes, passive productions with *venire* were lower, 7% after active primes and 10% after passive primes.

Prime	**Target description**			
	Strict Passive	Lax Passive	*Essere* Aux	*Venire* Aux
Active	0.13 (0.34)	0.23 (0.43)	0.16 (0.37)	0.07 (0.26)
Passive	0.32 (0.47)	0.43 (0.50)	0.33 (0.47)	0.10 (0.30)

Table 11. Mean proportion and (S.D.) of passive responses (from Strict and Lax scoring)

Turning to the distinction between the two animacy conditions analyzed in this study, InAn and InIn condition, the percentage of passive responses is slightly larger in the InAn condition compared to the InIn condition. Priming of *Strict passives* following passive primes was 33% in the InAn condition vs. 31% in the InIn condition. A bit larger was the percentage of *Lax passives*: 47% in the InAn condition vs. 39% in the InIn condition (see Table 12).

In addition, also priming of passives containing the auxiliary *essere* was larger in the InAn condition than in the InIn condition (37% vs 27%). The same is not true for *venire* passives, which displayed the inverse pattern, which, again, was not particularly significant (9% vs. 12%).

The lack of significant distinctions between the two animacy conditions may be due to different reasons, such as the limited sample of participants or the need for a more counterbalanced animacy manipulation.

Prime	**Animacy**	**Target description**			
		Strict Passive	Lax Passive	*Essere* Aux	*Venire* Aux
Active	InAn	0.11 (0.31)	0.25 (0.43)	0.15 (0.36)	0.09 (0.29)
	InIn	0.15 (0.36)	0.23 (0.42)	0.17 (0.37)	0.06 (0.23)
Passive	InAn	0.33 (0.47)	0.47 (0.50)	0.37 (0.48)	0.09 (0.28)
	InIn	0.31 (0.46)	0.39 (0.49)	0.27 (0.44)	0.12 (0.32)

Table 12. Mean proportion and (S.D.) of passive responses in the different animacy conditions (from Strict and Lax scoring)

Statistical inference: t-test

To further investigate the significance of the results, it was decided to run a statistical test, a *t-test*. Two means were compared: the proportion of passive responses after having received active primes and the proportion of passive responses after having received passive primes. The test was conducted through the

Excel data-analysis tools. The aim is to verify if the exposure to English passive sentences primed the production of passive sentences in Italian.

Test t: Paired two Sample for Means

	Active prime	*Passive prime*
Mean	1	2,65
Variance	0,842105263	2,87105263
Observation	20	20
Pearson Correlation	0,406184996	
Hypothesized Mean Difference	0	
Df	19	
Stat t	-4,71428571	
P(T<=t) one-tail	7,54882E-05	
t Critical one-tail	1,729132812	
P(T<=t) two-tail	0,000150976	
t Critical two-tail	2,093024054	

Table 13. t-test: Mean proportion of passives after active primes vs. after passive primes

Table 13 shows that the *p-value* obtained from a two-tailed *t-test* is *p=0,0001*, a value that allows to reject the null-hypothesis. Being the difference between the two means significant, it can be safely stated that more passive structures are produced after passive primes rather than after active primes. Therefore, exposure to a L2 structure elicits the production of the correspondent L1 structure.

To be sure that the difference between the two animacy conditions was not significant, another two-tailed t-test was conducted. It investigated whether there is any animacy effect on syntactic priming, and it did so by comparing two means: passives produced after primes with inanimate agent and animate patient (InAn) and passives produced after primes with inanimate agent and patient (InIn).

Test t: Paired two Sample for Means

	InAn	*InIn*
Media	1,85	1,8
Varianza	2,344736842	2,58947368
Osservazioni	20	20
Correlazione di Pearson	0,008543849	
Differenza ipotizzata per le medie	0	
gdl	19	
Stat t	0,101096729	
P(T<=t) una coda	0,460266451	
t critico una coda	1,729132812	
P(T<=t) due code	0,920532902	
t critico due code	2,093024054	

Table 14. t-test: Mean proportion of passives after InAn condition vs. InIn condition

In this second statistical analysis, the *p-value* (*p=0,9*) is not significant. Therefore, the difference between passive responses after the two animacy conditions is not substantial (see Table 14).

Comparison with Norming results

In paragraph 4.2.5, I analyzed the baseline preference of transitive responses of Italian speakers both in their native language and in English. From the analysis of *Strict passive* and *Lax passive* descriptions, a large number of passive responses is used for describing some items in particular (see Table 6 and Table 7). A parallel situation is found in the results of the experiment, where, thanks to the priming effect, the percentage of passive structures is considerably higher than in the Norming Phase (see Table 15). Regardless of this, it can be noticed that items like *news shock man* and *lightning strike man* elicit a greater production of passives, especially *Lax passive* responses (63% and 65% each). It is interesting to note that an item like *lightning strike man* is often produced as a truncated passive in Italian in the norming phase. An almost parallel situation is found in the priming: even after having received a prime sentence, where both agent and patient are expressed, participants produced truncated passives in describing this picture (50%). According to Bock (1986), we cannot be sure that truncated passives are produced as the results of a proper syntactic priming or of a verb bias. For the mentioned

reason, this aspect should be taken into consideration in the construction of experimental items in future research, namely it is better to exclude items that are likely to appear without agent expressed by the prepositional phrase.

The preference toward passive constructions is probably due to a verb bias, that is a given verb is more likely to occur in passive constructions than in active constructions, also in spontaneous language. Alternatively, it may be the type of the event depicted in the picture that elicits the production of a passive structure.

From the comparison between baseline productions and priming productions, it becomes clear that the already mentioned item *rope trip boy* is not an ideal item, especially in Italian, where it is an intransitive verb, so target structure cannot be parallel to the prime structure in English.

Target Picture	**Type of scoring**	
	Strict Passive	**Lax Passive**
alarm awake man.bmp	0.30 (0.47)	0.50 (0.51)
ball hit boy.bmp	0.25 (0.44)	0.35 (0.49)
crayon color star.bmp	0.20 (0.41)	0.40 (0.50)
feather tickle girl.bmp	0.06 (0.23)	0.11 (0.32)
hammer crack egg.bmp	0.35 (0.49)	0.40 (0.50)
hose spray firefighter.bmp	0.15 (0.37)	0.30 (0.47)
knife peel apple.bmp	0.20 (0.41)	0.30 (0.47)
knife slice lemon.bmp	0.21 (0.42)	0.21 (0.42)
lightning strike man.bmp	0.20 (0.41)	0.65 (0.49)
news shock man.bmp	0.58 (0.50)	0.63 (0.50)
police follow car.bmp	0.20 (0.41)	0.20 (0.41)
rock break window.bmp	0.35 (0.49)	0.50 (0.51)
rope tie man.bmp	0.35 (0.49)	0.35 (0.49)
rope trip boy.bmp	0 (0)	0.10 (0.30)
truck tow car.bmp	0.30 (0.47)	0.30 (0.47)
wrecking ball smash building.bmp	0 (0)	0.11 (0.32)

Table 15. Mean proportion and (S.D.) of passive productions by item

4.4 Discussion

The experiment finds syntactic priming of the passive structure across languages in L2 speakers. In fact, they show a strong tendency to produce active sentences after active primes and passive sentences after passive primes. This finding is at odds with Sfriso (2020), in which cross-linguistic priming experiment with dative sentences no priming of DO sentences is found (see Table 14). In fact, while Italian shares PD structure with English, there is no equivalent structure to the English DO (Giusti & Lovino, 2016). However, few dative sentences with a marked linear order (e.g. *La donna offre all'uomo l'ombrello*) were produced, but it is unclear if this construction is under the influence of DO primes.

	Participants' productions				
Prime	NP NP (DO)	NP PP (PD)	Other Transitive	PP NP (Marked Dative)	Ungrammatical
DO	0 (0)	0.9 (0.30)	0.06 (0.23)	0.02 (0.16)	0.02 (0.13)
PD	0 (0)	0.89 (0.31)	0.08 (0.28)	0.01 (0.09)	0.2 (0.13)

Table 16. Mean proportion and (S.D.) of responses after dative primes in Sfriso (2020)

On the other hand, the results of the present experiment display an increase in the mean percentage of Italian passives produced after English passive of the 19%. The two-tailed *t-test* that was additionally conducted proved that exposure to a L2 structure triggers the production of an equivalent structure in the L1.

If we compare the baseline found in the norming phase (see Ch. 4.2.5) to the strong elicitation of passive sentences due to priming, the latter clearly appears to be a fruitful technique for triggering passive productions in L2 speakers. Despite being a rarely heard and used construction both in Italian and English, these results show that passives can be in fact elicited. Moreover, the priming of passives occurs in absence of repeated lexical items as primes and targets did not share the same verb. This phenomenon not only proves that presence of a generalized, abstract

representation of the passive, but also that the mentioned representation is shared between their two languages, namely Italian and English. In addition, the abstractness of the priming is also endorsed by other features of the experiment, like the use of full lexical NPs as arguments and the strict criteria for the scoring of passives.

In addition, the comparison with the baseline allows the identification of not ideal items, such as *rope trip boy*, that mainly triggers the production of *other* responses, as discussed in Ch. 4.3.2. Furthermore, some items, including the only one containing a non-actional verb, elicited the production of passive sentences both in the image norming phase and in the cross-linguistic structural priming. This phenomenon may occur because of a verb bias or the type of event depicted in the picture which triggers the production of a passive structure. The preference for passives is most likely due to a verb bias, considering that verbs like *strike* and *shock* and their Italian translation equivalents (*fulminare* and *scioccare*) are easily encountered in their passive form in spontaneous speech.

The other hypothesis tested through the experiment was the animacy effects on sentence structure, and whether the magnitude of passive priming was stronger after a passive prime containing animate patient and inanimate agent in L2 speakers. Even if the analysis of the proportions and S.D. showed a slight preference for passive sentences in the InAn condition, the statistical analysis, a two-tailed *t-test*, that was run to verify animacy effects on syntactic structure suggested that the difference between the two animacy conditions (InAn vs. InIn) was not significant.

This result might be due to presence of a restricted number of transitive sentences in the experiment, and especially of active and passive sentences in which the animacy trait was manipulated (there were only 8 actives and 8 passives, and for each sentence structure, half of the trials were in the InAn condition and the other half in the InIn condition). For this reason it is impossible to conclude that animacy effects, in this case, affect the preference of syntactic structure over another or the syntactic priming.

In conclusion, priming of a structure happens in speakers that possess an abstract representation for that structure (Pickering & Branigan, 1998), thus it can be assumed that L2 speakers have a syntactic representation of the passive.

Furthermore, this representation is shared between their L1 and L2, since cross-linguistic syntactic priming is possible only if speakers share the representation of a given structure between languages. Therefore, the study here proposed supports the instances of the shared-syntax model for bilingual language use developed by Hartsuiker et al. (2004).

The participants who took part in the study have an intermediate to high proficiency in English, and, in line with Bernolet et al. (2013), they show a high integration of syntactic structures in their languages.

Chapter 5: Conclusion

The present thesis aimed to investigate late bilinguals' syntactic representation of the passive structure, and it did so through a cross-linguistic structural priming paradigm. The experiment was conducted on adult Italian-English late bilinguals with intermediate to high English proficiency. Participants received a transitive prime in their L2 (English) and were asked to describe a picture in their L1 (Italian). Results displayed a higher proportion of passive productions following a passive prime than an active prime. This finding demonstrates that cross-linguistic syntactic priming of the passive structure occurs in Italian-English late bilinguals, supporting the assumption that their syntactic representation of the passive construction is shared in their two languages. Such results are in line with Hartsuiker et al. (2004)'s shared-syntax model, according to which all similar structures are shared between the speaker's languages, and they are also linked to all lemmas they can be combined with.

Additionally, I investigated the possibility that the magnitude of the priming effect was boosted by animacy traits. Syntactic priming is recognized to be independent of semantics in most literature on monolingual adults, but some studies (Buckle et al., 2017) found that children tend to be affected by animacy in their syntactic priming, while adults do not. There is evidence coming from picture description tasks that proficient L2 speakers display animacy effects on sentence structure choice (Solak, 2007), therefore I tested if this might occur even in priming.

Despite finding a slightly larger priming of passives after passive primes containing animate patient and inanimate agent than after passive primes containing inanimate agent and patient, the statistical analysis proved that the difference is not significant. Therefore, I conclude that there is no evidence of animacy effects on syntactic priming in late bilinguals. Conversely, if the production of passive sentences would have been more prominent in the InAn condition, it would be possible to argue that the results found by Solak (2007) are extended to priming tasks. Future work on this topic may clarify the issue of animacy effects on sentence structure. A follow-up study to further expand the research in these topics would include a larger sample of participants, and it would focus exclusively on transitive structures, in order to have a larger number of sentences in the two different animacy conditions. A further experiment should include a fine-grained design which looks more into animacy. In fact, in the present experiment, animacy was controlled by having half of the active sentences with an inanimate agent and an animate patient, and the other half with an inanimate agent and an inanimate patient. The same configuration applied to the passive sentences. However, the transitive sentences were only 16, 8 of them were active sentences and 8 were passive sentences. These numbers may not have been sufficient to provide significant results. Furthermore, it might be mostly interesting to compare the production of passive sentences under different animacy conditions of both bilingual children and bilingual adults to examine whether there are significant differences in their behavior.

In addition, in the present experiment participants' L2 proficiency was not an object of analysis, as the sample was not a high degree of variation: most of the subjects have an intermediate to high English proficiency level. A more varied sample may allow researchers to inspect different L2 proficiency levels in order to assess the different levels of integration L2 speakers undergo in their representation of the passive structure.

Appendix A

1. List of experimental items:

Transitive items (active):

1. The boat is pulling the woman.
2. The stove is cooking the pasta.
3. The net is trapping the girl.
4. The water is filling the glass.
5. The truck is dumping the dirt.
6. The pumpkin is scaring the man.
7. The blanket is hiding the baby.
8. The spoon is stirring the milk.

Transitive items (passive):

1. The ball is bounced by the racket.
2. The girl is dropped by the plane.
3. The presents are carried by the wagon.
4. The baby is rocked by the cradle.
5. The woman is pricked by the needle.
6. The chair is covered by the blanket.
7. The stripe is painted by the brush.
8. The woman is burned by the fire.

Dative items (DO):

1. The teacher is showing the student a book.
2. The man is selling the other man a car.
3. The girl is throwing the boy a box.
4. The man is handing the other man a ticket.
5. The woman is giving the boy a cookie.
6. The man is giving the girl a pencil.

Dative items (PD):

1. The artist is showing a painting to the people.
2. The man is throwing a bone to the dog.
3. The woman is selling a ring to the man.
4. The waiter is offering tea to the woman.
5. The man is offering a handkerchief to the woman.
6. The woman is handing the salt to the man.

Filler items:

1. The boy is playing with the train.
2. The shoes are on the chair.
3. There is a vase on the table.
4. The girl is brushing her hair.
5. The briefcase is on the couch.
6. Two men are arguing.
7. The man is climbing.
8. It's snowing.
9. The cat and the dog are under the table.
10. There is an umbrella on the table.
11. A woman is mowing the lawn.
12. The car is inside the garage.
13. There is a girl with big shoes.
14. The kites are flying.
15. The cellist is playing.
16. The girl sits on the skateboard.
17. The man is hiking.
18. The woman is sailing.
19. The plane is landing.
20. The men are shaking hands.
21. The cabinet is above the stove.
22. The girl is asleep on the floor.
23. The ship is sailing on the ocean.
24. The people are at the museum.
25. The boat is sailing under the bridge.
26. The man is talking on the phone.

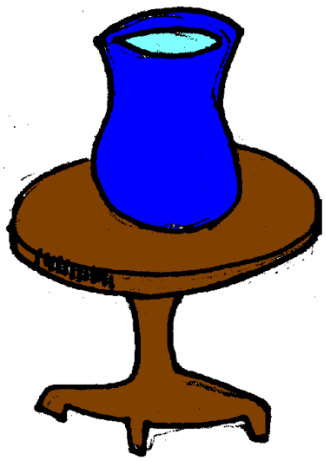
27. Trees are bending in the wind.
28. The helicopter is landing.

2. List of pictures:

Filler pictures:

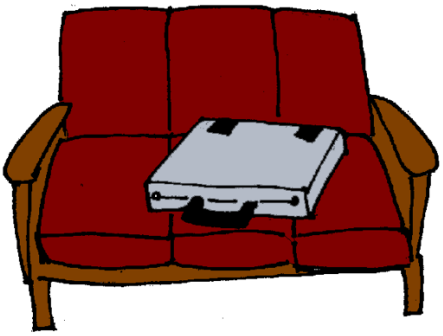
1. boy play w train.bmp

2. shoes on chair.bmp

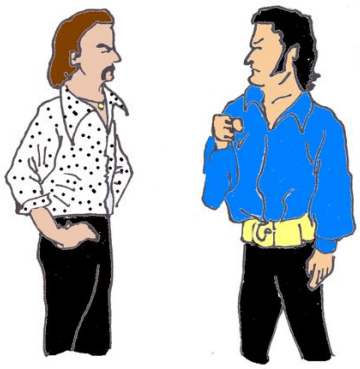


3. vase on table.bmp

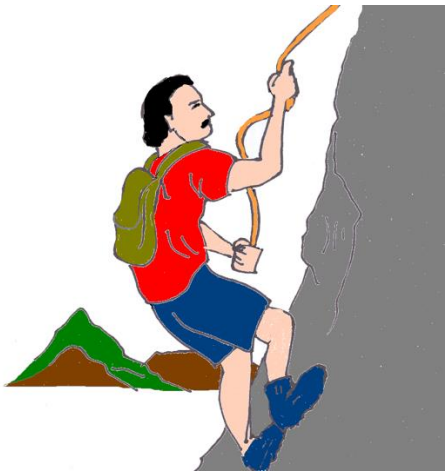
4. girl brush hair.bmp



5. briefcase on couch.bmp

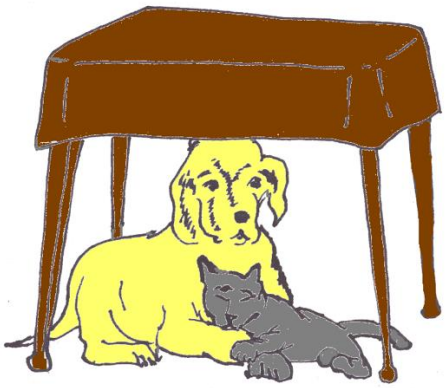


6. men arguing.bmp



7. man climb.bmp

8. snowing.bmp

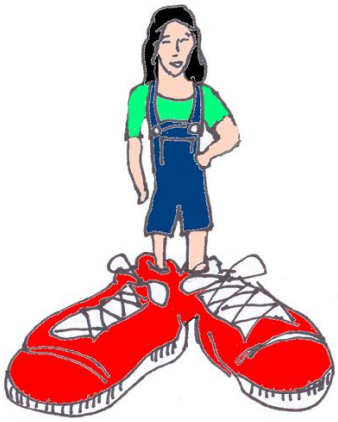


9. cat and dog under table.bmp

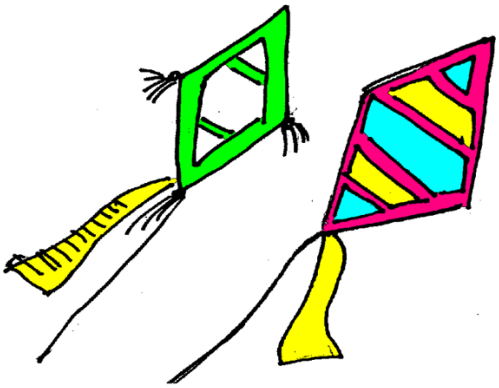
10. umbrella on table.bmp

11. woman mow lawn.bmp

12. car inside garage.bmp



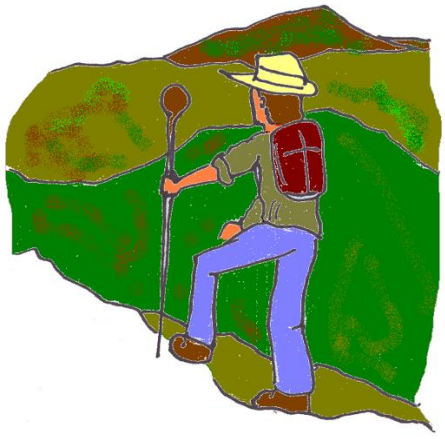
13. girl w big shoes.bmp



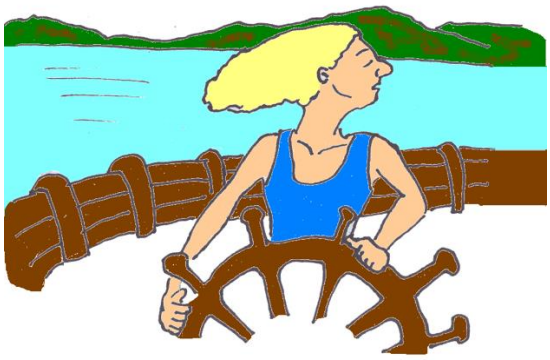
14. kites flying.bmp

15. cellist playing.bmp

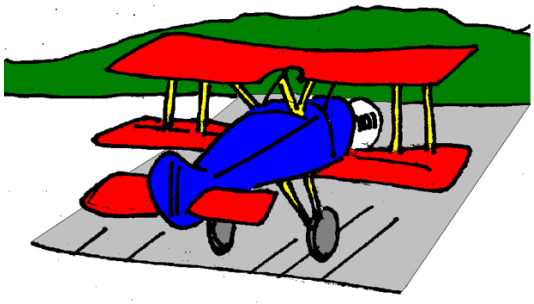
16. girl on skateboard.bmp



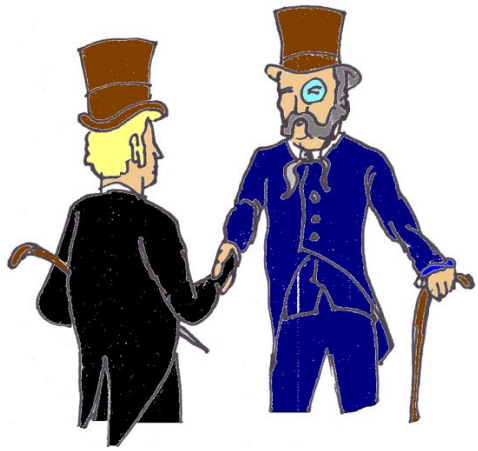
17. man hiking.bmp



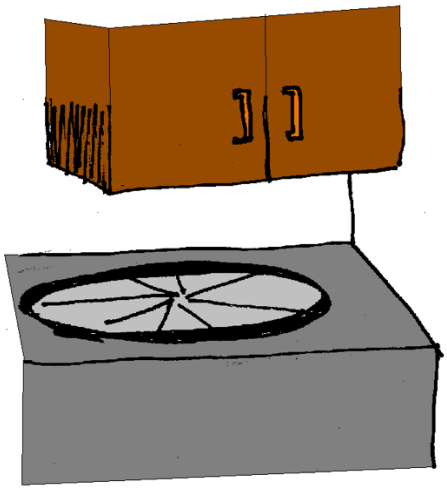
18. woman sailing.bmp



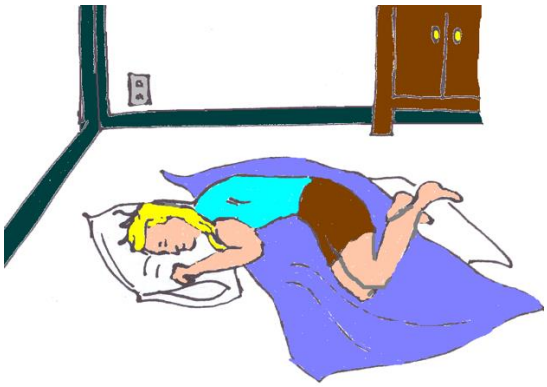
19. plane landing.bmp



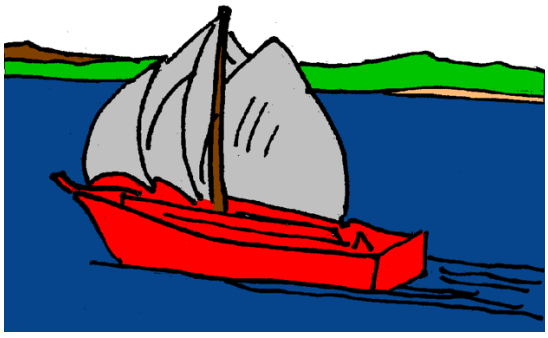
20. men shake hands.bmp



21. cabinet above stove.bmp

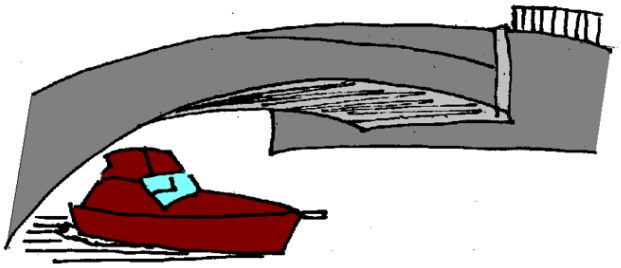


22. girl asleep on floor.bmp



23. ship sailing.bmp

24. people at museum.bmp



25. boat sail under bridge.bmp

26. man on phone.bmp

27. trees in wind.bmp

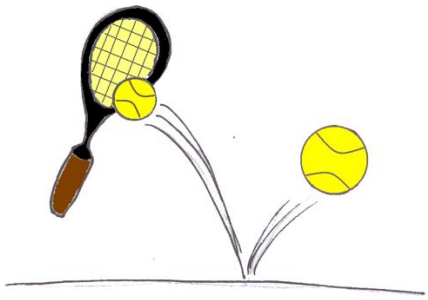
28. helicopter landing.bmp

Prime pictures:

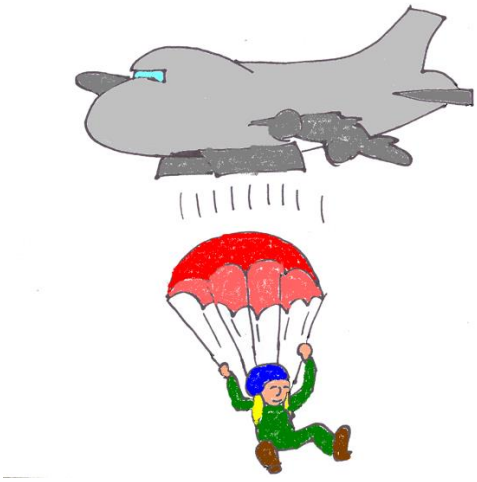
1. boat pull woman.bmp

2. show book.bmp

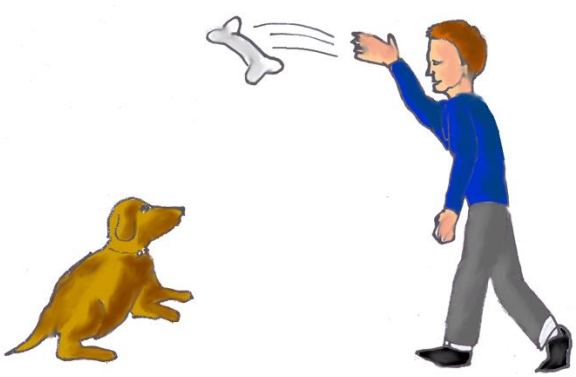
3. racket bounce ball.bmp



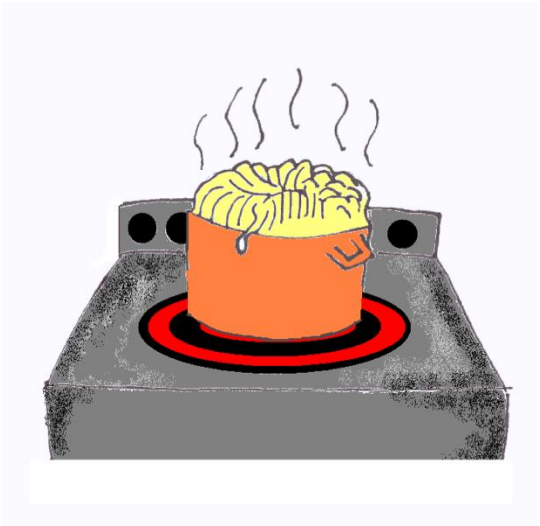
4. show painting.bmp



5. plane drop girl.bmp



6. throw bone.bmp



7. stove cook pasta.bmp

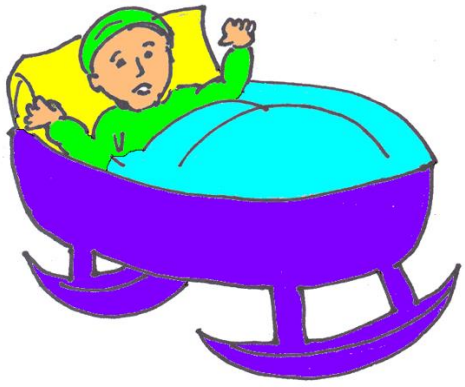
8. sell car.bmp

9. wagon carry presents.bmp

10. sell ring.bmp

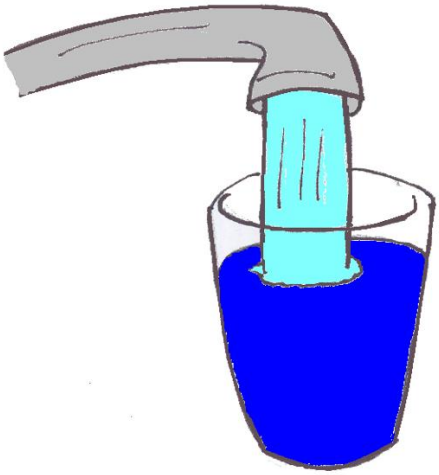
11. net trap girl.bmp

12. throw box.bmp



13. cradle rock baby.bmp

14. offer tea.bmp



15. water fill glass.bmp

16. hand ticket.bmp

17. truck dump dirt.bmp

18. offer tissue.bmp

19. needle prick woman.bmp

20. give cookie.bmp

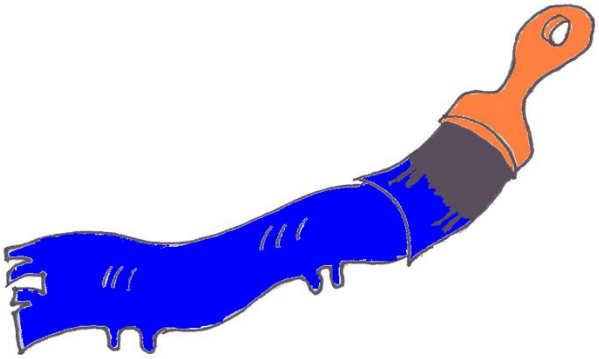
21. pumpkin scare man.bmp

22. give pencil.bmp

23. blanket cover chair.bmp

24. hand salt.bmp

25. blanket hide baby.bmp



26. brush paint stripe.bmp

27. spoon stir milk.bmp

28. fire burn woman.bmp

Target pictures (with baseline passive production and after priming production):

1. rope trip boy.bmp *(baseline in Ita: 0 (0), baseline in Eng: 0 (0), priming: 0 (0))*

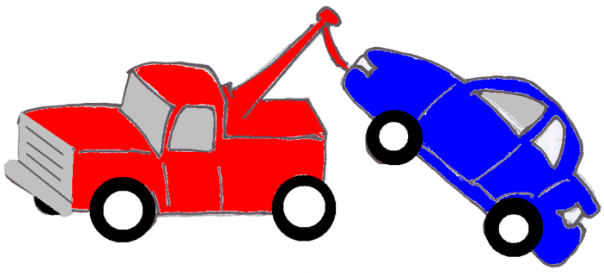
2. show dress.bmp

3. wrecking ball smash building.bmp *(baseline in Ita: 0 (0), baseline in Eng: 0 (0), priming: 0 (0))*

4. hand hammer.bmp

5. alarm awake man.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0.10 (0.32), priming: 0.30 (0.47))*

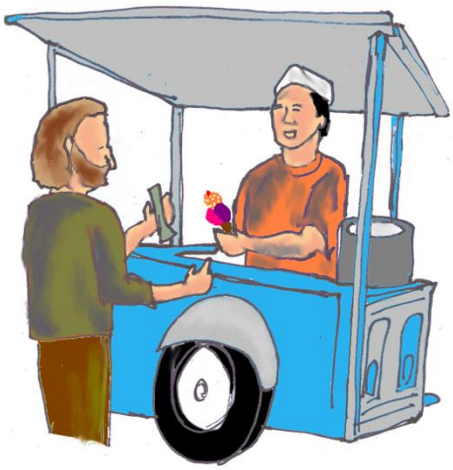
6. throw ball.bmp



7. truck tow car.bmp *(baseline in Ita: 0.20 (0.42), baseline in Eng: 0 (0), priming: 0.30 (0.47))*

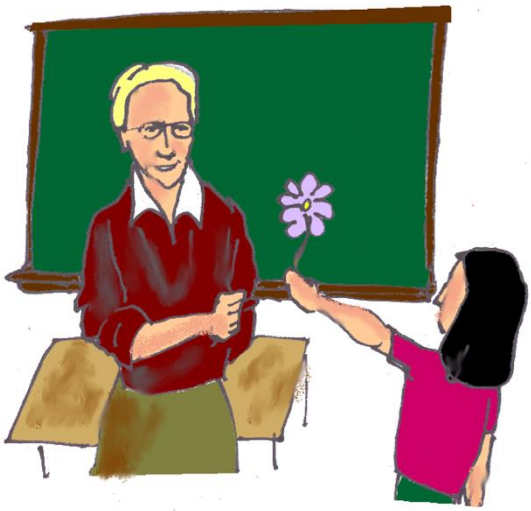
8. offer umbrella.bmp

9. knife slice lemon.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0 (0), priming: 0.21 (0.42))*

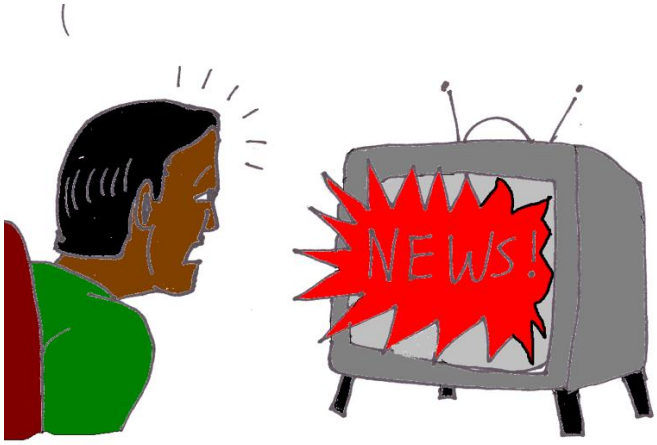


10. sell icecream.bmp

11. hose spray firefighter.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0.11 (0.33), priming: 0.15 (0.37))*

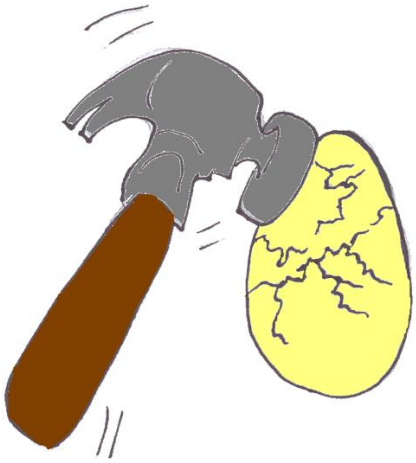


12. give flower.bmp



13. news shock man.bmp *(baseline in Ita: 0.50 (0.53), baseline in Eng: 0.40 (0.52), priming: 0.58 (0.50))*

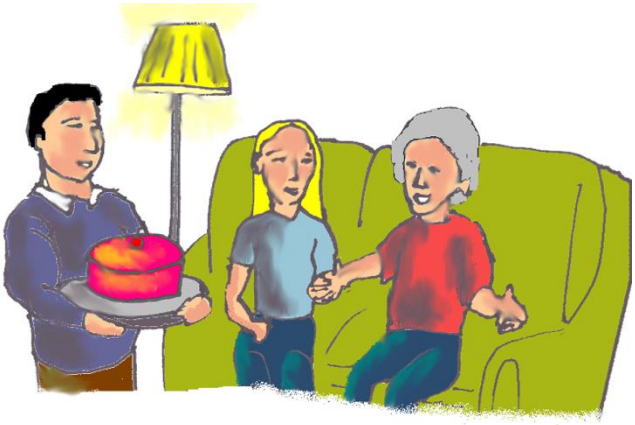
14. throw keys.bmp



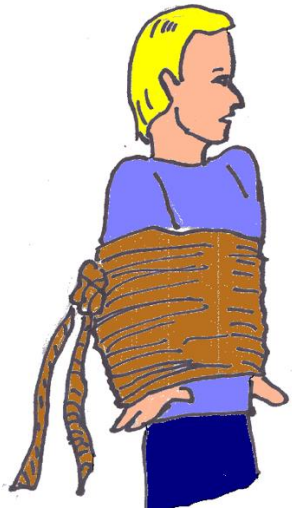
15. hammer crack egg.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0.10 (0.32), priming: 0.35 (0.49))*

16. hand passport.bmp

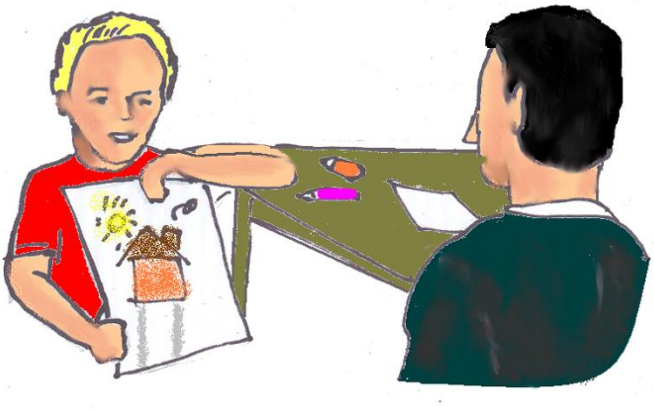
17. crayon color star.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0 (0), priming: 0.20 (0.41))*



18. offer cake.bmp

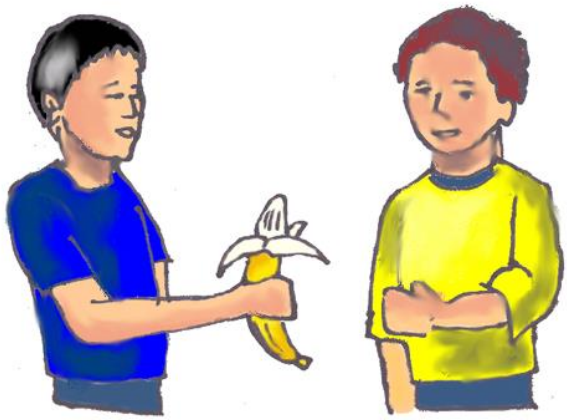


19. rope tie man.bmp *(baseline in Ita: 0.20 (0.42), baseline in Eng: 0 (0), priming: 0.35 (0.49))*

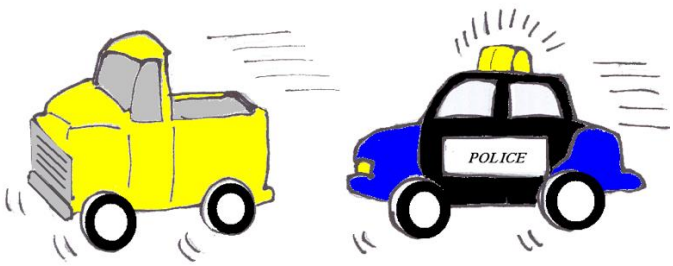


20. show drawing.bmp

21. ball hit boy.bmp *(baseline in Ita: 0.20 (0.42), baseline in Eng: 0.50 (0.53), priming: 0.25 (0.44))*



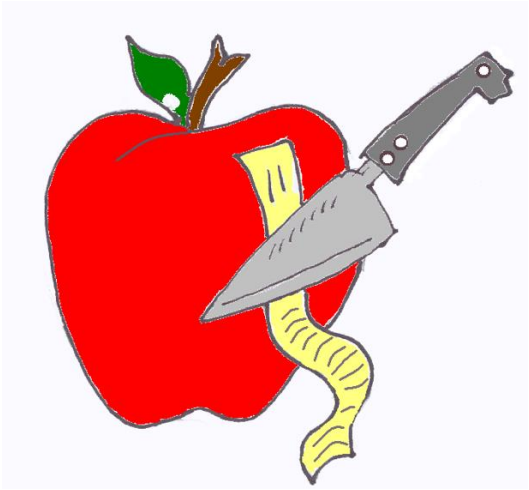
22. give banana.bmp



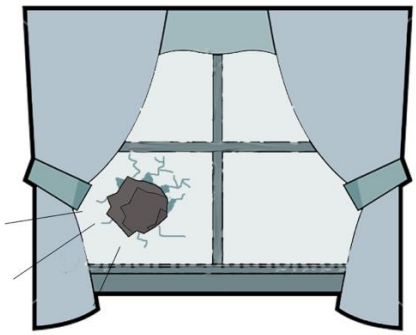
23. police follow car.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0.20 (0.42), priming: 0.20 (0.41))*

24. sell baguette.bmp

25. feather tickle girl.bmp *(baseline in Ita: 0.20 (0.42), baseline in Eng: 0.20 (0.42), priming: 0.06 (0.23))*



26. knife peel apple.bmp *(baseline in Ita: 0.10 (0.32), baseline in Eng: 0 (0), priming: 0.20 (0.41))*



27. rock break window.bmp *(baseline in Ita: 0.30 (0.48), baseline in Eng: 0.10 (0.32), priming: 0.35 (0.49))*

28. lightning strike man.bmp *(baseline in Ita: 0.20 (0.42), baseline in Eng: 0.33 (0.5), priming: 0.20 (0.42))*

3. Experiment instructions and practice trial:

- Leggi ad alta voce le due frasi in inglese nelle prossime schermate. Vedrai poi un'immagine che devi descrivere con una frase in italiano. Usa il verbo (coniugato) indicato sotto l'immagine per comporre la frase. La procedura si ripeterà allo stesso modo per gli items successivi.

- Per i caratteri accentati usa l'apostrofo.

- Per scrivere la descrizione dell'immagine hai circa 30 secondi. Per passare alla schermata successiva puoi anche premere "freccia destra".

- Non è possibile cancellare quello che viene scritto. Se sbagli una parola, riscrivila corretta di seguito.

Premi "freccia destra" per vedere un esempio.

Esempio:

Dopo aver premuto "freccia destra", dovrai leggere ad alta voce la frase in inglese che apparirà sullo schermo.

The boy is eating a hotdog

Ora usa la tastiera del tuo computer per digitare la frase in italiano che può, secondo te, descrivere l'immagine. Ricorda di usare il verbo suggerito.

Premi "freccia a destra" per continuare.

Appendix B

1. Consent form for the Pilot experiment

La ricercatrice è autorizzata ad archiviare per la durata del progetto di ricerca tutti i dati personali (compresi quelli acquisiti preliminarmente e quelli raccolti tramite il questionario sul background linguistico e socio-demografico) in formato cartaceo e digitale.
La ricercatrice è autorizzata a conservare tutti i dati personali (compresi quelli acquisiti preliminarmente e quelli raccolti tramite il questionario sul *background* linguistico e socio-demografico) in formato cartaceo e digitale dopo la conclusione del progetto di ricerca.
La ricercatrice è autorizzata a condividere con altri/e ricercatori/trici per soli scopi scientifici tutti i dati personali (compresi quelli acquisiti preliminarmente e quelli raccolti tramite il questionario sul *background* linguistico e socio-demografico) in formato cartaceo e digitale dopo la conclusione del progetto di ricerca.

2. Modulo per l'espressione del consenso informato: Cross-linguistic investigation in L2 English learners:

Gentile partecipante,

Il presente studio è condotto da Giulia Sfriso e Micol Zanaga, laureande magistrali in Scienze del Linguaggio presso il Dipartimento di Studi Linguistici e Culturali Comparati dell'Università Ca' Foscari – Venezia sotto la supervisione della prof.ssa Giulia Bencini. Accettando questo modulo, esprime il suo consenso alla partecipazione allo studio e alle attività in esso incluse.

Lo studio è rivolto a soggetti maggiorenni che conoscono la lingua inglese. L'interesse principale è quello di indagare come la mente bilingue accede a determinate strutture linguistiche e come le processa.

Potremmo chiederle di compilare un breve questionario sul suo profilo linguistico, il background familiare e il percorso educativo.

La partecipazione a questo studio è volontaria e potrà decidere di abbandonare lo studio in qualsiasi momento senza alcun tipo di conseguenza negativa. Esprimendo il suo consenso,

autorizzerà i ricercatori a conservare in formato digitale e a trattare in maniera confidenziale per tutta la durata del progetto di ricerca i dati personali acquisiti. Al fine di tutelare la privacy, tutti i dati raccolti non saranno mai riconducibili alla sua persona, secondo quanto previsto da Codice etico e di comportamento dell'Università Ca' Foscari – Venezia e dalla normativa nazionale vigente. Potrà chiedere di modificare, ritirare o eliminare il consenso alla partecipazione allo studio e tutti i dati forniti in qualsiasi momento contattando il/la responsabile della raccolta dati. I risultati delle analisi dei dati in forma aggregata e anonima potranno essere pubblicati sotto forma di tesi, libri o articoli per riviste scientifiche.

Lo studio e i moduli che le viene chiesto di compilare hanno ricevuto l'approvazione della Commissione Etica di Ateneo in data 05.02.2020, verbale n. 1/2020 (per ulteriori informazioni: commissione.etica@unive.it).

Per qualsiasi domanda relativa alle procedure dello studio, ora o in futuro, può contattare:

- Supervisore della ricerca: Giulia Bencini; Email: giulia.bencini@unive.it

- Ricercatore/responsabile della raccolta dati: Giulia Sfriso; Telefono: 3483639430; Email: 858181@stud.unive.it

Micol Zanaga; Telefono: 3475560720; Email: 854712@stud.unive.it

- Eventuali altri recapiti: BemboLab; Telefono: 041/2345738 - 041/2345738; Email: bembolab@unive.it

Il/La sottoscritto/a dichiara di aver letto con attenzione e compreso le informazioni contenute nel presente documento. Dichiara di esprimere il proprio consenso a partecipare allo studio qui descritto e autorizzare i ricercatori a trattare, gestire e archiviare tutti i dati personali con le modalità sopracitate. Il consenso potrà essere modificato/revocato in qualsiasi momento.

INFORMATIVA RECLUTAMENTO POTENZIALI PARTECIPANTI

INFORMATIVA SUL TRATTAMENTO DEI DATI PERSONALI ai sensi dell'articolo 13 del Regolamento (UE) 2016/679

L'Università Ca' Foscari Venezia, nell'ambito delle proprie finalità istituzionali e in adempimento agli obblighi previsti dall'articolo 13 del Regolamento UE 2016/679 ("Regolamento"), le fornisce informazioni in merito al trattamento dei dati personali da lei conferiti con la compilazione del presente Google form.

1. TITOLARE DEL TRATTAMENTO

Il Titolare del trattamento è l'Università Ca' Foscari Venezia, con sede in Dorsoduro n. 3246, 30123 Venezia (VE), nella persona del Magnifico Rettore.

2. RESPONSABILE DELLA PROTEZIONE DEI DATI

L'Università ha nominato il "Responsabile della Protezione dei Dati", che può essere contattato scrivendo all'indirizzo di posta elettronica dpo@unive.it o al seguente indirizzo: Università Ca' Foscari Venezia, Responsabile della Protezione dei Dati, Dorsoduro n. 3246, 30123 Venezia (VE).

3. CATEGORIE DI DATI PERSONALI, FINALITA' E BASE GIURIDICA DEL TRATTAMENTO

Il trattamento in questione comporta il conferimento di suoi dati anagrafici (nome, cognome, sesso, anno di nascita, e le sue conoscenze linguistiche), del suo livello di istruzione e di un recapito al quale desidera essere contattato (indirizzo email). I predetti dati verranno utilizzati al fine di contattarla per invitarla a partecipare ai progetti di ricerca condotti sotto la supervisione di la Prof.ssa Giulia Bencini e la dottoranda Michaela M. Vann.

Le contatteremo tramite email per darle informazioni specifiche riguardo i progetti di ricerca a cui è invitato/a a partecipare. Le ricordiamo che lei potrà in ogni momento e senza subire pregiudizio chiedere di non essere più contattato.

La base giuridica di tale trattamento è rappresentata dall'art. 6.1.e) del Regolamento ("esecuzione di un compito d'interesse pubblico"). Lei potrà opporsi al predetto trattamento in qualsiasi momento, scrivendo al Responsabile della Protezione dei Dati Personali ai recapiti sopraindicati. L'Ateneo si asterrà dal trattare ulteriormente i suoi dati personali salvo sussistano motivi cogenti che legittimino la prosecuzione del trattamento.

Il trattamento dei dati personali è improntato ai principi di correttezza, liceità e trasparenza e di tutela della riservatezza e dei diritti dell'interessato, nonché agli ulteriori principi previsti dall'art. 5 del Regolamento.

4. MODALITA' DI TRATTAMENTO

Il trattamento dei dati personali verrà effettuato da dipendenti e collaboratori dell'Ateneo, che agiscono sulla base di specifiche istruzioni fornite in ordine alle finalità e modalità del trattamento medesimo (nel rispetto di quanto previsto dall'art. 29 del Regolamento e dall'art.2-*quaterdecies* del D.lgs. 196/2003), con l'utilizzo di procedure anche informatizzate, adottando misure tecniche e organizzative adeguate a proteggerli da accessi non autorizzati o illeciti, dalla distruzione, dalla perdita d'integrità e riservatezza, anche accidentali.

5. TEMPI DI CONSERVAZIONE

I dati verranno conservati per tre anni.

6. DESTINATARI E CATEGORIE DI DESTINATARI DEI DATI PERSONALI

Per le finalità sopra riportate, oltre ai dipendenti e collaboratori dell'Ateneo specificamente autorizzati, potranno trattare i dati personali anche i soggetti che svolgono attività in outsourcing per conto dell'Università nella loro qualità di Responsabili del trattamento. La lista aggiornata dei Responsabili del trattamento è disponibile alla pagina: https://www.unive.it/pag/34666/.

7. CONFERIMENTO DEI DATI

Il conferimento dei dati personali è necessario per poterla contattare ed invitare a prendere parte agli studi condotti sotto la supervisione della Prof.ssa Giulia Bencini e la dottoranda Michaela M. Vann. Pertanto, il mancato conferimento dei dati le precluderà la possibilità di essere invitato a partecipare ai predetti studi.

8. DIRITTI DEGLI INTERESSATI E MODALITA' DI ESERCIZIO

In qualità d'interessato, ha diritto di ottenere dall'Ateneo, nei casi previsti dal Regolamento, l'accesso ai dati personali, la rettifica, l'integrazione, la cancellazione degli stessi o la limitazione del trattamento ovvero di opporsi al trattamento medesimo (artt. 15 e ss. del

Regolamento). La richiesta potrà essere presentata, senza alcuna formalità, contattando direttamente il Responsabile della Protezione dei Dati all'indirizzo dpo@unive.it ovvero inviando una comunicazione al seguente recapito: Università Ca' Foscari Venezia - Responsabile della Protezione dei Dati, Dorsoduro 3246, 30123 Venezia. In alternativa, è possibile contattare il Titolare del trattamento, inviando una PEC a protocollo@pec.unive.it.

Gli interessati, che ritengono che il trattamento dei dati personali a loro riferiti avvenga in violazione di quanto previsto dal Regolamento, hanno, inoltre, il diritto di proporre reclamo all'Autorità Garante per la Protezione dei Dati Personali, come previsto dall'art. 77 del Regolamento stesso, o di adire le opportune sedi giudiziarie (art. 79 del Regolamento).

Testo aggiornato al: 29/07/2020 (orig.: 16/07/2020)

3. Recruitment Post:

Ciao!
Siete interessati/e a sapere come funziona la mente bilingue?
Stiamo conducendo un esperimento cross-linguistico per il nostro progetto di laurea magistrale e cerchiamo partecipanti. Tutti i livelli di inglese sono benvenuti. Lo studio richiede circa 30 minuti.
Sareste così gentili da darci una mano?
Se volete partecipare, compilate il box che trovate al seguente link: https://bembolab.fra1.qualtrics.com/jfe/form/SV_bDT00qzax2ydDY9.
Grazie!

Appendix C

Language Profile Questionnaire

We would like to ask you to help us by answering the following questions concerning your language history, use, attitudes, and proficiency. This survey was created to better understand the profiles of English learners. The survey consists of 29 questions and will take about 15 minutes to complete.

Note: this questionnaire is best completed on a computer. It is possible from a mobile phone, however it may lead to formatting issues, depending on your device.

This is not a test, so there are no right or wrong answers. Please answer every question to the best of your ability. You will have an opportunity to clarify and explain any of your responses regarding questions that were unclear or difficult to answer.

I. Biographical Information

Name _____ Last Name _____

Unique ID number _____

Age_____ Male / Female / Other

Country where you currently _____

Country of origin: _____

If your country of origin is different than your country of residence, when did you move to the country where you live now? _____

Highest level of formal education (your current or most recent education level, even if you have not finished the degree).

- Middle School
- High School
- College (BA/BS/Laurea Triennale)
- Graduate school (MA/MS/Laurea Magistrale)

- Graduate school (PhD/MD/JD)
- Other

If you have a degree or specialization or are currently enrolled in degree or specialization program, please list what it is in here (ex. Economics, Literature and Languages, etc.) _____

II. Language history *In this section, please answer these questions about your language history.*

1. Please list all the languages you know in order of dominance. If you are equally dominant in two languages, please pick an order for them. _____

2. At what age did you **start learning** English?

Slide to indicate your age 0 7 13 20 27 33 40

3. At what age did you **start feeling comfortable** using English?

Slide to indicate your age 0 4 8 12 16 20 24 28 32 36 40

4. How many years of **English language classes** have you had (preschool through university)?

Slide to indicate the number of years 0 3 6 9 12 15 18 21 24 27 30

5. How many years of **classes (science, history, math, etc.)** have you had in English (preschool through university)?

Slide to indicate the number of years 0 3 6 9 12 15 18 21 24 27 30

6. Please indicate the age at which you **started using English** in each of the following environments.

At home	With friends	At school	At work	Language learning software	Online games	Social media

7. If you have lived or travelled in countries where you used English for **three or more months**, please indicate the name of the country, the length of your stay, and how often you used English for each country, using the following scale.

Never	Rarely	Sometimes	Regularly	Often	Usually	Always
1	2	3	4	5	6	7

*You may have been to the country on multiple occasions, each for a different length of time. Add all the trips together.
*Please indicate months or years

8. How much time have you spent in a **family or home environment** where English was spoken?

*If this doesn't apply to you indicate 0.

Months _____

Years _____

9. How much time have you spent in a **work or school environment** where English is spoken?

*If this doesn't apply to you indicate 0.

Months _____

Years _____

III. Language use *In this section, we would like you to answer some questions about your language use.*

10. Please estimate how many hours you are **exposed to English** in an average week**.**

Slide to indicate how many hours you are exposed to English 0 24 48 72 96 120 144 168

11. Please estimate how many hours you **use English** in an average week**.**

Slide to indicate how many hours you use English 0 24 48 72 96 120 144 168

12. How often do you use English to speak to the following groups of people? Please enter the number in the table according to the scale below.

*Include significant others in this category if you did not include them as family members (e.g., married partners).
**Include anyone in the work environment in this category (e.g., if you are a teacher, include students as coworkers).

Never	Rarely	Sometimes	Regularly	Often	Usually	Always
1	2	3	4	5	6	7

Family members	
Friends*	
Classmates and/or Coworkers**	
People on the Internet	

13. How often do you use English for the following activities? Please enter the number in the table according to the scale below.

Never	Rarely	Sometimes	Regularly	Often	Usually	Always
1	2	3	4	5	6	7

*This includes counting, calculating tips, etc.
**This includes telephone numbers, ID numbers, etc.

Thinking Talking to yourself Dreaming Arithmetic* Remembering numbers**	

14. How often do you use English for the following activities? Please enter the number in the table according to the scale below.

Never	Rarely	Sometimes	Regularly	Often	Usually	Always
1	2	3	4	5	6	7

Expressing pain Expressing frustration/cursing Showing affection to others Talking to pet/animals	

15. How often are you engaged in the following activities in English?

Never	Rarely	Sometimes	Regularly	Often	Usually	Always
1	2	3	4	5	6	7

Entertainment (music, T.V., podcast, etc.) Writing for school/work Reading for school/work Reading for pleasure Writing emails	

IV. Language proficiency *In this section, we would like you to rate your language proficiency.*

16. How well do you **speak English**? *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

17. How well do you **understand English**? *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

18. How well do you **read English**? *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

19. How well do you **write** in English*? 1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

20. Using the CEFR, what would you **self-rate your level of English,** whether or not you have a certification?

A1 A2 B1 B2 C1 C2

21. If you have taken any **standardized language proficiency tests** (e.g., TOEFL, IELTS, PET, FCE, CAE), please write the **name of each test**, the **date it was taken**, and the **score** you received. If you do not remember the exact score, then indicate an "Approximate score" instead. If you have not taken any proficiency test, write “none”. _____

V. Language attitudes *In this section, we would like you to respond to statements about language attitudes.*

22. I feel like myself when I speak English. *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

23. I identify with an English-speaking culture. *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

24. It is important to me to use (or eventually use) English like a native speaker. *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

25. I want others to think I am a native speaker of English. *1 = not well at all 7 = extremely well*

0 1 2 3 4 5 6 7

26. Please choose the language you feel the **most comfortable** in when **listening, speaking, reading, and writing** in each of the contexts listed below.

	Listening	Speaking	Reading	Writing
At home With friends At school At work On the Internet On social media				

27. Please rate your **language learning skill**. In other words, how good do you feel you are at learning new languages, relative to your friends or other people you know?

Extremely bad	Moderately bad	Slightly bad	Neither good or bad	Slightly good	Moderately good	Extremely good
1	2	3	4	5	6	7

28. Please comment below to indicate any additional answers to any of the questions above that you feel better describe your language background or usage. _____

29. Please comment below to provide any other information about your language use. _____

Appendix D

Participants' Responses

Subject	List	Prime Sentence	Target Picture	Subject's Response
1008	1A	The boat is pulling the woman	rope trip boy.bmp	il ragazzo sta inciampando sulla corda
1008	1A	The ball is bounced by the racket	wrecking ball smash building.bmp	la gru sta distruggendo l'edificio
1008	1A	The girl is dropped by the plane	alarm awake man.bmp	il ragazzo bracketleft svegliato il ragazzo viene svegliato dalla sveglia
1008	1A	The stove is cooking the pasta	truck tow car.bmp	il carro attrezzi trasporta l'auto
1008	1A	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia il limone
1008	1A	The net is trapping the girl	hose spray firefighter.bmp	la pompa spruzza il pompiere
1008	1A	The baby is rocked by the cradle	news shock man.bmp	il ragazzo bracketleft scioccato dalle notizie il ragazzo bracketleft s il ragazzo e' scioccato dalle notizie
1008	1A	The water is filling the glass	hammer crack egg.bmp	il martello rompe l'uovo
1008	1A	The truck is dumping the dirt	crayon color star.bmp	il pennarello colora la stella
1008	1A	The woman is pricked by the needle	rope tie man.bmp	l'uomo bracketleft strett l'uomo e' stretto da una corda
1008	1A	The pumpkin is scaring the man	ball hit boy.bmp	il ragazzo e' centrato da una pallina
1008	1A	The chair is covered by the blanket	police follow car.bmp	la polizia insegue un sispetto sospetto la polis la polizia segie un sospe
1008	1A	The blanket is hiding the baby	feather tickle girl.bmp	la piuma solletica la ragazza
1008	1A	The stripe is painted by the brush	knife peel apple.bmp	il coletto coltello sbuccia la mela
1008	1A	The spoon is stirring the milk	rock break window.bmp	il sasso rompe la finestra
1008	1A	The woman is burned by the fire	lightning strike man.bmp	l'uomo e' colpito dal fulmine
1009	1A	The boat is pulling the woman	rope trip boy.bmp	il ragazzo inciampa
1009	1A	The ball is bounced by the racket	wrecking ball smash building.bmp	il macchinario sta distruggendo un edificio
1009	1A	The girl is dropped by the plane	alarm awake man.bmp	un un uomo si sta svegliando
1009	1A	The stove is cooking the pasta	truck tow car.bmp	il carroattrezzi sta trasportando una macchina
1009	1A	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia il limone

1009	1A	The net is trapping the girl	hose spray firefighter.bmp	la canna dell'acqua sya sta spruzzando il upompiere
1009	1A	The baby is rocked by the cradle	news shock man.bmp	
1009	1A	The water is filling the glass	hammer crack egg.bmp	un martello rompe un uovo
1009	1A	The truck is dumping the dirt	crayon color star.bmp	il pastello giallo colora una stella
1009	1A	The woman is pricked by the needle	rope tie man.bmp	una corda stringe una persona
1009	1A	The pumpkin is scaring the man	ball hit boy.bmp	la palla centra il giocatore
1009	1A	The chair is covered by the blanket	police follow car.bmp	la polizia segue un camioncino giallo
1009	1A	The blanket is hiding the baby	feather tickle girl.bmp	la piuma fa il solletico a una donna
1009	1A	The stripe is painted by the brush	knife peel apple.bmp	il coltr coltello sbuccia una mela
1009	1A	The spoon is stirring the milk	rock break window.bmp	il sasso rompe la finestra
1009	1A	The woman is burned by the fire	lightning strike man.bmp	un uomo viene fulminato
1010	1A	The boat is pulling the woman	rope trip boy.bmp	il ragazz o sta inciampando sullac corsa corda
1010	1A	The ball is bounced by the racket	wrecking ball smash building.bmp	la gru sta distruggendo il palazzo
1010	1A	The girl is dropped by the plane	alarm awake man.bmp	l'la sveglia ha svelgliao svge svegliato l'uomo
1010	1A	The stove is cooking the pasta	truck tow car.bmp	l'il carro atrezzi trasporta la macchina
1010	1A	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia il limone
1010	1A	The net is trapping the girl	hose spray firefighter.bmp	l'estintore spruza spruzza di acu acqua l il pompiere
1010	1A	The baby is rocked by the cradle	news shock man.bmp	le notizie scioccano lo spettao spettatore
1010	1A	The water is filling the glass	hammer crack egg.bmp	il martello rompe l'uovo
1010	1A	The truck is dumping the dirt	crayon color star.bmp	il pennarello colora la stella
1010	1A	The woman is pricked by the needle	rope tie man.bmp	le corde stringono l'uomo
1010	1A	The pumpkin is scaring the man	ball hit boy.bmp	la palla cetra il centra il braccio edel dell del ragazzo
1010	1A	The chair is covered by the blanket	police follow car.bmp	la polizia sege segue il camionup
1010	1A	The blanket is hiding the baby	feather tickle girl.bmp	la piuma solletica la donna
1010	1A	The stripe is painted by the brush	knife peel apple.bmp	il coletto coltello sbuccia la mela
1010	1A	The spoon is stirring the milk	rock break window.bmp	il sasso rome sr rompe la finestra
1010	1A	The woman is burned by the fire	lightning strike man.bmp	l'uomo bracketleft bracketleft bracketrightbracketleft p bracketleft e'fulminato

1011	1A	The boat is pulling the woman	rope trip boy.bmp	Il ragazzo sta inciampando nella fune
1011	1A	The ball is bounced by the racket	wrecking ball smash building.bmp	la palla da demplizione sta demolendo il palazzo
1011	1A	The girl is dropped by the plane	alarm awake man.bmp	l'uomo viene svegliato dalla sveglia
1011	1A	The stove is cooking the pasta	truck tow car.bmp	il camioncino traspirta trasporta l'auto
1011	1A	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia in due il limone
1011	1A	The net is trapping the girl	hose spray firefighter.bmp	il tubo sta spruzzando dell'acqua contro il vigile del foco del fuoco
1011	1A	The baby is rocked by the cradle	news shock man.bmp	l'uomo bracketleft s l'uomo e' sco scioccato dalle notizie del Tg
1011	1A	The water is filling the glass	hammer crack egg.bmp	il martello sta rompendo l'uovo
1011	1A	The truck is dumping the dirt	crayon color star.bmp	qualcuno sta colorando di giallo una t stella
1011	1A	The woman is pricked by the needle	rope tie man.bmp	le corde stringono forte il prigioniero
1011	1A	The pumpkin is scaring the man	ball hit boy.bmp	la palla da bae baseball centra in pieno il povero ragazzo
1011	1A	The chair is covered by the blanket	police follow car.bmp	l'auto della polizia sta seguendo un camioncino giallo
1011	1A	The blanket is hiding the baby	feather tickle girl.bmp	la piuma solletiva solletica la ragazza
1011	1A	The stripe is painted by the brush	knife peel apple.bmp	qualcunosta sbucciando una mela
1011	1A	The spoon is stirring the milk	rock break window.bmp	la pietra sta rompendo il vetro
1011	1A	The woman is burned by the fire	lightning strike man.bmp	un uomo viene fulminato da un fulmine
1013	1A	The boat is pulling the woman	rope trip boy.bmp	il graragazzo inciampa sulasullacorda
1013	1A	The ball is bounced by the racket	wrecking ball smash building.bmp	stanno distruggendo un palazzo
1013	1A	The girl is dropped by the plane	alarm awake man.bmp	2come svegliarsi briscamentebruscamentecomma cap.2
1013	1A	The stove is cooking the pasta	truck tow car.bmp	il carro attrezzi sta trasf s trasportando la macchina
1013	1A	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia il limone
1013	1A	The net is trapping the girl	hose spray firefighter.bmp	la canna dell'acqua spri sp
1013	1A	The baby is rocked by the cradle	news shock man.bmp	il tipo bracketleft scio e' scioccato dalla notizia
1013	1A	The water is filling the glass	hammer crack egg.bmp	il r martello rim rompe l'o uovo
1013	1A	The truck is dumping the dirt	crayon color star.bmp	il pastello colora la stella
1013	1A	The woman is pricked by the needle	rope tie man.bmp	la corda stringe l'uomo
1013	1A	The pumpkin is scaring the man	ball hit boy.bmp	la palla centra l'uomo nel gomito

1013	1A	The chair is covered by the blanket	police follow car.bmp	la polizia insegn ine insegue l'auto
1013	1A	The blanket is hiding the baby	feather tickle girl.bmp	la piuma solletica l'acella ascella
1013	1A	The stripe is painted by the brush	knife peel apple.bmp	il coltello sbuccia la mela
1013	1A	The spoon is stirring the milk	rock break window.bmp	la pietra rompe la finestra
1013	1A	The woman is burned by the fire	lightning strike man.bmp	il fulmine fulmina l'uomo
1021	1B	The woman is burned by the fire	lightning strike man.bmp	Un fulmine che colpisce un uomo.
1021	1B	The spoon is stirring the milk	rock break window.bmp	Un sasso che rompe una finestra.
1021	1B	The stripe is painted by the brush	knife peel apple.bmp	Un coltello sta sbucciando una mela.
1021	1B	The blanket is hiding the baby	feather tickle girl.bmp	Una piuma sta solleticando l'ascella di una donna.
1021	1B	The chair is covered by the blanket	police follow car.bmp	La polizia sta inseguendo un'auto gialla.
1021	1B	The pumpkin is scaring the man	ball hit boy.bmp	Una palla centra il gomito di un ragazzo biondo.
1021	1B	The woman is pricked by the needle	rope tie man.bmp	Una corda stringe il corpo di un ragazzo biondo.
1021	1B	The truck is dumping the dirt	crayon color star.bmp	Un pastello colora di giallo una stella.
1021	1B	The water is filling the glass	hammer crack egg.bmp	Il martello rompe il guscio dell'uovo.
1021	1B	The baby is rocked by the cradle	news shock man.bmp	Un uomo rimane scioccato da una notizia.
1021	1B	The net is trapping the girl	hose spray firefighter.bmp	La canna spruzza l'uomo con l'acqua.
1021	1B	The presents are carried by the wagon	knife slice lemon.bmp	Un coltello che taglia in due un limone.
1021	1B	The stove is cooking the pasta	truck tow car.bmp	Un carroattrezzi trasporta un'auto.
1021	1B	The girl is dropped by the plane	alarm awake man.bmp	Un uomo si sveglia di colpo.
1021	1B	The ball is bounced by the racket	wrecking ball smash building.bmp	La palla distrugge un edificio.
1021	1B	The boat is pulling the woman	rope trip boy.bmp	Un ragazzo inciampa.
1024	1B	The woman is burned by the fire	lightning strike man.bmp	l'uomo e' fo
1024	1B	The spoon is stirring the milk	rock break window.bmp	la finestra e' rotta
1024	1B	The stripe is painted by the brush	knife peel apple.bmp	la mela e' ssbucciata dal coltello
1024	1B	The blanket is hiding the baby	feather tickle girl.bmp	
1024	1B	The chair is covered by the blanket	police follow car.bmp	l'auto bracketlefte' seguita dalla polizia
1024	1B	The pumpkin is scaring the man	ball hit boy.bmp	la pallina ha canetrato il braccio

1024	1B	The woman is pricked by the needle	rope tie man.bmp	l'uomo bracketlefte' stretto dalla corda
1024	1B	The truck is dumping the dirt	crayon color star.bmp	il pastello sta colorando la stella
1024	1B	The water is filling the glass	hammer crack egg.bmp	il martello sta rompendo l'uovo
1024	1B	The baby is rocked by the cradle	news shock man.bmp	l'uomo e' scioccato dalla notizia
1024	1B	The net is trapping the girl	hose spray firefighter.bmp	il tubo sta sprizzando il pompiere
1024	1B	The presents are carried by the wagon	knife slice lemon.bmp	il limone e' tagliato dal coltello
1024	1B	The stove is cooking the pasta	truck tow car.bmp	il furgone sta trasportando l'auto
1024	1B	The girl is dropped by the plane	alarm awake man.bmp	l'uomo e' svegliato dalla sveglia
1024	1B	The ball is bounced by the racket	wrecking ball smash building.bmp	la palla sta distruggendo il palazzo
1024	1B	The boat is pulling the woman	rope trip boy.bmp	la corda ha fatto inciam
1080	1B	The woman is burned by the fire	lightning strike man.bmp	l'uomo bracketleft colpito dal fulmine
1080	1B	The spoon is stirring the milk	rock break window.bmp	la finestra viene rotta da un sasso
1080	1B	The stripe is painted by the brush	knife peel apple.bmp	il coltello sbuccia la mela
1080	1B	The blanket is hiding the baby	feather tickle girl.bmp	la piuma fa il solletico alla donna
1080	1B	The chair is covered by the blanket	police follow car.bmp	il camion bracketlefte' inseguito dall'aiuto dell
1080	1B	The pumpkin is scaring the man	ball hit boy.bmp	la palla ha centrato il bambino
1080	1B	The woman is pricked by the needle	rope tie man.bmp	l'uomo viene stretto dalla corda
1080	1B	The truck is dumping the dirt	crayon color star.bmp	il pennarello colora una stella
1080	1B	The water is filling the glass	hammer crack egg.bmp	il martello sta per rompere l'uovo
1080	1B	The baby is rocked by the cradle	news shock man.bmp	l'uomo e' scioccato dalle notizie
1080	1B	The net is trapping the girl	hose spray firefighter.bmp	la canna spruzza acqua sul pompiere
1080	1B	The presents are carried by the wagon	knife slice lemon.bmp	il coltello taglia il limone
1080	1B	The stove is cooking the pasta	truck tow car.bmp	l'auto e' trasportata dal carroattrezzi
1080	1B	The girl is dropped by the plane	alarm awake man.bmp	l'uomo e' svegliato dalla sveglia
1080	1B	The ball is bounced by the racket	wrecking ball smash building.bmp	il palazzo viene distrutto
1080	1B	The boat is pulling the woman	rope trip boy.bmp	il ragazzo inciampa nella corda
1082	1B	The woman is burned by the fire	lightning strike man.bmp	il ragazzo sta essendo fulminato

1082	1B	The spoon is stirring the milk	rock break window.bmp	la finestra bracketleft e' rotta da un sasso
1082	1B	The stripe is painted by the brush	knife peel apple.bmp	la mela bracketleft sbucciata dal la mela e' sbucciata dal coltello
1082	1B	The blanket is hiding the baby	feather tickle girl.bmp	la piuma capslocknocapslock la piuma sta facendo solletico sta soletican
1082	1B	The chair is covered by the blanket	police follow car.bmp	la polizia sta seguendo l macchina
1082	1B	The pumpkin is scaring the man	ball hit boy.bmp	il ragazzo bracketleft centrail il ragazzo e' centrato dallapalla
1082	1B	The woman is pricked by the needle	rope tie man.bmp	il ragazzo bracketleft e' stretto dalla corda
1082	1B	The truck is dumping the dirt	crayon color star.bmp	il pennarello sta colorando la stella
1082	1B	The water is filling the glass	hammer crack egg.bmp	il martello sta rompendo l'uovo
1082	1B	The baby is rocked by the cradle	news shock man.bmp	l'uomo bracketleft scioccato dalle news
1082	1B	The net is trapping the girl	hose spray firefighter.bmp	la pompa sta spruzzando acqua addosso al pompiere
1082	1B	The presents are carried by the wagon	knife slice lemon.bmp	il coltello sta tagliando un limone
1082	1B	The stove is cooking the pasta	truck tow car.bmp	il carro attrezzi sta trasportando la macchina
1082	1B	The girl is dropped by the plane	alarm awake man.bmp	l'uomo si bracketleft e' svegliato
1082	1B	The ball is bounced by the racket	wrecking ball smash building.bmp	la ruspa sta distruggendo la casa
1082	1B	The boat is pulling the woman	rope trip boy.bmp	il ragazzo bracketleft e' inciampato
1112	1B	The woman is burned by the fire	lightning strike man.bmp	lbracketleftuomo ebracketleft fulminato
1112	1B	The spoon is stirring the milk	rock break window.bmp	un sasso sta rompendo la f
1112	1B	The stripe is painted by the brush	knife peel apple.bmp	al il coltello sta sbucciando la mela
1112	1B	The blanket is hiding the baby	feather tickle girl.bmp	la piuma sta solleticando la ragazza
1112	1B	The chair is covered by the blanket	police follow car.bmp	la polizia sta seguendo lbracketleftaurlbracketleftauto gialla
1112	1B	The pumpkin is scaring the man	ball hit boy.bmp	la palla sta centrando il ragazzo
1112	1B	The woman is pricked by the needle	rope tie man.bmp	la corda string e stringe lbracketleftuomo
1112	1B	The truck is dumping the dirt	crayon color star.bmp	il pastello s colora la stella
1112	1B	The water is filling the glass	hammer crack egg.bmp	il martello rompe lbracketleftuovo
1112	1B	The baby is rocked by the cradle	news shock man.bmp	lbracketleftuomo ebracketleft scioccato dalle news
1112	1B	The net is trapping the girl	hose spray firefighter.bmp	il pompiere ebracketleft spruzzato dalla pompa
1112	1B	The presents are carried by the wagon	knife slice lemon.bmp	il limone ebracketleft tagliato dal coltello

1112	1B	The stove is cooking the pasta	truck tow car.bmp	il carroattrezzi sta trasportyando lbracketleftauto
1112	1B	The girl is dropped by the plane	alarm awake man.bmp	lbracketleftuomo ebracketleft svegliato dalla sveglia
1112	1B	The ball is bounced by the racket	wrecking ball smash building.bmp	il demolitore sta distruggendo il palazzo
1112	1B	The boat is pulling the woman	rope trip boy.bmp	il ragazzo inciampa sulla corda
1025	2A	The woman is pulled by the boat	rope trip boy.bmp	il bambino bracketlefti il bambino inciampa sulla
1025	2A	The racket is bouncing the ball	wrecking ball smash building.bmp	la gru sta distruggendo il palazzo
1025	2A	The plane is dropping the girl	alarm awake man.bmp	la sveglia ha svegliato l'uomo
1025	2A	The pasta is cooked by the stove	truck tow car.bmp	la macchina bracketleft e' trainta dal carroattrezzi
1025	2A	The wagon is carring the presents	knife slice lemon.bmp	il limone e' tagliato dal coltello
1025	2A	The girl is trapped by the net	hose spray firefighter.bmp	il pompiere viene spruzzato dalla pompa
1025	2A	The cradle is rocking the baby	news shock man.bmp	le news hanno scioccato l'uomo
1025	2A	The glass is filled by the water	hammer crack egg.bmp	l'uovo viene rotto dal martello
1025	2A	The dirt is dumped by the truck	crayon color star.bmp	la stella viene colorata dal pastelo
1025	2A	The needle is pricking the woman	rope tie man.bmp	la corda sta sr stringendo l'uomo
1025	2A	The man is scared by the pumpkin	ball hit boy.bmp	il ragazzo e' centrato dalla palla
1025	2A	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo la macchina sospetta
1025	2A	The baby is hidden by the blanket	feather tickle girl.bmp	la piuma sta solleticando la donna
1025	2A	The brush is painting the stripe	knife peel apple.bmp	la mela viene sbucciata dal coltello
1025	2A	The milk is stirred by the spoon	rock break window.bmp	la finestra e' rotta dal sasso
1025	2A	The fire is burning the woman	lightning strike man.bmp	l'uomo viene fulminato
1026	2A	The woman is pulled by the boat	rope trip boy.bmp	il ragazzo bracketleft e' inciampato sullacorda
1026	2A	The racket is bouncing the ball	wrecking ball smash building.bmp	la gru sta distruggendo l'edificio
1026	2A	The plane is dropping the girl	alarm awake man.bmp	l'uomo si sta svegliando
1026	2A	The pasta is cooked by the stove	truck tow car.bmp	il camioncino sta trasportando la macchina
1026	2A	The wagon is carring the presents	knife slice lemon.bmp	il coltello sta tsagliando il limone
1026	2A	The girl is trapped by the net	hose spray firefighter.bmp	la pompa sta spriuzzando il pompiere

1026	2A	The cradle is rocking the baby	news shock man.bmp	la notiza in tv bracketleft scioccante
1026	2A	The glass is filled by the water	hammer crack egg.bmp	l'uovo vinenerotto dal martello
1026	2A	The dirt is dumped by the truck	crayon color star.bmp	il pennarello colora la stella
1026	2A	The needle is pricking the woman	rope tie man.bmp	l'uomo bracketleft e' strettoda una corda
1026	2A	The man is scared by the pumpkin	ball hit boy.bmp	ilragazzo viene centrato dalla pallina
1026	2A	The blanket is covering the chair	police follow car.bmp	il camion bracketlefte' seguito dala macchina della polizia
1026	2A	The baby is hidden by the blanket	feather tickle girl.bmp	la piuma solletica la donna
1026	2A	The brush is painting the stripe	knife peel apple.bmp	il coltello sbuccia la mela
1026	2A	The milk is stirred by the spoon	rock break window.bmp	una pietra rompe il vetro
1026	2A	The fire is burning the woman	lightning strike man.bmp	l'uomo viee viene fulminato
1027	2A	The woman is pulled by the boat	rope trip boy.bmp	il bambino inciampa nella corda
1027	2A	The racket is bouncing the ball	wrecking ball smash building.bmp	la macchina distrugge il palazzo
1027	2A	The plane is dropping the girl	alarm awake man.bmp	la sveglia sveglia il ragazzo
1027	2A	The pasta is cooked by the stove	truck tow car.bmp	l'auto blu viene trasportata dal carroattrezzi
1027	2A	The wagon is carring the presents	knife slice lemon.bmp	il limone bracketlefte' e' tagliato dal coltello
1027	2A	The girl is trapped by the net	hose spray firefighter.bmp	la pompa spruza il pompiere
1027	2A	The cradle is rocking the baby	news shock man.bmp	la notiza notiza notizia sciocca l'uomo
1027	2A	The glass is filled by the water	hammer crack egg.bmp	il martello rompe l'uovo
1027	2A	The dirt is dumped by the truck	crayon color star.bmp	la stella viene colorata di giallo
1027	2A	The needle is pricking the woman	rope tie man.bmp	la corda stringe l'i l'uomo
1027	2A	The man is scared by the pumpkin	ball hit boy.bmp	left la palla centra il ragazzo
1027	2A	The blanket is covering the chair	police follow car.bmp	la polizia segue il camion giallo
1027	2A	The baby is hidden by the blanket	feather tickle girl.bmp	la foglia solleticaa solletica la donna
1027	2A	The brush is painting the stripe	knife peel apple.bmp	il coltello sbuccia la mela
1027	2A	The milk is stirred by the spoon	rock break window.bmp	la roccia rompe il vetro
1027	2A	The fire is burning the woman	lightning strike man.bmp	l'uomo viene fulminato
1049	2A	The woman is pulled by the boat	rope trip boy.bmp	il ragazzo inciampa sulla corda

1049	2A	The racket is bouncing the ball	wrecking ball smash building.bmp	la gru sta distruggendo il palazzppalazzo
1049	2A	The plane is dropping the girl	alarm awake man.bmp	la sveglia sta svegliando l'uoo uomo
1049	2A	The pasta is cooked by the stove	truck tow car.bmp	l'auto bracketleft l'auto e' trasportata dal rimorchiatore
1049	2A	The wagon is carring the presents	knife slice lemon.bmp	il coltello sta tagliando il limone
1049	2A	The girl is trapped by the net	hose spray firefighter.bmp	il tubo sta spruzzando il pompiere
1049	2A	The cradle is rocking the baby	news shock man.bmp	le notizie scioccano l'uomo
1049	2A	The glass is filled by the water	hammer crack egg.bmp	il martello sta rompendo l'uovo
1049	2A	The dirt is dumped by the truck	crayon color star.bmp	il pastello sta colorando la stella
1049	2A	The needle is pricking the woman	rope tie man.bmp	la corda sta stringendo l'uomo
1049	2A	The man is scared by the pumpkin	ball hit boy.bmp	la palla ha centrato il ragazzo
1049	2A	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo l'auto
1049	2A	The baby is hidden by the blanket	feather tickle girl.bmp	la piuma sta solleticando la donna
1049	2A	The brush is painting the stripe	knife peel apple.bmp	il coltello sta sbucciando la mela
1049	2A	The milk is stirred by the spoon	rock break window.bmp	l a finestra bracketlefteequalla la finestra ebracketleft la finestra e' rotta dal sasso
1049	2A	The fire is burning the woman	lightning strike man.bmp	il tuono sta fulminando l'uomo
1107	2A	The woman is pulled by the boat	rope trip boy.bmp	il ragazzo inciampa nella corda
1107	2A	The racket is bouncing the ball	wrecking ball smash building.bmp	la palla demolitrice s distrugge l'edificio
1107	2A	The plane is dropping the girl	alarm awake man.bmp	la sveglia sveglia all'improvvisoi il ragazzo
1107	2A	The pasta is cooked by the stove	truck tow car.bmp	il carro trasporta la macchina
1107	2A	The wagon is carring the presents	knife slice lemon.bmp	il limon il coltello taglia il limone
1107	2A	The girl is trapped by the net	hose spray firefighter.bmp	il pompiere e' spruzzato dall'acqua
1107	2A	The cradle is rocking the baby	news shock man.bmp	le notiizie scioccano l'uomo
1107	2A	The glass is filled by the water	hammer crack egg.bmp	l'uovo e' rotto dal martello
1107	2A	The dirt is dumped by the truck	crayon color star.bmp	la stella equal e' colorata di giallo
1107	2A	The needle is pricking the woman	rope tie man.bmp	la o corda stringe l'uomo
1107	2A	The man is scared by the pumpkin	ball hit boy.bmp	il bambino e' centrato dalla palla
1107	2A	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo la macchina gialla

1107	2A	The baby is hidden by the blanket	feather tickle girl.bmp	la ragazza e' solleticata dalla piuma
1107	2A	The brush is painting the stripe	knife peel apple.bmp	la mela e' sbucciata con un coltello
1107	2A	The milk is stirred by the spoon	rock break window.bmp	la finestra e' rotta dal sasso
1107	2A	The fire is burning the woman	lightning strike man.bmp	il fulmine fuli fulmina l'uomo
1030	2B	The fire is burning the woman	lightning strike man.bmp	l'uomo e' fulminato
1030	2B	The milk is stirred by the spoon	rock break window.bmp	la finestra si e' rotta
1030	2B	The brush is painting the stripe	knife peel apple.bmp	il coltello sta sbucciando la mela
1030	2B	The baby is hidden by the blanket	feather tickle girl.bmp	la foglia sta facendo il solletico alla ragazza
1030	2B	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo la macchina gialla
1030	2B	The man is scared by the pumpkin	ball hit boy.bmp	la palla centra il ragazzo
1030	2B	The needle is pricking the woman	rope tie man.bmp	la corda sta stringendo l'uomo
1030	2B	The dirt is dumped by the truck	crayon color star.bmp	la stella e' colorata dal pennello giallo
1030	2B	The glass is filled by the water	hammer crack egg.bmp	l'uovo e' rotto dal martello
1030	2B	The cradle is rocking the baby	news shock man.bmp	la tv sciocca l'uomo
1030	2B	The girl is trapped by the net	hose spray firefighter.bmp	l'uomo e' spruzzato dall'acqua
1030	2B	The wagon is carring the presents	knife slice lemon.bmp	il coltello sta tagliando il limone
1030	2B	The pasta is cooked by the stove	truck tow car.bmp	la macchina e' trasportata dalla macchina
1030	2B	The plane is dropping the girl	alarm awake man.bmp	l'uomo si e' svegliato
1030	2B	The racket is bouncing the ball	wrecking ball smash building.bmp	il castello sta per essere distrutto
1030	2B	The woman is pulled by the boat	rope trip boy.bmp	l'uomo sta inciampando
1052	2B	The fire is burning the woman	lightning strike man.bmp	un uomo viene fulminato
1052	2B	The milk is stirred by the spoon	rock break window.bmp	un sasso ha rotto la finestra
1052	2B	The brush is painting the stripe	knife peel apple.bmp	la mela viene sbucciata dal coltello
1052	2B	The baby is hidden by the blanket	feather tickle girl.bmp	la piuma solletica la ragazza
1052	2B	The blanket is covering the chair	police follow car.bmp	la polizia segue la macchina gialla
1052	2B	The man is scared by the pumpkin	ball hit boy.bmp	una palla da baseball ha centrato un ragazzo
1052	2B	The needle is pricking the woman	rope tie man.bmp	la corda stringe l'uomo

1052	2B	The dirt is dumped by the truck	crayon color star.bmp	la stella viene colorata
1052	2B	The glass is filled by the water	hammer crack egg.bmp	l'uovo e' rotto dal martello
1052	2B	The cradle is rocking the baby	news shock man.bmp	l'uomo e' scioccato dalla notizia
1052	2B	The girl is trapped by the net	hose spray firefighter.bmp	la canna spruzza l'acqua addosso al pompiere
1052	2B	The wagon is carring the presents	knife slice lemon.bmp	il limone si taglia con il coltello
1052	2B	The pasta is cooked by the stove	truck tow car.bmp	il carroattrezzi trasporta l'auto in panne
1052	2B	The plane is dropping the girl	alarm awake man.bmp	l'uomo si e'svegliato perche' e' suonata la svegl
1052	2B	The racket is bouncing the ball	wrecking ball smash building.bmp	il palazzo viene distrutto
1052	2B	The woman is pulled by the boat	rope trip boy.bmp	un bimbo inciampa su una corda
1090	2B	The fire is burning the woman	lightning strike man.bmp	l'uomo bracketleftstato fulminato
1090	2B	The milk is stirred by the spoon	rock break window.bmp	il vetro bracketleft stato rotto
1090	2B	The brush is painting the stripe	knife peel apple.bmp	qualcuno sya sbucciando la mela
1090	2B	The baby is hidden by the blanket	feather tickle girl.bmp	la ragazza bracketleft solleticata con una piuma
1090	2B	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo un'auto gialla
1090	2B	The man is scared by the pumpkin	ball hit boy.bmp	il gomito del ragazzo bracketleft centrato da una palla
1090	2B	The needle is pricking the woman	rope tie man.bmp	un uomo bracketleft stretto da una corda
1090	2B	The dirt is dumped by the truck	crayon color star.bmp	la stella bracketleft colorata con un pennarelo
1090	2B	The glass is filled by the water	hammer crack egg.bmp	un uovo bracketleft rotto con un martello
1090	2B	The cradle is rocking the baby	news shock man.bmp	l un uomo bracketleft scuioccato dalle notizie in Tv
1090	2B	The girl is trapped by the net	hose spray firefighter.bmp	un pompiere bracketleft spruzzato dalla cabnna
1090	2B	The wagon is carring the presents	knife slice lemon.bmp	un coltello sta tagliando un limone
1090	2B	The pasta is cooked by the stove	truck tow car.bmp	un auto bracketleft trasportata dal carrattrezzzi
1090	2B	The plane is dropping the girl	alarm awake man.bmp	un uomo bracketleft svegliato dalla propria sveglia
1090	2B	The racket is bouncing the ball	wrecking ball smash building.bmp	la palla demolitrice sta distruggendo un palazzo
1090	2B	The woman is pulled by the boat	rope trip boy.bmp	un ragazzpo sta inciampando d in una corda tesa
1095	2B	The fire is burning the woman	lightning strike man.bmp	un lampo sta fulminando un uomo
1095	2B	The milk is stirred by the spoon	rock break window.bmp	la finestra e rotta da un sasso

1095	2B	The brush is painting the stripe	knife peel apple.bmp	il coltello sta sbucciando la mela
1095	2B	The baby is hidden by the blanket	feather tickle girl.bmp	
1095	2B	The blanket is covering the chair	police follow car.bmp	la polizia sta seguendo i fuggitivi
1095	2B	The man is scared by the pumpkin	ball hit boy.bmp	la palla ha centrato il giocatore
1095	2B	The needle is pricking the woman	rope tie man.bmp	l'uomo e stretto dalla corda
1095	2B	The dirt is dumped by the truck	crayon color star.bmp	la stella e colorata dal
1095	2B	The glass is filled by the water	hammer crack egg.bmp	l'uovo e rotto dal martello
1095	2B	The cradle is rocking the baby	news shock man.bmp	l'uomo e scioccato dalla tv
1095	2B	The girl is trapped by the net	hose spray firefighter.bmp	la pompa spruzza il vigile
1095	2B	The wagon is carring the presents	knife slice lemon.bmp	
1095	2B	The pasta is cooked by the stove	truck tow car.bmp	il carroattrezzi trasporta l'auto danneggiata
1095	2B	The plane is dropping the girl	alarm awake man.bmp	l'uomo e svegliato dal suono della sveglia
1095	2B	The racket is bouncing the ball	wrecking ball smash building.bmp	
1095	2B	The woman is pulled by the boat	rope trip boy.bmp	il bambino inciampa sulla corda
1018	2B	The fire is burning the woman	lightning strike man.bmp	L'uomo viene fulminato
1018	2B	The milk is stirred by the spoon	rock break window.bmp	Il vetro e' rotto
1018	2B	The brush is painting the stripe	knife peel apple.bmp	La mela viene sbucciata
1018	2B	The baby is hidden by the blanket	feather tickle girl.bmp	La ragazza sente il solletico
1018	2B	The blanket is covering the chair	police follow car.bmp	L'auto gialla e' seguita dalla polizia
1018	2B	The man is scared by the pumpkin	ball hit boy.bmp	La palla viene centrata
1018	2B	The needle is pricking the woman	rope tie man.bmp	La corda stringe il busto dell'uomo
1018	2B	The dirt is dumped by the truck	crayon color star.bmp	La stella viene colorata
1018	2B	The glass is filled by the water	hammer crack egg.bmp	L'uovo viene rotto dal martello
1018	2B	The cradle is rocking the baby	news shock man.bmp	L'uomo e' scioccato dalle notizie
1018	2B	The girl is trapped by the net	hose spray firefighter.bmp	Il pompiere viene spruzzato dall'acqua
1018	2B	The wagon is carring the presents	knife slice lemon.bmp	Il coltello taglia il limone
1018	2B	The pasta is cooked by the stove	truck tow car.bmp	Il carroattrezzi trasporta l'auto

1018	2B	The plane is dropping the girl	alarm awake man.bmp	La sveglia sveglia l'uomo
1018	2B	The racket is bouncing the ball	wrecking ball smash building.bmp	Il bulldozer distrugge il palazzo
1018	2B	The woman is pulled by the boat	rope trip boy.bmp	Il ragazzo inciampa sulla corda

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