

## **Morphological Variability in Interlanguage Grammars: New Evidence From the Acquisition of Gender and Number in Italian Determiner Phrases and Direct Object Pronouns**

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### **Abstract**

In this paper, I investigate the phenomenon of morphological variability in the production of Italian determiners, descriptive adjectives, and direct object pronouns by adult English learners of Italian to determine whether morphological errors are the result of computational or representational difficulties. Second language acquisitionists do seem to agree on whether erroneous morphological forms noticeable even in advanced second language grammars due to the absence of the functional apparatus responsible for their feature-checking, a partially developed morphological competence, or even learners' performance limitations. Data have shown that the morphological features of Italian Determiner Phrases (DPs) and pronouns are fully acquirable, despite their absence in the grammar of learners' native language. Furthermore, adult English speakers' precocious familiarity with Italian nominal and pronominal morphology, and the uniform occurrence of erroneous forms in their interlanguage grammars suggest that morphological variability does not stem from the absence of the necessary functional structure, but from a general deficiency in properly "assembling" the morphological features of a particular lexical item, and learners' inability to map them with the syntactic information available.

### **Résumé**

Dans cet article, j'examine le phénomène de la variabilité morphologique dans la production des syntagmes nominaux et pronominaux italiens par les adultes anglophones afin de déterminer si des erreurs morphologiques sont le résultat de difficultés de computation ou de représentation. La recherche actuelle en l'acquisition d'une langue étrangère semble pas être capable d'expliquer si les formes morphologiques fossilisées visibles dans les grammaires avancées de ces langues sont dues à une déficience syntaxique sous-jacente, à une compétence morphologique partiellement développée, ou à des limites performatives des apprenants. Les résultats de l'étude ont montré que les caractéristiques morphologiques des articles déterminants, adjectifs, et pronoms objet direct italiens peuvent être appris, malgré leur absence dans la grammaire de la langue maternelle. Par ailleurs, la familiarité précoce des apprenants avec la morphologie nominale et pronominale en italien et l'apparition systématique des formes impropres suggèrent que la variabilité morphologique ne provient pas de l'absence de la structure fonctionnelle nécessaire, mais d'une carence générale à « assembler » correctement les caractéristiques morphologiques d'un élément lexical particulier, et à l'incapacité des apprenants de les associer à la information syntaxique disponible.

## **Morphological Variability in Interlanguage Grammars: New Evidence From the Acquisition of Gender and Number in Italian Determiner Phrases and Direct Object Pronouns**

### **Introduction**

The acquisition of morphology in interlanguage settings has been the object of a systematic analysis in recent years. There is a large body of literature that has investigated the development of nominal (e.g., Francescina, 2001, 2002; Grandfeldt, 2000; Hawkins, & Francescina, 2004; Santoro, 2008, 2010; White, Valenzuela, Kozłowska-MacGregor, & Yan-Kit, 2004) or verbal morphology (e.g., Lardière, 1998a, 1998b, 2006; Prévost, 2006; Prévost & White, 2000) in second language (L2) grammars. These studies have indicated that the acquisition of the morphological features of the target language follows a long developmental process characterized by the presence of numerous ungrammatical forms even at advanced stages. Many L2 researchers do not seem to agree on the underlying cause of this delay. Does it result, for instance, from the absence of the relative L2 functional structure or is it more a computational problem due to learners' performance limitations? Hawkins, and Chan (1997) believe that L2 functional categories, properties, features, and features values are not completely attainable after puberty, unless they have already been developed in learners' native language. In other words, adult L2 learners' ability to acquire a new language is restricted to only those features and categories shared with the grammar of their first language (L1). Following their Failed Functional Features Hypothesis (FFFH, see Appendix A for a list of abbreviations), they state that any parametric variation between the two languages in terms of functional categories, formal features, and strength will cause serious acquisition difficulties that may not be completely overcome. Under this proposal, L2 morphological errors derive from learners' inability to attain the appropriate functional apparatus needed for the checking of these features due to parametric differences between L1 and L2.

Within an alternative approach, morphological variability in L2 grammars is not believed to be caused by an underlying defective syntactic structure, since this phenomenon is also noticed at high proficiency levels when it is presumed to be fully developed. Fossilized morphological forms are to be attributed to learners' inability to access the appropriate features from the lexicon. In other words, the functional apparatus needed for their checking is not impaired. L2 learners for some reasons, not necessarily linguistic, are unable to appropriately map them with the syntactic information available (Missing Surface Inflection Hypothesis [MSIH], see, for example, Prévost & White, 2000). In this view, morphological errors are a mere computational issue rather than a more serious representational problem.

McCarthy (2007, 2008), on the other hand, claims that the erroneous morphological forms encountered in advanced L2 grammars are not simple performance errors. According to her Morphological Underspecification Hypothesis (MUH), morphology, similarly to the other linguistic components, is considered to be an independent and structured entity whose knowledge is attained gradually and in a piece-meal manner. Morphological errors may just represent a partial achievement of that knowledge, rather than a lexical impediment. Thus, fossilized morphological forms may be the result of an underlying deficit, which is morphological rather than syntactic. This view is justified by the fact that, generally, the occurrence of morphological errors is not random, but quite consistent and, in most cases,

unidirectional, in other words, involving a particular morphological feature, or domain. In fact, McCarthy, in her (2008) study, discerned that adult English learners of Spanish indiscriminately used the default, (underspecified) masculine form even in feminine contexts. This phenomenon equally involved any element of the nominal projection, - determiners, adjectives - and any linguistic modality – comprehension and production.

In the same vein, Lardièrè (2005, 2008) believes that the source of morphological variability in L2 grammars may be a problem of morphological competence. Performance issues such as working memory lapses, automaticity or processing difficulties do have an impact on L2 acquisition of morphological features, but they are not as relevant as not precisely knowing which forms go with which features. In fact, according to her Feature-Assembly Approach (FAA), fossilized morphological forms are due to L2 learners' inability to reassemble the morphological features contained in the lexical items of the target language. In other words, morphological errors are not a problem of feature-selection, but a general difficulty in attaining "the appropriate morphological spell-out of the features of L2 lexical entries and the knowledge of the correct contexts for their insertion" (Lardièrè, 2008, p. 116). This (re)assembling operation may be further complicated by how features are conditioned and realized in the related lexical items of learners' L1.

In sum, recent L2 acquisition research acknowledges the persistent nature of morphological variability in L2 grammars. L2 acquisitionists, however, do not seem to agree on the underlying source of this phenomenon. As we have seen, fossilized morphological forms may be the result of critical period effects (FFFH), or may due to an underlying morphological deficit (MUH) and competence (FAA), or learners' performance limitations (MSIH). In this state of affairs, the present study wishes to shed some brighter light on the nature of this acquisition issue in order to delineate a more transparent developmental process, and to determine the causes of its persistence. With this in mind, adult English learners of Italian were tested in their use of the morphological features of gender and number displayed by Italian determiners, adjectives and pronouns. The choice of this particular language group is justified by the fact that English and Italian Determiner Phrases (DPs) are quite different in terms of features values and strengths. English nouns are generally not distinguished by gender and, contrary to their Italian counterparts, the morphological agreement with their related determiners, adjectives and pronouns is quite limited (see 1a, b below).

<i>Italian</i>	<i>English</i>
1a) <b>I pantaloni neri</b> The <sub>(masc/plu)</sub> pants <sub>(masc/plu)</sub> black <sub>(masc/plu)</sub>	1b) The black pants

In light of these parametric differences between the two languages, analyzing the use of Italian nominal and pronominal features by adult English speakers could help us determine whether they are fully attainable, despite their absence in English. Furthermore, they could assist us in verifying whether morphological variability is a consistent or a random phenomenon; thus determining whether its causes are psychological, strictly linguistic, or both.

### **Italian Nominal System: A Syntactic Account**

All Italian nouns, whether their referent is animate or inanimate, are classified by gender. The choice is usually morphologically and phonologically determined. In general, nouns ending in *-o* are considered masculine, whereas those ending in *-a* are feminine. Their gender assignment is strictly grammatical, in that the assignment of masculine gender to *libro* (book) or feminine gender to *penna* (pen) is completely arbitrary and grammatically driven. Gender assignment to nouns referring to humans or animals, on the other hand, may be biologically determined. For instance, the distinction between *figlio* (son) and *figlia* (daughter) is linked to semantic notion of sex, or biological gender.

It needs to be pointed out, however, that, despite these regularities, the Italian nominal system has many exceptions. Some nouns, in fact, although they are grammatically feminine, may refer to a male or female person (e.g., *la guardia*, the guard; *la spia*, the spy). Similarly, nouns such as *il soprano*, (the soprano), *il contralto* (the contralto) refer to a female person. Furthermore, some nouns ending in *-o* are grammatically feminine, for example, *mano* (hand), *foto* (photo), *moto* (motorcycle), and some nouns classified as masculine may end in *-a*, for example, *problema* (problem), *teorema* (theorem).

In addition, the morphemes *-o* and *-a* may have two or three morphological variants. In fact, some masculine and feminine nouns may end in *-e*, for example, *motore* (engine), *lezione* (lesson), or a consonant, for example, *bar*, *scooter*, *email*<sup>1</sup>. Some feminine nouns may even end with *-i*: *crisi* (crisis), *analisi* (analysis), or *-ú*: *virtú* (virtue).

Italian nouns, besides their gender distinction, display number features. Their classification as singular or plural nouns is also grammatically determined. The morpheme *-i* is the plural marker for nouns ending in *-o* or *-e*. This is illustrated in (2) and (3) below.

- |                                |  |
|--------------------------------|--|
| 2) libro → libri<br>book books | 3) professore → professori<br>professor professors |
|--------------------------------|--|

The morpheme *-e*, on the other hand, is the plural marker for nouns ending in *-a*, as in (4).<sup>2</sup>

- 4) penna → penne  
pen pens

Interestingly, these morphological features are also reflected on the other elements of Italian DPs, which may include determiners (definite and indefinite) and adjectives: descriptive (see 1a, repeated here as 5), or demonstrative or possessive, as shown in (6) below.

- |   |   |
|---|---|
| 5) <b>I pantaloni neri</b><br>the <sub>(masc/plu)</sub> pants <sub>(masc/plu)</sub> black <sub>(masc/plu)</sub><br>friend <sub>(fem/sing)</sub><br>'The black pants.' | 6) <b>Quella mia amica</b><br>that <sub>(fem/sing)</sub> my <sub>(fem/sing)</sub><br>'That friend of mine.' |
|---|---|

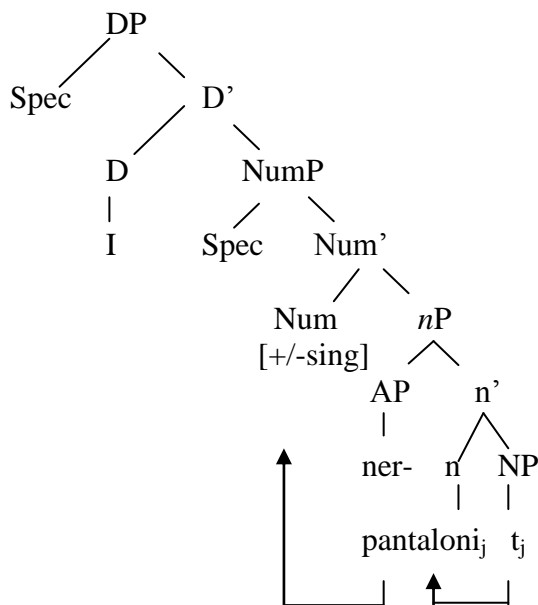
Let us now see how the process of morphological concord in Italian DPs takes place. Most of the syntacticians working within the minimalist theoretical framework (Cartens, 2000; Chomsky, 1995; 2001) seem to agree on the fact that gender is a lexical property of the

<sup>1</sup> Words ending with a consonant are usually foreign lexical items that have been completely assimilated to the morpho-syntactic rules of Italian grammar.

<sup>2</sup> The Grammatica Italiana (2009) lists several other cases that do not follow this general rule of nominal pluralization, including those that use different endings, e.g. *problema* → *problemi*., those that determine additional changes such as *parco* (park) → *parchi*, *spiaggia* (beach) → *spiagge*, and those that do not modify their morphology, eg. *crisi* (crisis), *moto* (motorcycle), *cinema* (movie theater), *caffé* (coffee).

noun. This means that nouns enter the numeration with interpretable gender features. Furthermore, a nominal phrase (NP) is not a simple projection consisting of one single lexical head,  $N_{oun}$ . Its maximal projection is dominated by a series of functional categories where the relevant grammatical features are checked. Abney (1987), Bernstein (1993), and Picallo (1991) assume at least two additional functional categories, namely DP where the determiner is generated, and Number Phrase (NumP) where the number features are checked (see 7 below). Cartens (2000) also suggests the presence of an *nP* or “light” noun shell outside the NP where the adjectives are assumed to be originally generated. According to this account, an early stage of the derivation of 5 will have the following syntactic representation.

- 7) I pantaloni neri  
 the<sub>(masc.plu)</sub> pants<sub>(masc/plu)</sub> black<sub>(masc./plu)</sub>  
 ‘The black pants.’



Here the noun *pantaloni* (pants) is base-generated in the Nominal Phrase (NP), which, as previously mentioned, enters the numeration with interpretable gender features. These features must check the uninterpretable  $\phi$  features of agreeing determiners, adjectives and pronouns because, if they are left unchecked, the derivation will crash when it reaches the  $P_{honetlic} F_{orm}$  level. The Italian noun will accomplish its task by overtly moving to the relative functional projections. In brief, given that noun shell is strong in Italian, the noun will overtly raise to the *n*-head where it will be able to check the uninterpretable gender features of the adjective *ner-* “black” in a spec-head configuration. Once valued, these features will be eliminated. Next, the noun will raise in overt syntax to the Num-head, which is also strong in Italian. In this position, it will be able to value its number features and those of the adjective.

The checking of number and gender on the definite article “I” (the) is also straightforward. As indicate above, the Italian determiner has uninterpretable gender and number features at the point of Merge, a grammatical operation that put two lexical items together and organize them into syntactic phrases (see Hornstein, Nunes, & Grohmann,

2006). Therefore, it will need to search for an element with matching interpretable features in order to have its uninterpretable features checked and, eventually, deleted. The noun that has merged with NumP will do the job by raising to the head position of DP. In other words, the determiner will get its number and gender features valued in a head-head (determiner-noun) relation. It needs to be pointed out, however, that, contrary to the previous concord agreement, the merging of  $[\text{Num Num} + \text{N}]$  to  $D^0$  will take place covertly at the level of semantic interpretation, usually known as Logical Form (LF). Overt raising is not generally found in Italian suggesting that these features are weak.

English nouns, on the other hand, are not classified by gender, except for some lexicalized forms such as *actor/actress*, *bachelor/bachelorette*. Furthermore, their number features are not reflected on their determiners or adjectives, as shown below:

- 8a) The handsome boy                                      8b) The handsome boys

Despite these discrepancies, both nominal systems involve a similar functional apparatus. The differences lay in their feature-strengths and the feature-checking mechanisms they trigger. Such parametric variations affect the relative ordering of the noun and its adjective(s) (pre-nominal in English and post-nominal in Italian) and the presence (Italian) or absence (English) of morphological concord between the noun and its determiner, adjective(s) or pronoun.

From an acquisition perspective, these dissimilarities entail that English speakers learning Italian need not only be able to categorize the newly acquired Italian nouns, but also be familiar with the morphological concord they trigger on their determiners and adjectives. We have seen that, although gender is lexically assigned to nouns, morphological agreement entails a feature-checking process usually handled by syntax. A morphological mismatch could result from a parameter resetting problem due to an underlying syntactic impairment, or an incomplete development of the necessary morphology competence.

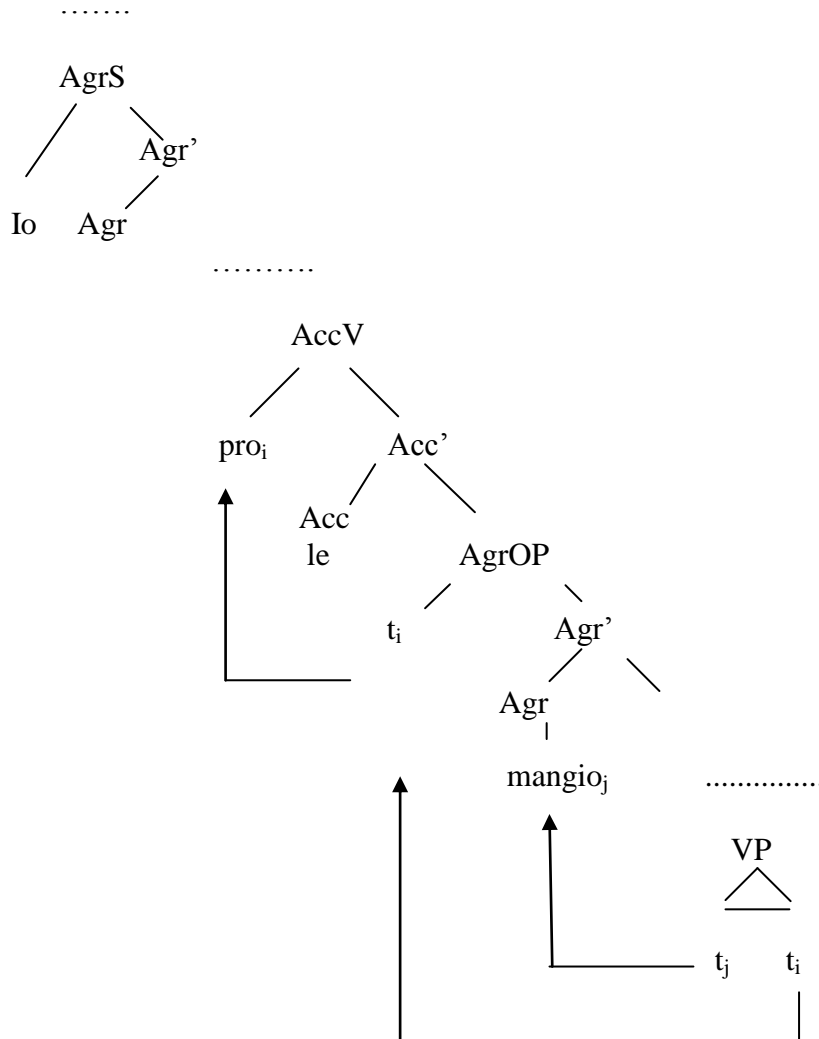
Italian direct object pronouns (DOPs), generally known as clitics, also display the morphological features of gender and number of their referent (see 9 below).

- 9) *Le verdure, le mangio raramente*  
 $\text{the}_{(\text{fem/plu})} \text{vegetables}_{(\text{fem/plu})} [\text{I}] \text{them}_{(\text{cl/fem/plu})} \text{eat-PRES rarely}$   
 ‘The vegetables, I rarely eat them.’

Similarly to Italian DPs, the morphological agreement between the noun, e.g. *verdure* (vegetables) and the relative pronoun *le* (them), involves a complex feature-checking process. Syntactically, Italian as well as French and Spanish clitics are assumed to be generated where they appear heading their own functional projections, which are called Voices (Sportiche, 1996). The morphological features of these pronouns are valued by the movement of a related null pronominal element (*pro*) that carries the same morphological features. This null element, base-generated in the argument position of the verb, moves to the specifier position of the agreement projection (Spec-AGROP) where it checks its case features. Then it proceeds to the specifier position of the corresponding Clitic Voice where it licenses the other morphological features of the clitic in a Spec-head agreement configuration, as stated in the Clitic Criterion (Sportiche, 1996, p. 236). In brief, a clitic must be in a Spec-head relationship with a specifier carrying [+specific] features when the derivation reaches LF. Similarly, a specifier with [+specific] features must be in a spec-head configuration with a related clitic at that level of the derivation. The clitic licensing

process is schematized in (10) where the functional category of the accusative clitic *le* is located higher than its related agreement projection (irrelevant projections omitted).

- (10) Le verdure, le mangio raramente  
 the<sub>(fem/plu)</sub> vegetables<sub>(fem/plu)</sub> [I] them<sub>(cl/fem/plu)</sub> eat-PRES rarely  
 ‘The vegetables, I rarely eat them.’



In this example, the agreement reflex of the Spec-head relationship is expressed by accordance of number and gender.

English DOPs, on the other hand, do not display a determiner-like internal structure. According to Cardinaletti and Starke’s (1999) typology, English DOPs are either full-fledged DPs (strong) or they may lack the highest functional layer (weak). Furthermore, contrary to the Italian clitics, they are partially inflected for gender and number agreement with their referent. Since English nouns are not usually classified by gender, this

morphological feature is reflected on the pronouns only when the referent is animate, and totally disappears in plural cases.

### Hypotheses

As we have seen, the Italian and English nominal and pronominal systems are quite distinct in terms of their morphological features. Among L2 researchers, however, there is no general consensus on whether these parametric differences may be the real cause of their late attainment, or there may be some other issues, not necessarily linguistic, that limit learners' performance. With that in mind, the present study wishes to answer the following research questions:

1. Does the morphological variability involving the use of Italian determiners, adjectives or direct object pronouns by adult English speakers tend to significantly improve with time?
2. Is the production of erroneous morphological forms random and unpredictable, or does it follow a more consistent and systematic pattern?
3. Are there any qualitative performance differences between the oral and written production of the features of gender and number displayed by Italian determiners, adjectives and direct object pronouns?
4. Are there any acquisition discrepancies in terms of nominal features (gender, number), and/or domain (determiner, adjective, pronoun)?

Addressing these particular acquisition issues should help us delineate a much clearer developmental pattern of Italian nominal and pronominal morphology, and, therefore, be able to advance more robust assumptions with regard to the nature of the morphological variability in advanced L2 grammars. More specifically, if the acquisition of L2 morphological features is subject to critical period effects, the functional apparatus and the syntactic mechanisms responsible for their checking may not be operational unless they have already been activated in L1 acquisition. As we have indicated in the previous section, English nouns are not classified for gender, and do not trigger any morphological agreement on their determiners and adjectives. This presupposes that English grammar lacks the functional structure where these features are usually checked. In that case, English learners of Italian need to acquire the necessary syntactic apparatus *ex novo*, presumably with the help of the Universal Grammar (UG) and L2 input. However, if one assumes that UG is not available after puberty, and L2 acquisition is restricted only to L1 categories and features, the morphological concord occurring in Italian nominal and pronominal phrases will be extremely difficult to be fully mastered. Morphological errors will be never completely eradicated, and no significant improvement will be noticed as L2 learners move toward a native-like performance (consonant with FFFH).

Alternatively, if the occurrence of morphological errors in Italian L2 grammars is more consistent and visibly improves with time, one could argue for an unimpaired access to UG after puberty (Full Access Hypothesis [FAH], see Epstein, Flynn, & Martojodono, 1996). If that is the case, the functional apparatus required for the checking of the morphological features displayed by Italian determiners, adjectives, and pronouns may be gradually activated, despite its absence in learners' L1 grammar. As a consequence, English learners of Italian will eventually be able to use them in native-like manner, if given the appropriate amount of L2 exposure and input (e.g., see Prévost & White, 2000; Santoro, 2008, 2010).

It is worth noting, however, that post-pubertal access to UG and full attainability of these features does not exclude that their acquisition process will be smooth and seamless.



It is well-known that learners of different language backgrounds encounter numerous difficulties, even at advanced acquisition stages, in dealing with the nominal and pronominal features of morphologically rich languages (e.g., see White, 2002; 2003). Unfortunately, L2 researchers are still struggling to determine the real causes of these errors at such high acquisition stages. Proponents of the MSIH attribute them to problems of lexical access, most likely due to psychological reasons. McCarthy (2007, 2008), and Lardièrè (2008) on the other hand, link them to a delayed development of the morphological component with respect to the other linguistic modules.

An effective way to ascertain between these different acquisition hypotheses is to take a closer look at the distribution of the ungrammatical forms. In terms of second language grammar acquisition, MSIH presupposes a random and inconsistent occurrence of these errors, indistinctively involving any type of feature or domain, and affecting more the oral than the written use of the morphological features. In general, psychological factors such as anxiety, nervousness are more visible in the oral production of the target language. McCarthy's (2007) approach, on the other hand, assumes a more regular and systematic presence of these ungrammatical forms, regardless of the production modalities.

In sum, the error pattern displayed by our L2 learners should help us determine whether the morphological features displayed by Italian determiners, adjectives, and pronouns may be eventually fully acquired, despite their absence in English grammar. Furthermore, it could offer some very interesting information regarding the psychological and/or strictly linguistic nature of morphological variability in L2 grammars. These particular issues and the theoretical ramifications they entail will be specifically investigated through two related experiments that will be described in the next section.

## Method

### Participants

The experimental group consisted of thirty-five post-pubertal learners of Italian who, at the time of the data collection, had completed one or two years of Italian instruction in various colleges of the City University of New York. They were all native speakers of English, ranged between 18-30 years of age, and had started learning Italian in their late teens with no prior knowledge of other language(s). They were classified according to the amount of instruction received. More specifically, students who had completed the first year of instruction were listed as high-beginners, whereas the ones that had passed the first four semesters of Italian were indicated as high-intermediates.

The high-beginners' group consisted of eighteen subjects. By the end of the first year of instruction, learners of Italian are required to successfully accomplish numerous communicative tasks such as buying clothes in a boutique, or describing an unforgettable vacation. These activities usually involve a frequent use of Italian determiners, adjectives, and direct object pronouns.

The high-intermediate group, on the other hand, consisted of seventeen participants. After two years of instruction, the use of Italian determiners, adjectives, and pronouns is reviewed in a less formal manner. L2 learners, however, participate in more challenging tasks such as summarizing or discussing newspaper articles or previously-read stories where the usage of pronouns, determiners, and adjectives is even higher.

In addition to the thirty-five experimental subjects, twelve native Italian speakers, who had been living in the USA for a short period of time, served as a control group.

## Materials and Procedure

Two different tasks were used in the experiment: a Written Agreement Recognition Task and a Picture Identification Task. The former test is an adaptation of the one used in Montrul, Foote, and Perpiñan's (2008) experiment to test gender agreement in Spanish L2 grammars. The latter task has also been adopted in previous L2 research, precisely in McCarthy's (2008) study where the scholar analyzed the acquisition of the morphological features displayed by Spanish accusative clitics.

The Written Agreement Recognition Task investigated the use of gender and number agreement in nominal and pronominal phrases. It consisted of a passage with forty slots where definite articles, adjectives, and direct object pronouns were given only in their masculine singular form. There were forty different cases and, for each of them, subjects were to choose the correct determiner, adjective or pronoun from a list of four. An excerpt of the passage is given below:

Il<sup>1</sup> famiglia Rossi abita in una bello<sup>2</sup> villa fuori Firenze. Il<sup>3</sup> signor Rossi è architetto e Il<sup>4</sup> signora Rossi è professoressa all'Università di Firenze. Hanno due figli, Antonio e Patrizia. Il<sup>5</sup> signori Rossi lo<sup>6</sup> amano molto.

*The Rossi's family lives in a beautiful villa at the outskirts of Florence. Mr. Rossi is an architect and Mrs. Rossi is a professor at the University of Florence. They have two children, Antonio and Patrizia. Mr. and Mrs. Rossi love \*him [them] a lot.*

The task included sixteen target sentences testing for gender and number agreement between nouns and their determiners. They presented eight masculine or feminine singular cases and eight masculine or feminine plural options. Sixteen additional slots investigated the use of morphological agreement between nouns and their adjectives. Similar to the determiners, eight sentences required adjectives displaying masculine or feminine singular morphology, and eight sentences needed adjectives with masculine or feminine endings. The remaining eight slots tested for the use of Italian direct object pronouns (four for each case: masculine/feminine singular and four for masculine/feminine plural). Such a variety of stimuli was necessary to determine whether the expected morphological variability that characterizes L2 grammars is a contained phenomenon, or if it expands to the entire agreement system.

The Picture Identification Task also tested for gender and number agreement between nouns and their determiners, adjectives, and pronouns. The experiment, however, consisted of forty pictures; twenty photographs representing different objects, and twenty pictures portraying people that were doing some type of action with/on them (see Appendix B). In order to be consistent with the other task, there were ten pictures requiring the use of Italian direct object pronouns with masculine/feminine singular morphology, and ten pictures requiring masculine/feminine plural pronouns.

Each participant was personally interviewed by the experimenter, and pictures were randomly presented one at time. The interviewer first asked questions that led the participants to identify the object(s) represented in the picture. For instance,

(11) Che cosa è questa?

What be-PRES this<sub>fem/sing</sub>

'What is this?'

After the object(s) was correctly identified, a second picture showed a person taking an action on the object(s) previously described. At that point, the participants would be asked to describe the type of action the person was taking upon the object(s), as in (12)

- (12) Che fa il ragazzo con la mela?  
 What do-PRES the young man with the apple  
 ‘What is the young man doing to the apple?’

The respondent was expected to answer the question using the appropriate direct object pronoun, i.e. *la* (it), as in (13).

- (13) **La** sta mangiando.  
 [he] it<sub>fem/sing</sub> be-PRES eat-GER  
 ‘He is eating it.’

The second part of the interview consisted of describing the pictures in more detail. The experimenter would ask questions in the form of “What color is the object?” “What is the young man wearing”, “What color are his pants?” Such questions would provide additional information regarding the correct use of the morphological features displayed by Italian determiners and adjectives.

Each interview lasted between 15-20 minutes that were added to the 20-25 minutes of the written task, for a total of 40-45 minutes.

The twelve monolingual speakers that acted as a control group were tested following the same procedure as the two experimental groups. As expected, the total duration of the experiment was sensibly shorter (25-30 minutes).

## Results

As mentioned in the introductory section of this paper, the main objective of this study was to see whether morphological variability encountered at any proficiency level stems from (a) the parametric differences of the two languages, along with a general inaccessibility to UG in post-pubertal age, (b) or a delayed development of the necessary morphological competence, or (c) is due to learners’ production-based limitations. In order to clearly identify the source(s) of morphological variability in L2 grammars, other related acquisition aspects were also investigated, namely the predictability/unpredictability of the morphological errors, their gradual or abrupt disappearance, and their preference in terms of features (masculine/feminine/singular/plural), syntactic domains (determiners/adjectives/pronouns), or production modes (written/oral).

These issues were analyzed by measuring the two experimental groups’ accuracy rates in using the morphological features of gender and number displayed by Italian adjectives, determiners, and direct object pronouns. Furthermore, their responses were compared to those of the control group in order to determine their progress towards a native-like performance.

Before moving on to the analysis of the data, some aspects of the experimental design vis-à-vis the statistical analyses performed on the data need to be briefly addressed and explained. Responses to target sentences were coded as “correct” or “incorrect”, based on whether subjects had chosen the appropriate determiner, adjective, or pronoun. Subjects received zero points for each incorrect answer and one point for each correct one. All earned points were then added to determine their final score, which was, subsequently, used to calculate their levels of correctness. Accuracy rates were then computed and compared

through the use of statistical analyses of variance. Significance (or lack thereof) in those analyses means greater confidence in the replicability of the results with a different sample of participants and a different set of items. The following sections will report the outcomes of this investigation as well as those of paired comparisons of the material subsets.

Regarding the issue of whether morphological variability, in its written or oral form, visibly decreases with time, we have previously mentioned that this is a very important piece of information to obtain, since it could be a testing ground for UG availability in post-pubertal age. In fact, if our data indicate that English learners of Italian incur numerous morphological errors that persist throughout the entire acquisition process, without showing any significant improvement, one could assume that UG is no longer available, and our learners will never be able to fully master the use of Italian nominal and pronominal morphology given the parametric differences between the two languages (consonant with FFFH). On the contrary, if the occurrence of ungrammatical morphological forms is more consistent and predictable, and gradually decreases as L2 learners become more proficient in their target language, one could argue for UG accessibility even in adult age, and anticipate a complete attainment of Italian morphological features, if given the appropriate amount of L2 exposure/instruction.

With that in mind, learners' general performance was evaluated in terms of accuracy rates. The results are reported in Table 1 and 2.

Table 1  
Mean Percent Accuracy for All Test-items (Oral Task)

High Beginners (n = 851)	High Intermediates (n = 809)	Natives (n = 602)
75.2	86.5	100

*Note:* n = number of responses

Table 2  
Mean Percent Accuracy for All Test-items (Written Task)

High Beginners (n = 720)	High Intermediates (n = 680)	Natives (n = 480)
83.8	90.2	98.8

*Note:* n = number of responses

Data show that the high-beginners' group was quite accurate in providing the correct features of gender and number of Italian determiners, adjectives, and pronouns. In either task, their accuracy rates were relatively high (oral 75.2%; written 83.8%). Furthermore, their performance visibly improved with only ten additional months of exposure/instructional time. The high-intermediates' accuracy level show an increase of eleven percentile points in the oral production (86.5%), and slightly over six points in the written one (90.2%). Statistical analyses of their means indicate that the performance discrepancies between the two experimental groups are significant in both the oral ( $t = 5.93$ ,  $p < .001$ ) and written production ( $t = 3.64$ ,  $p < .001$ ), suggesting that morphological variability in Italian L2 grammars does indeed decrease as our learners' ability levels improve.

It is important to note, however, that, despite its substantial improvement over time, the high-intermediates' performance is far from being native-like. Their L2 grammar still reports a noticeable amount of erroneous morphological forms as shown by their lower accuracy levels (oral: 86.5%; written 90.2%) with respect to those of the control group (oral: 100%; written:

98.8%). These discrepancies are even statistically significant in both tasks (oral:  $t = -9.84$ ,  $p < .001$ ; written:  $t = -6.79$ ,  $p < .001$ ).

In sum, learners' general performance indicates that morphological errors gradually diminish, as L2 learners become more proficient, suggesting that the correct use of Italian nominal and pronominal morphology may be completely attained, if given the appropriate amount of exposure and instruction time. However, two academic years do not seem to be sufficient to complete its acquisition process.

With regard to whether morphological variability is a uniform and homogeneous phenomenon, equally affecting any form and feature, or is more random and unpredictable, learners' data drawn from each single domain (determiners/adjectives/pronouns) and each feature (masculine/feminine/singular/plural) were analyzed. Tables 3 and 4 summarize the results obtained.

Table 3

Percentage of Correct Responses in Each Domain (Oral ask)

Domain	High-Beginners (n= 851)	High-Intermediates (n = 809)	Natives (n = 602)
Determiners	89.2	92.7	100.0
Adjectives	75.3	89.2	100.0
Pronouns	63.3	81.1	100.0

Note: n = number of responses

Table 4

Percentage of Correct Responses in Each Domain (Written Task)

Domain	High-Beginners (n= 720)	High-Intermediates (n = 680)	Natives (n = 480)
Determiners	86.8	92.2	100
Adjectives	84.3	90.4	100
Pronouns	77.0	86.0	98.8

Note: n = number of responses

As we can see, in early acquisition stages, the occurrence of ungrammatical morphological forms is quite inconsistent. Some syntactic forms seem to be more affected than others depending on the task they have been used in. In either activity, pronominal morphology appears to be more susceptible to errors than the adjectival and the nominal ones. Analyses of variance of their means indicate, in fact, that these discrepancies are statistically significant (oral:  $F = 34.98$ ,  $p < .001$ ; written:  $F = 3.43$ ,  $p < .05$ ).

In any case, this initial inconsistency tends to disappear as English speakers become more proficient in Italian. At the high-intermediate level, the occurrence of morphological errors becomes more uniform, especially in the written production of the target language. The minimal differences in accuracy in using the three syntactic forms (det. 92.2%; adj. 90.4%; pron. 86.0%) are statistically irrelevant ( $F = 2.09$ ,  $p > 1$ ). However, the same cannot be said with regard to the oral production. Results still show some visible performance discrepancies that are statistically relevant ( $F = 10.57$ ,  $p < .001$ ). Similarly to the lower proficient group, high-intermediates encountered less difficulty in using the nominal (92.7%) than the adjectival (89.2%) or the pronominal morphology (81.1%). As expected, the control group did not report any relevant differences in either task.

Additional analyses of the data indicate that learners' inconsistency in using the nominal and pronominal morphology is also noticeable at the feature level. As we can see

from Tables 5 and 6, initially, the occurrence of morphological errors is quite heterogeneous with some features being affected more than others.

Table 5

Percentage of Correct Responses to Items Testing for Gender and Number (Oral Task)

Feature	High-Beginners	High-Intermediates	Natives
Masculine	76.5	86.6	100.0
Feminine	73.8	86.3	100.0
Singular	80.5	87.1	100.0
Plural	69.8	85.8	100.0

Table 6

Percentage of Correct Responses to Items Testing for Gender and Number (Written Task)

Feature	High-Beginners	High-Intermediates	Natives
Masculine	86.9	92.6	99.5
Feminine	80.3	87.9	100.0
Singular	91.1	97.0	99.5
Plural	76.6	83.5	100.0

The different levels of accuracy reported by the high-beginners' group in providing the singular (80.5%) and plural forms (69.8%) in the oral task are, in fact, statistically significant ( $t = 3.61, p < .05$ ). On the contrary, the slight discrepancies in accuracy encountered in the use of masculine (76.5%) and feminine (73.8%) endings are statistically irrelevant ( $t = 0.89, p = 0.37$ ). In any event, this feature asymmetry becomes more evident in the written production. Although the morphological features of gender and number are accounted for with greater grammatical appropriateness, t-tests of their means report some statistical significance in either comparison (gender:  $t = 2.23, p < .05$ ; number:  $t = 5.36, p < .001$ ), with masculine and singular features showing fewer errors than their feminine and plural counterparts.

At higher proficiency levels, the initial feature discrepancy tends to disappear, particularly in the oral production. The accuracy rates for gender and number do not show any clear differences. They are, in fact, statistically irrelevant in either case (gender:  $t = -0.11, p = 0.91$ ; number:  $t = 0.52, p = 0.59$ ). However, the same cannot be said regarding the results of the written task. The levels of grammaticality are still quite unbalanced, closely resembling the acquisition pattern of the lower proficient group. Again, t-tests of their means do indicate that this irregularity is utterly visible (gender:  $t = 2.07, p < .05$ ; number:  $t = 6.11, p < .01$ ).

In sum, data indicate that morphological variability, although it sensibly decreases with time, is not a uniform acquisition phenomenon. It does not equally impact any syntactic element or morphological feature. Data have shown that it is particularly present in the use of Italian direct-object pronouns, and the feminine or the plural features. This initial asymmetry, however, tends to gradually dissipate as L2 learners become more proficient in Italian, even though it does not totally disappear.

With regard to whether the irregular presence of morphological errors noticed at the domain and feature level is also encountered in the general production type, the two experimental groups' general performance in the oral and written tasks was analyzed and compared. Table 7 reports the results of this investigation.

Table 7  
Percentage of Correct Responses to Test-items in the Oral and Written Tasks

Tasks	High-Beginners	High-Intermediates	Natives
Oral	75.0	86.5	100.0
Written	83.8	90.3	98.8

As we can see, the high-beginners' group was much less accurate in providing the correct morphological features when they participated in the oral task (75%) than the written one (83.8%). There is, in fact, a difference of more than eight percentile points between the two accuracy means, which also reaches statistical significance ( $t = -4.35$ ,  $p < .001$ ).

Again, this initial gap decreases at higher proficiency levels. The discrepancy in accuracy between the two tasks reduces to slightly over four percentile points. However, a t-test of the two means (oral: 86.5%; written 90.2%) indicates that their difference is still statistically significant ( $t = -2.2787$ ,  $p < .05$ ). As expected, Italian native speakers did not show any noticeable anomaly (oral: 100%; written: 98.8%).

To conclude, the following pattern regarding the occurrence of erroneous morphological forms in Italian L2 grammars can be distinguished in the data:

- (a) After ten months of L2 instruction (end of the first year), the presence of ungrammatical morphological forms is quite widespread, affecting any syntactic elements and feature type. Their occurrence, however, is not homogenous, but it is quite irregular. Its inconsistency is noticeable at any level: production mode (oral or written), and syntactic (determiners, adjectives, pronouns), or feature (gender and number) domain.
- (b) At the end of the second academic year (twenty months) the amount of morphological errors substantially decreases. Furthermore, the initial asymmetries tend to disappear, even though they may still be noticed, depending on the task learners are engaged in. In any case, despite this general improvement, two academic years of instruction and exposure to the target language do not seem to be sufficient to fully master the correct use of Italian nominal and pronominal morphology. High-intermediate learners, in fact, appear to be still uncertain on how to apply some basic morphological rules of Italian language.

### Discussion

In brief, data have confirmed that:

- (a) The morphological features of gender and number displayed by Italian determiners, adjectives, and direct object pronouns are acquirable, but follow a slow and gradual acquisition process. Learners' accuracy rates, in fact, have only improved from 75.2% of the high-beginners' group to 86.5% of the high-intermediates.
- (b) Morphological errors are quite recurrent involving any syntactic domain and feature.
- (c) Morphological variability is not a homogenous acquisition phenomenon. It affects particular morphological features (e.g., plural endings), and specific syntactic elements (e.g., pronouns).
- (d) This inconsistency is also noticed at the general production level. Morphological errors are, in fact, particularly visible in learners' oral use of their target language. Interestingly, these discrepancies are reported at any proficiency level.

In light of these findings, what can be hypothesized with regard to the nature of morphological variability in Italian interlanguage grammars? Is it due to an underlying

syntactic deficit, an incomplete development of L2 morphological competence, or mere performance limitations?

Previously, we have mentioned that Italian and English DPs differ in terms of feature strengths and values. Furthermore, English pronominal system, contrary to its Italian counterpart, lacks syntactic clitics. Therefore, one could assume that the functional structure needed for their licensing may not be part of English grammar. If that is the case, Italian clitic features and categories are expected to be acquired *ex novo*, presupposing a slow and late developmental process. Data, however, have reported a relatively accurate use of the morphological features of these pronouns after a brief period of L2 instruction. In only ten months, in fact, they were appropriately produced at a relatively high rate in both oral (63.3%) and written (77%) forms. These results indicate an early familiarity with these morpho-syntactic elements, despite their absence in English grammar, suggesting that the functional apparatus needed for their licensing may have been available (even though unspecified) from the beginning, and presumably been activated with the help of UG and L2 input. The visible increase in accuracy at higher proficiency levels (oral: 76.5%; written 86.0%) further corroborates this assumption.

Additional evidence supporting some form of continuity in L2 acquisition is provided by the higher degrees of accuracy in using the morphological features of Italian determiners and adjectives in early acquisition stage. The high beginners do not appear to have great difficulties in dealing with the gender and number distinction of Italian DPs, even though their English counterparts lack these morphological features. Again, this precocious familiarity with the morpho-syntactic processes involved in the feature-checking of Italian DPs justifies some form of learners' accessibility to their universal linguistic knowledge, despite their post-pubertal age.

This pervasive grammatical use of Italian nominal and pronominal morphology after only thirty weeks of exposure/instruction also contrasts with FFFH's fundamental claim that only features and projections shared by both languages are fully acquirable. If English speakers had only projected structures and functional categories consistent with their L1, Italian morphological features would have developed at a much slower rate, due to the parametric differences between the two languages. Furthermore, the high accuracy levels in the oral (86.5%) and written (90.2%) production reached with only an additional thirty-week period of instruction indicates that these features can be fully mastered given the appropriate amount of L2 input.

In sum, the results obtained indicate that the morphological features displayed by Italian determiners, adjectives, and pronouns are acquirable despite their absence in English grammar. Interestingly, L2 learners do not rely on structures and mechanisms of their L1 to deal with these features, but rather on their universal linguistic knowledge, which seems to be still available in adult age.

At this point, the following question arises. Since UG accessibility appears to be still an option to our adult learners, what may have determined the occurrence of such a considerable number of morphological errors throughout the entire acquisition process? As mentioned in the introductory section, proponents of the Missing Surface Inflection Hypothesis claim that the presence of fossilized morphological forms in advanced/end-state L2 grammars may not be attributed to an underlying syntactic deficit, but rather to some performance limitations. Their assumption is based on the idea that, at advanced proficiency levels, the L2 syntactic component should be fully developed. Previous L2 research (e.g., White, 2002; 2003) has provided plenty of evidence that this is exactly the



case. McCarthy (2007, 2008) and Lardière (2005, 2008) however, challenge this interpretation supporting a modular view of grammar where the various linguistic components, although they interact among each other, follow their own developmental patterns. In their view, morphological variability is not due to communication pressure, but rather to a delayed development of the necessary morphological competence. In other words, fossilized morphological forms reflect an underlying deficit, which is morphological rather than syntactic, and not a problem of lexical access or feature selection. This view is justified by the fact that morphological errors tend to be unidirectional, and to equally affect any type of production, be it oral or written.

Our data do report some uniformity in the occurrence of the morphological errors. Both groups, in fact, show a tendency of being more accurate with Italian nominal than pronominal morphology. Furthermore, morphological errors are more frequently present in the use of feminine and plural features than in the production of masculine and singular endings. These discrepancies are consistent and statistically relevant at any proficiency stage.

In any case, this asymmetry is also encountered in the oral and written tasks (contra MUH & FAA). As we have seen, L2 learners seem to find less difficulty in providing the correct morphological features of Italian determiners, adjectives, and pronouns when they are involved in the written than the oral activities, suggesting that there may have been some psychological impediments. Oral production usually entails higher levels of anxiety and nervousness that could hinder the appropriate use of the target language (consonant with MSIH).

### **Conclusion**

As we have seen, the acquisition scenario obtained from the data indicates that the morphological variability is a persistent phenomenon, but lacks uniformity. The morphological features of Italian DOPs, in fact, seem to be more affected than those displayed by adjectives or determiners. Furthermore, feminine and plural features are accounted for with less degrees of accuracy than their masculine and singular counterparts. This incongruence is also reported at the general production level where erroneous morphological forms are more frequently encountered in the oral than the written task.

In any event, data have also shown that the persistence and inconsistency of these morphological errors do not reflect an underlying syntactic impairment. The relatively high degree of grammaticality displayed by the beginning group along with the substantial increase in accuracy after only ten additional months of instruction seem to indicate that the relevant functional projections and the (abstract) morpho-syntactic feature-checking mechanisms must have been in place from the beginning. If that is the case, morphological variability in Italian L2 grammars should be then an interface problem, resulting from some difficulties in using the acquired syntactic knowledge. In other words, erroneous morphological forms do not necessarily indicate an absence of the associated syntactic representations, but they could reflect an underdeveloped morphological competence, or a general problem in mapping the morphological information with the appropriate syntactic features. It is well-known that oral activities usually require greater cognitive abilities, and are subject to more psychological impediments than their written counterparts. Therefore, the visible asymmetry in accuracy between the oral and written use of these forms, with the former displaying higher degrees of ungrammaticality, could have resulted from performance issues such as processing difficulties, nervousness, and memory constraints.

It needs to be pointed out, however, that, despite the unpredictable and irregular nature of this phenomenon, the occurrence of morphological errors seems to follow a specific path. Data have shown, in fact, that masculine features are accounted for with greater accuracy than their feminine counterparts, regardless of the syntactic domain and the type of activity in which they are used. Similarly, singular forms create fewer acquisition difficulties than plural endings. The unidirectional distribution of these errors seems to indicate that morphological variability is more than a mere production-based problem. Several L2 studies (e.g., Bartning, 2000; Bruhn de Garavito, & White, 2002; Montrul, et al., 2008) have reported a widespread use of masculine forms in feminine contexts, and singular endings in plural situations. These discrepancies in performance have been attributed to an overgeneralization of the masculine and singular forms, acting as defaults, whenever L2 learners find themselves in unfamiliar terrains. In other words, L2 speakers, having not mastered the dependent features [feminine] and [plural], overextend the use of the unmarked ones, which are usually acquired earlier. If that is the case, the feature asymmetries reported in this study may result from an underlying morphological deficit. More specifically, following Lardière (2008), one could claim that the sources of morphological variability in Italian interlanguages are to be found in learners' inability "to assemble" the correct morphological features of a particular lexical item, which is a competence rather than a mere performance issue.

In sum, in light of these results, it can be concluded that morphological ungrammaticality, especially when noticed in advanced L2 grammars, is a strictly morphological problem, and does not entail any syntactic impairment. The misuse of Italian morphological features appears to be due to a delayed development of the necessary morphological competence, even though performance limitations could not be completely disregarded. Additional research, however, is needed to determine what causes the acquisition delay of the morphological knowledge with respect to the other linguistic competencies, and what types of difficulties and impediments L2 learners encounter in "assembling" the appropriate morphological features of the lexical items they are acquiring.

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**Appendix A: Abbreviations**

AGROP = Object Agreement Phrase

AP = Adjectival Phrase

cl = clitic

DOP = direct object pronoun

DP = Determiner Phrase

FAA = Feature-Assembly Approach

FAH = Full Access Hypothesis

fem = feminine

FFFH = Failed Functional Features Hypothesis

GER = Gerundive

LF = Logical Form

masc = masculine

MSIH = Missing Surface Inflection Hypothesis

MUH = Morphology Underspecification Hypothesis

N = Noun

Num = Number head

NumP = Number Phrase

NP = Nominal Phrase

PF = Phonetic Form

plu = plural

PRES = present tense

sing = singular

## Appendix B: Test items

### Target Nouns in the Written Recognition Task

Masculine		Feminine	
signore	“Mr.”	famiglia	“family”
marito	“husband”	signora	“Mrs.”
figlio	“son”	maestra	“teacher”
nonno	“grandfather”	moglie	“wife”
signori	“Mr. & Mrs.”	amiche	“friends”
genitori	“parents”	figlie	“daughters”
professori	“teachers”	sorelle	“sisters”
nonni	“grandparents”	amiche del cuore	“girlfriends”

### Target Adjectives in the Written Recognition Task

Masculine		Feminine	
bravo (sing.)	“smart”	bella (sing.)	“beautiful”
timido (sing.)	“shy”	diversa (sing.)	“different”
introverso (sing.)	“introvert”	estroversa (sing.)	“extrovert”
sposato (sing.)	“married”	generosa (sing.)	“generous”
arrabbiati (plu.)	“upset”	molte (plu.)	“many”
contenti (plu.)	“happy”	timide (plu.)	“shy”
sposati (plu.)	“married”	dinamiche (plu.)	“active”
piccoli (plu.)	“small”	estroverse (plu.)	“extrovert”

### Target Nouns in the Picture Identification Task

Masculine		Feminine	
vino	“wine”	mela	“apple”
libro	“book”	birra	“beer”
pollo	“chicken”	macchina	“car”
latte	“milk”	television	“television”
giornale	“newspaper”	carne	“meat”
pantaloni	“trousers”	lasagne	“lasagna”
libri	“books”	fotografie	“photos”
spaghetti	“spaghetti”	cravatte	“ties”
gelati	“ice cream”	scarpe	“shoes”
limoni	“lemons”	pere	“pears”

**Samples of pictures used in the Picture Identification Task**

*Un bicchiere di vino*  
“A glass of wine”



*La ragazza **lo** sta bevendo.*  
“The young girl is drinking it.”



*Una macchina*  
“A car”



*Il ragazzo **la** sta lavando.*  
“The young man is washing it.”

