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The development of Italian as a second language

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1. Introduction

Italian is a nonconfigurational, null-SUBJ headmarking language characterised by a rich morphology and a flexible syntax which is highly sensitive to pragmatic and discourse choices.[1] From the point of view of the effect of pragmatics on syntactic structure, Van Valin (2005: 77) locates Italian among languages with 'flexible syntax and rigid focus'. English, on the other hand, is among languages with 'rigid syntax and flexible focus', which makes the contrast between the two languages intriguing. These typological characteristics are of interest to PT in two fundamental ways. First, with regards to the notion of transfer of grammatical information within and between phrases of a sentence (cf. ch. 1, § 4.1, this volume), Di Biase & Kawaguchi (2002) show that, despite the basic contrast with English, Italian interlanguage data fully validates the universal hypotheses about the development of morphological structures and their interaction with syntax as hypothesised in Pienemann (1998), who had not looked at any Romance languages. Secondly, and perhaps even more importantly, with regards to the LFG architecture of correspondences among its three parallel levels of linguistic representation, the need to account for the nonconfigurationality of Italian syntax contributed substantially to the formulation of PT's hypotheses about the development of syntactic structures at the interface with discourse-pragmatics (cf. ch. 1, § 4.2, this volume). As a matter of fact, Di Biase & Kawaguchi (2002) pioneered the use of the newly formalised LFG DFs in PT, thus foreshadowing the extension later developed in Pienemann, Di Biase & Kawaguchi (2005). In what follows, unlike any previous treatments of Italian processability, we revisit and expand the morphosyntactic framework for Italian L2 development and propose a theoretically motivated way

1 For a brief description of Italian grammar written in English, cf. Maiden (1995), and Vincent (2011). For more comprehensive treatment in Italian, cf. Renzi, Salvi & Cardinaletti (2001), Salvi & Vanelli (2004), and Schwarze (2009) – the latter within an LFG framework.

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forward for dealing with the so-called intrastage phenomena (cf. § 2). We also offer a fairly comprehensive discussion of the interface between syntax and discourse-pragmatics, with empirical support (cf. § 3).

2. Morphological development of L2 Italian

PT-derived hypotheses for the acquisition of Italian must deal with its rich morphology instantiating all-pervasive and obligatory agreement patterns.

In terms of morphological typology, Italian is located higher than English on the index of fusion continuum. This is the index which measures the extent to which morphemes are segmentable, with agglutination at one end, where segmentation is straightforward, and fusion at the other end, where there is no segmentability (Comrie 1989: 46). English morphemes are more easily segmentable than Italian morphemes, which in most cases fuse a number of grammatical features in a single exponent. Segmentation of inflectional morphemes is often more problematic in Italian even than in other Romance languages such as French, Spanish or Portuguese, all of which, for instance, have adopted suffixation of *–s* to mark plural in nominal inflection. Italian on the other hand has a system of vowel alternation (Vincent 2011), which makes nominal number and gender hard to factor out, and more opaque for learners.

The other important characteristic of Italian morphology is that it is stem-based, like Russian and Hebrew, rather than word-based, like English or German. This is significant from a processing point of view, because – for the vast majority of nouns and adjectives, and for all verbs – Italian stems do not amount to full legal words, and must always bear some inflectional ending. The function of these inflectional endings is to express grammatical categories such as number, gender, mood and tense (Maiden 1995: 92). For example, the lexical item in (1a) cannot be realised in its bare stem (1b), but it must have one of the four inflectional vowel endings typical of Italian nominals, as in (1c). The inflectional endings in (1c) mark the gender contrast (masculine vs. feminine: e.g., *ragazzo*, 'boy' vs *ragazza*, 'girl'; *ragazzi*, 'boys' vs *ragazze*, 'girls') and the number contrast (singular vs. plural, e.g., *ragazzo*, 'boy' vs *ragazzi*, 'boys'; *ragazza*, 'girl' vs *ragazze*, 'girls') in nominals. Learners appear to acquire the phonological part of the process very early, namely, the fact that Italian words typically display a vocalic ending. But then it takes them much longer to account for the grammatical information loaded in the vocalic variation they hear in the input at the end of words.

(1) a. {*ragazzo*} [boy]
b. */ragats-/
c. / –o ~ –a ~ –i ~ –e /

Apart from the irregularities found in any system, nominal group marking in Italian is made more complex than the paradigm presented in (1) by the existence of several phonologically-based noun classes. In addition, from a semantic point of view, Ns with features +human and/or +animate do not always match their 'natural' and grammatical genders. All other nouns are assigned by the grammar to one or the other gender in an arbitrary way, often following phonologically based criteria: e.g., Ns ending in the unmarked singular citation form *–o* tend to be assigned to masculine gender (*libro*, 'book'), and those ending in *–a* to feminine gender (*casa,* 'house'). Yet Ns ending in *–e* are masculine (*pane*, 'bread'; *leone*, 'lion') or feminine (*neve*, 'snow'; *tigre*, 'tiger') in an arbitrary way.

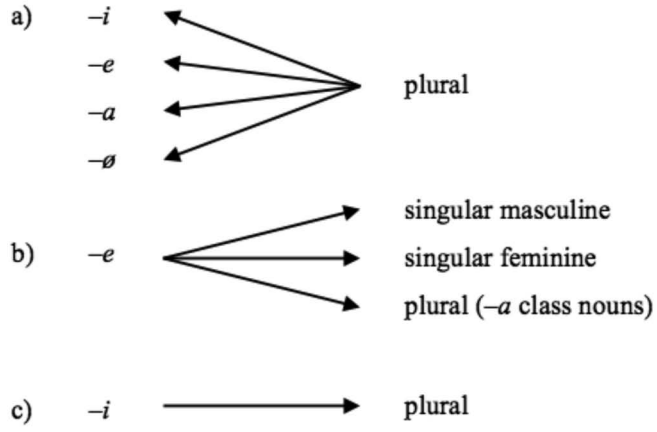
Also nominal modifiers, such as determiners, demonstratives and adjectives, must express the same gender and number values as their head Ns. Nominal modifiers also fall into classes: those with the same four endings seen in (1c) for Ns (*rosso ~ rossa ~ rossi ~ rosse*, 'red'), and those which neutralise the gender distinction by having *–e* ending for singular, and *–i* ending for plural (*verde ~ verdi*, 'green'), irrespectively of whether their head is masculine or feminine. An anchor point in this extreme variation is offered by the stability of *–i* as appearing with plural referents consistently. No wonder, as we shall see, that learners latch on to this morpheme and use it as a kind of prototypical, or default, plural marker. This phenomenon of identifying a certain form as bearing some particular function by default seems to be pervasive across all levels of morphological as well as syntactic and pragmatic marking.

The task faced by the learner in sorting out Italian nominal inflection is complex enough. Yet it is rivalled by that imposed by verbal morphology. We will not deal with the latter here, except to mention briefly that Italian Vs fall into three classes, each with a characteristic thematic vowel distinguishing three conjugations (*–a–*; *–e–*; *–i–*); and that a typical V has 47 or so finite forms, marking tense, aspect and mood, as well as person and number.

The complexity of the Italian inflection system offers a good example of the way in which the primary PT notion of information exchange within and across constituents needs to be complemented by other principles in order to explain the acquisitional process. Among these, there is the form-to-function relationship (Pienemann 1998: § 4.3). That is, the actual learning of the morphological form of the affix in relation to its function is a different task from that of managing information distribution in the affixation process, where diacritic features have to be exchanged within different grammatical structures. The figure in (2) illustrates how Italian Ns mark the *plural* value of their number feature through a complex set of form-function relations. The many-to-one relationship, where several morphemes mark one and the same feature is exemplified in (2a). Then there is the one-to-many relationship, as shown in (2b), where a particular morpheme marks more than one function. On the other hand, the most consistent

form-to-function relationship is shown in (2c), where the final *–i* vowel at the end of Italian nominal forms only marks the number feature [plural]. Similar form-function mapping problems may also be expected with the acquisition of Italian verbal paradigms, where the vowel ending of one form (e.g., *mangia* "(s/he) eats/is eating") carries information regarding several features at once, such as subject person, subject number, tense, aspect and mood. A veritable labyrinth for the learner.

(2) Form-function relations of Italian plural nominal markers



In essence, the relationship between morphological forms and their functions exhibits different degrees of complexity. This adds another dimension to the learning task which is separate and different from the task on which PT is focused, namely the exchange of grammatical information and the use of diacritic features. So far PT has not made any predictions on how a fuller paradigm develops. However, on the one hand, the more regular and simpler one-to-one form-function relationships may help to bootstrap the more complex ones (cf. Andersen's 1984 "one-to-one principle in interlanguage construction"). On the other hand, teasing out of different factors allowing to progress from emergence[2] to full mastery of the whole system is one of the directions in which future research can go – and not only with regards to Italian (cf., e.g., the brief mention of Russian morphology in ch. 5).

2 For a thoughtful assessment of the emergence criterion in PT as applied to Italian, cf. Pallotti (2007).

2.1. The hypotheses

Let us now consider some of the main language-specific Italian L2 structural outcomes of the morphological processing procedures universally predicted by PT (cf. ch. 1, § 4.1, this volume). Our hypotheses are shown in (3), and then discussed with interlanguage examples taken from Di Biase's corpus analysed in Di Biase & Kawaguchi (2002) and Di Biase (2007), and briefly described in § 2.2.

(3) Developmental stages hypothesised for L2 Italian morphology (extended from Di Biase & Kawaguchi 2002)

STAGE	MORPHOLOGICAL OUTCOME	STRUCTURE	EXAMPLE
S-BAR PROCED.	INTERCLAUSAL MORPHOLOGY	subjunctive marking in subordination	*immagino siano partiti* *[I imagine they have left]*
SENTENCE PROCED.	INTERPHRASAL MORPHOLOGY	NP_{TOPi} Cl_{OBJi} AUX V-to$_i$ NP_{SUBJ}	*i fichi li ho comprati io* *[the figs, I have bought them]*
		NP_{TOPi} Cl_{OBJi} V NP_{SUBJ}	*i fichi li compro io* *[the figs, I buy them]*
		NP_{SUBJ} AUX V-to	*i bimbi sono partiti* *[the kids have left]*
		NP_{SUBJ} COP predicative adjective	*i bimbi sono buoni* *[the kids are good]*
PHRASAL PROCED.	VP MORPHOLOGY	AUX V-to	*sono usciti* *[(they) have left]*
		COP predicative adjective	*sono buoni* *[(they) are good]*
	NP MORPHOLOGY	N adjective	*bambini buoni* *[good children]*
CATEGORY PROCED.	LEXICAL MORPHOLOGY	person marking on V	*mangiare vs mangio* *[eat vs I eat]*
		past marking on V	*mangia* vs *mangiato* *[eat* vs *eaten]*
		plural marking on N	*bambino* vs *bambini* *[child* vs *children]*
LEMMA ACCESS	INVARIANT FORMS	single words	*no lavoro [no work]*
		formulas	*mi chiamo Karim* *[my name is Karim]*

After leaving behind the single-words and formulaic (lemma access) stage, learners begin to incorporate language-specific procedures at the next (lexical-morphology)

stage, when categorial marking for Italian Ns is achieved through the use of article-like forms, such as *la* or *il* as generalised markers (cf. also, in a non-PT framework, Chini & Ferraris 2003: § 3.4.1), as *la acqua* 'the water' in (4), and *l'oca* 'the goose' in (5) further below.

(4) Researcher: sotto nell'acqua? [under the water?]
Trish: no no la acqua [no no water]

In PT the category procedure is characterised by the lack of information exchange with any other element in the phrase or clause. Our interpretation then would not consider the combination of noun and article as evidence for phrasal procedure morphology, independently of whether or not the specific combination turns out to be target-like (cf. also Di Biase 1998). In fact, bare Ns are not often produced at early stages of Italian L2 development, and are in any case highly restricted also in native Italian, aside from personal names. Furthermore, the Italian article is syntactically incapable of appearing by itself and is prosodically not independent of the content word that follows, and groups under its stress field. This, in turn, would favour a sort of formulaic (exemplar) learning of article-N combinations. For all these reasons, such combinations are hypothesised as belonging to the lexical level, in the sense that article forms are considered as part and parcel of categorial marking of Ns rather than as agreeing determiners[3] . A clearly different situation obtains with other determiners or N modifiers such as demonstratives, which may appear (syntactically) independently or at the end of phrase boundaries, and have their own independent stress pattern and prosody. When such N modifiers must agree with their N head, a phrasal procedure needs to be called upon.

At this category procedure stage in Italian, the plural *–i* diacritic, being the most consistent marker of plurality in the language among several other markers (cf. (2) above), turns out to be the first to emerge in conjunction with plural referents, as in (5).

(5) Lois: l'oca ritornato *caroti
the goose returned carrots
[the goose has returned the carrots]

Like Ns, Vs also show categorial marking in Italian, such as the infinitive *–re* ending used in various contexts, as in (6). At this stage, perfective past tense can also

3 Naturally, some defaults may be learned quickly (*la casa*), others (*il problema*) may take a long time (cf., the discussion on soft barriers below).

be marked by the *–to* past-participle ending,[4] although not yet in analytical constructions with their AUX, as in (5) above. Some person marking on V is also attested at this stage. See, for example in (6), the formal contrast between *capire* and *capisco* that may mark first person with the characteristic null SUBJ. This contrast, however limited, is sufficient to show that person marking appears at a much earlier stage in Italian compared to English – a fact that can be explained by the null-SUBJ nature of Italian (cf. our discussion of this point below).

(6) Lois: non... capire... non capisco
not understand-INF not understand-1.SG
[(I) don't... understand... (I) don't understand]

The morphological processes that characterise the next, phrasal, stage in Italian interlanguage include nominal and verbal agreements. Within the NP, learners start producing the agreement of determiners (other than articles as we have seen), and/or adjectives in attributive function, with the gender/number of the head N, as in (7). Within the VP, unification of number value (singular or plural) produces two types of agreement: one between the copula and a predicative adjective or a nominal, as *sono cugini* in (8); the other between the person marker in the (*essere*) AUX[5] and the ending in the lexical V, as in (9).

(7) Anne: non ho tanti amici maschili [maschi]
not have-1.SG many-PL.MASC friends-PL.MASC male-PL.MASC
[I don't have many male friends]

(8) Amy: sono cugini della mia mamma
are-3.PL cousins-PL.MASC of my mother
[they are my mother's cousins]

(9) Toni: ah sì, sono andati alla camera di letto
oh yes are-3.PL gone-PL.MASC to the bedroom
[oh yes, they went to the bdroom]

Let us now move on with the learners to the S-procedure stage. Notice that in English, on account of obligatory SUBJ, person variation in the V-form is placed

4 The *–to* marker also marks perfective aspect but it is difficult to segment out tense and aspect marking.

5 Analytical tenses require different AUXs (*essere* 'be', *avere* 'have') that carry the finiteness features (Schwarze 2009: 150). However only the *essere* AUX is relevant for phrasal agreement because it requires GEN/NUM agreement between SUBJ and lexical V.

high in the processability hierarchy (cf. ch. 2, § 2). Italian, on the other hand, being a null-SUBJ language, maps the person-number (singular or plural speaker, addressee or third person) directly on V form without a necessary co-reference to a nominal or pronominal SUBJ (cf. Di Biase & Kawaguchi 2002 for an LFG formalisation). Indeed SUBJ may not be expressed at all, or be generated after V (cf. § 3.1 below). Results from psycholinguistic experiments (e.g., Vigliocco, Butterworth & Semenza 1995; Vigliocco, Butterworth & Garrett 1996) support the hypothesis that SUBJ-V agreement in null-SUBJ languages is generated via an independent retrieval of the features of V and those of SUBJ. If this is the case, then – for Italian and other null-SUBJ languages – achievement of interphrasal morphology may be more clearly expressed by structures other than SUBJ-V agreement, so as to allow for the fact that at least some of the different person-number forms of V are acquired, as we have just seen, at an earlier stage.

In Italian too, of course, interphrasal morphology requires the S-procedure, that is, the procedure for unifying different categories of constituents at sentence- or clause-level. This means that, for the emergence of structures belonging to this stage, the learner must recognise the grammatical relations (e.g., SUBJ, OBJ) expressed by the various constituents of the clause, as well as identify the category of each constituent, and more generally the relationship between predicates and their arguments, including predicates of an adjectival or nominal nature, as we have seen in (8)-(9). So what are the candidate structures for Italian at the sentence agreement stage? One structure that can be built on those in (8)-(9) is the unification of SUBJ features (gender and number) with nonverbal predicates, as in (10).

(10) Anne: i genitori di mia mamma sono australiani
the parents-PL.MASC of my mother are-3.PL Australian-PL.MASC
[my mother's relatives are Australian]

Other good candidates include agreements in verbal analytic constructions (with AUXs) that are likely to be unified online, provided they require nondefault (i.e., not singular and masculine) unification. By this we mean not the unification of the person feature of SUBJ, which is carried by the AUX, but of the values for its number and gender features, which must be unified with the lexical V, as in (11).

(11) Amy: noi siamo andate da Napoli a Palermo
we-1.PL are-1.PL gone-PL.FEM from Napoli to Palermo
[we went from Napoli to Palermo]

Here, the number value of the lexical V form (*andate*, 'gone') is unified with that of the pronominal SUBJ (*noi*, 'we'): plural in both cases. On the other

hand, the feminine gender value also marked on the lexical V (*andate*) is not marked in the pronominal SUBJ (*noi*), which could indifferently refer to males, females or mixed referents. So, we may ask, where does the feminine gender information of the lexical V-form come from? The answer to this question must be that – because both features (gender and number) are required by V – the gender value is retrieved by the V lemma directly from the conceptual structure. Pronominal SUBJ, on the other hand, requires only the number value. It is these kinds of feature distributions and unification patterns that lead Di Biase (2007: § 1.2) to support the 'independent retrieval' assumption of Vigliocco and her co-workers, who carried out numerous experiments concerning SUBJ-V agreement in a range of typologically different European languages (e.g., Vigliocco, Butterworth & Garrett 1996; Vigliocco, Hartsuiker, Jarema & Kolk 1996; Vigliocco & Franck 1999, 2001). This line of research suggests that, at least in null-SUBJ languages with SUBJ-V agreement, both SUBJ and V retrieve features from the conceptual structure independently, and then merge them at the S-node. Hence, the V-form is essentially a lexical-stage form, stored in the mental lexicon of the speaker, whose features must match or be compatible with its agreeing counterpart.

Still at the S-procedure stage, and again referring to (3) above, another structure hypothesised for L2 Italian is the TOP-V agreement occurring in clauses that topicalise OBJ by (dis)placing it to the left of V from its canonical postverbal position (cf. § 3.2 on syntactic development). In such cases OBJ is an accusative clitic pronoun co-referential with the TOP placed at the beginning of the clause. These (i.e., the NP TOP and the OBJ clitic) must agree in number and gender values, as in (12). Furthermore, if the V is in an analytic construction with an AUX, its past participle form will bear the same number and gender values as the clitic, as in (13). This structure then requires that learners recognise a full nominal TOP as nonSUBJ, and mark their discourse-pragmatic choice explicitly by the ACC clitic pronoun exhibiting NUM and GEN values in agreement with the NP TOP. Learners who can produce such long distance agreement must clearly be able to assign SUBJ and OBJ functions, and manipulate their agreement and position patterns. More about this complex structure will be said when presenting the development of Italian syntax in § 3.1, and in chapter 8.

(12) Toni: i broccoli li compra il cane
the broccoli-PL.MASC them-PL.MASC buys the dog
[the broccoli, the dog buys it]

(13) Amy: le patate le ha comprate la il cane
the potatoes-PL.FEM them-PL.FEM has bought-PL.FEM the dog
[the potatoes, the dog has bought them]

Finally, at the S-BAR procedure stage, subordination phenomena at the interclausal level can affect morphological form also in Italian, as they do in English (cf. § 2, ch. 2 in this volume). In (14) and in the appropriate cell in (3) above there are a couple of examples.

(14) speriamo venga domani
hope-INDICATIVE.1.PL come-SUBJUNCTIVE.3.SG tomorrow
[we hope she comes tomorrow]

These constructions, which show a marked form of V in the subordinate clause, belong to an educated register of standard Italian; they are rather rare in native speakers' everyday production, and difficult to elicit in learners. As already noticed with regard to L2 English in chapter 2, learner data has yet to support the late emergence of this last stage for L2 Italian. Indeed, the very complex area of subordination is still a research gap in PT, and requires further theoretical elaboration and focused empirical investigation.

2.2. Hard barriers and soft barriers in morphological development

Evidence in support of the learner's journey outlined in § 2.1 is provided by two studies: Di Biase & Kawaguchi's (2002) cross-sectional study of six English-speaking Australian university students learning L2 Italian, two each attending beginner, intermediate and advanced courses; and Bettoni & Di Biase (2005) longitudinal study of a seven-year old Romenian girl recorded for eight times after her arrival in an Italian school. In (15) we extend the analysis presented in Di Biase & Kawaguchi (2002) by adding further phrasal and interphrasal structures, and focus on the morphosyntax involving the most frequent, consistent and reliable form-to-function marking and agreement phenomena. The oral production data set from the six learners (and one native control interacting with the researcher, not shown in the table) was elicited over two sessions totalling between 35 and 60 minutes for each learner. The first session included free conversation, a picture description and a story telling task. A shorter second session focused on a communicative task devised by Di Biase to elicit structures with OBJ clitics, which he called the 'animal dinner task'. This task shows the learnrs two cards at a time, one with the picture of animals, and the other with that of food items. When the two cards appear on the computer screen, learners are encouraged first to plan who (the agent) is buying what (the theme) for a forthcoming dinner in the (simple) present tense, and then to retell the events by saying who has brought what in the (analytic) past tense. Learners have to do this starting from the card on the left. Since this card randomly shows the animals and the food items, active SVO

(15a) Cross-sectional study of morphological development in L2 Italian (extended and updated from Di Biase & Kawaguchi 2002)

STAGE	STRUCTURE	TRISH	LOIS	CARRIE	ANNE	TONI	AMY
S-PROCED.	NP_{TOPi} Cl_{OBJi} AUX V-to_i NP_{SUBJ}					-6	+5-2
	NP_{TOPi} Cl_{OBJi} V NP_{SUBJ}		-19	-11	-1	+11-1	+12-1
	NP_{SUBJ} AUX V-to			+1	+6-3	+2-2	+10-6
	NP_{SUBJ} COP predicative adjective	-1		+1-1	+6	+3-2>1	+16-3
VP PROCED.	AUX V-to				+3-2	+3-2	+4-1
	COP predicative adjective		-3	+3-1	+10-1	+6-5>1	+3-1
NP PROCED.	N adjective	-1	+1-5	+3-1>1	+7-1	+4-3>1	+6-2
CATEGORY PROCED.	past *–to* marking on V	+1-2	+10-9	+16-3	+26	+112-11	+54-3
	plural *–i* marking on N	+1-14>5	+14-5>1	+12-2>2	+21	+17-2>1	+10

\+ = supplied in obligatory context (correct) > = oversupplied in a singular context (error)
\- = not supplied in obligatory context (error) empty cell = no context

(15b) Scalability matrix of Italian morphological data shown in (15a)

STAGE	STRUCTURE	TRISH	LOIS	CARRIE	ANNE	TONI	AMY
S-PROCED.	NP_{TOPi} Cl_{OBJi} AUX V-to_i NP_{SUBJ}					⊖	+
	NP_{TOPi} Cl_{OBJi} V NP_{SUBJ}		–	–	⊖	+	+
	NP_{SUBJ} AUX V-to			–	+	+	+
	NP_{SUBJ} COP predicative adjective	–		–	+	+	+
VP PROCED.	AUX V-to				+	+	+
	COP predicative adjective		–	+	+	+	+
NP PROCED.	N adjective	–	–	+	+	+	+
CATEGORY PROCED.	past *–to* marking on V	–	+	+	+	+	+
	plural *–i* marking on N	–	+	+	+	+	+

sentences (e.g., *l'oca compra le carote*, 'the goose buys the carrots') should alternate with topicalised ones (e.g., *le carote le ha portate l'oca*, 'the carrots, [them] has brought the goose') – although it is of course impossible to rule out the use of passives, a more formal choice in Italian (e.g., *le carote sono comprate dall'oca*, 'the carrots are bought by the goose'). The total data set thus gathered consists of about 30,000 words, of which half produced by the learners, with a mean length of 10.3 words per turn.

The initial lemma access stage is omitted from the results because it is safely reached by all learners. The rest of the counting is exhaustive over the database. However, default agreements (e.g., the citation, and most frequent, masculine/singular form) are excluded because otherwise the acquisition criteria would be clouded over by the bulk of the default itself, as we will explain where it becomes relevant. For the organisation of the table, see the criteria in chapter 1, § 5, this volume.

Our empirical results for all six learners in (15a-b), with nine implicationally arranged structures generating a matrix of 54 cells, support the hypotheses formulated in (3), yielding a coefficient of scalability (Hatch & Lazaraton 1991: 204-16) of 100% if we consider only the three procedures. This means that the principle of 'information exchange' and its operation across major linguistic units (categorial, phrasal and interphrasal) is robust. In chapter 1, § 5, we called 'hard barriers' these boundaries that the learner needs to negotiate from one stage to the next in order to be recognised as having achieved a particular developmental stage. Thus Trish has not yet crossed the hard barrier to the category procedure stage. Lois has, but has not crossed into phrasal procedure stage yet. Carrie successfully reaches the phrasal procedure stage but not completely. The other three learners can be said to be capable of handling S-procedure but, curiously, each of them seems to be at distinct points of the interphrasal stage. So, having said that the hypothesis is supported, if we consider all the structures severally, our data yields a coefficient of scalability of 89%, which is more than sufficient to reduce the possibility of chance in the sequence in which these structures emerge.

How can one interpret this difference between a scalability of 100% for structures collapsed within the stages and a lower scalability for them taken individually? Notice that a similar pattern obtains also for English, as shown in (3a), § 2, ch. 2, this volume. The answer is probably that, whereas there are categorical implicational relationships among the procedures described by PT, these relationships are not as strong between specific structures belonging to each stage. A refinement of the gross division by stages was foreshadowed by Mansouri & Håkansson (2007) under the guise of 'intrastage' sequencing in learner language. These scholars identify structures belonging within a single stage as being acquired according to a specific pattern. More specifically, three

different structures for marking definitness in Arabic and two in Swedish, respectively, were found to emerge in a specific sequence. Mansouri & Håkansson (2007: 115) then propose an expanded 'Hypothesis Space' model for PT to account for "more complex linguistic and functional phenomena that have implications for language processing". Furthermore, from a methodological point of view, they indicate the desirability of identifying for any stage the 'optimal structure' for empirically testing PT-based predictions, because the structures emerging later within a stage may not be good candidates for testing theoretical predictions. We concur with Mansouri and Håkansson that it is desirable to find an 'optimal' structure to characterise the stage. A case in point is the *–i* plural marking for Italian, the most frequent and reliable out of all the possible markers for plurals. However, we propose that it is crucial to identify the source(s) of complexity, so that the sequencing itself also becomes theoretically predictable (and falsifiable).

There are two main sources of language-specific variation that constrain the learner's progress over these barriers within a stage, which we called 'soft barriers' (cf. ch. 1, § 5, ch. 2, § 2, for English, and ch. 4, § 3.2, for Japanese). These sources are the lexicon, namely, the bundling of lexical features and lexical mapping, on the one hand, and on the other hand, the discourse-pragmatic requirements expressed in the grammar, as originally identified in the PT extension (Pienemann, Di Biase & Kawaguchi 2005). Both lexical features and discourse requirements are hypothesised to absorb further processing cost according to the number of syntactic nodes requiring unification and, consequently, requiring greater attention by L2 speakers (cf. Segalowitz 2003; Taube-Shiffnorman & Segalowitz 2005). These two constraints can be seen at play in the results presented in (15), where the solid line represents the 'hard barrier' between one stage and the next, and the zigzag line represents the 'soft barrier' of a hypothesised step within the stage. In other words, while the environment of feature unification (i.e., the scope of information exchange) provides the basic constraint between one stage and the next, both the quality and quantity of the features requiring unification over two or more nodes and discourse requirements (which require greater attentional resources) will further constrain progress within a stage. Let us consider these two sources in turn.

With regard to the language-specificity requirement of particular lexical items, focusing on our results in (15), we notice that the accuracy rate for some morphological agreements at the higher stages is still poor with the more advanced learners. Why is this so? On the one hand, some of the structures identified as candidates for our hypotheses rely on analytical constructions based on nontransitive Vs selecting AUX *essere*. In fact, along with Maiden (1995: 150) and Schwarze (2009: 153), among others, we consider active transitive constructions which select AUX *avere* as default given their frequency,

consistency and high predictability.[6] Because *avere* constructions do not require agreement with the lexical V, they are not very informative in terms of developmental stages in morphological agreement. On the other hand, there is a small group of Italian Vs with unaccusative meaning (e.g., *andare*, *partire*, *nascere*) that select *essere* AUX ('to be') in analytic forms (Maiden 1995: 150-153). In these cases, as in copular constructions and with passives and reflexives, the participle form of V must agree in gender and number with SUBJ. This type of concord is a laborious thing to learn and may motivate what we call here a soft barrier within the stage for the learner to overcome, causing the rather shaky accuracy we can see in the results of more advanced learners such as Anne, Toni and Amy. Their lower rates in fact occur when attempting structures with *essere* AUX (unaccusatives, passives, reflexives) in an otherwise strong agreement performance. The intermediate stage learner, Carrie, interestingly crosses over the hard boundary to achieve the interphrasal stage, with agreements between copula and predicative adjective, but she does not produce any contexts for the *essere* AUX and V-to agreement. We agree with a reviewer of this chapter that the evidence here is weak because no production does not necessarily imply no acquisition; however, all learners have performed exactly the same tasks designed to elicit this structure and only the three more advanced learners produced it successfully.

The effect of the second source of language-specific variation constraining the learner's progress within a stage can be exemplified at the top of the S-procedure stage. Because all of the three more advanced learners have crossed over the hard barrier between phrasal and interphrasal stages, the difference between them can be characterised by the soft barrier imposed by the appearence of topicalised OBJ. That is, Anne does not topicalise, although she attempts to use some passive constructions, as in (16), which, however, do not involve clitics.

(16) Anne:	mm la lattuga	è	comprata	dal cane
	the lettuce-SG.FEM	is	bought-SG.FEM	by the dog
	[the lettuce is bought by the dog]			

Toni crosses the OBJ topicalisation boundary, as (15) shows, but does not manage the long distance TOP-V agreement over the next soft boundary, which Amy does, as (13) shows. It could be argued that the computation of the discourse-pragmatic information together with the morphosyntactic informa-

6 Some intransitives (e.g., unergatives such as *dormire*, *camminare*) also select *avere*, and do not require agreement. Like transitives, these Vs tend to have an agentive SUBJ.

tion may indeed require the S-procedure but that TOP lay outside of it. In other words, it could be argued that there should be a 'hard' boundary to separate more clearly the discourse-pragmatic information from the rest of the S-procedure because, even though the linguistic unit is still the clause, in processing terms the long distance agreement is computed over potentially discontinuous constituents. For the moment it may be best to let the 'linguistic unit' define the hard boundaries, and let the additional lexical or discourse information define the soft boundaries (some of these issues will be picked up again in § 3.1). In any case, the coefficient of scalability of the same results for the same learners shown in (15) improves dramatically from 89 to 100% when soft barriers are taken into account.

3. Syntactic development

Italian appears to assign a lesser role to syntax than to morphology in interpreting GFs (e.g., SUBJ can be null, but always marked in verbal morphology). As Bresnan (1998: 119) observes more generally, morphological forms will compete with and pre-empt phrases that carry no additional information. If the syntactic structure nodes do not bear additional GFs that distinguish them from the morphological structures, they must be omitted. This explains why the numerous Italian word order options are used more for mapping pragmatic and semantic information than for conveying grammatical information.

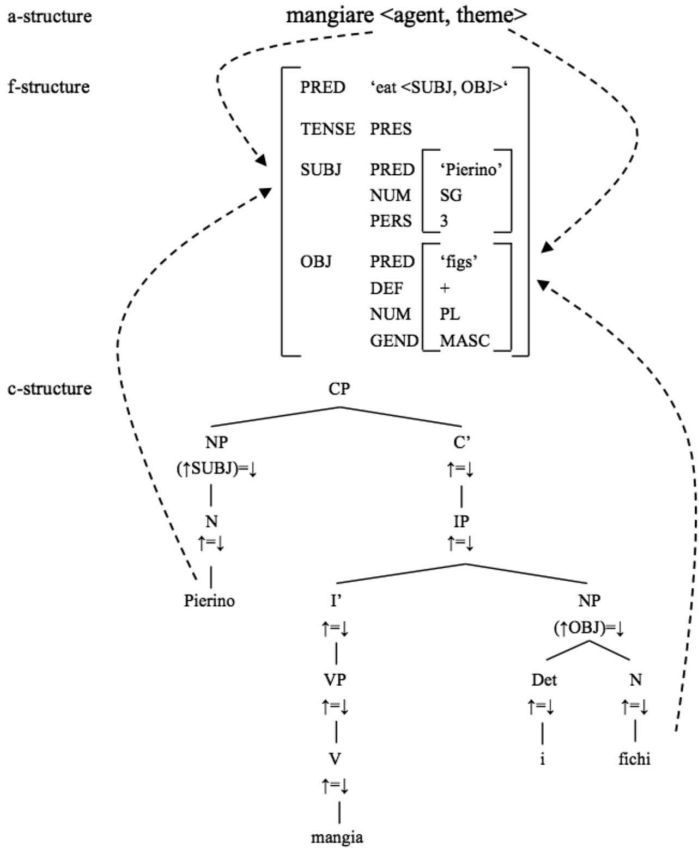
3.1. The Prominence Hypothesis

Let us then look at how the Prominence Hypothesis applies to the development of Italian syntax. We will present first the key features of Italian grammar on which the predicted developmental trajectory is based, and then the actual trajectory for L2 Italian declarative sentences, drawn from work by Di Biase and his collaborators (e.g., Di Biase 2005; Di Biase & Bettoni 2007; Bettoni, Di Biase & Ferraris 2008; Bettoni, Di Biase & Nuzzo 2009; Bettoni & Di Biase 2011). The development of Italian content questions is discussed and tested with empirical data by Bettoni & Ginelli in chapter 8, this volume.

Like English, Italian canonical word order is SVO, as shown in (17). This means that, in pragmatically neutral, simple, declarative sentences, SUBJ is the default TOP, and OBJ is the default FOC.

However, since Italian – unlike English – is a nonconfigurational language, its canonical word order can be freed up for mapping pragmatic and semantic information. In theory at least, all permutations of the core elements are possible, as shown in (18), where the propositional meaning of all the sentences is 'Pierino eats

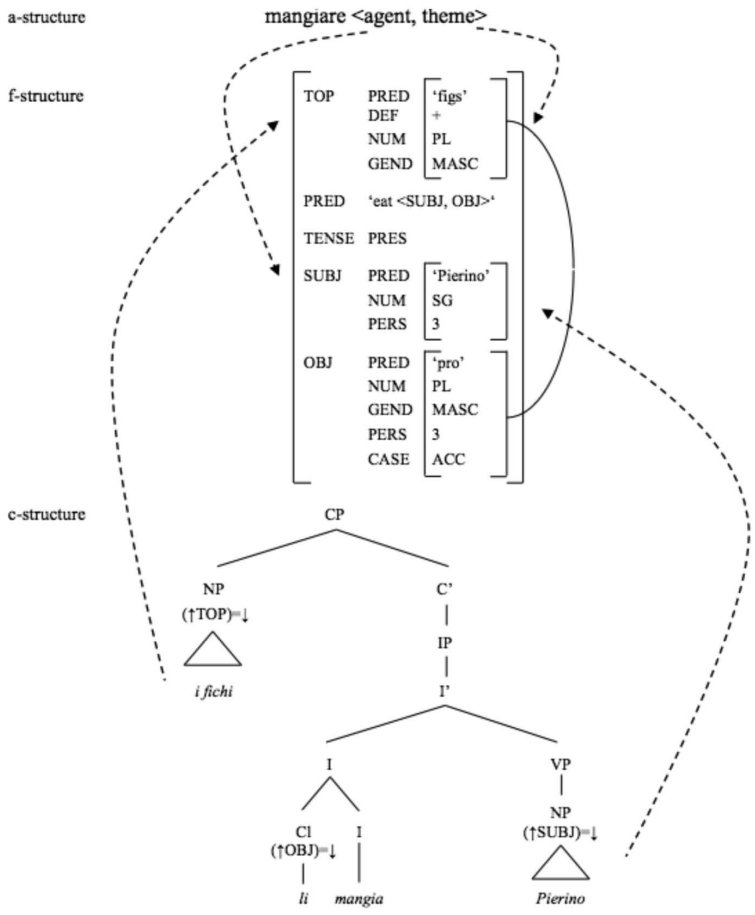
(17) Canonical correspondences between a-structure, f-structure and c-structure for the sentence Pierino mangia i fichi *('Pierino eats the figs')*



the figs'. In practice, however, those in (18c-f) are highly dependent on marked prosody for interpretation and rarely used. OBJ topicalisation, as in (18b) and illustrated formally in (19), needs no special prosodic emphasis, because the "functional uncertainty" of the first NP (Bresnan 2001: § 4.8) is solved by a coreferential OBJ clitic marker on V (both *i fichi* and *li* are MASC-PL).

(18) a. SVO Pierino mangia i fichi
b. OVS i fichi li mangia Pierino
c. SOV Pierino i fichi mangia
d. OSV i fichi Pierino mangia
e. VSO mangia Pierino i fichi
f. VOS mangia i fichi Pierino

(19) Noncanonical correspondences between f-structure and c-structure for the sentence i fichi li mangia Pierino *('the figs, Pierino eats them')*



If the inanimate nature of the first NP in this sentence will semantically rule out the possibility of the *figs* doing the eating, confusion could easily arise if animacy is shared by both the participants in the eventuality. This would happen in (20), for example, if neither SUBJ nor OBJ is unequivocally marked. In configurational languages such as English one can tell positionally which NP has which GF: in declaratives, the one before V is SUBJ, and the one after V, if any, bears some other GF. As we have just seen, Italian marks preverbal OBJ with a clitic agreeing with TOP: in (18b) masculine and plural (*li* and *i fichi*), and in (20) masculine and singular (*lo* and *il bambino*).

(20) a. la mamma accarezza il bambino
SUBJ V OBJ
[mummy caresses the child]

b. il bambino lo accarezza la mamma
TOP.MASC.SG he-Cl.ACC.MASC.SG V SUBJ
[the child, mummy caresses him]

If, on the other hand, it were *the child* doing the caressing (as in 21), and for discourse-pragmatic reasons the speaker would wish to place this NP in postverbal focal position and place *mummy* in topical position (as in 21b), then the clitic signalling all this would agree with *mummy* and be feminine and singular.

(21) a. il bambino accarezza la mamma
SUBJ V OBJ
[the child caresses mummy]

b. la mamma la accarezza il bambino
TOP.FEM.SG she-Cl.ACC.FEM.SG V SUBJ
[mummy, the boy caresses her]

Besides being nonconfigurational, Italian is also a null-SUBJ language. In spoken Italian, SUBJ is neither referential nor pronominal in almost 70% of sentences (Bates 1976), and is expressed exclusively by verbal morphology. This means that, when previously mentioned, implied or shared, SUBJ is left out, as in (22a). Should pronominal SUBJ be used, it would indicate emphasis or contrast, and therefore most often occupy the postverbal focal position in declarative sentences,[7] as in (22b), rather than its canonical preverbal position.

(22) a. hai sentito i ragazzi? hanno telefonato
have-2.SG heard the boys? have-3.PL phoned
[have you heard from the boys? they have phoned]

b. hai chiamato tu i ragazzi? hanno telefonato loro
have-2.SG called you the boys? have-3.PL phoned they
[was it you who has called the boys? it was them who have called]

7 Because Italian allows for flexible word order, it is a non-plastic language, i.e., it does not allow variable placement of nuclear stress (Vallduvi & Engdahl 1996), in contrast to English, for example.

Even from this brief presentation of Italian word order rules, it is easy to see that learners will be able to acquire them all only gradually. Let us then illustrate their path hypothesised for syntactic development with regard to word order (cf. 23).

(23) Developmental stages hypothesised for L2 Italian syntax based on the Prominence Hypothesis: declaratives (after Bettoni & Di Biase 2011)

STAGE	STRUCTURE	EXAMPLE
NONCANONICAL WORD ORDER	TOP_i $Cl_{OBJ\,i}$-V SUBJ	*i fichi li compro io* *[the figs, (I) buy them]*
XP_{TOP} CANONICAL WORD ORDER	TOP_{ADJ} SVO	*al lavoro non ho amici* *[at work (I) have no friends]*
CANONICAL WORD ORDER	SVO	*Pino mangia fichi* *[Pino eats figs]* *parlo italiano poco* *[(I) speak Italian a little]*
LEMMA ACCESS	single words formulas	*ciao [hello]* *mi chiamo Ugo [ny name is Ugo]*

After the initial stage, when single concepts are mapped to single words or formulas, learners will at the next stage organise words according to the order most typically and most frequently recurring in the L2 input. This is SVO for Italian, including the possibility of VO, or V, as we have seen. Notice however that, at this stage, the canonical-order sentence remains underspecified regarding the grammatical functions of its core referents. That is, learners will analyse the preverbal NP, if present, semantically as agent or pragmatically as TOP rather than purely grammatically as SUBJ.[8] Recall also our comment on the categorial stage in morphology in § 2 above: formal variation on V may begin to emerge in Italian interlanguage at this stage – that is, much earlier than in English interlanguage. So, whereas the English *–s* marker on third person singular emerges when the learner is able to unify the relevant features of SUBJ-V agreement at the interphrasal stage, a variety

8 As a matter of fact, given that SUBJ is claimed to be universal (cf. the Subject Condition of LFG, Falk 2006: 98, 170), learners assume that one element has SUBJ status. This would mean a mapping by default between SUBJ, TOP and agent. However, at this stage SUBJ remains underspecified, with some of its Italian-specific properties unrealised.

of morphological verbal markings begin to appear at this category stage, because – thanks to the null-SUBJ character of Italian – there is no SUBJ for the V to unify with. The sentences in (24)-(25) are typical of this stage.

(24) mia famiglia. fratello sorella mangia dolce swedish
my family brother sister-SUBJ eat-V sweet swedish-OBJ
[my family, brother sister eat swedish sweet]

(25) mangio sul lavoro
eat-V at work-ADJ
[I eat at work]

To move beyond the canonical word order stage, learners must assign grammatical functions to sentence constituents independently of their fixed position within the canonical string. PT's Prominence Hypothesis predicts that they will begin to do this by uncoupling TOP from SUBJ. The first step in this development happens when learners begin to contextualise (in time, space, etc.) the core sentence by adding an ADJ to canonical order. If for pragmatic reasons this addition is introduced as TOP occupying a position early in the sentence as in (26), there will now be two preverbal constituents. This will force learners to distinguish between TOP and SUBJ, change the relationship between the c-structure and f-structure, and require additional processing procedures. With the addition of ADJ as TOP, however, the first position is occupied by a nonargument constituent, so the SVO structure nudges intact to the right.

(26) mezz'ora dopo mio padre prende il treno
half an hour later-TOP_{ADJ} my father-SUBJ catches-V the train-OBJ
[half an hour later my father catches the train]

Further in their development, learners will also be able to disrupt canonical word order. Once again this will happen gradually: first when only one core argument is in a noncanonical position, namely when SUBJ is postverbal, as in (27), and then when both are assigned to a noncanonical position, namely when SUBJ is postverbal and OBJ preverbal, as in (28).

(27) compro io il pane
buy-V I-SUBJ the bred-OBJ
[I am going to /it's me buying the bread]

(28) hindi lo sanno tutti
Hindi-$TOP_{MASC.SG}$ it-Cl.ACC.MASC.SG know-V everybody-SUBJ
[Hindi, everybody knows it]

Supporting evidence for this trajectory comes from several corpora, gathered in Australia and in Italy. We summarise here the results of the analysis of a cross-sectional data set of 15 learners working or studying in Verona or Milan (Bettoni & Di Biase 2011). They are all in their twenties (9 females, 6 males), with a wide range of competence levels in L2 Italian and L1 backgrounds, including Arabic, Czech, English, French, German, Japanese, Mongolian, Portuguese, Romanian, Russian, and Tigrinya. Three tasks were used to elicit the structures listed in (29). The first two, targeting canonical word order and ADJ topicalisation, although standard in SLA, were adjusted for Italian in order to allow for production of both overt SUBJ and null-SUBJ. Thus, first, a short picture story retelling task involving at least two actors encourages the use of canonical word order with both full referential or pronominal SUBJ and pro-drop. Second, a spot-the-difference task gives speakers the chance to contextualise the different actions depicted in the two drawings by prefacing such phrasal ADJ as *nel disegno a* ('in drawing a') and *nel secondo disegno b* ('in the second drawing b'). Thirdly, for eliciting OBJ topicalisations we adapted Di Biase's 'animal dinner' described in § 2.2, which became a 'birthday party', and a 'trip into the mountains' where various protagonists must contribute a present in the first case and a piece of equipment in the second. From the learners' oral production data set, 512 declaratives sentences could be extracted, about 34 sentences per learner. They are all main clauses with lexical Vs requiring default mapping of thematic roles onto GFs, such as *dare* ('give', a three-argument V), *comprare* ('buy', a two-argument V) or *saltare* ('jump', a one-argument V). In other words, sentences with so-called exceptional Vs and nonbasic V forms such as passives (Pinker 1984) are not considered here, because all of these involve nondefault mapping between a-structure and f-structure, and consequently PT's Lexical Mapping Hypothesis. Nor do we consider copular and presentative sentences, because they are 'nonverbal predicates' (Kroeger 2005: ch. 10).

In (29) we arrange structures vertically from the bottom up with the three groupings coherently reflecting our hypotheses, and learners horizontally from the left according to developmental progress. In general terms, results shows an implicational developmental pattern: all learners who have achieved the XP canonical word order stage have acquired various instantiations of the previous canonical word order stage. Then, likewise, those who have achieved the non-canonical (marked) stage have clearly achieved both previous ones. The fact that the L1 background of our 15 learners is typologically varied makes our evidence even more convincing. This of course does not deny the influence of L1. Transfer does occur, but it is constrained by the procedures the learner can handle (Pienemann, Di Biase, Kawaguchi & Håkansson 2005). As such, it does not affect the developmental sequence, although it may affect the hypothesis space of a given stage, the speed with which it is attained, or the structur-

al preferences it manifests, as shown for RYA. Within this PT-based implicational developmental pattern, a closer look at the figures reveals further interesting patterns.

(29) Cross-sectional study of syntactic development in L2 Italian based on the Prominence Hypothesis: declaratives (after Bettoni & Di Biase 2011)

STRUCTURES	GHI	MID	MAR	MAC	CHA	LEI	NAT	RIC	TAN	VAN	SHI	SER	EVA	HEL	RYA
TOP_i $Cl_{OBJ.i}$-AUX V–*to*$_i$ SUBJ											-8			4	8
TOP_i $Cl_{OBJ.i}$-V SUBJ						-4	-7	-12					3	4	8
TOP_{ADJ} SV(O)		4	8	6	9	9	2	4	4	5	2	9	2	4	5
TOP_{ADJ} V(O)			1				2	3		2		1			
V(O)				2			1	3	5	6	9	5	5	6	
$SUBJ_{pr}$ V (O)	2	3	6	5	7	3	8	7	2	2	7	6	3		7
*$SUBJ_{ref\text{-}THEME}$ V(O)	4	13	8	11	8	10	13	11		9					
$SUBJ_{ref\text{-}AGENT}$ V(O)	13	6	16	16	15	11	8	2	15	10	8	12	9	11	10

In the two OBJ topicalisation rows at the top, the numbers to the left of the vertical line refer to sentences produced with various incorrect V agreements: cf. examples (35)-(37) below.

In the $SUBJ_{THEME}$ row at the canonical word order stage, learners produce an interlanguage form involving nondefault mapping of thematic role (theme) onto GF (SUBJ): cf. example (31), note 17, and § 3.2.

All our learners are beyond the lemma access stage. Even GHI, who is the weakest, produces several sentences with canonical word order, as also found in other studies of L2 Italian using different theoretical frames (e.g., Andorno, Bernini, Giacalone Ramat & Valentini 2003). In first position these sentences include most commonly the agent with default mapping, as in (30), but also – under the pragmatic constraints of our specific task – the theme with nondefault mapping, as in (31). Unable to produce an OBJ_{THEME} topicalisation required by the task we have described above, GHI (like the other less proficient learners) produces instead a clear example of functional assignment specified solely by position. Without labouring the point here, this is a case where the interfacing between the morphological resources and syntactic progress still needs to be worked out in more detail along both the Prominence Hypothesis schedule and the Lexical Mapping Hypothesis one (cf. ch. 1, § 4.3, this volume).

(30) GHI lui scito [=lasciato] carta identità per scrivere
he-SUBJ left-PAST PARTICIPLE identity card-OBJ to write
[he has left (his) identity card (on the counter) in order to write]

(31) GHI la torta prendare i carabinieri
the cake-SUBJ$_{THEME}$ bring-INF the policemen-OBJ$_{AGENT}$
[the cake the policemen take]

As we move from GHI rightwards in the table, there is significant variation among the learners in the distribution of the different constructions belonging to this canonical word order stage, concerning mainly three points: morphological accuracy of V inflection, the thematic roles in the SVO order, and use of SUBJ vs null SUBJ. With regard to the first point, although a detailed analysis on this set of data is not yet available, it is worth noting that learners to the left of our interlanguage path have poor V inflection – marking mostly aspectual but not grammatical person, unequivocally indicating SUBJ, as in (30)-(31). On the other hand, inflection improves considerably as we move rightward in the table. Secondly, as the figures for SVO show, the weaker learners produce ungrammaticised topicalisations of themes in first position similar to GHI's in (31). On the other hand, learners to the right clearly avoid them. Thirdly, the table shows how null SUBJ tends to be avoided by the weaker learners, who have unreliable morphological means to assign SUBJ, and then progressively increases rightwards. Here the only exception is RYA – an interesting case, most likely due to the fact that his L1 is English, which requires overt SUBJ. In any case, most learners overuse pronominal SUBJ, as he does in (32), where *lui* ('he') is redundantly repeated three times.

(32) RYA lui non poteva sentirla bene lui ha detto a lei.. ah.. a lei lui detto un indirizzo falso
he not could hear her well he has said to her ah to her he said an address false
[he couldn't hear her well, he told her, ah, her, he told a false address]

All our learners except GHI have also reached the XP canonical word order stage, and are able to front ADJ to the left of the canonical sequence. The reader will notice that in (29), as well as the structure with SUBJ, as in (33), we also count the one with null SUBJ, as in (34), both by VAN. This needs an explanation because if there is no SUBJ to compete with TOP, one could think that the evidence for progress to this stage is missing. However, we claim that in a null-SUBJ language, VO is also a canonical string.

(33) VAN nel disegno B il ragazzo anda nella bicicletta
in the drawing b-ADJ the boy-SUBJ goes-V on the bicycle-OBL
[in drawing B the boy rides a bicycle]

(34) VAN nel disegno b guardano le borse
in the drawing b-ADJ look at-V the bags-OBJ
[in drawing B they look at the bags]

Among our learners, three have progressed also to the highest noncanonical word order stage. Being able to assign functions independently from position, they now have the means to place OBJ and SUBJ in a position other than their canonical one, and mark them with the correct morphological resources. In this cross-sectional study we can now plot the developmental path learners traverse when faced with a task requiring them to begin the sentence with a role other than the agent, and we can discern several phases. In a first phase, represented by GHI, MID, MAR, MAC, CHA, and VAN, learners most often begin the sentence with the theme without grammaticising the topicalisation, as we have seen in (31); at other times however they use canonical order but choose to start with SUBJ as agent, thus ignoring the prompt from the task, as in (35). In a second phase, represented by LEI, NAT, and RIC, learners start to grammaticise the topicalisation of the theme by using a clitic, but the grammaticisation is incomplete in the sense that one, two or all three agreements (SUBJ-V, TOP-clitic, and TOP-clitic-participle) are missing or not unified. For example, in (36) LEI uses the clitic, but neither SUBJ-V nor TOP-clitic agreement is in place; and in (37) RIC mixes features of passivation with those of topicalisation.

(35) MAR lo stereo.. lo stereo... il cameriere porta il cameriere porta il stereo
[the stereo, the stereo, the waiter brings the waiter brings the stereo]

(36) LEI i fragoli la porta le ballerine
the stawberries-FM.PL it-FM.SG take-3.SG the dancers-3.PL
[the strawberries [them] take the dancers]

(37) RIC la torta la porta dai poliziotti
the cake-FM.SG it-FM.SG takes-3.SG by the policemen-3.PL
[the cake (it) takes the policemen]

In a third phase, represented by EVA and HEL, learners produce some grammatical and some ungrammatical topicalisations. In the final phase, represented by RYA, all topicalisations are targetlike; and even the third long distance, interphrasal dependency is computed with the correct agreement between the clitic and the participle, as in (38).

(38) RYA	le calze	le	ha	portate	l'infermiera
	the socks-FM.PL	them-FM.PL	have-3.SG	taken-FM.PL	the nurse-3.SG
	[the socks (them) has taken the nurse]				

Although a fine-grained analysis of the increasing morphological accuracy still needs to be done, we consider this sequence an important confirmation that learners may shoot up syntactically in their word order development well before they acquire the full morphological means to unequivocally mark all the GFs in their sentences.

3.2. The Lexical Mapping Hypothesis

Italian Vs lexically requiring nondefault mapping of thematic roles onto GFs are not only numerous in type, but some of them also occur quite frequently as tokens in everyday speech. Among this latter group, we find unaccusative Vs (e.g., *arrivare* 'arrive' and *morire* 'die'), exceptional Vs (e.g., *piacere* 'like' and *mancare* 'be missing'), and nonbasic V forms, such as reflexive Vs (e.g., *lavarsi* 'wash [oneself]' and *arrabbiarsi* 'get angry').

Although as formulas they can be used by L2 learners quite early – see, for example, the ubiquitous *mi piace* ('I like it') –, all these Vs lexically requiring nondefault mapping are acquired – that is, processed online with some grammatical accuracy – quite late, at the final nondefault mapping stage. Given the great variety among them, it is not surprising that they may also be acquired at different times within this last stage, as we have seen in the previous discussion of morphological development. Factors affecting their sequencing include (a) the number of arguments they subcategorise: see, for example, *nascere* ('be born') vs *piacere* ('like'), which require one and two arguments respectively; (b) their information structure; that is, whether, in a pragmatically neutral context, they require noncanonical word order in addition to nondefault mapping: see, for example, passive V forms, which require topical (preverbal) SUBJ, as in (39), vs unergatives, unaccusatives and most exceptional Vs, which prefer focal (postverbal) SUBJ, as in (40), (41) and (42) respectively; (c) the nature and function of their clitic particles in the case of the reflexive V family; that is, whether the clitic particle is purely expletive, as in *pentirsi* ('repent'), which does not have a corresponding nonreflexive form **pentire*, or semantically somewhat more transparent, as in *baciarsi* ('kiss [each other]'), which has a transitive form *baciare* ('kiss [someone]') as well; furthermore, whether the reflexive construction is decausative, as in (43), entails OBJ reduction, as in (44), OBL reduction, as in (45), or no grammatical function reduction but adds a pragmatic modality to the eventuality being described, as in (46).

(39) la pasta viene servita calda
SUBJ V
[pasta is being served hot]

(40) ha telefonato la nonna
V SUBJ
[the grandmother has phoned]

(41) è nata una bambina
V SUBJ
[a baby girl is born]

(42) ai bambini piace la pizza
OBL V SUBJ
[pizza pleases the children = the children love pizza]

(43) il bus si ferma
SUBJ V
[the bus stops]

(44) si lava
V
[(he) washes (himself)]

(45) si leva la giacca
V OBJ
[(he) takes off the jacket]

(46) si mangia la pizza
V OBJ
[(he) eats (his) pizza (loving it)]

In (47) we propose our language specific developmental schedule for Italian based on the Lexical Mapping Hypothesis discussed universally in chapter 1 (cf. § 4.2.2, and ch. 2, § 3.2, for English).

At the default mapping stage, learners may soon lexically saturate all the roles that are semantically relevant to their Vs, provided of course they store the appropriate items in the lexicon. They will, however, be unable to map them onto the appropriate GFs unequivocally, that is by morphological means. So, for Vs lexically requiring a further argument besides those mapped on SUBJ and OBJ, learners will tend to leave it functionally unmarked, as in (48)-(49) by MAR and CHA

(47) Developmental stages hypothesised for L2 Italian syntax based on the Lexical Mapping Hypothesis

STAGE	STRUCTURE	EXAMPLE
NONDEFAULT MAPPING	reflexive constructions	*Pierino si lava le mani* *[Pierino washes his hands]*
	causatives constructions	*il papà lascia guidare la moto a Pierino* *[daddy lets Pierino drive the motobyke]*
	exceptional verbs	*a Pierina piace la cioccolata* *[to Pierina chocolate is pleasing]*
	unaccusative verbs	*è morto il gatto* *[the cat has died]*
	passive verbs	*il pesce blu è mangiato dal pesce verde* *[the blue fish is eaten by the green fish]*
DEFAULT MAPPING AND ADDITIONAL ARGUMENTS	agent/experiencer mapped on SUBJ, patient/theme mapped on OBJ, and other members of the a-structure hierarchy, such as goals and locatives, mapped on GFs other than SUBJ and OBJ	*la mamma mette i fichi nel frigo* *[mum puts the figs into the fridge]* *la nonna dà un bacio a Pierino* *[grandma gives a kiss to Pierino]*
DEFAULT MAPPING	agent/experiencer mapped on SUBJ and patient/theme mapped on OBJ	*il pesce verde mangia il pesce blu* *[the green fish eats the blue fish]*
LEMMA ACCESS	single words formulas	*ciao [hello]* *mi chiamo Pierino [my name is Pierino]*

respectively, two of the learners in the corpus mentioned above in § 3.1. Italian, in fact – unlike configurational English – has no OBJθ, and requires both the beneficiary or source roles to be mapped onto OBL by means of a PP.

(48)	MAR	la ragazza	è data mh	Carlo	la chiave
		$SUBJ_{AGENT}$	V	OBJ_{GOAL}	OBJ_{THEME}.
		[the girl	has given	Carlo	the key]
	target	la ragazza	ha dato	a Carlo	la chiave
		$SUBJ_{AGENT}$	V	OBL_{GOAL}	OBJ_{THEME}

(49)	CHA	Susanna	chiede..	un uomo ahh	dove San Pietro
		$SUBJ_{AGENT}$	V	OBJ_{THEME}	SUBORDINATE CLAUSE
		[Susanna	asks	a man	where Saint Peter (is)]
	target	Susanna	chiede	a un uomo	dove è San Pietro
		$SUBJ_{AGENT}$	V	OBL_{SOURCE}	SUBORDINATE CLAUSE

Likewise, any V types may be used early by beginners. The crucial point, however, is again that in certain cases the outcome will be ungrammatical or pragmatically inappropriate because at this stage Vs are treated as mapping the highest thematic role onto the highest GF in the first linear position. So, besides felicitous outcomes with 'regular' Vs, as in (50), beginners will produce sentences such as that in (51), where MID uses the exceptional V (*piacere*, 'is pleasing') ignoring that in Italian its experiencer role requires to be mapped as TOP_{OBL}.

(50) MAR la signora adorare la:: scarpe
$SUBJ_{AGENT}$ V OBJ_{THEME}
[the lady adores the shoes]

(51) MID i pagliacci piacere:: caramelle
$SUBJ_{EXPERIENCER}$ V OBJ_{THEME}
[clowns like sweets]
target ai pagliacci piaccono le caramelle
$OBL_{EXPERIENCER}$ V $SUBJ_{THEME}$

At the next stage up, learners begin to mark the GFs of arguments other than SUBJ and OBJ more clearly, and produce sentences such as those in (52)-(53). Here, although the prepositions are lexically inaccurate (*per* and *di* respectively instead of *a*), the very fact of using a PP marks the function of the constituent as OBL, that is as neither SUBJ nor OBJ (the two core GFs of the canonical order). We assume, as explained in chapter 1, § 4.2.2, that this is a necessary intermediate stage before learners acquire the means to map arguments onto GFs in an unequivocal way.

(52) RIC il marito ha detto [= dato] i fiori per [= a] sua moglie
SUBJ has given OBJ_{THEME} $OBL_{BENEFICIARY}$
[the husband has given the flower to his wife]

(53) TAN la receptionista ha chiesto di [= a] Carlo la mh sua carta di identità
the receptionist-SUBJ V of Carlo-OBL_{SOURCE} his identity card-OBJ_{THEME}
[the receptionist has asked Carlo for his identity card]

At the final nondefault mapping stage learners will then be able to assign arguments to any thematic roles as required by their lexical entries, and hence assign prominence to thematic roles low in the hierarchy by mapping them onto SUBJ, as in (54), or demote those that are high up by mapping them, for exam-

ple, onto OBL or ADJ, or even suppress them, as in (55). These latter two examples are fictitious.

(54) al ministro mancano i fondi
OBJθ$_{EXPERIENCER}$ V SUBJ$_{THEME}$
[the minister is lacking the funds]

(55) il presidente è stato fischiato
SUBJ$_{THEME}$ V
[the president has been booed]

Empirical work testing our Lexical Mapping Hypothesis for L2 Italian has just begun. Needless to say parts of our schedule in (47) are not yet supported by actual data. We mention here three studies in chronological order, which are heterogeneous for the variety of Vs and constructions they deal with. Bettoni, Di Biase & Nuzzo (2009) deal with nondefault mapping requirements from the point of view of the acquisition of postverbal SUBJ, and show that, within the last stage of development, unergative and unaccusative Vs are acquired with their required mapping before exceptional Vs. Nuzzo (2012) deals with the acquisition of passives, and clearly shows how long and complex the path toward their full acquisition can be, despite the fact that structurally they require canonical word order. The point Nuzzo makes is that even learners who can produce SVO sentences with a high degree of grammatical accuracy – as long as default mapping is required – may fail to do so when mapping requirements are nondefault. The explanation, we assume, is that they fail to integrate pragmatic and structural information in order to give their sentences a suitable perspective so as to guide the listeners' attention according to their communicative intentions. The third study testing the Lexical Mapping Hypothesis is by Bettoni & Fratter (2013), and deals with Italian reflexive V forms.

4. Conclusion

As we have seen, Italian is an interesting language for PT in so far as it presents different challenges compared to English, chiefly posed by its rich obligatory morphology licensing more flexible options in word order. Since the seminal work on L2 Italian by Di Biase & Kawaguchi in 2002, the analyses mentioned in this chapter have not only added to our knowledge of the development of this language but they have also paved the way for other nonconfigurational languages. More discussion and results will be presented in Bettoni & Ginelli's chapter 8 on the syntactic development of content questions.

This chapter also takes up the challenge of identifying the sources of sequencing regularities noted within a particular stage, and indicates both how they can be conceptualised by identifying soft (intrastage) barriers as compared to hard (interstage) barriers. Furthermore, this chapter offers a key for predicting their sequencing. The quality and quantity of features to be processed at any given moment and how specific DFs are involved will offer a principled key for going beyond the more traditional PT predictions and offering a more detailed map for possible language intervention. We have also indicated how looking at the variable behaviour of learners, i.e., at their accuracy in a principled way, rather than ignoring it as soon as one can establish emergence of one particular structure, can be quite revealing of more fine-grained developmental patterns. In any case more work needs to be done, foremost in two directions, in our opinion.

First, with regard to obligatory structures, in a language with such a syncretic morphology as Italian, the challenges posed by the emergence criteria need more attention, as Pallotti (2007) lucidly states. But there are other crucial problems to disentangle along the long path from emergence to acquisition. For example, in strict LFG terms, the two sentences in (56) would both belong to the category procedure stage (with no information exchange outside the VP), because LFG sees clitic pronouns as verbal morphology rather than separate words.

(56) a. glieli dò oggi
he-DAT they-ACC.PL.MASC give-1.SG today
[I give them to him today]

b. glieli ho dati ieri
he-DAT they-ACC.PL.MASC have-1.SG given-PL.MASC yesterday
[I have given them to him today]

Yet in order to produce them, learners will need to identify the GFs of all three argument roles of the V *dare* ('give'), and formally distinguish between OBJ and OBL_{DAT} – not to mention the added complexity of marking number and gender on the clitic pronoun and on the past participle. Could we then not assume that learners will proceed from sentences with referential nouns or full pronouns to those with clitics, as in (57a), and from just one clitic, as in (57b), to both of them, as in (56 above) only after they have reached the stage of default mapping and additional arguments in the Lexical Mapping Hypothesis hierarchy?

(57) a. dò i libri a lui oggi
give-1.SG the books to him today
[I give the books to him today]

b. li dò a lui oggi
they-ACC.PL.MASC give-1.SG to him today
[I give them to him today]

Could we not also assume that learners will produce accurate sentences first with SUBJ morphology, then with clitic OBJ markers, and finally clitic with OBL_{DAT} ones? See, in this regard, the stage of default mapping and additional arguments in (47), § 3.2. The rich nature of categorial markings in Italian offers a good area for testing hypotheses of morphological development across soft barriers within stages, and its interfaces with syntactic development.

Secondly, in terms of the acquisition of optional or alternative syntactic constructions, PT can be quite precise not only on structural optionality dealt with by the Prominence Hypothesis, but also on the lexical-semantic requirements dealt with by the Lexical Mapping Hypothesis. In this direction, Italian has a lot of ground to offer to both theory development and empirical testing.