Modularity in SLA

Transfer, innate mechanisms and input in the L2 acquisition of Italian reflexive and reciprocal constructions

Maja Miličević

University of Cambridge

Paper published in *EuroSLA Yearbook* 7 (2007), 89-120.

https://benjamins.com/#catalog/journals/eurosla.7/main

DOI: 10.1075/eurosla.7.07mil

Modularity in SLA: Transfer, innate mechanisms and input in the L2 acquisition of Italian reflexive and reciprocal constructions

Maja Miličević

University of Cambridge

Abstract

This paper reports on a study of the acquisition of reflexive and reciprocal forms in L2 Italian from the point of view of their argument structure. The results are interpreted with respect to the debate about whether transfer is monolithic (Schwartz and Sprouse 1996, Whong-Barr 2005) or modular (Montrul 1997), considering at the same time other relevant factors – innate mechanisms and L2 input. On the basis of the acceptability judgements of Serbian and English learners, compared to native speakers of Italian, it is argued that a modular approach is more realistic, as different types of transfer were identified for morphology (direct transfer of L1 marking) and argument structure (indirect influence of L1 general properties). Possible reliance on innate knowledge was detected at the argument structure level, while the input (examined through a corpus study) was found to influence both domains in different ways. It is also suggested that the three factors should be looked at jointly rather than in isolation.

Introduction

In generative second language (L2) research it is believed that the process of second language acquisition (SLA) is determined by two key factors, the learners' first language (L1) and the innate principles of Universal Grammar (UG). Within this approach the major theories of SLA (or at least of its initial state) have been formulated and defined with respect to the view on these two issues, commonly referred to as transfer and access. One such approach is the Full Transfer/Full Access (FT/FA) model of Schwartz and Sprouse, whose basic tenet is that 'the initial state of L2 acquisition is the final state of L1 acquisition' (1996: 41). In other words, learners use their L1 grammar, in its entirety, as the starting point for constructing an L2 grammar (full transfer), and if the L2 properties cannot be accommodated by this grammar, they resort to UG options to restructure it (full access).

This monolithic view on transfer and access was re-examined by Montrul (1997), who proposed a 'modular' adaptation of FT/FA. Namely, looking at argument structure alternations, she found that the derivational morphology is the area most affected by transfer, while L2 argument structure itself is acquired in the same fashion as in L1A, being therefore determined solely by access to UG. Consequently, she suggested that not all domains of grammar are equally susceptible to L1 and UG influences, which are therefore better described as modular.

However, Whong-Barr (2005) has recently challenged Montrul's claims and she argued that considering the input as a third crucial factor in the process of SLA might reveal that a monolithic FT/FA approach is correct after all, because the learners' errors might be caused by conflicting evidence present in L2 input. That is, although the verbs

that Montrul used in her tasks behave in the same way in the L1 and the L2, this is not the case with all verbs belonging to the classes she examined, and it might be that the detection in the input of these different verbs causes overgeneralisations that overtake the transferred rules. Regardless of whether Whong-Barr's claim about the FT/FA is correct or not, her observation on input seems to be a valid one and in a wider context it can be interpreted as a call to introduce more frequency data into generative SLA research.

Of course, generative models have never negated the importance of L2 input for the acquisitional process, but it has typically been assigned the role of a trigger for UG mechanisms, and more importantly, it is usually only mentioned, and only rarely examined, especially in quantitative terms. Some more active interest in the input as a potential influencing variable has recently emerged in a number of papers that take into account the possibility of the input and some generative mechanisms being jointly operative (see for instance Bley-Vroman 2002 and Gass and Mackey 2002).

This state of affairs seems to call for further examination of two central questions, whether the factors that determine the SLA process operate modularly or monolithically and where precisely the position of L2 input is in this picture. The present study addresses these problems by incorporating frequency data into considerations of the modular version of FT/FA, along the lines of Montrul (1997). The specific area that is discussed is the acquisition of reflexive and reciprocal constructions in L2 Italian by native speakers of Serbian and English. Reflexives and reciprocals are studied with respect to their argument structure, a sense in which they have been quite neglected in SLA research. On the basis of the reported data, it is suggested that a modular approach is

more realistic than a monolithic one and that a comprehensive theory of SLA should take into account not two but three factors, as well as their mutual influences.

Reflexives and Reciprocals in Italian, Serbian and English

Crosslinguistically, reflexive and reciprocal markers fall into two main types, known in the typological literature as *nominal* and *verbal*. The nominal forms exhibit the properties of nouns or pronouns in a given language, whereas the verbal ones can take the form of clitics, particles, affixes, or even be morphologically null (Lichtenberk 1994: 3504). With respect to this basic distinction, in the languages studied here there is a sharp contrast between Italian and Serbian on one and English on the other side: while Italian and Serbian possess both productive pronouns and productive clitic forms, English employs a prevalently nominal strategy, with only a few formally unmarked verbal reflexives. But the crucial thing to stress is that whichever type of reflexive marker is used by a particular language, it can only be added to transitive verbs, i.e. to those verbs that subcategorise for a direct object, or to intransitive or ditransitive verbs that subcategorise for a dative indirect object (dative forms will not be discussed here). It is crosslinguistically illicit to form reflexives from any other type of intransitive verbs, either unaccusative or unergative.

Focusing on specific languages, Italian possesses distinct forms for each person and number, both among clitics and pronouns, and except in the case of the third person, reflexive markers are formally identical to personal pronouns. This paper deals only with third person forms, the strong pronoun *sé* and the clitic *si*, used for both singular and plural. Strong pronouns are often followed by the intensifier *stesso* 'self'. All forms agree

with the sentence subject in person and number, the intensifier in number and gender. Examples are given in (1).

(1) a. Maria si veste.

Maria SI dress.PRES.3SG

'Maria is dressing.'

b. Paolo odia se.stesso.

Paolo hate.PRES.3SG himself

'Paolo hates himself.'

As for reciprocals, while the clitic forms are the same ones used for plural reflexives, with the third person being *si*, illustrated in (2), a single form is used for the stressed markers, the expression *l'un l'altro* 'each other'. An essential thing to note is that in the contexts relevant for this study the stressed form is not autonomous. It displays normal pronominal behaviour in oblique cases, when its two elements are separated by a preposition (as in 3a), but if it is used in direct object position, it renders the sentence ungrammatical (cf. Belletti 1982). The only licit option in this case is to resort to clitic doubling, as shown in (3b).

(2) Marta e Pietro si amano.

Marta and Pietro SI love.PRES.3PL

'Marta and Pietro love each other.'

(3) a. Maria e Anna parlano spesso l'una dell'altra.

Maria and Anna talk.PRES.3PL often the.one about.the.other

‘Maria and Anna often talk about one another.’

b. Marta e Pietro *(si) amano l’un l’altro.

Marta and Pietro SI love.PRES.3PL the.one the.other

‘Marta and Pietro love each other.’

Importantly, even though they encode the same basic meaning, pronominal and clitic forms are not freely interchangeable. Pronouns occur mostly within PPs, and they can act as direct or indirect objects only in an appropriate context that provides sufficient semantic and phonetic emphasis (Cordin 1989: 594-595). Even more crucially, contexts allowing for non-marking of reflexivity do not exist.

Unlike Italian, Serbian employs a one-form strategy for all types of reflexive marking. Its only reflexive clitic is *se* and its only reflexive pronoun *sebe*. The intensifier *sam* ‘self’ can be added to pronominal forms and it represents the only element that agrees with the subject in number and gender. Reciprocal meaning can be encoded by the clitic *se* or by the expression *jedan drugog* ‘each other’, agreeing in number and gender with the subject. The alternation between clitic and pronominal forms is subject to approximately the same stress and focus conditions imposed by Italian (Stanojčić and Popović 1995: 100). Serbian reflexives and reciprocals are illustrated in (4) and (5).

(4) a. Marina se kupa.

Marina SE bathe.PRES.3SG

‘Marina is bathing.’

b. Sanja voli samu.sebe.

Sanja love.PRES.3SG herself

'Sanja loves herself.'

(5) a. Marko i Ivana se ljube.

Marko and Ivana SE kiss.PRES.3PL

'Marko and Ivana are kissing.'

b. Nikola i Aca tuku jedan drugog.

Nikola and Aca beat.PRES.3PL one other

'Nikola and Aca are beating one another.'

Both in Italian and in Serbian the third person clitic (*si*/*se*) is highly polysemous and in addition to the basic reflexive and reciprocal meanings, it can also mark inchoative, middle, feel-like and impersonal constructions; moreover, there are many intransitive verbs that are simply lexicalised in reflexive form.

The most important thing to be said about English is that it does not possess any clitics, but only pronominal *-self* markers, agreeing in person, number and gender with their antecedent (a multi-form strategy). The only way to overtly mark reciprocal meaning is by using one of the synonymous pronominal expressions *each other* or *one another*. In addition, English does have a set of verbal forms, but these are not formally marked and they represent closed classes of verbs (such as *wash*, *shave*, *dress* for reflexives and *kiss*, *hug*, *meet* for reciprocals, cf. Levin 1993). In the literature these verbs are often labelled as 'intrinsic' reflexive/reciprocal predicates, as opposed to 'extrinsic' predicates (compare 6a and 7a to 6b and 7b).

(6) a. Paul washed (himself).

b. Jane respects *(herself).

(7) a. Bob and Lucy are kissing (each other).

b. Rick and Jerry hate *(each other).

Reflexivity and reciprocity encoding by means of pronouns is highly productive in English, without being subject to special discourse conditions.

The theoretical approach to reflexives and reciprocals

The approach to argument structure adopted in this paper is based on the framework of Lexical Functional Grammar (LFG).[1] It assumes that each predicate can be represented at three levels relevant for capturing the possible alternations of its numbers or arguments, or *valence*: *thematic structure*, which expresses the verb's semantic arguments, *a(rgument)-structure*, which contains an ordered list of valence slots that the verb subcategorises for, and the level of *grammatical functions*, which encodes the roles of the verb's arguments in surface syntax (cf. Ackerman and Moore 2001: 44-45). This basic architecture, exemplified in templates for transitive and intransitive verbs, is shown in (8). The intransitive template has the option of having either an Agent or a Theme semantic argument, depending on whether the verb is unergative or unaccusative.

(8) Insert example (8) here

The schemes in (8) indicate that there is a sense in which the transitive template 'contains' the intransitive one (in both its versions). The same was, in a different framework, suggested by Montrul (1997), who claimed that the transitive template is the

basic one, since all other cases can be derived from it. This claim has great importance for the acquisitional issues, because the transitive template is argued to constitute the default template that language learners rely on when acquiring verbal transitivity in both L1 and L2.

Concerning the treatment of reflexives and reciprocals, the nominal forms are assumed to be transitive, two-argument structures, whereas the verbal forms are seen as intransitive – their verb is viewed as expressing only the syntactic function of the subject, while the clitic is analysed as a non-argumental marker of valence change (cf. Grimshaw 1982, Alsina 1996).

The transitivity status of nominal and verbal reflexives and reciprocals is closely related to their binding properties. In the nominal forms, binding occurs at the level of grammatical functions and it is typically indicated by alphabetical coindexation. An example is given in (9).

(9) Nominal reflexives

Insert example (9) here

Since verbal forms express only one syntactic function, they cannot be subject to the same binding mechanism. Instead, their formation is understood, following Alsina (1996: 116), as an instance of valence alternation brought about by the binding of two arguments at the level of a-structure and their joint mapping onto a single syntactic function. This can be formally represented using numerical indices, as in (10).[2]

(10) Verbal reflexives

Insert example (10) here

Going back to the prerequisites for reflexive formation, it is obvious that, for any kind of binding to take place, two arguments must be present in the a-structure of the input verb. Clearly, given that unaccusatives and unergatives do not have a second argument, they cannot be reflexivised or reciprocated.

The last point concerns the Italian reciprocal pronouns, which can appear only in clitic doubling constructions. In the literature their status is controversial between verbal and nominal, depending on which part is thought to carry the alternation, the clitic or the pronoun.[3] In this paper we remain agnostic on the exact theoretical status of these forms, and we will refer to them as 'nominal' for ease of reference, giving importance only to the fact that they contain a pronominal element which can be treated as such at least morphologically.

Argument structure in language acquisition research

L1 acquisition

Research on L1 acquisition of argument structure has largely focused on the fact that children sometimes use intransitive verbs transitively, as in [E, 3;0] *Don't giggle me* (Bowerman 1982: 17), and the other way round, as in [J, 8;3] *Do you think it'll fix?* (Lord 1979, quoted in Montrul 1997: 98). Numerous studies have shown that these phenomena are crosslinguistically attested (Bowerman 1982 for English, Borer and Wexler 1987 for Hebrew, Barrière et al. 1999 for French), while the morphosyntactic patterns that children use when overgeneralising have been noted to be language-specific.

Among the explanations offered, we single out Montrul's (1997) interpretation of children's errors in terms of reliance on the default template, which happens when they

are not sure about the specific components of verb's meaning that determine its transitivity status (see also Pinker 1989). Namely, if children use an intransitive verb transitively (as in *Don't giggle me*), it means that they have mapped it onto the default transitive template, assuming that it can have both an Agent and a Patient. In the reverse case (for instance of the type *Do you think it'll fix?*), they presumably think that a specific non-alternating transitive verb can undergo a suppression of one of its arguments, and as a result they use it intransitively. The general idea behind both cases is that the structure that is most permissive with respect to an alternation, i.e. the one allowing most derivations, is used as the default template. Since all templates are thought to be innate, this mechanism is believed to constitute evidence for UG.

Turning now to the studies that deal with reflexives and reciprocals in child language, some remarks about overgeneralisation patterns have been made here as well. Errors involving reflexive clitics are reported for French by Barrière et al. (1999) and for Polish by Rivero and Golędzinowska (2002); they are exemplified in (11) and (12), respectively.

(11) Je me gigote. (François 3;6)

I REFL.1SG fidget.PRES.1SG

'I fidget.'

(12) Pływała się. (B 1;8)

swim.PAST.PART REFL

'She swam.'

On the other hand, pronominal overgeneralisations have been identified in English. Bowerman's (1982) data contain several examples of reflexive use of intransitive verbs, which confirm the general tendencies noted for non-reflexive forms:

(13) He *disappeared* himself. He just keeps *disappearing* himself in different places. (C 4;2)

Judging from the non-reflexive transitivity errors, the reverse pattern should also be attested (omission of reflexive markers in the contexts that require them to be present), but as far as we know, no data on such cases has been reported, at least not beyond the point when reflexive markers become productively used in child speech.

Similarly to what happens in non-reflexive overgeneralisations, it could be argued that a possible explanation for the above cases lies in the children's reliance on a 'permissive' default transitive template, which sometimes makes them analyse intransitive verbs as transitive, allowing them as input for reflexive formation.

L2 acquisition

Transitivity alternations have also been widely studied in SLA contexts (Juffs 1996, Montrul 1997), alongside other argument structure phenomena, such as the English dative alternation (Inagaki 1997) and the unaccusative/unergative distinction (Zobl 1989).

In the acquisition of argument structure, the task of L2 learners seems to be fairly similar to that of L1 learners, namely acquiring the syntactic and semantic rules that govern each alternation (cf. Pinker 1989) and the specific morphological expression of the alternation that the target language uses. However, due to the nature of the SLA

process, it should be highlighted that the constraints imposed on the alternations show wide crosslinguistic variation and that their morphological spell-outs differ greatly from one language to another. Moreover, the crucial difference between the L1 and L2 acquisition lies in the simple fact that L2 learners already have one fully developed system containing the rules and morphology of the alternations as manifested in their L1.

All this leads back to the general question posed in the introductory part of the paper, that of the factors determining SLA. In the previous section a proposal has been presented from Montrul (1997) of how the innate mechanisms could operate in L1A of argument structure alternations, but the problem is even more challenging in SLA, where the issue becomes whether these same mechanisms persist or the entire argument structure knowledge is first transferred from the L1 and then adapted if necessary.

The empirical evidence gathered so far is rather ambiguous. For most scholars working within this framework, UG access appears to be indisputable, but the results on the L1 component are mixed, and while some studies have found transfer effects, no L1 influence has been detected in others (see reviews in Juffs 2000 and Montrul 2000). Furthermore, a number of researchers argue for a 'middle way' between these extreme positions by suggesting that the transfer phenomena do not affect all parts of grammar in the same manner.

The level that has been shown to be most subject to transfer is morphology, as indicated for instance by the results of Adjémian (1983) and Toth (2000), who found that the learners they tested initially ignored the morphological properties of the L2, using instead the (non)marking they would use in the L1 (e.g. Toth's English learners of Spanish persisted in omitting the obligatory clitic *se* in contexts that are morphologically

unmarked in English, as in the inchoative *The window opened*). Similar results were reported in Montrul's (1997) study on transitivity alternations in English, Spanish and Turkish, where she found evident differences between learner groups with different L1s at the level of morphology, even at the high-intermediate stage.

Other domains, however, do not give such clear results. For argument structure rules, Montrul found similar overgeneralisation errors for all learners, regardless of their background (e.g. acceptance of sentences such as **The magician disappeared the rabbit*), which should not have happened if their entire L1s were transferred. These overgeneralisation patterns were again interpreted by Montrul through initial recourse to the innate default template, which is gradually abandoned as the learners' proficiency increases.

These mixed results suggest that new arguments should be looked for, perhaps by examining additional phenomena and additional factors, above all L2 input. This was the main reason why reflexivisation and reciprocation were chosen for this study. While an abundant research record exists on reflexives in terms of binding (Thomas 1993, Hamilton 1998), to the best of our knowledge, no work has been done on how L2 learners acquire the restrictions on which verbs can be reflexivised in the target language.

The study

Hypotheses

The study was designed to address two general research questions, couched in the context of the monolithic versus modular influences debate:

- Is L2 acquisition of argument structure alternations shaped primarily by innate principles, L1 influence or L2 input, or by an interplay of these factors?
- Do these factors have the same impact on all levels of grammar or each module has a different degree of susceptibility to each factor?

Keeping in mind the previous findings in L1 and L2 acquisition, it is hypothesised that any errors related to verbs' transitivity will be developmental and due to the innate default options and/or L2 input, while any errors on the morphological marking will be persistent and attributable to the learners' L1. If these hypotheses are borne out, this will constitute evidence for the modularity of influences; in the opposite case, and if no alternative explanation can be found, it will be concluded that an approach close to FT/FA is more realistic. Specific predictions are given after the presentation of the test design.

Participants

A total of 78 subjects participated in the study, including experimental groups and native controls; they were tested in Serbia, UK and Italy. The information about the exact number of subjects in each group and the subjects' age is given in Table 1.

Insert Table 1 about here

The Serbian learners of Italian were recruited from the Italian Department of the Faculty of Philology, University of Belgrade, where they were doing their undergraduate studies in Italian Language and Literature. To enable the testing of the developmental path, two proficiency groups were formed, Lower Intermediate (LI), n=16, and Upper Intermediate (UI), n=17. The participants were assigned to a specific level on the basis of

their performance on the test-internal measure (a cloze test). A similar procedure was applied with the English learners, who were also university students of Italian, tested at Cambridge and Oxford University. Two proficiency groups were created here as well, LI (n=11) and UI (n=14). The fact that all participants were studying Italian in the most formal instructional setting possible might have its shortcomings, but given the time constraints imposed on the study, they were the best choice available. None of the participants spent longer than two months in Italy.

The control group consisted of 20 native speakers of Italian, 9 of whom were tested in Cambridge, UK, where they were studying for a postgraduate degree, and 11 tested in Milan and Genoa, Italy.[4]

Testing materials

The test administered to the subjects consisted of four tasks: a cloze test, a vocabulary translation task (VTT), a picture judgement task (PJT) and an acceptability judgement task (AJT). The only difference between the versions distributed to the learners and the controls was that native speakers did not do the VTT. The entire test design represents an adaptation of the methodology used by Montrul (1997).[5] No time limit was imposed for the completion of the test.

Specifically, the cloze test was intended to assess the level of the learners' proficiency in the L2. This type of task was chosen rather than a standardised proficiency test due to the fact that the study is part of a bigger project that also involves L2 English and L2 Serbian; since no standardised tests exist for Serbian, and the levels defined by Italian and English tests would be difficult to compare, a cloze test was considered a suitable

measure that should give results directly comparable across languages. The original text, a short narrative, was in English (adapted from Rye 1982: 43-44); it was translated into Italian by the experimenter, and then checked by two native speakers. The first sentence of the text was kept intact, while every seventh word was deleted in the remainder, for a total of 40 blanks.

The goal of the VTT was to verify whether the learners knew the verbs whose acquisition was being tested. It contained a list of 34 verbs, presented in randomised order (these were the same verbs used in the PJT), that the participants were asked to translate into their native language. These verbs are listed in Table 2.

Insert Table 2 about here

The PJT was designed to address the research questions and hypotheses outlined above. The choice of the task was determined in the first place by the need to supply a context for the sentences, which was necessary because they could otherwise be given an impersonal, in addition to a reflexive or reciprocal interpretation.

The task consisted of 68 pictures (34 different pictures, one per verb, repeated twice)[6], each accompanied by a pair of sentences to be marked for acceptability on a scale ranging from –3 (completely unacceptable) to +3 (completely acceptable). The subjects were asked to use 0 (defined as 'can't decide') for the sentences they understood, but that they found to be on the borderline between acceptable and unacceptable, while they were required to put a question mark next to the sentences they did not understand (the question-marked sentences were left out from further analysis). There were no distractors, as the task was fairly long and the verbs used were believed to be varied enough to obscure the underlying design.

The verbs included in the test belonged to four major groups. The first group (given under the heading 'reflexive' in Table 2) contained transitive verbs that were used as input for deriving reflexive forms. The second, 'reciprocal' group was composed of transitive verbs that served as input for reciprocation. The 'unaccusative' set included verbs that have one participant (and in this sense are close to reflexives), while the 'unergative' verbs were chosen from the class which necessarily involves more than one participant, but cannot be used transitively.

Each one of the 34 verbs was used in four different constructions: verb + reflexive/reciprocal clitic (referred to as the *clitic* condition), verb + reflexive/reciprocal pronoun (*pronoun* condition), verb + reflexive/reciprocal clitic + reflexive/reciprocal pronoun (clitic doubling, or *cli+pro* condition), and unmarked verb (*unmarked* condition). They are illustrated in (14) and (15), for reflexive and reciprocal forms.

(14) a. Tommaso *si è* lavato.

b. Tommaso ha lavato *se stesso*.

c. *Tommaso *si è* lavato *se stesso*.

d. *Tommaso ha lavato.

'Tommaso washed himself.'

(15) a. Rosa e Flavio *si* sono baciati.

b. *Rosa e Flavio hanno baciato *l'un l'altro*.

c. Rosa e Flavio *si* sono baciati *l'un l'altro*.

d. *Rosa e Flavio hanno baciato.

'Rosa and Flavio kissed each other.'

Although there were four sentences to judge per verb (and consequently per picture), it was decided not to put all of them together and use each picture only once, but to have each picture appear in the test twice, with two different sentences. This was done because having to judge four very similar sentences at one time was considered to be too demanding for the participants, and moreover, it would make it much easięr for them to capture the structure of the test. In order to reduce any possible ordering effects, two versions of the test were created by randomising in different ways both the pictures and the sentences that accompanied them.

An overview of the relation between different verb and construction types in terms of grammaticality is shown in Table 3, while examples of test items from the PJT are given in the Appendix. The verb types and construction types were chosen in such a way that they enable the testing of the hypotheses; intransitive verbs were included in order to examine the learners' knowledge of transitivity in the L2, while the reflexive and reciprocal forms were intended to address both transitivity- and morphology-related issues.

Insert Table 3 about here

As mentioned above, only third person forms were used in the test, both singular and plural, in order to avoid interference of those differences between languages that are irrelevant for the study (one-form strategy of Serbian versus multiple-form strategies of Italian and English). All reflexive pronouns were accompanied by the intensifier *stesso* 'self', in order to make their use in direct object position sound more natural.

Two verbal tenses occurred in the test sentences, the present tense and the (compound) past tense. This was inevitable, as some of the verbs would sound odd in the present, and

some in the past, depending on the type of action they denote. However, due to the use of the past tense, a note is due on auxiliary choice in Italian. Reflexive clitics trigger a change of the past tense auxiliary verb from *avere* 'have', used with transitive and unergative verbs, to *essere* 'be', typically used with unaccusative verbs. Since this might have led the subjects to reject some sentences for independent reasons (i.e. because they were not familiar with the use of auxiliaries in Italian), in order to control for this problem, one part of the AJT was designed to test their knowledge of auxiliary choice with different verb types.

The AJT contained 48 sentences to judge on the same scale used in the PJT, but without pictures. The purpose of the task was to control for some potentially problematic features of the PJT, of which only the auxiliary selection is relevant for the present discussion. Learners' knowledge of auxiliaries was tested on 16 sentences, 8 with the correct and 8 with the incorrect auxiliary. The following verb classes were represented by two tokens: transitive verbs (*mangiare* 'eat' and *leggere* 'read'; auxiliary *avere*), unergative verbs (*ballare* 'dance' and *giocare* 'play'; auxiliary *avere*), unaccusative verbs (*partire* 'leave' and *uscire* 'go out'; auxiliary *essere*) and unaccusative verbs with lexicalised reflexive marking (*arrabbiarsi* 'get angry' and *ammalarsi* 'fall ill'; auxiliary *essere*). These verbs were not included in the VTT, as it was expected that due to their high frequency all learners should know them.

Refining the above hypotheses according to the contexts they were tested in, the following predictions are made:

Hypothesis 1: Transitivity rules

Following Montrul (1997) in assuming that transitivity rules are not subject to transfer, it is expected that their acquisition in the L2 should resemble the patterns attested in L1A, which for our study amounts to predicting that:

1a. All learners will accept reflexivised and reciprocated unaccusatives and unergatives;

1b. Acceptance of intransitive uses in contexts that should be reflexive or reciprocal, if it occurs at all, will happen for all learner groups.

Hypothesis 2: Morphology

As L1 morphology is typically transferred into the L2 (Adjémian 1983, Montrul 1997, Toth 2000), causing learners to differ from native speakers whenever there is a mismatch between the L1 and the L2, it is expected that:

2a. Both English and Serbian learners will accept reciprocal pronouns without clitic doubling and reject them when doubled by clitics;

2b. The English learners will accept those unmarked reflexive and reciprocal forms that can be morphologically unmarked in English (equivalents of *wash*, *shave*, *dress*, *prepare*; *kiss*, *hug*, *caress*, *meet*).[7]

Hypothesis 3: Developmental path

The amount of transitivity errors, due to either innate mechanisms or L2 input, will decrease over time and the UI learners will be closer to the target than the LI learners, while incorrect morphological marking, caused by transfer, will be persistent in the judgements of all learners, regardless of proficiency.

Results

In the cloze marking process, all semantically and grammatically appropriate solutions were accepted as correct, even if they did not exactly match the word used in the original text. Each correct solution received 1 point, while 0.5 points was assigned to the solutions that contained a minor morphological or spelling error, or which led to a slight modification of the original meaning of the sentence. Given the 40 blanks, the maximum number of points was 40. The group scores, in percentages, are shown in Table 4, together with VTT results.

Since equal variances could not be assumed (Levene's test statistic $F(4,73)=12.41$, $p<0.001$), a non-parametric Kruskal-Wallis test was used for the cloze data, which showed a significant overall difference between groups, $H(4)=67.81$, $p<0.001$. A series of Mann-Whitney pairwise comparisons (with Bonferroni correction) confirmed that all learner groups differed from the control group; crucially, the lower proficiency groups differed from the higher proficiency groups and there was no effect of L1 (no difference between the two LI or the two UI groups).

Insert Table 4 about here

In the VTT one point was assigned for each correct translation (synonyms were accepted as well), for a maximum of 34 points. If a subject did not provide a correct translation for a verb, his/her answers on the sentences containing that particular verb were not analysed in the PJT.[8] The accuracy was relatively high with most verbs, but there were several problematic items that many learners did not know, namely *rasare* 'shave', *pungere* 'prick', *graffiare* 'scratch' and *aggredire* 'attack'. In particular, while differences were expected between different proficiency levels, the groups with different L1 backgrounds unexpectedly obtained different results on VTT, with the English groups

performing worse than the Serbian ones. This might make one wonder if these learners are as comparable in proficiency as the cloze scores indicate, given that it has been shown that there is a correlation between L2 lexical knowledge and overall proficiency (cf. Zareva et al. 2005). However, due to its characteristics (an out-of-context translation task with a limited number of items, all verbs, whose frequencies could not be controlled for), the task used in our study cannot be considered a proper vocabulary test and it seems plausible that the learners did or did not know certain infrequent items by pure chance.

For the PJT the numerical results and the statistical analyses were computed on the mean group scores. The mean responses for all sentence types are shown in Table 5 and the corresponding graphs (Figures 1-4). The results will be discussed in relation to the hypotheses, in terms of patterns and statistical analyses.

Insert Table 5 about here

Starting from Hypothesis 1, two kinds of transitivity errors could occur: acceptance of transitive uses of intransitive predicates and acceptance of intransitive uses of transitive predicates. With respect to the sentence types used in the study, the first kind would appear if the learners accepted any type of reflexive or reciprocal marker used with unaccusative and unergative verbs (Hypothesis 1a); the second error type would possibly be attested if the learners accepted unmarked forms of reflexivised and reciprocated transitive verbs (Hypothesis 1b; more about this issue and its interference with morphology is said below).

As it can be seen from Figures 1 and 2, the learners gave mostly accurate judgements on the correct, unmarked forms of unaccusative and unergative verbs, but instead of rejecting all of their reflexive and reciprocal derivations, they made some transitivity

errors. This is most striking with unaccusatives and unergatives to which a reflexive/reciprocal clitic is added. Importantly, however, all learner groups did not treat these forms in the same way. It is clear from the patterns of responses that there are major differences between L1 Serbian and L1 English groups, where the former gave less determinate judgements than the natives, but in the right direction, while the latter expressed judgements on the opposite side of the scale. A Kruskal-Wallis test confirms a significant difference between groups (for unaccusatives $H(4)=44.37$, $p<0.001$, for unergatives $H(4)=53.28$, $p<0.001$), while Mann-Whitney pairwise comparisons show that for unergatives all learner groups differ from controls, while for unaccusatives only SerUI does not; the differences between the Serbian and the English groups are also statistically significant in all cases.[9]

Insert Figure 1 and Figure 2 about here

The situation is slightly different for other types of markers, pronouns and clitic doubling, where the learners' responses mostly pattern with those of the control group, even though the English again appear to be less accurate than the Serbian learners, especially with clitic doubling. The difference between groups is significant in both pronoun and clitic doubling condition for unaccusatives ($H(4)=25.8$, $p<0.001$, and $H(4)=29.12$, $p<0.001$, respectively), and with clitic doubling for unergatives ($H(4)=26.35$, $p<0.001$). In all cases the most prominent differences are those between the controls and the English learners. The most problematic case for all groups seems to be the use of reciprocal pronouns with unergative verbs. The results are quite inconclusive here, given that the judgements of the natives themselves are rather indeterminate; in fact, the difference between groups is not significant ($H(4)=9.06$, $p=0.06$). The only

explanation we can offer at the moment is that the unclear theoretical status of the Italian reciprocal pronouns is reflected in the responses of all participants.

Insert Figure 3 and Figure 4 about here

As for the transitive verbs used intransitively, the only sentence types that might give some indication of these errors are the unmarked uses of transitive verbs in reflexive or reciprocal context (Figures 3 and 4). In both cases, despite the seemingly similar judgements of all groups, a Kruskal-Wallis test found a significant group effect (for reflexives $H(4)=15.98$, $p<0.01$, for reciprocals $H(4)=16.69$, $p<0.01$), and post-hoc Mann-Whitney tests discovered that both times its source was the difference between the control group and the two English groups. However, in order to say something more precise about these errors, it is necessary to look at the data more closely, as the difference might in fact be due to morphological factors.

Recall that English allows certain 'intrinsic' predicates to be used reflexively or reciprocally without being overtly marked by a reflexive/reciprocal pronoun. Among the verbs used in this study, there were four such verbs among reflexives (Italian equivalents of *wash*, *shave*, *dress*, *prepare*) and four in the reciprocal group (*kiss*, *hug*, *caress*, *meet*). Figures 5 and 6 show a reanalysis of the data obtained by separating these verbs from the rest. For reflexives, three verbs have been omitted from the 'extrinsic' group, *amare* 'love', *odiare* 'hate' and *rispettare* 'respect', because they gave indeterminate results for all groups, which can be explained by an incorrect interpretation of the pictures.

Insert Figure 5 and Figure 6 about here

It can be seen that the patterns do differ for the English group with 'intrinsic' and 'extrinsic' verbs (more markedly so for reciprocals), meaning that the problem probably

lies in L1 morphology and that this should not be treated as a transitivity error. For the UI group the intrinsic/extrinsic split is confirmed by Wilcoxon signed-rank statistics (reflexives: z=–3.30, p<0.01; reciprocals: z=–2.86, p<0.001), which does not happen for the LI group (reflexives: z=0.00, p=1.000; reciprocals: z=–1.51, p=0.131), probably due to large standard deviations caused by vast differences between the judgements of individual learners. Even though these results do not lend unwavering support to the morphological transfer hypothesis, they do point to a morphological rather than a transitivity problem.

Concentrating more specifically on morphology, as expected, no problems have been identified with the use of 'proper' reflexive and reciprocal clitics and reflexive pronouns, but apart from the discussed unmarkedness problem of the English learners (Hypothesis 2b), evidence of transfer is present in the use of reciprocal markers (Hypothesis 2a). Figure 4 undoubtedly shows that the native speakers themselves do not have clear intuitions about the use of nominal reciprocals. Their judgements on the illicit pronoun use are just below zero and those on clitic doubling constructions are not very determinate (remember also the natives' judgements on reciprocal pronouns used with unergative verbs). The learners' responses on these two constructions indicate quite evidently that their L1s are influencing their L2 judgements, as they all accept pronouns, and despite the indeterminacy of the natives, there is a highly significant difference between them and all learner groups, confirmed by a Kruskal-Wallis test (H(4)=29.49, p<0.001), and pairwise Mann-Whitney tests. Serbian groups in addition reject the grammatical clitic doubling constructions (their difference from the controls is the locus of the only statistically significant Mann-Whitney tests following a significant Kruskal-

Wallis result, $H(4)=18.1$, $p<0.01$); the English seem to be better at them, but as it will be seen below, they are inclined to accept clitic doubling for reflexives as well, so it is doubtful whether their correct responses on reciprocals reflect proper knowledge of the construction.

Finally, the most puzzling situation is the one found for reflexives doubly marked with both clitics and pronouns (see Figure 3). The picture is similar to the one with unaccusatives and unergatives in the clitic condition: here as well there is a significant overall difference between groups ($H(4)=25.08$, $p<0.001$), and all learner groups significantly differ from controls, but the pattern shows that the judgements of Serbian and English learners are different (even though not significantly) in that the English learners at LI level tend to accept these sentences, at UI level they just about start rejecting them, while the Serbian groups' answers are on the right side of the scale from the beginning, only being much less determinate than the controls' judgements. The main problem is how to establish whether these cases should be treated as transitivity errors or morphological errors. On the one hand, they are reminiscent of double marking of an argument position, and the error pattern is similar to the one that emerged for transitivity errors, on the other, similar uses of reflexive clitic doubling exist in languages such as Spanish and Catalan, indicating that some morphological mechanism might be at play. We will return to this problem in the following sections.

In relation to Hypotheses 3, dealing with developmental patterns, it was predicted that the rate of transitivity errors would decrease more markedly than that of morphological errors; the situation in the data appears more complex than that. Statistical analyses have not identified any significant differences between the mean judgements of the LI and the

UI groups, for either language. The trends, on the other hand, do indicate some improvement in a number of cases, so it seems reasonable to assume that the complete lack of significance might be due to large individual variation. Indeed, for an in-depth investigation it would be essential to look at potentially more illuminating individual data, but owing to space limitations, this cannot be discussed here. Instead, we reanalyse the group judgements on the problematic constructions in the light of their accuracy regardless of the exact mark. All the judgements on the correct side of the scale (+1, +2 or +3 for grammatical sentences and –1, –2 and –3 for ungrammatical sentences) are assigned 1 point, while all the judgements on the opposite side, as well as all zeroes, receive 0 points. The average accuracy percentages obtained by this procedure are summarised in Table 6.[10] For transitivity errors, unergatives in the clitic condition are the only instance where no progress can be detected; in all other cases there is at least a modest improvement at the UI level. For morphology, on the other hand, with the exception of the English groups in the reciprocal pronoun condition, over time, the learners tend to become even more distant from the target, presumably because the initial error pattern perseveres and the judgements become more determinate. It can therefore be (tentatively) argued that morphological errors are indeed more persistent.

Insert Table 6 about here

Lastly, the results of the AJT, concerning auxiliary selection, confirm that the accuracy of all groups is high above chance, meaning that the errors in the PJT cannot be traced back to any problems with auxiliaries. The percentages of correct judgements on correct and incorrect uses of the auxiliaries are reported in Table 7.

Insert Table 7 about here

In sum, the predictions of Hypothesis 1a were borne out only in part, as the learners did make transitivity errors in accepting reflexivised and reciprocated unaccusatives and unergatives, but these errors were more prominent for L1 English than for L1 Serbian learners. No evidence was found of detransitivising errors, predicted by Hypothesis 1b. Hypothesis 2a has been confirmed almost in full – all learners accepted illicit reciprocal pronouns and the Serbian groups also rejected the required clitic doubling; some evidence in support of Hypothesis 2b (acceptance of unmarked reflexives and reciprocals by the English groups) is also present, but it is far less persuasive. It looks as if Hypotheses 3 was on the right track – transitivity errors do seem to be overcome faster that morphological errors – but it is difficult to give a definite conclusion, as the observed group differences are not statistically significant.

Corpus data

In order to see whether the specific patterns that emerged in the test results can be attributed to the influence of L2 input in the reflexive and reciprocal domain, a corpus examination has been performed.

Since the learners tested in this study were confined to formal instructional settings, spending only up to two months in Italy, the primary linguistic data they were exposed to came mainly from their teachers, textbooks, literature and television. However, since it was impossible to gain insight into the exact input they received, it was necessary to use a publicly available corpus. The resource chosen was a corpus of written Italian CORIS, containing 100 million words in texts from different genres (press 38%, fiction 25%, academic prose 12%, administrative prose 10%, miscellaneous 10% and ephemeral 5%).

The reasons behind the choice of this corpus were twofold. Firstly, as mentioned above, this study is one of three studies within a bigger project, which imposed the goal of looking for corpora of Italian, Serbian and English that are as comparable as possible; since the largest available corpora of Serbian are written, while the British National Corpus is 90% such, a written corpus was selected for Italian as well. Secondly, CORIS was by far the biggest corpus available, so it was assumed that the quantity of the data should make up for the fact that the corpus contains no spoken part.

It should also be emphasised that the corpus study presented here does not directly comply with what Whong-Barr (2005) had in mind in her discussion of possible input influence, which would require different verbs to be examined in the input in addition to those that behave in the same way in the studied languages. Given the complexity of use of reflexive clitics in Italian, that type of search would take too long and a more straightforward examination of marker distribution was instead opted for. Frequencies of occurrence of reflexive and reciprocal clitics and pronouns were counted for the verbs used in the test; in addition, overall frequencies of nominal reflexive and reciprocal expressions were also examined. The former search included the forms for all persons and both numbers; in the latter search, only third person forms were looked at. These particular comparisons were performed because nominal markers behave differently in reflexive and reciprocal forms and it was assumed that the marker with higher frequency might influence the learners' treatment of the marker with lower frequency, meaning that the input is the crucial factor. If it turns out that no such relationship exists, the explanation for the learners' response patterns should be looked for elsewhere.

Unaccusative and unergative verbs were excluded from this search, as they have no marker types to compare.

Recall that some learners unexpectedly accepted clitic doubling for reflexives. Strictly speaking, the input can be 'blamed' for this if the reciprocal forms, which do require clitic doubling, are so frequent that the learners can be expected to overgeneralise them to reflexive forms. However, as shown in Figure 7, in the sample of verbs used in this study, the relative frequency of nominal reciprocals is 9.06 times lower than the relative frequency of nominal reflexives (relative with respect to the total number of occurrences of reflexive/reciprocal forms). Reflexives are overall more frequent than reciprocals and in this sample of verbs reflexives constitute on average 13.56% of all uses of the given verbs, whereas the percentage for reciprocals is 2.83%.

Insert Figure 7 about here

In order to gain a better insight into the input data, another search was performed with the goal of identifying the absolute frequency of reflexive and reciprocal pronominal markers in the corpus. Given the corpus size, it was impossible to look at other individual verbs and the search targeted the markers themselves. Also, since first and second person reflexive forms can carry both reflexive and non-reflexive meaning, having therefore very high frequencies, the search was limited to *sé*-forms (with and without the intensifier), and *l'un l'altro* in third person contexts. Another important issue is that due to the limitations of CORIS' search interface, it was impossible to extract all occurrences of *sé* and *se stesso*, meaning that some of the figures are actually estimates calculated from the examined sample.

In the whole corpus 221 occurrences were found of *l'un l'altro* in direct object use (clitic doubling), plus 2 further instances with the pronominal element only, confirming the unclear status of reciprocals in Italian. For *sé* and *se stesso*, 1723 instances of direct object use were counted in the sample of 14842 sentences that could be extracted, and an estimate is that there are around 3170 instances in the whole corpus, as there is a total of 27302 sentences containing some form of *sé*. Even though the total for the nominal reflexives is an estimate, the figure undoubtedly indicates that reflexive pronouns are much more frequent in the input than reciprocal pronouns. One of the reasons is no doubt the fact that reciprocals can appear only with plural verb forms, which automatically makes their frequency two times lower than that of reflexives, but even the remaining difference seems big enough to justify the claim that reflexive pronouns are in all senses more frequent than reciprocal pronouns.

This indicates that an influence coming from reciprocals leading to clitic doubling in reflexives is quite improbable; it should in fact be the other way round, and even under input influence the learners should not accept clitic doubling with reflexives. On the other hand, it could be that this ratio of frequencies makes the learners assume that nominal reciprocals have the same form as nominal reflexives, i.e. that they do not require clitic doubling. Moreover, since direct object use is not very frequent for nominal reciprocals, its uses in other cases, which do not require clitic doubling, might also exert an influence in the direction of acceptance of non-doubled reciprocal forms: the total number of occurrences of *l'un l'altro* for all persons is 3068, and of these only 300 are DO uses (9.78%), 129 are indirect objects with clitic doubling (4.2%) and the remaining 2639 are different uses without clitics (86.02%). It could thus be claimed that input reinforces what

is transferred from L1, or that the two sources operate together, leading to acceptance of *l'un l'altro* without clitic doubling.

Discussion

The empirical data showed that the predictions of Hypothesis 1 (transitivity rules) were borne out only in part, those of Hypothesis 2 (morphological marking) almost entirely, while those of Hypothesis 3 (development) gave a tentative indication of being correct.

The test results evidence that the learners accepted some ungrammatical reflexive/reciprocal derivations with intransitive verbs, as well as some over-marked reflexive forms (clitic doubling). Their L1s cannot be responsible for the errors in a direct way, as they do not allow these options. The input cannot be the immediate cause either, as it contains no such cases, nor can it be expected that much less frequent clitic-doubled reciprocal pronouns should influence the judgements on more frequent reflexive pronouns. This might thus lead to a conclusion, along the lines of Montrul (1997), that L2 learners do indeed rely on a default transitive template when judging transitivity-related phenomena. But let us first discuss possible alternative explanations, that is, whether these cases might actually be better explained as morphological errors or errors caused by other constructions.

Note first that in making errors the learners distinguish between different marker types; for unaccusatives and unergatives there is a higher acceptance rate for clitics than for pronouns or clitic doubling. This might indicate some awareness of the difference in transitivity between nominal and verbal forms and one might wonder if these errors are in fact purely morphological, caused by the existence of a class of lexicalised reflexive

forms, either reflexive-like (e.g. *alzarsi* 'get up', *sedersi* 'sit down', *fermarsi* 'stop'), or reciprocal-like (e.g. *unirsi* 'unite', *separarsi* 'separate', *coalizzarsi* 'form a coalition'). However, the 'fake' reflexives have to be used either with a reflexive clitic or (some verbs) with an object (as in *alzare la mano* 'raise one's hand'), and since the learners also correctly accepted the unmarked unaccusative and unergative forms used in the test, it seems more plausible that they distinguish between clitics and pronouns here because they do so in all other contexts, including the judgements on 'proper' reflexive and reciprocal forms, as shown in Figures 3 and 4 (remember that pronouns require special discourse conditions). The results of this study do not enable us to determine whether the learners perhaps misanalyse the clitic forms as transitive, but it seems plausible to assume that their errors with unaccusatives and unergatives indicate incorrect assignment of these verbs to an alternating transitive template. An influence of the morphologically related 'fake' reflexives cannot be completely negated, but it does not seem sufficient as an explanation on its own.

Secondly, the default template cannot accommodate the cases of clitic doubling with reflexives, a possible account of which could be derived from the general properties of the L2 input. Italian makes abundant use of clitic doubling with (dislocated) non-reflexive objects as a focalisation strategy. Namely, in addition to the canonical SVO word order (exemplified in 16a), Italian allows objects to be dislocated to the left, in which case it is compulsory to repeat them by means of a clitic, as in (16b). Furthermore, in colloquial speech it is also possible to topicalise the object, without dislocating it, by adding its clitic double before the verb (16c).

(16) a. Non vedo Gianni.

not see.PRES.1SG Gianni

b. Gianni non lo vedo.

Gianni not him see.PRES.1SG

c. Non lo vedo Gianni.

not him see.PRES.1SG Gianni

'I don't see Gianni.'

Although they typically occur with full NPs rather than with pronouns, these options might lead the learners to incorrectly assume the same possibility with reflexive objects. However, further work is necessary to show the exact relation between these phenomena, just as it cannot be excluded that these errors might need to be treated as purely morphological, an issue that we also leave open. Another possibility would be to examine in more detail the option of not looking at transfer of morphology and argument structure rules as standing in opposition (see Whong-Barr 2005).

Furthermore, contrary to the predictions of Hypothesis 1, this study has found that the learners with different L1s do not behave in the same way. To be precise, the fact that the English learners make overall more transitivity errors than the Serbian learners is indicative of some other process on top of the reliance on the default template. As the input should also lead to similar behaviour of different groups, the most likely factor that could cause this difference is the L1. Since neither Serbian nor English allow the constructions that the learners accepted in Italian, it seems justified to assume that we need to take into account not only the specific area of reflexives and reciprocals, but also the L1 as a whole. It could be that the fact that Serbian possesses reflexive clitics gives Serbian learners of Italian an advantage over the English learners, whose L1 has no clitics

at all (cf. Sorace 1993 for a related discussion with respect to auxiliary selection). However, this should not be treated as direct transfer of L1 properties in the sense of FT/FA model.

As for the morphological component, transfer is present for reciprocal pronouns (all learner groups), for reciprocal CP rejection (L1 Serbian) and perhaps for unmarked forms (L1 English). Obviously, innateness is inconceivable in this domain, but potential input influences should be checked for. As argued in the previous section, it seems reasonable to suppose that the more frequent reflexive pronouns and non-doubled reciprocal pronouns in oblique cases induce learners to assume the same structure for direct object reciprocals. It appears then that transfer and input operate simultaneously in this case, reinforcing one another. Rejection of reciprocal clitic doubling by Serbian learners could be explained along the same lines, and the fact that the same does not happen in the English groups (contra Hypothesis 2a) would be explained if their correct judgements were arrived at in an erroneous way, by assuming that clitic doubling is licit everywhere (an assumption that could override the L1 influence), or even if the L1 had some indirect influence, in the sense that it might be easięr for learners coming from a language that has no clitics to allow their use in various L2 contexts, including those that are illicit, than is the case with those learners whose L1 has clitics but allows no clitic doubling. Concerning the unmarked forms, the results were not as clear as those reported by e.g. Montrul (1997) and Toth (2000), but this is not so surprising, given that cases like *John washed* are optionally (un)marked in English, contrary to *The door closed*.

Conclusion

The study presented in this paper indicated that three factors are important in the SLA of reflexives and reciprocals, transfer, innate mechanisms and input, with transfer being most directly evident at the level of morphology, which is also influenced by input, and with innate templates and (broadly understood) input being operative at the level of rules that regulate the alternations. However, even where an absence of direct transfer was noted, an indirect influence of the L1 was postulated, in terms of its general properties which can cause differences between learners from different L1 backgrounds. These claims were derived mainly from the learners' errors, but are equally applicable to the correct judgements they gave. A conclusion can therefore be reached that the factors typically examined in SLA research should not be treated as monolithic, and they should always be looked at as a network rather than as separate individual factors. And even though there were no beginners in this study, enabling only indirect insight into the SLA initial state, the presented data can be taken as at least tentative evidence contra a monolithic FT/FA model and for a modular approach.

Notes

[1] For more information about LFG the reader is referred to Alsina (1996) and Bresnan (2001).

[2] Numerical indices are one of LFG's means for signalling which argument maps onto which grammatical function (see Alsina 1996: 22-23).

[3] For arguments in favour of the nominal analysis see Alsina's (1996) account of clitic doubling in Catalan reflexives; for the verbal view see Belletti (1982).

[4] A reviewer pointed out as problematic the fact that some of the native speakers were very proficient in English. Ideally, the control group should speak only Italian; however, monolingual speakers in the strict sense of the word were impossible to find, as all Italian schools and universities have at least one foreign language in their curricula.

[5] The same types of tasks were used, while the modifications concern mainly the number of items in each task, and the overall number of sentences per picture in the PJT, adapted to suit the research questions of this particular study. Also, the AJT in Montrul's study was addressing the research questions, whereas we used it as a control task for some secondary aspects of the PJT.

[6] The pictures were drawn specifically for the purposes of the study, for which I am grateful to Jovana Čavorović.

[7] An explanation of the grounds on which acceptances of unmarked forms are treated as transitivity or morphological errors is given in the results section.

[8] The total percentage of missing answers (because the learner did not know the verb, or he/she put a question mark next to the sentence, or he/she missed a sentence by mistake) was 0.2% for the control group, 12% for Serbian LI, 1.8% for Serbian UI, 21.7% for English LI and 8.6% for English UI.

[9] Non-parametric tests were used for judgement data due to the ordinal nature of the scale, Kruskal-Wallis and Mann-Whitney (with Bonferroni adjustment) for between group comparisons and Wilcoxon signed-rank for within group comparisons.

[10] The unmarked forms were excluded from this analysis because most learners' responses were correct, but very indeterminate.

References

Ackerman, F. and Moore, J. 2001. *Proto-properties and Grammatical Encoding: A Correspondence Theory of Argument Selection.* Stanford: CSLI Publications.

Adjémian, C. 1983. "The transferability of lexical properties". In *Language Transfer in Language Learning*, S.M. Gass and L. Selinker (eds), 250-268. Rowley, MA: Newbury House.

Alsina, A. 1996. *The Role of Argument Structure in Grammar: Evidence from Romance*. Stanford: CSLI Publications.

Barrière, I., Perlman Lorch, M. and Le Normand, M.-T. 1999. "On the overgeneralization of the intransitive/transitive alternation in children's speech: A cross-linguistic account with new evidence from French". *International Journal of Bilingualism* 3: 351-362.

Belletti, A. 1982. "On the anaphoric status of the reciprocal construction in Italian". *The Linguistic Review* 2: 101–38.

Bley-Vroman, R. 2002. "Frequency in production, comprehension, and acquisition". *Studies in Second Language Acquisition* 24: 209-213.

Borer, H. and Wexler, K. 1987. "The maturation of syntax". In: *Parameter Setting*, T. Roeper and E. Williams (eds), 123-172. Dordrecht: D. Reidel.

Bowerman, M. 1982. "Evaluating competing linguistic models with language acquisition data: Implications of developmental errors with causative verbs". *Quaderni di semantica* 3: 5-85.

Bresnan, J. 2001. *Lexical-Functional Syntax*. London: Blackwell.

Cordin, P. 1989. “I pronomi riflessivi”. In *Grande grammatica italiana di consultazione* [Vol. 1], L. Renzi (ed.), 593-603. Bologna: il Mulino.

CORIS, *Corpus dell’Italiano Scritto*. Bologna: Centro Interfacolta di Linguistica Teorica e Applicata. On-line access http://corpus.cilta.unibo.it:8080/coris_eng.html

Gass, S.M. and Mackey, A. 2002. “Frequency effects and second language acquisition: A complex picture?”. *Studies in Second Language Acquisition* 24: 249-260.

Grimshaw, J. 1982. “On the lexical representation of Romance reflexive clitics”. In *The Mental Representation of Grammatical Relations*, J. Bresnan (ed.), 87-148. Cambridge, MA and London: MIT Press.

Hamilton, R. 1998. “Undetermined binding of reflexives by adult Japanese-speaking learners of English”. *Second Language Research* 14: 292-320.

Inagaki, S. 1997. Japanese and Chinese learners’ acquisition of the narrow-range rules for the dative alternation in English. *Language Learning* 47: 637-669.

Juffs, A. 1996. *Learnability and the Lexicon: Theories and Second Language Acquisition Research*. Amsterdam/Philadelphia: John Benjamins.

Juffs, A. 2000. “An Overview of the Second Language Acquisition of Links between Verb Semantics and Morphosyntax”. In *Second Language Acquisition and Linguistic Theory*, J. Archibald (ed.), 187-227. Oxford: Blackwell.

Levin, B. 1993. *English Verb Classes and Alternations*. Chicago and London: University of Chicago Press.

Lichtenberk, F. 1994. Reflexives and Reciprocals. In *The Encyclopedia of Language and Linguistics* [Vol. 7], R. E. Asher (ed.), 3504-3509. Oxford and New York: Pergamon Press.

Lord, C. 1979. “Don’t you fall me down: Children’s generalizations regarding cause and transitivity”. *Papers and Reports on Child Language Development* 19: 81-89.

Montrul, S. 1997. *Transitivity Alternations in Second Language Acquisition: A Crosslinguistic Study of English, Spanish and Turkish*. Ph.D. dissertation, McGill University, Montreal.

Montrul, S. 2000. “Transitivity alternations in L2 acquisition: Toward a modular view of transfer”. *Studies on Second Language Acquisition* 22: 229-273.

Pinker, S. 1989. *Learnability and Cognition: The Acquisition of Argument Structure*. Cambridge, MA: MIT Press.

Rivero, M.L. and Golędzinowska, M. 2002. “The Acquisition of Constructions with Reflexive Clitics in Polish”. *Cahiers Linguistiques d’Ottawa* 30: 60-90.

Rye, J. 1982. *Cloze Procedure and the Teaching of Reading*. London and Exeter: Heinemann Educational Books.

Schwartz, B.D. and Sprouse, R.A. 1996. “L2 cognitive states and the Full Transfer/Full Access model”. *Second Language Research* 12: 40-72.

Sorace, A. 1993. “Incomplete vs. divergent representations of unaccusativity in non-native grammars of Italian”. *Second Language Research* 9: 22-47.

. Stanojčić, Z. and Popović, Lj. 1995. *Gramatika srpskoga jezika*. Beograd: Zavod za udzbenike i nastavna sredstva

Thomas, M. 1993. *Knowledge of Reflexives in a Second Language*. Amsterdam/Philadelphia: John Benjamins.

Toth, P.D. 2000. “The interaction of instruction and learner-internal factors in the acquisition of L2 morphosyntax”. *Studies in Second Language Acquisition* 22: 169-208.

Whong-Barr, M. 2005. “Transfer of argument structure and morphology”. In *Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)*, L. Dekydtspotter et al. (eds), 269-282. Somerville, MA: Cascadilla Proceedings Project.

Zareva, A., Schwanenflugel, P. and Nikolova, J. 2005. “Relationship between lexical competence and language proficiency: Variable sensitivity”. *Studies in Second Language Acquisition* 27: 567-595.

Zobl, H. 1995. “Markedness aspects of case-marking in L1 French/L2 English interlanguage”. In *The Current State of Interlanguage*, L. Eubank, L. Selinker and M. Sharwood Smith (eds), 197-203.Amsterdam/Philadelphia: John Benjamins.

Appendix: Sample test items from PJT

Insert graphics and sentences from the ‘Appendix’ file here

Table 1. Participant data

Group	n	Mean age (SD)	Age range
Serbian LI	16	21.7 (2.0)	19-26
Serbian UI	17	21.9 (1.7)	18-24
English LI	11	18.9 (0.7)	18-20
English UI	14	19.5 (1.4)	17-22
Italian controls	20	25.0 (5.1)	17-40

Table 2. Verbs used in the Vocabulary Translation Task

Reflexive (n=15)	Reciprocal (n=11)
lavare 'wash'	
rasare 'shave'	
vestire 'dress'	*baciare* 'kiss'
preparare 'prepare'	*abbracciare* 'hug'
difendere 'defend'	*accarezzare* 'cuddle'
proteggere 'protect'	*conoscere* 'meet'
mascherare 'disguise'	*ignorare* 'ignore'
armare 'arm'	*provocare* 'provoke'
tagliare 'cut'	*evitare* 'avoid'
graffiare 'scratch'	*uccidere* 'kill'
pungere 'prick'	*avvelenare* 'poison'
bruciare 'burn'	*ferire* 'wound'
amare 'love'	*aggredire* 'attack'
odiare 'hate'	
rispettare 'respect'	
Unaccusative (n=4)	**Unergative (n=4)**
sparire 'disappear'	*conversare* 'converse'
arrivare 'arrive'	*negoziare* 'negotiate'
cadere 'fall'	*collaborare* 'collaborate'
fuggire 'escape'	*comunicare* 'communicate'

Table 3. Grammaticality relations between verb types and construction types

	Clitic	Pronoun	Cli + Pro	Unmarked
Reflexive	ok	ok	*	*
Reciprocal	ok	*	ok	*
Unaccusative	*	*	*	ok
Unergative	*	*	*	ok

Table 4. Cloze test and VTT scores

Group	Mean cloze score (SD)	Cloze score range	Mean VTT accuracy (SD)	VTT accuracy range
Controls	93.8% (2.3)	87.5-97.5%	-	-
Serbian LI	40.0% (6.9)	26.3-48.8%	90.1% (3.5)	82.4-97.1%
Serbian UI	63.2% (7.4)	51.3-75.0%	98.6% (1.8)	94.1-100.0%
English LI	39.1% (8.4)	26.3-50.0%	79.4% (12.3)	58.8-100.0%
English UI	62.9% (7.6)	51.3-75.0%	91.8% (5.3)	82.4-100.0%

Table 5. PJT mean responses by sentence type and group

Reflexive:	Clitic	Pronoun	*Cli + Pro	*Unmarked
Controls	2.74	1.11	-2.17	-2.16
Serbian LI	2.13	1.36	-0.74	-1.89
Serbian UI	2.30	1.52	-0.72	-1.92
English LI	2.31	0.84	0.50	-1.32
English UI	2.64	1.01	-0.20	-0.94
Reciprocal:	Clitic	*Pronoun	Cli + Pro	*Unmarked
Controls	2.88	-0.44	1.41	-2.26
Serbian LI	2.29	1.31	-0.51	-1.85
Serbian UI	2.17	2.07	-0.70	-1.76
English LI	2.16	1.27	0.78	-1.17
English UI	2.62	1.19	0.46	-0.98
Unaccusative:	*Clitic	*Pronoun	*Cli + Pro	Unmarked
Controls	-2.79	-2.76	-2.78	2.99
Serbian LI	-0.66	-2.30	-2.06	2.64
Serbian UI	-1.75	-2.80	-2.39	2.87
English LI	0.77	-1.30	-1.02	2.25
English UI	0.45	-2.06	-1.58	2.55
Unergative:	*Clitic	*Pronoun	*Cli + Pro	Unmarked
Controls	-2.75	-0.34	-2.55	2.75
Serbian LI	-1.37	0.00	-1.73	2.26
Serbian UI	-1.31	-1.23	-1.91	2.34
English LI	0.83	0.33	-0.14	1.13
English UI	1.48	0.17	-0.66	1.82

Table 6. Percentage of correct judgements on some problematic sentence types

	*Unaccusative Clitic	*Unaccusative Pronoun	*Unaccusative Cli + Pro
Serbian LI	57.8%	90.6%	87.5%
Serbian UI	77.9%	97.1%	91.2%
English LI	32.6%	76.5%	74.2%
English UI	44.0%	89.3%	86.3%
	*Unergative Clitic	*Unergative Pronoun	*Unergative Cli + Pro
Serbian LI	73.4%	38.5%	78.6%
Serbian UI	69.1%	67.2%	82.8%
English LI	28.0%	38.6%	50.0%
English UI	18.5%	47.6%	60.7%
	*Reflexive Cli + Pro	*Reciprocal Pronoun	Reciprocal Cli + Pro
Serbian LI	57.6%	17.5%	37.1%
Serbian UI	58.0%	5.9%	34.5%
English LI	32.8%	13.3%	69.6%
English UI	52.7%	20.0%	58.0%

Table 7. Auxiliary selection accuracy in the AJT

	Accurate acceptance of correct auxiliary	Accurate rejection of incorrect auxiliary
Controls	99.4%	100.0%
Serbian LI	94.9%	89.1%
Serbian UI	97.8%	87.4%
English LI	97.7%	77.6%
English UI	95.3%	88.4%

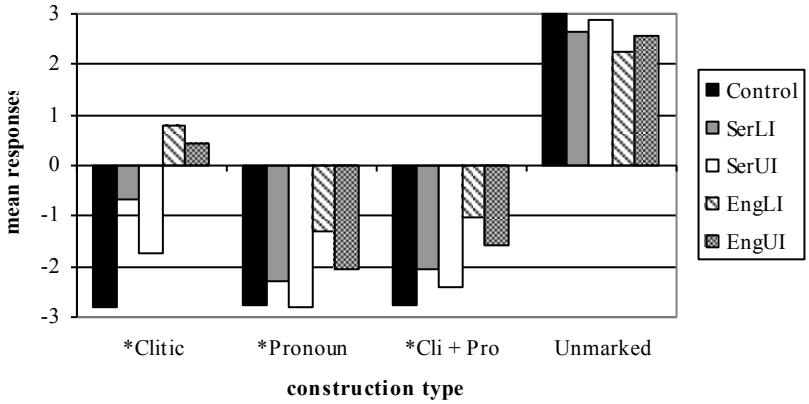


Figure 1. Mean judgements on unaccusative verbs

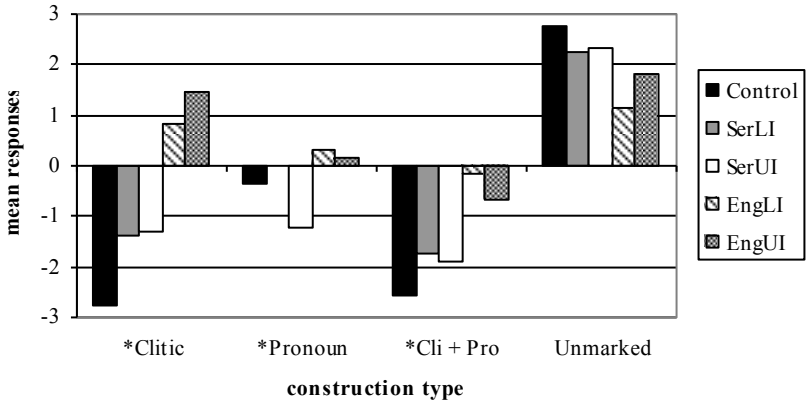


Figure 2. Mean judgements on unergative verbs

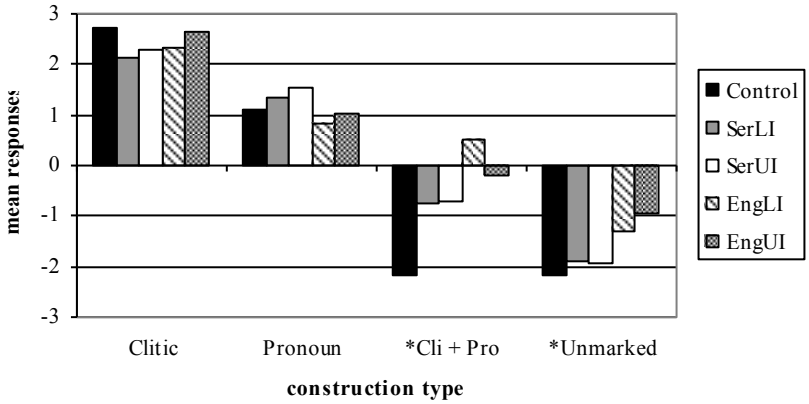


Figure 3. Mean judgements on reflexive forms

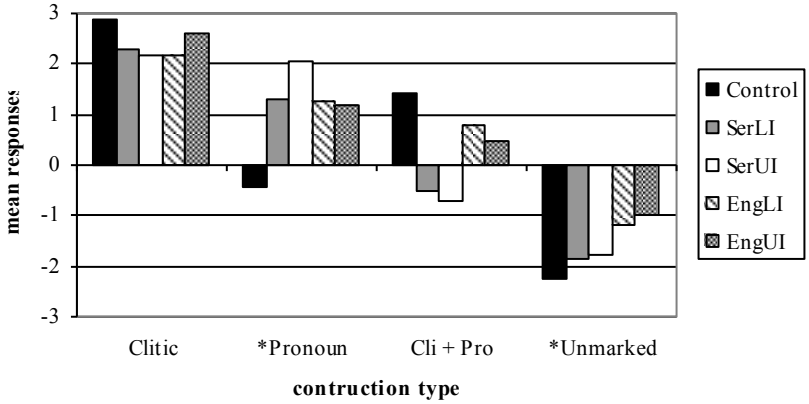


Figure 4. Mean judgements on reciprocal forms

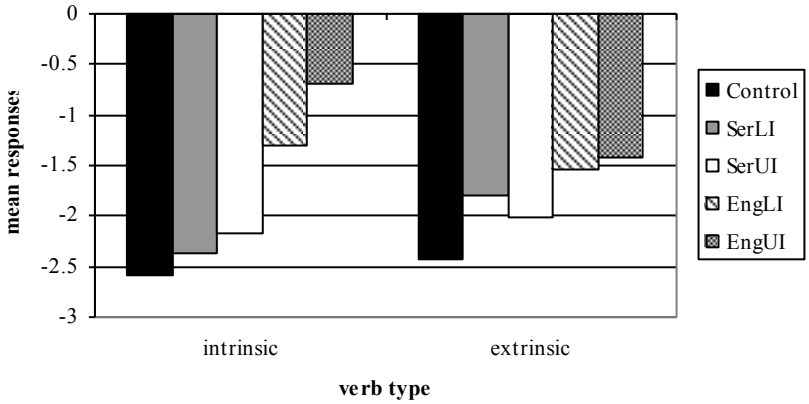


Figure 5. Mean judgements on unmarked reflexives

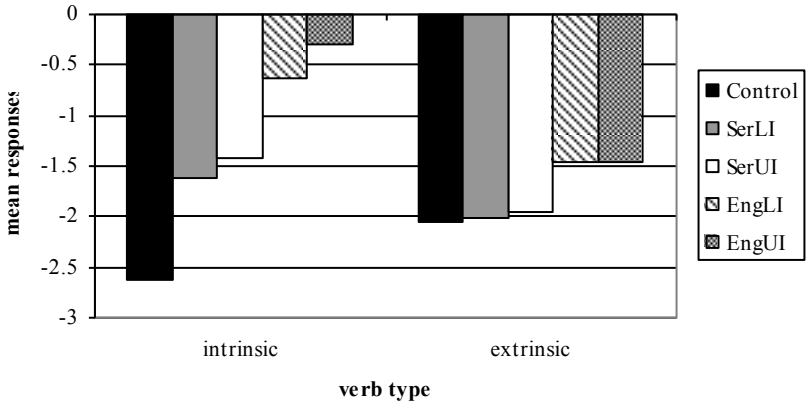
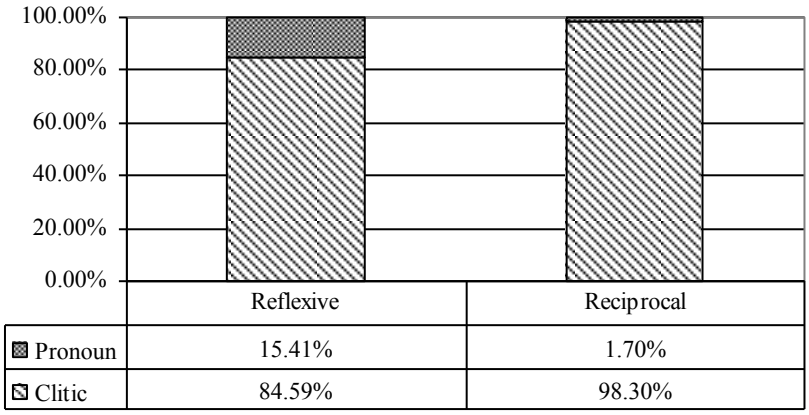
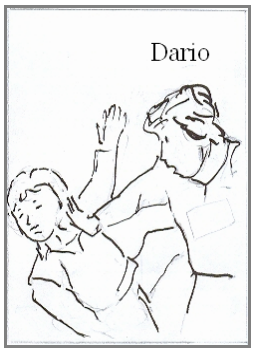


Figure 6. Mean judgements on unmarked reciprocals



	Reflexive	Reciprocal
Pronoun	15.41%	1.70%
Clitic	84.59%	98.30%

Figure 7. Marker distribution for the verbs used in the test



Dario si è difeso se stesso.

-3 -2 -1 0 +1 +2 +3

Dario si è difeso.

-3 -2 -1 0 +1 +2 +3

Rosa e Flavio hanno baciato.

-3 -2 -1 0 +1 +2 +3

Rosa e Flavio si sono baciati l'un l'altro.

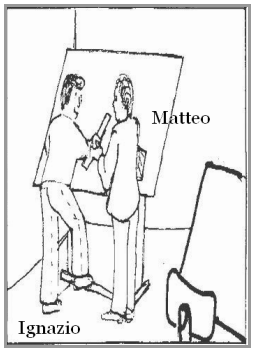
-3 -2 -1 0 +1 +2 +3

Marta ha arrivato se stessa a casa.

-3 -2 -1 0 +1 +2 +3

Marta si è arrivata se stessa a casa.

-3 -2 -1 0 +1 +2 +3



Ignazio e Matteo si sono collaborati.

-3 -2 -1 0 +1 +2 +3

Ignazio e Matteo hanno collaborato.

-3 -2 -1 0 +1 +2 +3