

**A Processability Approach to the Acquisition of Italian
as a Second Language: Theory and Applications**

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This thesis is mainly my own original work and contains a number of co-authored publications. The latter are clearly indicated in the Introduction and in the contextual introduction specifically written for each Section of the thesis. The nature of my own contribution is likewise specified.

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Abstract

This thesis concerns the acquisition of Italian as a second language in instructed adult and child learners within the framework of Processability Theory (Pienemann 1998) with particular reference to morphological and syntactic development. It also contains some contributions to an extension of the theory itself, particularly the development of syntax, leading to a new exploration of the interface between discourse-pragmatics and syntax in L2 learners. The empirical longitudinal and cross-sectional studies on which these papers are based support Processability Theory's universal developmental implicational hierarchy based on the hypothesised processing procedures in Levelt (1989). The second part of the thesis investigates the development of Italian L2 in primary school programs, testing both PT and Focus-on-form instruction. This study demonstrates that PT can be applied to classroom contexts and that it promotes more efficient language development in child-learners within existing school Italian L2 program time and resources constraints. This work also revealed that focused feedback is effective in promoting acquisition and accuracy in L2 production. This classroom-based quasi-experimental longitudinal study was supported by the Australian Research Council and Industry partner CoAsIt, a provider of Italian language education services. This work on researching practice shows the critical interrelation between theory construction and the investigation of practice itself. A sample of my contributions to professional journals exemplify the need for a continuing dialogue between research and professional practice.

Contents

	<u>Acknowledgments</u>	
	<u>Abstract</u>	
	<u>Introduction</u>	1
PART A	<u>ADVANCING THE THEORY</u>	5
Chapter 1	<u>Developing Processability hypotheses for the acquisition of Italian</u>	13
1.1	<u>Processability Theory and the acquisition of Italian L2</u>	15
1.2	<u>The acquisition of inflectional morphology in learners of Italian L2, with some reference to the role of phonological word structure</u>	34
1.3	<u>Exploring the typological plausibility of Processability Theory: language development in Italian second language and Japanese second language</u> <i>with Satomi Kawaguchi</i>	58
1.4	<u>Processing constraints on L1 transfer</u> <i>with Manfred Pienemann, Satomi Kawaguchi and Gisela Håkansson</i>	81
Chapter 2	<u>Extending Processability Theory: exploring the syntax-pragmatic interface</u>	89
2.1	<u>The Topic Hypothesis in Processability Theory</u>	91
2.2	<u>Extending Processability Theory</u> <i>with Manfred Pienemann and Satomi Kawaguchi</i>	117
2.3	<u>Processability hypotheses for a correspondence between syntax and morphology in the development of Italian L2</u> <i>with Camilla Bettoni and Stefania Ferraris</i>	176
PART B	<u>ADVANCING THE PRACTICE</u>	206
Chapter 3	<u>Looking into the classroom “black box”</u>	208
3.1	<u>A comparative study of second language teaching program outcomes under different implementation conditions in upper primary school</u>	209

3.2	<u>Focusing strategies in second language development: a classroom-based study of Italian L2 in primary school</u>	231
3.3	<u>Developmentally moderated focus-on-form</u>	253
Chapter 4	<u>Disseminating research for professional practice</u>	267
4.1	<u>The Lexicon in early Italian L2 development</u>	269
4.2	<u>What to teach when in Italian L2</u>	284
4.3	<u>Verbal lexicon and Processability issues in Italian L2</u> <i>with Camilla Bettoni</i>	292
Chapter 5	<u>Conclusion</u>	301
	<u>References</u>	305
Appendix A	<u>Methodological aspects: Elicitation procedures, Sample Tasks</u>	326
Appendix B	<u>Data Sample</u>	330
Appendix C	<u>Analysing the data</u>	345
Appendix D	<u>Methodological components for classroom-based research</u>	352

Introduction

This is a contextual thesis comprising 13 papers concerning the acquisition and teaching of Italian as a second language within the framework of Processability Theory (Pienemann 1998), as well as some contributions to the theory itself. These papers, all written between 1998 and 2006, have been selected as those that best represent my contribution to the field of second language acquisition. Thus, while during and before this period I have written other papers in this same field, several of those included here have been written in collaboration with other researchers working in the field of second language acquisition and sharing the same theoretical framework.

My interest in second language acquisition (SLA) grows out of my own migration history, which includes secondary schooling in Caracas, Venezuela, learning English (and surviving) as a young man in the unrepeatable Sixties in London, followed by undergraduate education in linguistics and anthropology in Australia. After graduating in the mid Seventies, an early stint at SLA (not yet known as such) brought me to work as a research assistant to Bill Bonney and Helen Wilson, at the then New South Wales Institute of Technology, in a project investigating the way in which immigrants to Australia from various, and typologically different, language backgrounds learned English.¹ My role in this project was that of periodically interviewing recently arrived refugees from Chile and Argentina, transcribing their spoken production phonetically (!), and then helping the team with the analysis. My most important realisation at the time, from attempting to analyse words produced by early learners, was that it was difficult or irrelevant to attribute a grammatical category such as “noun” or “verb” to singly produced words in the L2 such as, e.g., *work*, which seemed to enclose the potential for either outcome whenever the learner managed, eventually, to create a greater linguistic context for it.

Language teaching, including translation, and a perhaps naïve passion for language and the cultural rights of immigrant communities occupied much of my academic activities

¹ This was probably the first substantial research project in Australia on second language learning. It hoped to investigate in depth and longitudinally the development of English in immigrants from three typologically different L1 backgrounds: Spanish, Turkish and Polish. Malcolm Johnston joined the project with the role of following Turkish and Polish. This could have been Australia’s counterpart to the ZISA project in Germany, but lack of government interest in such investigations at that time eventually grounded the project.

in the subsequent years, until I began working again in an SLA context,² in the Nineties, prompted by the belief, possibly just as naïve, that in order to advance language teaching we needed to know a lot more about the details of language learning. Whether this belief is justified or not, I gradually came to appreciate the opportunity to research language learning for its own sake.

As for the structure of this thesis, the papers are organised into four chapters, distributed in two main parts. The first part (Part A) is understood as a theoretical contribution to advancing our understanding of the acquisition of Italian, by investigating and describing the learning process on the basis of naturalistic production data (Chapter 1). This work was carried out within Processability Theory (PT), a universalistic language development framework which up to that point was applied mainly to German, English and Swedish as L2. Using this theoretical framework, for the first time, to investigate the acquisition of Italian, typologically characterised as a pro-drop language (Comrie 1989), contributed in turn to extending the scope and depth of Processability Theory itself, as the three papers in Chapter 2 show.

The second part of this thesis (Part B) deals with some applications of the theory, and is meant as a contribution to advancing the practice in L2 teaching professional contexts. So, the three papers in Chapter 3 investigate L2 learning and teaching in the classroom “black box”, while the remaining three papers in Chapter 4 engage in a dialogue with the teaching profession by disseminating and discussing the results and ideas generated through the investigation of both theory and practice. This latter set of selected papers, together with the professional in-servicing activities developed around them, exemplify the common ground connecting researchers and professionals, which helps develop both the research itself and its applications to professional practice.

Each of these two parts and four chapters is introduced by an opening section, expressly written for this thesis in order to present the themes developed in the set of papers they contain. These introductions link each part and chapter to one another, giving not only internal coherence to the thesis, but attempting also to establish outwards connections to the field of enquiry. Furthermore, each paper is also separately introduced, contextualized and linked to the others by a shorter section also specifically written for the present work. Since the content matter of the thesis is thus entrusted to these

² I was seconded by my University to assist Manfred Pienemann at the Language Acquisition Research Centre just being established at the University of Sydney, in partnership with the University of Western Sydney.

introductory sections, the remainder of this introduction completes the explanation of the more formal aspects and status of the papers selected for this thesis.

The 13 papers presented here consist of works in various forms: 5 are chapters published in books, 3 are articles in journals, and 4 are unpublished papers presented at conferences and symposia, 2 of which are reproduced as abstracts along with the slides of the presentation; the last paper is a research submission to the Australian Research Council, which also includes some sections of the final report. Among these 13 works, 11 are refereed, while 2 are not. These latter belong to the dissemination work for Italian language teachers, are published in a professional journal, and were reviewed by the editorial committee of that journal.

As for the authorship of the 13 papers, 8 of them have been written wholly by me, while 5 are co-authored. Among the co-authored papers, the most theoretically significant for the Extension of PT (§ 2.2) has been written with Pienemann and Kawaguchi. This is reproduced in full. Another on L1-L2 transfer includes these same co-authors, as well as Håkansson (§ 1.4). Only the parts relevant to Italian and a broad understanding of this paper are reproduced here. A third article, dealing with the typological plausibility of PT (§ 1.3) is co-authored with Kawaguchi; however, since her contribution deals with Japanese and is easily identifiable, the part she wrote is not reproduced in this thesis. Further two papers are co-authored with Bettoni (§§ 2.3 and 4.3). These deal mainly with specific Italian-generated naturalistic (non-formal) data, and were written for an Italian audience. In all these 5 cases of co-authorship, the contextual introductions clearly specify both my contribution and that of my colleagues.

As for the language in which the 13 papers are written, most of them use English. The exceptions are the 2 papers co-authored with Bettoni, which are written in Italian for an Italian professional audience. Likewise 1 of my 2 articles chosen from those published for teachers of Italian in their journal was written in Italian (§ 4.1). These 3 papers are reproduced here in their original language, but for the benefit of readers who do not know Italian their contextual introductory remarks include a brief summary.

At the end of this thesis, after a brief concluding chapter and the bibliographical references, some further information is appended to supplement the thesis materials. The reason for this addition is that published articles and chapters can rarely afford the space for sufficient explanation of the methodology adopted in the investigation they report. In attempting to remedy the gap, Appendix A illustrates a key methodological aspect (data elicitation procedures) while Appendix B reports some samples of data

transcripts, biodata and data-base organization and Appendix C presents samples of the background analysis carried out. Finally, Appendix D presents methodological components used for the classroom-based research by reproducing the original appendices published with the relevant article appearing here in § 3.2.

All the 13 papers in this thesis reproduce verbatim the original publications. Three major changes however have been introduced. The first is the elimination, for reason of space, of certain parts not relevant for my specific contribution to the field, as I have already explained above. The second change has newly formatted all the papers in a consistent style. This means that slides presentations at conferences have lost their colouring and most of their aesthetic quality. Likewise, several articles may also not have improved graphically. With the third intervention, bibliographical references have been shifted out of the single papers and comprehensively listed at the end of the thesis. Two reasons suggested this move. The first is brevity, as many cited works appear in more than one paper, several in all of them. However, when weeding out multiple entries of the same works which are cited in subsequent papers as first “in preparation,” then “in press,” and finally with their proper date, all three references had to be maintained in the final list. The second reason for presenting all references together is to offer the reader an indication of the breadth of the sources on which I have drawn throughout my entire contribution to the topic of this thesis.

Part A

Advancing the theory

This part represents my theoretical contribution to Processability Theory. Before illustrating how it is organised, I will take the reader over a brief historical contextualisation of PT, then outline the range of research and applications it fuelled, and finally offer an evaluation of the theory which should indicate, *inter alia*, my own reasons for working within this paradigm.

As the field of SLA came of age with the influential 1991 handbook by Larsen-Freeman and Long, these authors identified “at least forty *theories* of SLA” (p. 227, emphasis in the original). Among the most prominent interactionist theories and the best representatives of the first decade of SLA research, the Multidimensional Model (e.g. Meisel, Clahsen and Pienemann 1981) is singled out for detailed discussion (pp. 270-289). To this model, Larsen-Freeman and Long added in the same breath important developments that followed from it in the 1980s, encompassing the Teachability Hypothesis. This new hypothesis was supported by instruction-based psycholinguistic experimentation and applications to syllabus construction in L2 teaching (Pienemann, 1984, 1985, 1987, 1989) and testing (Pienemann, Johnston and Brindley, 1988), the latter preceded by a substantial but not often cited discussion on factors affecting the development of proficiency in L2 learners (Pienemann and Johnston, 1987).

This collaborative work, which took place in Australia, widened the scope from the explanation of the developmental patterns of German L2 word order, through Clahsen’s (1984) Strategies approach, to a first application to a new language (i.e. English), supported by extensive work on ESL by Johnston (1985) and stretching Clahsen’s strategies to a new domain (i.e. morphology), thus accounting for developmental patterns of morpho-syntax in ESL and GSL. The key concept introduced then was that the development of morpho-syntax was determined by the incremental development of processing resources. Since Krashen’s (1977, 1982) influential ‘natural order’ was circumscribed to ESL morphology, and the Multidimensional Model to German syntax, this extension towards accounting for more than one language, and over more than one domain, was indeed bold. It re-defined the concept of ‘stage’ in SLA and prompted Larsen-Freeman and Long (1991, 275 ff.) to characterise these promising developments as constituting a ‘predictive framework’ for SLA.

This historical basis is not always sufficiently differentiated from PT itself, however (Pienemann, 2005c, 71-74). Over the 1990s PT soon superseded the Multidimensional Model-based predictive framework, thanks to two key developments: it took on board current psycholinguistics work and relied on a formal grammatical description.

Firstly, then, Levelt's (1989) impressive works in psycholinguistics and language generation – incorporating, *inter alia*, Kempen and Hoenkamp's (1987) incremental procedural grammar for sentence formulation – provided the processing principles and assumptions on which PT could base its universal processability hierarchy.

Secondly, and crucially, Pienemann (1998) could model each level of PT's processability hierarchy within linguistic theory, specifically Lexical Functional Grammar (Kaplan and Bresnan, 1982). Through LFG's mechanism of feature unification, the grammar of each stage of the learner's 'hypothesis space' can now be formally defined, and thereby transcend language-specific descriptions. White (1991) and other researchers working in a Government and Binding or a Minimalist framework would conflate SLA research and research on linguistic knowledge. LFG (Kaplan and Bresnan, 1982), on the other hand, takes research on psycholinguistics and research on linguistic knowledge as separate and complementary, thus making it possible for PT to relate linguistic knowledge to the language processor. This, in turn, eased PT almost completely out of Clahsen's (1984) perceptual strategies, on which the explanation of GSL word order patterns was based. Indeed this amounted to one of the most serious problems for both the Multidimensional Model and the predictive framework (Larsen-Freeman and Long, 1991, 285), for they assumed that cognition works in the way Clahsen's strategies suggest, i.e. that

people see things in a canonical order of "actor-action-acted upon", that people prefer continuous to discontinuous entities, that the beginnings and ends of sentences are more salient than the middles of sentences... (Jordan, 2004, 226).

What can be sympathised with here is the critics' discomfort with basing explanations of essentially 'linguistic' categories and constructs on non-linguistic, rather intangible – dubbed as 'mysterious' by Towell and Hawkins – perceptual constructs, any number of which could be invoked in an "unconstrained way" (Towell and Hawkins, 1994, 50).

In brief, adopting LFG as its source of representation of linguistic knowledge allows PT to represent formally, potentially for any language, the 'linguistic hypothesis space' of the language learner at specific developmental stages. Adopting Levelt's formal

psycholinguistic model allows it to describe the ‘mental operations’ that are applied on this linguistic knowledge.

Indeed if PT is to be universally applicable it needs to interpret its hierarchy in relation to the grammatical structure of any language. It follows that the typological plausibility of LFG, demonstrated on many disparate languages, both configurational and non-configurational (Falk, 2001, 193-94), is crucial for testing the application of PT’s hierarchy to ‘new’ languages, as Italian in §§ 1.1- 1-3 below.

Another key point here in regard to LFG is that its lexically driven and parallel grammar makes derivations unnecessary (Falk, 2001). This non-derivational stance of LFG is psycholinguistically supported, e.g. Pickering, Branigan, and McLean (2002) show that “constituent structure is formulated in one stage” in language generation. LFG can represent abstract grammatical information such as ‘Subject of’ or ‘Subject person’ at the level of f(unctional)-structure, regardless of whether the specific language expresses them in the c(onstituent)-structure through morphology or syntax. This is particularly important for so called ‘pro-drop’ languages such as Italian, where verb morphology carries subject features without necessarily unifying them to an overt subject, or to an obligatory subject slot in c-structure – which may create the ‘illusion’ of subject-verb agreement. Since LFG does not depend on configurational structure and categories, it also accounts in a simpler way for much of the flexibility of Italian word order in c-structure (cf. § 2.2), by reference to the syntacticised discourse functions Topic and Focus. These characteristics give LFG a high level of capacity to deal with typological variation, and in turn make PT’s predictions on any language testable (i.e. in principle falsifiable).

Once PT took on board Levelt and LFG, other achievements and applications followed over the last decade. Among these, I mention first its capacity for looking at L1-L2 differences, a theme to which the first issue of the journal *Bilingualism: Language and Cognition* was devoted, where PT is fully aired (Pienemann, 1998a) and discussed by a range of scholars. Secondly, PT introduced factorisation of features for the analysis of L2 morphology (particularly useful with fusional languages such as Italian), and generally more refined descriptive methods and acquisition criteria (cf. §§ 1.1-1.3, 2.3, 3.2). Thirdly, it developed several hypotheses: a principled developmentally moderated hypothesis for transfer (cf. §1.4); a stabilisation, or bad choice hypothesis – traditionally dubbed as fossilisation – hypothesised as ‘generative entrenchment’ (Pienemann, 1998, 1998a); and a steadiness hypothesis dealing with task variation in language production.

On these bases, ten years down the track, PT has turned out to be a fruitful framework for research in a range of second languages typologically different from the tried and tested German, Swedish and English, including now Arabic (Mansouri, 1999, 2005), Chinese (Zhang, 2001, 2004), Japanese (Di Biase and Kawaguchi, 2002; Kawaguchi, 2005) and Italian (Bettoni and Di Biase, 2005, Di Biase and Kawaguchi, 2002), various Scandinavian languages (Glahn, Håkansson, Hammarberg, Holmen, Lund and Hvenekilde, 2001), Serbian (Medojevic, in preparation), Spanish (Taylor, 2004) and Turkish (Özdemir, 2004). PT has served as a theoretical framework in the investigation of specific areas such as L1-L2 transfer (Håkansson, Pienemann and Sayheli, 2002, Pienemann et al., 2005), and in a range of contexts of acquisition, such as language learning among special populations (Håkansson, 2001, 2005, Agostini in preparation), bilingual first language acquisition (Itani-Adams, 2005 and in preparation), development of a third language in bilingual children (Özdemir, 2004), as well as instructed learning (Di Biase, 2002, Jansen, in press, Pienemann, Kessler and Roos, 2006).

It is not surprising then that PT is one of the nine SLA theories selected for discussion in the most recent introduction to of this field, unambiguously titled *Theories in Second Language Acquisition* (VanPatten and Williams, 2007). Proponents of these theories were asked by the editors (pp. 9-12) to react to the “Ten observations that every SLA theory needs to explain” originally listed by Long (1990) as “the least a second language theory needs to explain.” These are issues such as why do learners seem to follow predictable paths in their acquisition? Why is second language learning so variable in ultimate attainment and also across linguistic subsystems? What is the role of L1 in L2 learner language? What are the effects of input? Of frequency? Of output? What are the effects of instruction?

At the time Long asked these questions there was considerable discomfort with many of the forty or so ‘theories’ of SLA on the market, and over the 1990s many agreed with Long (1990) that a complete and coherent theory of SLA that could answer all of these questions is not in sight (e.g. Berretta and Crookes, 1993, Pienemann, 1998). More recently, in a wide ranging and in-depth analysis of the field from a philosophy of science standpoint, Jordan (2004) echoes this judgement and proposes stringent criteria for the evaluation of SLA theories, by which he then ends up putting many of them in the basket of those who “offend the guidelines.” Nevertheless, from a rationalist viewpoint he argues that “we can see evidence of progress towards a better, fuller

explanation of the phenomena in question.” Under the chapter title of “Signs of progress” Jordan discusses a number of approaches to SLA that meet at least most of his criteria. In this category we find some of the early approaches, such as the ‘morpheme studies’ and error analysis, as well as some more recent processing approaches such as Long’s Interaction hypothesis, Schmidt’s ‘noticing’, MacLaughlin’s Automaticity and restructuring, as well as Pienemann’s Processability Hypothesis, which is treated here together with the Multidimensional Model.

These are also the approaches that can respond in a scientifically reasonable way to at least some of the ten questions proposed by Long (1990) and re-proposed by VanPatten and Williams (2007). PT is able to field six of them: predictable stages, variability in SLA outcomes, limits to the effects of frequency in SLA, limits on the effects of L1 on SLA, constraints on the effects of instruction, and limits on the effects of output. All these can be related to the processability capacity of the learner at a given stage of development.

In discussing specifically PT, Jordan (2004, 225) comments that “[It] is a good example of a cognitive approach to SLA, where the focus is on the learning process.” In his evaluation, he recognises that PT addresses several of the problems encountered by its predecessors, and thus identifies remaining weaknesses:

The explanation is not complete: it makes some innocuous but unfounded assumptions, and has little to say about transfer. It clashes with some empirical evidence, and the question of what constitutes the acquisition of each level is not entirely resolved. Finally, the domain is limited; the theory restricts itself to an account of processing that accounts for speech production, and while it suggests that a certain type of linguistic theory should complement it, it does not go into details. (Jordan, 2004, 227)

Many of these criticisms, bar completeness, I believe have been or are currently being addressed by PT. Transfer is defined as constrained or moderated by the processability of the structure to be transferred (cf. § 1.4). The question of the boundaries between levels has been resolved to a large extent by doing away with ‘saliency’, the one piece of ‘perceptual strategy’ still hanging on in the 1998 version, and by introducing the Unmarked Alignment and the Topic Hypotheses in the PT 2005 extension (cf. § 2.2). The issue of a linguistic theory that should complement PT was already clearly solved by first adopting LFG in 1998, and then in 2005 by taking on board important innovations, such as its discourse functions and Lexical Mapping Theory (cf. §§ 2.1-2.2). This last point also addresses to some extent the question that “the domain is

limited” since it opens up PT’s interface with discourse pragmatics. Some limitations of domain will remain: among them its bias for production, as no comprehension work is done with PT; its exclusion of phonological and prosodic issues, of writing; and so on. But these are self-imposed within a reductionist, scientific approach. Thus I would agree with Jordan’s final comments on PT that, while significant, the above issues

do not detract from the theory’s considerable strengths: it is well argued, it has empirical content, it makes daring predictions, it has clear and wide-ranging teaching implications, it is broad in scope, it encourages and facilitates more research, [...] it is extending its domain, refining its concepts, making variables more operational, attracting more research. (Jordan, 2004, 227)

Now back to the organisation of this Part A of the thesis, illustrating my theoretical contribution to PT. Its seven papers are organised into two chapters. Chapter 1 contains four papers, showing my PT-based hypotheses for Italian and testing the typological plausibility of the original theory (Pienemann, 1998) with reference to morphosyntax. This provides a context for Chapter 2, which presents the current extension of the theory (Pienemann, Di Biase and Kawaguchi, 2005), incorporating aspects of the interface between syntax and discourse-pragmatics as they are acquired by L2 learners. A rationale for my choice of PT over other approaches for studying and explaining L2 development is I believe adequately covered in my comments above, while some elements of methodology that are not dealt with in the papers are illustrated in the appendices. Here is a road map for the theoretical issues raised by PT and dealt with in this part.

Any attempt at formulating PT-derived hypotheses for Italian has to deal with its richly morphologised and pro-drop nature. The former characteristic – instantiating all-pervasive agreement patterns relying on vowel alternation, together with the very high incidence of vowels at word boundaries (crucial for word segmentation in Italian) – highlights the role of phonology (and prosodics) in the early stages of learning. PT does not cover phonological issues, nevertheless these are briefly discussed in §§ 1.1 and 1.2, in which ‘prosodic bootstrapping’ is suggested as a mechanism for the learner to latch onto Italian L2 morphological marking.

Another area where the richly morphologised character of Italian appears to be problematic is that PT can successfully pinpoint the emergence of a particular stage on whichever structural expression happens to emerge first. Once a stage has emerged, PT

appears to have no further business to resolve but to look at the emergence of the next stage. The reality of languages such as Italian (or Arabic and German) is that there is a lot of further ground to cover within the same stage. Yet, even so, the strength of PT is that it uncovers, out of a bunch of structures that belong to the ‘same stage’, what may turn out to be default structures in learning specific L2s. This may offer strategic advantages to teachers and learners.

As for its pro-drop nature, unlike other languages such as German and English, Italian licences a high rate of null subjects and does not allow expletive pronouns, e.g. with weather verbs (*piove*, “it rains”) or certain constructions beginning with verbal expressions (*sembra*, “it seems”). Furthermore, this language uses post-verbal referential or pronominal subjects under certain discourse conditions (e.g. assigning prominence to grammatical objects in linear structure) and with certain lexical choices (e.g. unaccusative verbs). These issues had not been dealt with before, as Braidì (1999, 35) had already noted: “the research on developmental stages is somewhat incomplete. [...] Additional research on developmental stages of word order of L2s with more flexible word orders would offer a more complete picture of this aspect of L2 acquisition of syntax.”

Such a range of phenomena poses a problem for PT if it relies, exclusively, on theories of language production that emphasise a strict separation between the conceptual level of processing and the grammatical encoding level, such as Bock and Levelt (1994), Kempen and Hoenkamp (1987), and Levelt (1989). In these authors’ view, agreement is a purely syntactic operation that takes syntactic features (e.g. number) of a ‘source’ or controller (e.g. the subject of a sentence in subject-verb agreement) and copies them on an agreement ‘target’ (e.g. the verb). Some of the problems caused for PT by pro-drop (or rather, null subjects) and word order flexibility are further discussed in the introductory section in Chapter 1 and § 1.3. From a grammar-theoretical standpoint, the representation of null subjects is resolved by the feature unification approach taken by LFG (Kaplan and Bresnan, 1982). From a language generation standpoint, they are resolved by the work of Gabriella Vigliocco and a number of her collaborators (beginning with Vigliocco, Butterworth and Semenza, 1995). Over a substantial series of psycholinguistic experiments examining subject-verb agreement cross-linguistically (e.g. Vigliocco, Butterworth and Garret, 1996; Vigliocco, Hartsuiker, Jarema and Kolk, 1996), these authors propose an independent contribution of agreement features to the construction of the frame for the sentence to be uttered, which are shared between

different constituents (e.g. the verb can carry its own person and number features, which makes matches/mismatches with an expressed NP subject possible).

The works just mentioned refer to language representation and production in native speakers. PT on the other hand, attempts to explain how linguistic systems develop in learners who already know and use a first language. In such development the role of L1-L2 transfer is, traditionally, a major focal point of debate. Transfer, however, is an intricate bundle of issues involving knowledge and procedures across linguistic domains from phonology to semantics, and across skills and modalities (aural comprehension, production, reading, writing and so on). PT's contribution to this debate is discussed in Pienemann, Di Biase, Kawaguchi and Hakansson (2005), part of which is presented in § 1.4. One aspect concerning Italian L2 is discussed in that section, i.e. whether learners from an L1 with obligatory subject, such as English, will transfer this feature. Without denying that it may occur, PT proposes that L1-L2 transfer is 'developmentally moderated'. All learners of Italian L2, in fact, exhibit a high rate of null subjects very early in their learning because, as § 1.4 explains, null subjects are part of canonical order and thus at the bottom of the processing hierarchy, and they do not exact high processing cost.

More recently, the theoretical resolution of these problems posed by Italian typology, especially its discourse-dependent word-order character, are now approached through the use of LFG's extensions (e.g. Bresnan, 2001, Dalrymple, 2001, Falk, 2001) including its syntacticised discourse functions (Topic, Focus), as well as Lexical Mapping Theory. LFG's extensions opened up the work towards the extension of PT itself, which is the theme of Chapter 2, with the formulation of three new hypotheses contributing to a more systematic account of syntactic development in L2 learners, including now languages with flexible word order. The three hypotheses are the Unmarked Alignment Hypothesis, the Topic Hypothesis, and the Lexical Mapping Hypothesis (Pienemann, Di Biase and Kawaguchi, 2005), fully presented in § 2.2, which acknowledges how this extension is the result of intensive and extensive team work over several years.

The inclusion of § 2.1, with its focus on the Topic hypothesis, aims to identify the area in which my contribution may have been critical to the PT extension, while the need for testing it extensively, particularly on Italian L2, led to working with C. Bettoni on a number of papers applying the theory to naturalistic data from immigrants to Italy. This work is exemplified in § 2.3 with a joint paper written in Italian.

Chapter 1

Developing Processability hypotheses for the acquisition of Italian

This first chapter presents four papers detailing my contribution to Processability Theory in the area of morphosyntactic development in learners of Italian L2. When I started researching in this field, work on Italian had already been going on in Italy at least since the mid 1980s, particularly as part of a large European Science Foundation project conducted in a number of Italian universities centering on the University of Pavia (cf. Giacalone Ramat 1990, 2003). This research looks at learners from a variety of L1 backgrounds, learning the language in a naturalistic environment from a functionalist theoretical stance (von Stutterheim and Klein, 1987). My own work in Australia, on the other hand, looks at development of Italian L2 learners with a predominantly English-speaking background in an instructional environment within an English-dominant milieu within, of course, the PT framework.

The first two papers below (§§ 1.1-1.2) are unpublished conference presentations, albeit their proposals had been refereed. They sketch out the original theory (Pienemann, 1998) and outline the first PT-based hypotheses for Italian, a ‘new’ language for PT, typologically different (e.g. with null subject and richly inflected) from those looked at by PT’s predecessors (German, English). These early papers represent the bases of my subsequent work on Italian L2, which never contradicts any of their claims.

On revisiting this work from 1998 and 1999, however, it is still possible to find seeds for further development, even beyond 2007. Among these: (i) an exploration into ‘prosodic bootstrapping’ as a way used by the learner for placing the newly noted L2 phonological patterns in their early hypothesis space; (ii) the initial collision of the learner with the apparent morphological chaos of the L2. Furthermore, some early decisions needed to be made about phrasal procedure, for example: (iii) the fact that agreement in Italian has morphological exponents, thereby relegating phrases with numerals and no morphological agreement at the bottom-stage; (iv) the status of articles as a system which is too complex in form-function mapping and too influenced by phonological-level rules to be mastered in the early stages; (v) the status of gender as an ‘intrinsic’ and often opaque lexical feature, better left to middle or later stages, in contrast to the status of number as an excellent developmental pointer, given its conceptual transparency and its greater regularity compared to other nominal features.

This could not have been done without Pienemann's (1998, 159 ff.) 'factorisation of diacritic features' proposal.

The next two papers (§§ 1.31.4), from this side of the century, represent a more mature stage of my work, both conceptually and methodologically: the degree of grammatical formalisation is now higher, and their design is more controlled. Both papers are refereed and co-authored, but the parts reproduced here relate to Italian and I am the sole author responsible for them. The first of these papers tests PT for typological plausibility, for the first time with a Romance, null-subject language with flexible (pragmatically-driven) word order. It is also the first PT paper where an LFG discourse function (Topic) is used. This proved to be a good pointer towards further and more general theory construction work in PT (cf. Chapter 2). This paper also proposes the notion of Topic-Verb agreement for Italian, thus replacing subject-verb agreement as a more reliable candidate structure for the higher, interphrasal stage in Italian. In fact, the unification of the topic and the object marker cliticised on the verb must be produced online, while this is not necessarily the case with verb-form, which may be learned more gradually and retrieved independently as lexical forms. A theoretical paper (Di Biase, 2003) on this particular issue was envisaged as part of this thesis chapter, but space constraints have counselled otherwise. What can be stressed here is that the appearance of null-subjects in early learners is seen as part of Italian canonical order but its *choice* is interpreted (with Serratrice, 2002, 2005 and Kayama, 2006) at a discourse-pragmatic level. Even at a very early stage the learner shows a remarkable sensitivity to discourse-pragmatics, exploiting deixis systematically (the subject is null for first person) and informativeness (the subject is a referential noun phrase for third person only if it is 'new', and is null otherwise) to minimise effort and maximise results. This should be a fruitful line of development for future work.

The last paper in this chapter is an excerpt from a chapter in a recent (Kroll and De Groot, 2005) handbook of bilingualism from a psycholinguistic point of view. The chapter, co-authored with Pienemann, Kawaguchi and Hakansson, is based on an idea already present in the original 1998 PT version, further developed in Håkansson, Pienemann and Sayehli (2002). The 2005 chapter is a tightly argued case for L1-L2 transfer as being constrained by processability. It supports this argumentation by comparing predictions on transfer from other current SLA theories and measuring them against data from a range of typologically diverse constellations, including English L1-Italian L2.

1.1 Processability Theory and the acquisition of Italian L2

Paper presented at the European Science Foundation Research conference *The structure of learner language*, Acquafredda di Maratea, Italy, 26 September-1 October 1998.

This paper presents the basic elements of Processability Theory (PT) (such as it was at the time) and its first application to Italian L2. The 1998 European Science Foundation conference brought together much of the research that had been carried out within the European functionalist framework on various European second languages (Klein and Perdue 1988, 1992), including Italian (cf. the Pavia Project, Giacalone Ramat 1990). While this latter framework was then at a high point of elaboration and maturity, the PT-based work on Italian L2 had barely begun and the fundamental PT work itself (Pienemann 1998) was hot off the press.

With regard to Italian L2, a second significant difference between these two theoretical orientations and the work carried out within their respective frameworks is that the research on Italian L2 in Italy analyses data collected in an L2 context, i.e. learners are immersed in a social context that uses Italian as the dominant language and are learning the L2 in a naturalistic environment mostly without instruction. My own Australian research on Italian L2, on the other hand, is carried out exclusively with instructed learners, children and adults, in a foreign language context. Even though Italian is the language of a very large community in Australia, this focus on instructed learners has been constant in my own research, in order to minimise confounding variables.

This first paper concentrates on three objectives. First, it attempts to present the new PT within a European context with a 'new' language, Italian L2, which had not been studied from that particular vantage point before. Second, the conference was an opportunity to discuss the newly hypothesised stages of acquisition for Italian L2 formulated within more formal parameters than those used within the functionalist framework, e.g. adopting a hypothesis-testing approach with strict criteria for deciding whether a particular stage was acquired. Third, the paper attempts to unravel, from the learner point of view, some of the complex form-function relationships triggered by the morphological processes of Italian, a fusional language, in the context of early learners' data.

The latter objective highlights PT's approach to the data. Its analytical approach, in fact, proceeds in the opposite direction from the function-to-form approaches adopted more generally by functionalists and particularly by Giacalone Ramat (1990) for Italian L2. The analytical orientation of PT is from form to function, and makes no predictions as to which feature should emerge first out of any particular form-function complex. Such a feature needs to be identified case by case in each language. So, in this paper for instance, the plural ending *-i* in nominals is identified as the default plural number marker for Italian, and is therefore likely to be the first to emerge and to be generalised as a universal plural diacritic, out of several other possible forms. When some features are lagging behind with respect to the emergence of a particular stage, this fact is attributed to the degree of complexity of form-function mapping. This is a delicate but important point, which confuses some researchers, who find it rather problematic when a particular (lexical) form - especially among verb forms in highly inflected languages which may pile up number, person, tense, mood, aspect and even gender in one syllable - emerges very late and is still characterised as 'lexical'.,

This paper certainly does not claim to resolve all these form-function mapping problems. Nevertheless, it begins to define what belongs to a specific stage in early Italian L2 development. For instance, it discusses the issue of whether the article-noun complex should be considered as belonging to the 'lexical' or the 'phrasal' stage. Together with clitic pronouns, articles are among the last grammatical systems to be mastered by Italian L1 acquirers (Caselli, Leonard, Volterra and Campagnoli, 1993) since the article-noun complex presents a vast array of formal variation. Following a detailed distributional study of its emergence in one child learner, this paper suggests that the article-noun combination is 'lexical'. In the early learner it should be simply considered as a categorical marker for the noun rather than as a carrier of diacritic features such as number and gender, neither of which emerge from the analysis despite the persistence with which the learner accompanies nouns with articles.

Paper presented at the European Science Foundation Research conference <i>The structure of learner language</i> , Acquafredda di Maratea, Italy, 26 September-1 October 1998.

According to Giacalone Ramat (1990, 125) morphology shows the learner's autonomous processing and hypothesising better than L2 phonology and the lexicon, where interference plays a major role, and better than syntax, which is strongly influenced by pragmatic factors. Thus my contribution here, on the structure of learner language, will concentrate on the development of early morphology from the theoretical vantage point of Processability Theory. Since this theory has never been applied to Italian L2 before, the developmental stages I hypothesise will only deal with a small part of this application, which will most certainly require further elaboration and substantiation.

My Italian L2 research in Australia deals with instructed learners. Nevertheless it reveals strong parallels with the morphological sequences found in previous Italian studies, such as those of the "Pavia project", (cf. e.g. Bernini and Giacalone Ramat, 1990; Berretta, 1990; Giacalone Ramat, 1993; Giacalone Ramat and Crocco Gal  s, 1995).

In this paper, I will first attempt to show (i) that Processability Theory (Pienemann, 1998), with its tripartite, hierarchical and implicational morphological stages, offers a parsimonious and principled account of the morphological structure and development of learner language; and (ii) that it can be successfully applied to Italian L2 and predict the acquisitional path traced by learners. I will then show this development with observations derived from distributional analyses of emerging forms from my database, which consists of 36 naturalistic interviews with 12 Australian primary school children and 11 adult learners. These learners are all native speakers of English and their input derives only from classroom instruction. More than half the data are longitudinal, and the remaining cross-sectional. Again, given the magnitude of the enterprise and the available resources, only a very limited set of data will be presented here in any detail.

Processability Theory

According to its proponent, the only objective of PT (Pienemann, 1998) is that of determining the sequence in which learners develop the procedural skills for second language oral production in real time. Acquiring a language is seen as including, crucially among other things, the acquisition of the *procedural skills* needed for processing that language. This is in line with several authors such as Levelt (1989), McLaughlin (1987), Hulstijn (1990) and others. Thus, according to Pienemann (1998), the sequence in which the learner develops the target language will be determined by

the sequence in which those processing routines develop which are needed to handle the components of that language. In fact, the problem of learning a language “has to be solved not by an unconstrained computational device but by a mind that operates within human psychological constraints.”

PT assumes that in the acquisition process the basic fabric of grammar does not change at any given stage of acquisition. This is because the architecture of the language processor (the human mind) does not change, a position which is in line with and adapts Pinker’s (1984) ‘continuity hypothesis’. That is, PT assumes that the computational mechanism for L1 or L2 learners, or for either adult or child learners, is the same, since basic processing parameters such as word access and the linearisation problem (Levelt, 1981, 1989) “are imposed on the human mind in a very general way.” Thus, what does change in development is the language-specific way of handling these general constraints (Pienemann, 1998, 1-2).

The logic underlying PT is that the language learner will produce structural options which are formally possible only if the necessary processing procedures are available. So in order for the learner to transform linguistic hypotheses into “executable *procedural knowledge* (i.e. a certain processing skill) the processor needs to have the capacity of processing the structures relating to those hypotheses” (p. 5). Language produced in real time, however, can be accounted for only in a system where linguistic structures are produced with very fast word retrieval and without any conscious or non-conscious attention, because the capacity of immediate memory would be too limited for the operations required for most of the simplest utterances.

This means that a high degree of automatisisation of language production mechanisms must be assumed. Acquisition, then, is viewed as the process of automatization of linguistic operations. The outcome of these production mechanisms is a hierarchy of language processing procedures and routines, which is posited therefore as universal. This hierarchy, based on Levelt’s (1989) model of lexically driven language generation, can generate predictions for the processability of linguistic structures (cf. Fig. 1, which reproduces Levelt’s pictorial representation of this model). The set of psychological procedures thus envisaged is formally implemented into a Lexical Functional Grammar (LFG) treatment of the target language grammar. LFG (Bresnan, 1982; Kaplan and Bresnan, 1982) is chosen as one of the family of unification grammars which espouses psychological plausibility.

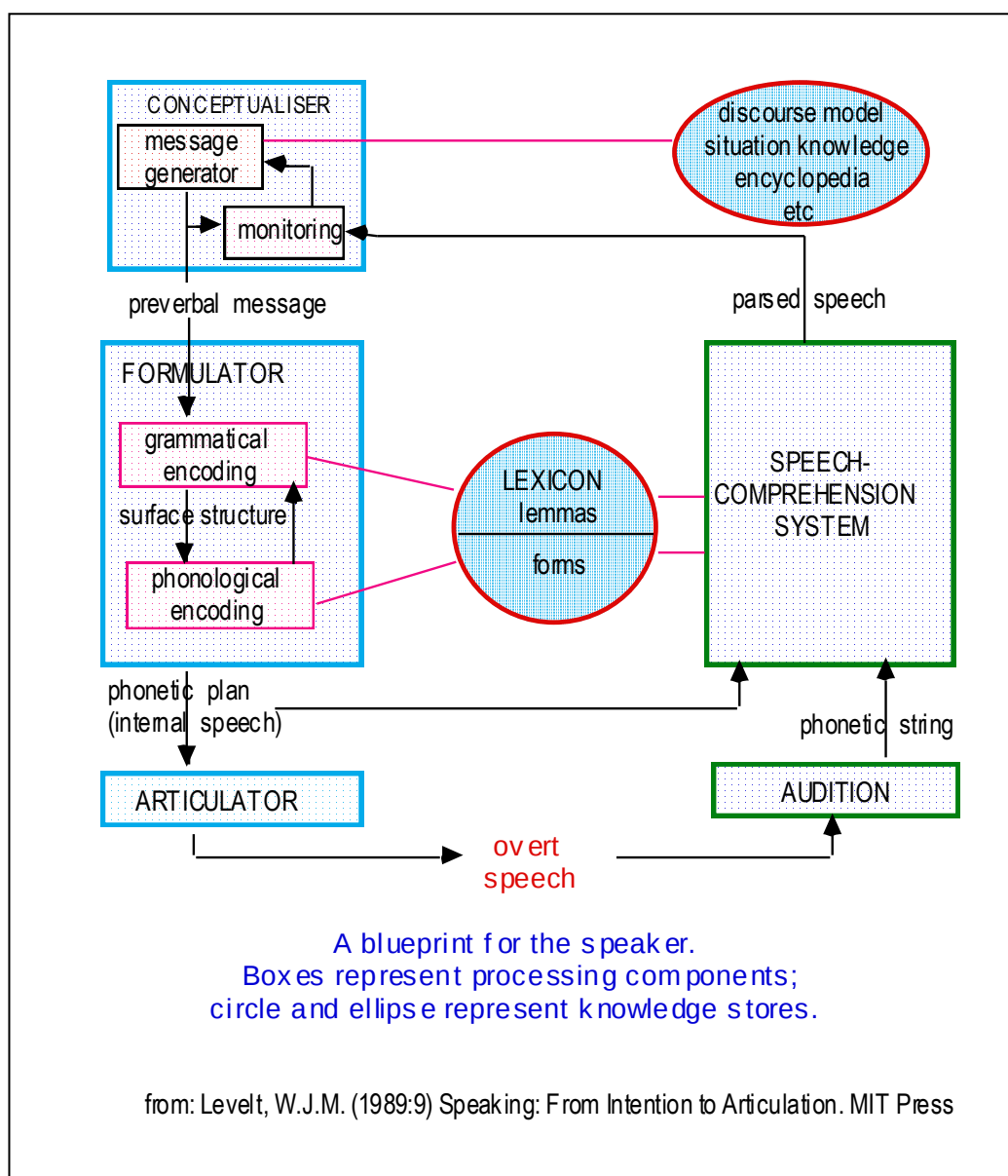


Figure 1

In pursuit of the most general objective of SLA research, namely to describe and account for how a learner moves from a state of not knowing a particular language to a state of its near target-like use (or any other endpoint of the process), PT uses a transitional paradigm based on the multi-dimensional model of SLA developed by Meisel, Clahsen and Pienemann (1981). This incorporates aspects of Bailey's (1973) wave model, and two important concepts in linguistic theory: implicational distributional analysis (DeCamp, 1973) and the concept of variable rules (Labov, 1972a, 1972b). The latter in particular provided a basis for dealing with variable language use in its social context (p. 131 ff). This brief summary here, however, deals more with the

invariant (or developmental) dimension of the model rather than with the variational one.

Processing components

PT arranges grammatical encoding procedures according to their sequence of activation in the language generation process, whose sequence follows, demonstrably, “an implicational pattern in which each procedure is a necessary prerequisite for the following procedure” (Pienemann, 1989). In the acquisition of language processing procedures the component parts are organised and are activated implicationally according to the following hierarchy (pp. 6-7):

1. lemma access
2. the category procedure
3. the phrasal procedure
4. the S-procedure
5. the subordinate clause procedure – if applicable.

Each of the above procedures is posited to be acquired, necessarily, as a prerequisite to the acquisition of the following one, which parallels their pattern of activation in production. So, following as a first step Levelt’s (1989) model of speech production (Figure 1 shows his “blueprint for the speaker”), a word must be added to the target language lexicon before the second step can occur, i.e. before the assignment of its grammatical category, which includes certain grammatical and semantic aspects of a word. Only when the grammatical category of the head of the phrase is assigned a phrasal procedure can be called, and once this is completed, and its value is returned, the function of the phrase (e.g., subject of, object of, etc.) can be determined. Once that function has been determined it becomes possible to attach it to the S-node and the sentential information can be stored in the sentence procedure. When an element of the hierarchy is missing from the learner’s grammar, the hierarchy will cut off at that point, and a direct mapping of conceptual structures onto surface form will replace the missing procedures (provided that lemmas matching the conceptually instigated searches of the lexicon exist).

The implicational sequence hypothesised for the acquisition of processing procedures and their unfolding over time is represented in Table 1 (Pienemann, 1998, 8).

	t1	t2	t3	t4	t5
5. subordinate-clause procedure	-	-	-	-	+
4. S-procedure	-	-	-	+	+
3. phrasal procedure	-	-	+	+	+
2. category procedure	-	+	+	+	+
1. word/ lemma access	+	+	+	+	+

Table 1

Levelt's model can account, in principle, for language processing in bilinguals, as shown by de Bot's (1992) adaptation of it, since the acquisition of a second language will lead to the construction of a bilingual language processor. Language-specific information to be used, de Bot shows, is present in each part of the preverbal message, so it must be present in the Conceptualiser (see top left box in Figure 1) at the beginning phase of message generation, and this informs the selection of language-specific lexical items and routines in the Formulator (the box below the Conceptualiser in Figure 1). The Formulator is the processing component responsible for grammatical encoding, and represents the focus of PT.

Morphological hierarchy

From the hierarchy in Table 1 above, a morphological typology can be inferred which will be later applied to the morphological development in learners of Italian L2. A basic distinction is hypothesised between three types of morphological processes:

A *lexical morpheme* requires its lexical category to be listed in the lemma for the "category procedure" to be called for the corresponding lexical item. A lexical morpheme also requires the corresponding diacritic features (e.g. "person", "number", etc.) to be part of the lemma. As far as acquisition is concerned this does not mean that all of the diacritic features are acquired simultaneously anymore than learners could acquire all lexical items simultaneously.

Next, phrasal procedures have to be in place for *phrasal agreement* to occur, whereby the exchange of information of diacritic and other features can take place between the head of the phrase and the modifier.

The third and last type, *inter-phrasal agreement*, such as that between subject and verb, needs two other procedures to be in place. On the one hand, grammatical functions need to be identified through Appointment Rules and, on the other hand, “the S-procedure needs to be in place to store the relevant phrasal information needed for the agreement process” (Pienemann, 1998, p. 8).

An important assumption in line with de Bot’s work on adapting Levelt’s speech processing model to a bilingual context is that where the L2 is not closely related to the L1, the development of different (language-specific) procedures have to be assumed, including the lexicon and a number of components of the grammatical encoder such as:

- word order rules
- syntactic procedures and their specific stores
- diacritic parameters in the lexicon
- the lexical category of lemmas
- functorisation rules

The learner then will have to be equipped to manage a range of typological, structural or morphological gaps that may exist between the target language and their L1. Diacritic features of lemmas, for instance, contain items such as number, gender, tense, which vary from one language to another – e.g. English nouns are not marked for “gender” while Italian nouns are. Since diacritic features are language-specific and stored in the syntactic procedure, L1 procedures are not equipped to handle the specific storage task required by the L2. Likewise the lexical category of a lemma may vary and the learner will need to test the lexical category for every new lexical item (e.g. English *hand* could be a noun or a verb, while Italian *mano* is not categorised as a verb). All these language-specific components have to be developed with the L2.

Thus the learner’s (L2) lexicon, is not, initially, fully annotated, and even if L1 annotations were transferred, the syntactic procedures will not be sufficiently developed to hold the specific L2 syntactic information. So it can be predicted that the beginning learner will not be able to use syntactic procedures to produce structures that rely on the exchange of language-specific information peculiar to the L2. In PT then, the flow of

information exchange (or “feature unification” in LFG terms) is crucial for predicting what the learner will be able to do at a specific developmental point. It follows that structures which do not involve exchange of grammatical information between constituents can be processed before structures that do require it. So, in the production of (phrasal) number agreement, as in the informally represented Italian example in (1), there is a lower processing load than in the case of subject-verb agreement represented in (2), where the insertion of the correct verb ending hinges crucially on information created before the verb is produced, i.e. person, number and gender marking in the subject. Such agreement can only occur if this information (which needs to be exchanged/unified) is stored in the first place and becomes rapidly available when the verb is produced.

(1) [[tre]_{Det} [giorn-i]_N]_{NP} (three days)
 | |
 Pl Pl

(2) [[Maria e Luisa]_{NPSubj} [[sono]_{Aux} [uscit-e_V]]_{VP}] (Maria and Luisa went out)
 | | |
 3Pers, Pl, Fem 3Pers, Pl Pl, Fem

Table 2 presents a shorthand representation of processing procedures, their L2 structural outcomes, and the corresponding exchange of information required, according to Pienemann (1998).

Processing procedures	Exchange of information	L2 structural outcomes
5. subordinate clause procedure	exchange of information between internal constituents in subordinate clause	main and subordinate clause
4. S-procedure	exchange of information between heads of different phrases	inter-phrasal information
3. phrasal procedure	exchange of information between head and another phrasal constituent	phrasal information
2. category procedure	no exchange of information - use of local information	lexical morphemes
1. word/lemma access	no exchange of information - no sequence of constituents	‘words’

Table 2. Exchange of information and structural outcomes of processing procedures

Information exchange – this first principle establishing an accessibility hierarchy, as represented above – is complemented by a second principle, i.e. perceptual saliency. This is a general cognitive principle anchored to results of studies which found persistent *primacy* and *recency* effects in the memorisation of any sequence of stimuli. In other words, a stimulus in end position – either first or last – is more marked and remembered more persistently than stimuli in other positions. This principle of salience is of course available to the beginning learner, and is very useful to them: it allows identification of sentence initial and final position without reference to language-specific procedures and can thus extend the range of functions a learner can express through his/her grammar; and it can also, eventually, be used in combination with language-specific procedures to enhance further the range of the learner's grammar (Pienemann, 1998, 78).

Emergence criterion

In working with transitional paradigms it is important to clarify, at the methodological level, what sort of observation will count as evidence for which linguistic rule, as in the end these principles of data interpretation determine the researcher's representation of the learner's current state. Pienemann (1998, 146) divides quantitative observations of rule application into four categories:

1. no evidence; i.e. no linguistic contexts;
2. insufficient evidence; i.e. very small number of contexts;
3. evidence for non-application; i.e. non-application in the context for rule X;
4. evidence for rule application; i.e. examples of rule application in the presence of a number of contexts.

While the first two categories are inconclusive, the last two provide a reliable picture of the state of a learner's grammar. To eliminate ambiguities, such as when a rule appears once in a sample with two contexts for its application, it would be necessary to find the same rule occurring with different lexical elements. Resorting to a version of the continuity assumption, however, it can be assumed that once a structure has been acquired, it will remain a constant part of the interlanguage system at later levels of development. So, the researcher can discount the isolated occurrence (which could also be part of a monomorphemic chunk) as an aberration in the data. When researchers are

in a position of stating that rule X has emerged in interlanguage Y by applying the emergence criterion to distributional analysis, then they are making a qualitative assertion about the structure of that interlanguage.

Form-function relationships

As discussed above, PT makes a basic distinction between lexical, phrasal and interphrasal morphology. The actual learning of the morphological form of the affix in relation to its function is, however, a different task from that of managing information distribution in the affixation process, where diacritic features have to be exchanged within different grammatical structures.

Some morphemes may have a one-to-one form-function relationship (cf. Andersen's (1984) "one-to-one principle in interlanguage construction"), others may express a multitude of functions. Others again may also fall into several formal (e.g. phonological) classes, which do not necessarily express particular functions. Italian for instance uses a range of vowel alternations for plural marking on nouns e.g., (*casa/case*; *gatto/gatti*; *uovo/uova*; respectively "house"/"houses"; "cat"/"cats"; "egg"/"eggs"). Other possible sources for the range of alternating vowels may not be conceptually transparent. Indeed form alternation may have nothing to do with conceptual structure but reside in the lexicon itself. For instance, the concept of 'number' can be inferred from conceptual structure and is applicable to the countable set of the 'noun' lexical class.

Gender, on the other hand, is quite idiosyncratic, except for first names and the relatively few Italian nouns which refer to humans or certain animals where grammatical 'gender' and biological sex correlate. In the majority of cases 'gender' is, therefore, a diacritic feature whose value needs to be acquired (or annotated) individually for every lexical entry. Indeed, Carrol (1989), in her study of the acquisition of French gender by English L1 children in the Canadian immersion programs, notes that non-native speakers were using quite complex heuristic and mnemonic devices for assigning gender to lexical items. French L1 acquirers, on the other hand, seemed to store 'gender' as one of the possible pieces of information of the lexical entry when they acquired that lexical entry. She proposes that if gender was not a lexical feature in the acquisition of the L1 then it could not be 'triggered' (in terms of access to *UG*) in the L2. All the more reason, then, to focus on the more conceptually transparent 'number' feature, particularly when it exists in both the L1 and the L2.

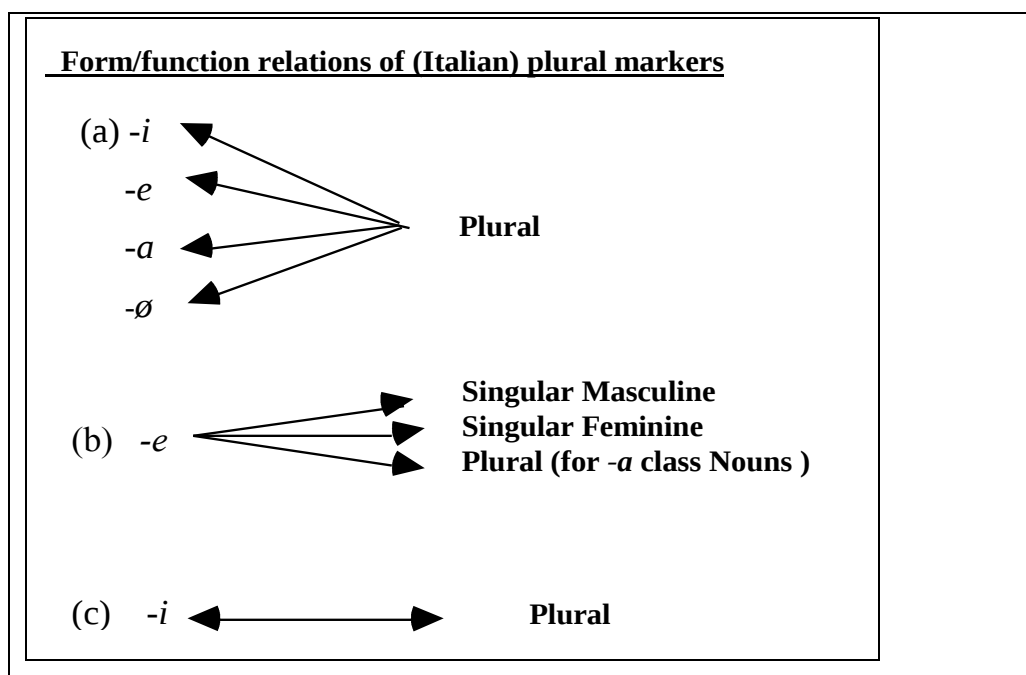


Figure 2

Figure 2 illustrates the fact that Italian nouns mark the *plural* value of the feature ‘number’ through a complex set of form-function relations. On the one hand, there is the case of the ‘one-to-many’ relationship, as shown in Figure 2(b). In this case, a particular word-ending morpheme marks more than one function. For example, the vowel *–e* in the final position in nouns and adjectives may represent not only the plural value for *–a* class nouns (e.g. *casa/case*, “house”/ “houses”) but also, ambiguously, the singular value of either masculine nouns (e.g. *cane*, “dog”) or feminine nouns (e.g. *automobile*, “car”). On the other hand, Italian also has ‘many-to-one’ relationships, where several word-ending morphemes mark one and the same feature. So, plural number may be marked by one of a range of word-ending vowels, as shown in Figure 2(a). The range of possibilities includes endings such as *–a*, which, besides being a prominent marker of ‘singular feminine’ (e.g. *casa*, *mela*, “house”, “apple”), also marks plural for a restricted class of nouns (e.g. *braccia*; *dita*; respectively “arms”; “fingers”). Furthermore, the zero marker *–ø* (no word-ending alternation) is used in plural contexts with restricted subclasses, such as nouns ending in stressed vowels (e.g. *città*, “city”) or nouns borrowed from other languages (e.g. *film*, *bar*). A veritable labyrinth for the learner (and the teacher)!

The one vowel that in Italian nouns does consistently and just about unequivocally mark the plural value of the number feature, however, is *-i*, (*libro/libri*, “book”/“books”; *automobile/automobili*, “car”/“cars”). Singular nouns ending in *-i* exist but they are rare (e.g. *analisi*, “analysis”) and maintain the same ending *-i* for their plural value. So, here we have a close enough case of “one-to-one form-function mapping.” Furthermore, given its higher frequency compared to other marks of plurality, this *-i* marker is likely to emerge as the first marker of plural number in the learner interlanguage, and for some time probably to remain the only one. With this marker the learner may construct a highly systematic contrast between plural and singular, albeit a simplified one with respect to the native Italian schema. In order to establish whether the ‘plural’ value of the ‘number’ feature is marked, PT can thus rely on the learner’s own interlanguage paradigm, rather than on the emergence of the target native paradigm.

Other parts, or the whole, of this morphological paradigm may emerge later in the learner on account of the complexity of the form-function relationships partially illustrated above. PT, however, does not make predictions on how this fuller paradigm develops. Similar form-function mapping problems may be expected also 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.

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, in the Italian interlanguage, because of its simpler one-to-one relationship, the notion of ‘plural’ will most likely emerge marked as *-i* in alternation with any singular form, well before all nouns are annotated for gender or phonological class in the lexicon. If the learner may thus appear not to mark plural consistently, what is happening, in fact, is that they are simply not marking it in a native-like fashion. For reasons such as these a sheer accuracy-based criterion would turn out to be hopelessly misleading.

Development of Italian morphology in learners

Ideally, PT employs corpora of spontaneous naturalistic spoken data. These may also be elicited from tasks designed to obtain, in spoken production, particular structures that may be of particular interest to the analyst or which may not occur with sufficient

regularity in a limited data set of totally spontaneous production. My own corpus includes mainly free conversations as far as the adult informants are concerned, while with child informants tasks were also used. Children were asked to describe a picture, tell a familiar story, such as that of Goldilocks and the Three Bears, or play classifying and guessing games with the help of pictures of animals, as well to participate in free conversation.

Some Italian language-specific structural outcomes of the morphological processing procedures predicted by PT are summarised in Table 3. These hypothesised outcomes are all attested to in my corpora, with the exception of the top procedure (subordinate clause). For reasons of space, however, in the present context only a very limited characterisation of the stages for Italian L2 will be attempted and the exemplification (cf. Table 4) will be limited to a detailed snapshot of the emergence of the early stages in one of the child-learners of Italian L2 in a formal context. A fuller exemplification will be left to a future paper.

Processing procedures	L2 Structural outcomes	Italian morphology
5. subordinate clause procedure	main and subordinate clause	marking of subordinate clauses
4. S-procedure	inter-phrasal information	“inter-phrasal morphemes” Subject (gender) - Verb agreement Object -Verb - agreement
3. phrasal procedure	phrasal information	“phrasal morphemes” Specifier Head Modifier agreement number/gender agreement in NP
2. category procedure	lexical morphemes	“lexical morphemes” N marking with articles. Verb: restricted marking e.g. sing/plural person, non-past/past Noun: singular/plural forms (no agreement) Categorial/definiteness marking restricted gender marking in nouns (without agreement) plural-i (without agreement) categorial marking of nouns (la/il)
1. word/lemma access	‘words’	invariant forms (single constituents)

Table 3: Morphological development in Italian

Now a brief characterisation of the stages follows.

Stage 1: Single words, formulaic chunks

Pre-adolescent learners will use single L2 words that are highly embedded in L1 structural frames and discourse. On the other hand, adult learners will use the L2 in longer stretches, but with high disfluency.

Stage 2: Lexical morphology

This stage begins to incorporate language-specific procedures. For the verb, categorial marking is achieved through a handful of diacritic markings, e.g. non-past vs. past (marked by *-to*); a *-re* marking (infinitival, in native speakers' use), which seems to work as a broad categorial marker for verbs; person marking, but restricted to one contrast only (either first vs. third person, or singular versus plural number). However limited, this would explain for instance why person marking seems to appear at an earlier stage in Italian than in English.

In the nominal area, categorial marking is achieved through the use of articles (mainly *la* or *il*) preceding noun-like expressions. This interpretation would not consider the combination of noun and article as a case of 'phrasal' morphology, independently of whether or not the specific combination turns out to be target-like. In fact 'bare' nouns, except for citation forms, lists, or similar expressions, are not produced at early stages of Italian L2 development and are, in any case, highly restricted in native Italian. This is demonstrated in Tables 4(a) and 4(b), which show a longitudinal (one year apart) study with a total count of nouns and determiner combinations in one child learner, code-named Wade.

Further support for this interpretation comes from the fact that, from the prosodic point of view, the Italian article is not independent of the content word that follows but groups under its stress field. This, in turn, would favour a sort of formulaic learning of article-noun combination. For all these reasons, such combinations are hypothesised as belonging to the 'lexical' level, in the sense that article forms are considered *categorial* markers of nouns.

Nevertheless, in terms of form-function mapping, the article system is quite complicated, and is mastered rather late even in first language acquisition (cf. Pizzuto

and Caselli, 1992). We can therefore hypothesise a late acquisition in L2 learners as well. This is one of several cases in Italian morphology where the sheer complexities of form-function mapping will challenge the PT definition of ‘lexical’ morpheme. While only the least marked markers – possibly the ‘default’ and most frequent ones – might show up at the predicted stage, the full paradigm of otherwise ‘lexical’ morphemes is acquired much later.

At this Stage 2, the plural *-i* diacritic turns out to be the only one to emerge in conjunction with plural referents. In my data, this appears more clearly at Time 2 (cf. Table 4b). Some gender marking also appears, but without agreement, as no exchange of information is predicted at this stage. This can be considered a default occurrence as it is, necessarily, restricted to a handful of nouns, since gender is idiosyncratic.

The emergence of combinations of nouns and numerals is also recorded as it is the earliest instance of the establishment of plural contexts. The demonstrative *questo* (‘this’) is also recorded when it emerges at Time 2. At this stage, it is the *only* demonstrative that does emerge, six times in the same form: three times in the context of English nominals, twice with default masculine singular nominals, and once with a feminine singular. Thus it is not counted as a case of agreement.

Det+N	Nm -o	Nm -e	Nm -a	Nf -a	Nf -e	Npl -i	Npl -e	total
IL (m/s) 18 tokens	5	1	6	3		3		12/18
LA 10 tokens	1		1	7	1			8/10
THE (English) 1 token			1 (papa)					
Ø 1 token	1 mucco*							1
L’ 3 tokens	1		2					3/3
UN 7 tokens	6	1						7/7
UNA 2 tokens				2				2/2
UNO 0 tokens								0/0
DUE 3 tokens	1 (bambino)	1 (cane)				1 (bambini)		1/3

Table 4.a. Determiner (mainly article) and noun combinations. Informant Wade (child), T1. (Shaded areas represent forms which are non-native like)

Det+N	English Lexeme	Nm -o	Nm -e	Nm -a	Nf -a	Nf -e	Npl -i	Npl -e	total
IL (m/s) 10 tokens	2	4	3		1				9/10
LA 5 tokens					4		1		4/5
THE 3 tokens	2				1				3
Ø 0 tokens									0
L' 0 tokens									0
UN 10 tokens	5	4			1				9/10
UNA 3 tokens					3				3/3
UNO 3 tokens		3# (Vowel -#)							3/3
DUE 4 tokens							3	1	4/4
QUESTO 6 tokens	3	2			1				5/6

Natives drop the end vowel of *uno* when the next word begins with a vowel.

Table 4.b. Determiner (mainly article) and noun combinations. Informant Wade (child), T2, c. 12 months after T1. (Shaded areas represent forms which are non-native like)

Only one single ‘bare noun’ was produced. All other nouns (43/44) come in combination with an article, whether definite or indefinite, a numeral or a demonstrative. This reinforces the ‘lexical’ hypothesis of article-noun combinations in early learners.

For this informant’s production we can therefore infer that the article is a categorial marker of N (lexical) at this stage. That is, the learner has constructed a rule for Italian which requires that N must be preceded by a categorial marker, a numeric specifier, or both, as in (3). This is the case with this learner, even when the fillers are English, as in (4).

- (3) *il tre orsi come back.*
the three bears came back

- (4) *tre orsi . la mamma uh la papa e la piccolo uh la mamma makes the breakfast the porridge*
three bears the mother uh the father and the little uh the mother makes the breakfast the porridge.

Gloss: (There are) three bears: the mother, the father and the little one. The mother makes porridge for breakfast.

Leaving aside the issue of whether and how the ‘definiteness’ feature may be marked, the marker *il*, “the”, which happens to be the masculine singular form in the target language, seems to be best candidate for the default nominal marker, since it is produced with 18 nouns at Time 1 and with 10 at Time 2, that is 33% and 25% of the times. It also appears with the widest range of noun forms (*gatto, leone, papa, mamma*), including more complex phrasal constructions (*il tre orsi, il papa bed*). On the other hand, the marker *la* (also “the”, for feminine gendered nouns) also pops up fairly frequently (10 and 5 times respectively). But this form appears with a narrower lexical spread and seems to be phonologically triggered, as in (4), where *la* is fairly consistently in an #____a# environment (*la mamma*) and may spread to neighbouring Ns. This tendency in my data to use *il* rather than *la* markers seems contrary to what happens with L2 development in ‘natural’ environments, as well as in L1 development (Chini 1992, Pallotti 1998), and points to a possible effect of formal instruction.

The indefinite articles *un, una* (“a”), and the numerals *uno, due*, “one”, “two”, seem to be used more accurately than the L-specifiers. By Time 2, the numeral *due* is comfortably used in the context of plural noun forms.

Stage 3: Phrasal morphology

Exchange of information takes place within constituents. For example, Demonstratives, Noun and Adjective show plural number agreement and eventually also gender agreement, but as we saw earlier this requires greater unification effort as more features are involved. Numerals and plural noun agreement may probably be placed at the previous Lexical Morphology stage for Italian, since no morphological agreement is required between numerals and nouns. Verb phrase structures will not be discussed here.

Stage 4: Interphrasal morphology

Exchange of information is hypothesised to take place between different kinds of constituents. This may be more clearly seen where a full referential Subject and the main Verb agree, particularly when the Auxiliary is *essere* and the Subject is Feminine (i.e. not default), or in topicalised constructions where Object clitics are required to

agree with the Object NP and the main Verb. These structural outcomes are difficult for learners, and are only hypothesised here without further comment in this paper.

Conclusion

PT provides an appealing and well-developed universal framework for understanding L2 development. For space and technical reasons it is not possible to present here data exemplifying and supporting all stages for Italian. This will be undertaken in an article in preparation. What we find here, however, is that this theory offers a principled instrument for mapping the Italian morphological maze L2 learners need to face early in their development.

1.2 The acquisition of inflectional morphology in learners of Italian L2 with some reference to the role of phonological word structure

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This paper builds on the initial hypothesis presented in Chapter 1 and exemplifies, stage by stage, the expanded proposal. It opens with a delineation of Italian inflectional morphology as the critical language-specific target for the learner. This is followed by a second section which discusses, stage by stage, a set of hypotheses for morphosyntactic development for Italian L2 based on Processability Theory. Summary results from adult and pre-adolescent informants are presented and each hypothesis is exemplified from these learners' oral production, focusing on their gradual build-up of structural (lexical and combinatorial) resources. Through this accumulation process the learner attempts to bridge the gap between what they intend to communicate in the L2 and the procedural constraints functioning at a particular developmental point. So rather than asking: what might be the function expressed by the learner through a specific structure (e.g. does this structure express tense versus aspect or modality?) my question is what are the structural/lexical resources available (processable) at a particular point? In what order do they become available?

There are a couple of points I would like to highlight, in this article, as novel within PT. The first is that phrasal agreement in Italian is identified with morphological variation requirements in both head and modifier(s). So, for instance, numerals, with the exception of *uno*, "one," intrinsically (lexically) encode conceptual plurality, independently of the head. Further, they are not subject to morphological marking, again with the exception of *uno/una*, which display gender alternation and are almost indistinguishable from the indefinite article. This points to the possibility of independent retrieval during processing, and distinguishes Italian numerals from nominal dependents such as quantifiers and adjectives, which are 'open' in terms of number and/or gender value, i.e. must bear the same values as the head (Italian is a 'dependent-marking' language in the NP).

The second point relating to choice of structure for a specific stage relates to Subject-Verb agreement. The theoretical status of this agreement is important for PT as it is also, more generally, both for language processing and grammar-theoretical representation. This is discussed more fully in the introductory section to Chapter 1 but here I would just point out that in the Lund paper below, the choice is made *not* to use Subject-Verb agreement for interphrasal agreement in Italian PT because the learning of verbal forms inevitably occurs with 'fused' markers, including lexical class, tense, aspect, mood, person and number within the last syllable of the form (cf. the next point below). This situation would certainly cloud the picture as to what exactly the learner (especially the beginner) may be marking when using a verbal form. Indeed, given the pro-drop status of Italian, the verb can be produced (by early learners also as 1.4 shows) without overt realisation of the subject. Studies of Italian L2 in Italy count verb forms as instances of 'subject-verb agreement' whether or not the subject is overt, and learners do start building their verb paradigms through endings contrasts fairly early (cf. Bernini, 1990b, Giacalone Ramat, 1990, Valentini, 1992).

The third and last section of this paper broaches an issue which is plainly outside the current scope of PT because it relates to inferential mechanisms. This is the puzzle: the first stage in L2 learning, i.e. the lemma procedure stage in PT, is deemed to be invariant. Yet learners appear to begin varying the shape of the final syllable of 'single words' at a stage before one could attribute morphological status to that variation. I am assuming such variation to be linked to the learners' efforts to segment and memorise new words out of the speech stream by acquiring, and then producing, fundamental prosodic shapes emerging from exposure to the L2. Cutler (2002, 5) in reviewing studies on L1 and L2 listening, explains how:

"[s]egmentation of fluent speech by adult listeners is in principle made easier by the availability of a well-stocked vocabulary. Adults can tell where a word begins by identifying the end of the preceding word, for instance."

As their vocabulary stocks up, L2 learners have increasing opportunities to use their L1 word segmentation mechanism in the identification of novel prosodic patterns presented by the L2 input. A language such as Italian, where variability is very high but also quite regular, may provide the L2 learner with a key, a sort of 'prosodic bootstrap' to morphological encoding.

Introduction

The aim of this paper is to describe the stages of acquisition of the (inflectional) morphological system by Italian L2 learners (of English-speaking L1) within the framework of Processability Theory (PT) (Pienemann, 1998). It also briefly examines the contribution of one aspect of the phonological structure of Italian, namely the structure of the phonological word, to early development. The paper will proceed from (1) a summary characterisation of inflectional morphology in Italian, followed by (2) an overview of the stages of acquisition as hypothesised within PT, which will not be presented in detail here since a detailed summary can be found elsewhere in these proceedings.³ The PT-generated predictions for Italian will be tested on, and exemplified by, naturalistic data from both pre-adolescent and adult learners. The final part (3) will discuss the potentially facilitating role of Italian word structure and, on the other hand, some of the problems it poses for deciding when or whether a morphological routine is acquired.

The acquisition of Italian as a second language has been studied at least since the 1980s, most notably within the Pavia project's framework (Ramat, 1990) and various projects based at the University of Rome (Bernini and Ramat, 1990). These studies look at the development of Italian L2 primarily in African, Asian and Middle Eastern immigrants, learning the L2 in its natural context (Italy) and mainly in a non-instructed way. The semantically-oriented approach (Giacalone Ramat, 1992) used in these studies is, by and large, a functionalist one as developed within the European Science Foundation SLA studies (e.g. Klein and Perdue, 1988, 1992; von Stutterheim and Klein, 1987). Unlike the studies just mentioned, the spoken production data in the present study comes from instructed learners who are learning Italian as a second language outside of Italy. The theoretical framework used, PT (Pienemann, 1998), is also different.

1. Inflectional morphology in Italian

I am assuming here the traditional division of grammar into syntax and morphology, and of morphology into inflectional morphology and word formation. I am excluding from the discussion below the acquisition of word formation morphology (i.e.

³ After presentation at the EUROSLA 9 conference this paper was submitted for the conference proceedings, but it remained unpublished.

derivation, compounding) since the two behave in different ways: derivational suffixes, for instance, are heads while inflectional suffixes are never heads (Scalise, 1988). Also, in terms of processing, while both morphological processes (inflection and derivation) are located in the lexicon they constitute autonomous subcomponents of the lexicon (Miceli and Caramazza, 1988; Badecker and Caramazza, 1989).

There are several reasons for concentrating on morphological processes in tracing the development of learners of Italian L2, rather than, say, syntax. First, morphology is highly pervasive and obligatory in Italian. With the exception of P(repositions), all the major lexical categories, N(ouns), V(erbs) and A(djectives), are minimally formed by stem+inflectional ending.

Second, perhaps because of its rich morphology, resulting in strong competitive pressure on its syntactic phrase structure, Italian appears to assign a lesser role to syntax in interpreting grammatical relations. As Bresnan observes more generally:

within a sentence morphological forms will compete with and preempt phrases that carry no additional information. If the syntactic structure nodes do not bear additional functions that distinguish them from the morphological structures, they must be omitted. (Bresnan, 1998, 119)

The large number of Italian Word Order options are thus used less for grammatical than for pragmatic and semantic information mapping.

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, at the extreme, there is no segmentability (Comrie, 1989 p.46). On the fusional parameter English morphemes (mostly free) are more easily segmentable than Italian (mostly bound) morphemes. Segmentation of inflectional morphemes is, in Italian often more problematic than in other Western Romance languages such as French, Spanish or Portuguese, all of which, for instance, have adopted suffixation of -s to mark plural in nominal inflection, while Italian has a system of vowel alternation to mark plural (Vincent, 1990). This makes nominal gender and number 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, as we shall see later, since Italian stems do not amount to full legal words and must bear some inflectional ending or inflectional desinence. This is so for the vast majority of nouns and adjectives, and all verbs. The

function of these inflectional desinences is to express grammatical categories such as number, gender, mood, tense (Maiden, 1995, 92). For instance 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).

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

The inflectional endings in (1c) mark the gender contrast (masculine vs. feminine) and the number contrast (singular vs. plural) in nominals. Learners appear to acquire the phonological and prosodic part of the process very early (i.e. that Italian words typically display a vocalic ending) but of course it takes them much longer to account for the grammatical information loaded in the vocalic variation found, in the input, at the end of words.

Apart from the irregularities or exceptions found in any system, nominal group marking is made more complex than the paradigm presented above by the existence of several (phonologically-based) noun classes. In addition, from a semantic point view, noun heads with features +human and/or +animate do not always match their ‘natural’ gender with their grammatical one, while all other noun heads are assigned by the grammar to one or the other gender in an arbitrary way, sometimes following phonologically based criteria: e.g. nouns ending in *-o* (*singular* is the unmarked number so it is taken as the citation form) tend to be assigned masculine gender (*libro*, “book”) while those ending in *-a* to the feminine (*casa*, “house”), with numerous exceptions. Some nouns ending in *-e* are masculine (*pane*, “bread”) while others are feminine (*neve*, “snow”).

Nominal modifiers, such as determiners, demonstratives and adjectives, must express the same gender and number values as the head noun. Nominal modifiers fall into two classes: those with the four endings seen in (1c) above (*rosso*, “red”), and those which neutralise the gender distinction since they have a single *-e* ending for singular (*verde*, “green”) whether the head is m or f, and a single *-i* ending for the plural (*verdi*), again whether the nominal head is m or f).

Thus the task faced by the learner in sorting out the idiosyncrasies of Italian nominal inflection is complex enough, but this is easily rivalled by verbal morphology. Schematically, Italian verbs fall into three classes, each with a characteristic thematic vowel (*-a-*; *-e-*, and *-i-* ‘conjugation’) where the first conjugation, or *-a-* class, may

be considered as basic or unmarked since it is the most numerous, the most regular and is the one to which all newly created verbs are assigned (e.g. from borrowings such as *formattare*, from the English “formatting”).

The structure of verb forms is summarised in (2) below, again following Vincent (1990)

$$(2) \quad \text{STEM} + \text{TV} + (\text{T/A/M}) + \text{P/N}$$

where TV represents the (semantically empty) thematic vowel, followed by the marking of tense, aspect and mood and, in final position, obligatory person/number marking. The slash separating the features represented after TV in the formula represents the fact that each of these two groups of features are ‘fused’ within a single marker, e.g. it is not possible to segment out person from number in the final part of the verb. Indeed, as shown in (3), TV and P/N are occasionally ‘fused’ as happens in third person singular of *-a* verbs:

$$(3) \quad \{\text{parla}\}(\text{he/she speaks})$$

<i>parl</i>	+	<i>a</i>
stem	+	TV and P/N (3d person, singular)

Given the above internal structure of the Italian verb it can be easily imagined that each verb will exhibit a very rich set of morphological forms: a typical verb will have 47 finite forms. In addition, two non-finite forms, i.e. the past participle and the gerund, combine with auxiliaries to form periphrastic tenses. Two other non-finite forms, i.e. the infinitive and the present participle, contribute to mainly nominal and adjectival constructions. Just as for the noun, the stem of the verb does not amount to a legal word: it must have an inflectional ending.

2. Processability hypotheses for Italian

The stages of acquisition of Italian L2 inflectional morphology are mapped here by reference to PT (Pienemann, 1998), which postulates a universal hierarchy of processing procedures, derived from critical aspects of the architecture of the language processor the speaker uses for language production and comprehension.

The language processor is viewed as the set of computational routines used by native speakers that operate on their linguistic knowledge. The task of language acquisition includes, critically amongst other things, the gradual acquisition of those computational routines, i.e. the acquisition of the procedural skills needed for the processing of the particular language.

A basic principle in establishing this accessibility hierarchy is the presence (or otherwise) and the scope of the exchange of information among the linguistic components produced by the speaker. These are shown in the first column (from the left) in Table 1, together with the specific procedure belonging to the respective stages. The content of the first column is after Pienemann (1998, 87).

Processing procedures and information exchange principle	Italian-specific morphosyntactic structural outcomes and characterising structures	Examples from data*
5. subordinate clause procedure: Exchange of information between main and subordinate clause	Dependent clause marking (subjunctive)	(5.315. T)*... e lui è venuto non sapeva che io ero australiana ... <i>and he came (he) didn't know that I was Australian</i>
4. S-procedure Exchange of information between heads of different phrases	Interphrasal (Clause level) morphological agreement – Marking of Object with clitic and agreement (Obj number/gender) with main Verb – Agreement between Subject and Predicative Adjective – Agreement between Subject and Past Participle of the lexical verb (in constructions with Auxiliary <i>essere</i> “to be”)	(5.269 T) no io non <u>l'ho mai visto</u> <i>I have never seen it</i> (5.14 T) ... <u>i miei parenti sono tedeschi</u> (5.36. T) no <u>loro sono andati</u> e hanno lasciato noi a casa (2.44 L) quando noi um noi <u>noi siamo andato andate</u> da um Napoli a Palermo noi doviamo prendere um un treno
3. phrasal procedure (exchange of information between head and another phrasal component)	Phrasal morphological agreement: – Number Agreement in the VP between copula and predicative adjective – Number Agreement in the VP between Auxiliary <i>essere</i> (“to be”) and lexical verb (past participle) – Agreement number/ gender between noun head and modifiers in the NP	(5.26 T) no . <u>sono cugini</u> della mia mom mamma 5.205. K (...) e <u>siamo andati</u> al mare oh no! non e' il mare! non c'e' le onde e la sabbia era un grigio non era come l'Australia! (...) (3.167 L) (...) ho fatto un prac a Leichhardt e <u>ci sono tante</u> um studen <u>tanti studenti italiani</u> (1.364 L) um molto um .. <u>molte donne</u> e . <u>alcuni . uomini</u> ... quattro personi
2. category procedure (no exchange of information – use of local information)	Lexical morphemes – Verb: restricted marking e.g. category, some person marking, non-past/past – Noun: plural (–i) forms (no agreement) – Categorical/definiteness marking of nouns (e.g. with <i>la/il</i>) – Restricted gender (?) marking in nouns (no agreement)	(8. 269 W) (...) <u>il mamma</u> too says um somebody's in my seat and <u>il piccolo orsi</u> says somebody's (NB “il” is used as a categorial marker, no gender/number agreement but final vowel on Ns) (11.315 JO) no . il signore non signora (11.717 JO) um scusi signora (11.831 JO) buongiorno signore
1. word/lemma access (no exchange of information – no sequence of constituents)	‘words’ and formulaic expressions Unanalysed forms (single constituents)	(11.10 J) piacere come v`a? (11.11 K) um benissimo e tu? (8.2 W) ciao sono W. (8.68 W) non lo so

* code in brackets identifies location of turns in specific interviews with informants.

Table 1. Processing procedures applied to Italian morphology
The hierarchy of processing procedures in Column 1 is after Pienemann (1998, 87)

The processing procedures in the first column are ordered (1 to 5) according to the time sequence, followed by the mature monolingual speaker when actually producing speech to reveal his/her intention to others. They only represent one part of the processing mechanism (as modelled in Levelt, 1989 and Bock and Levelt, 1994), i.e. the procedures relating to morphosyntactic formulation: top and bottom parts of the full process are not included in the above hierarchy, e.g. those relating to conceptualisation at one end, and phonological encoding and articulation at the other end. The learner of an L2 that is sufficiently different from the L1 will have to build new, language-specific morphosyntactic procedures (cf. de Bot, 1992). These procedures are hypothesised to be built following the same order in which speech processing resources are deployed during speech.

The middle column in Table 1 hypothesises, for each procedure, a characteristic morphosyntactic structural outcome representing the type of information exchange required at each respective stage. The final column on the right represents examples of structural outcomes, gleaned from the production data gathered from five adult and five primary school learners of Italian as a second language in Australia. All ten learners are from an English-speaking background. The child informants are learning Italian within the context of their primary schooling. The adults are university students learning Italian at various levels. Their input is purely formal with the exception of the informant code-named Tina, who was previously an exchange student to Italy, for seven months, as a teenager.

Stages of development

We turn now to a broad specification of the hypotheses for the acquisition of Italian L2, after the first stage, where the learner will essentially produce monomorphemic, formulaic chunks as in (1a-d), which may correspond to one or more words in the TL. This hierarchy of processing procedures predicts that morphological markers at the *lexical* level are acquired first. Among these lexical features we find categorial marking, definiteness and other diacritic features of the Noun such as number and possibly gender, as (2a) suggests. Learners of Italian seem to make use of either or both the singular articles *il/la* as categorial markers (i.e. distinguishing nouns from other categories) and as definiteness markers rather than as exponents of gender/number. This can be seen in (2b) where the article *il* does not match the gender and number of its nominal.

- (2) a. (11.315 JO) *no . il signore non signora*
no . the gentleman not lady
(gloss) “No, you should say ‘gentleman’, not ‘lady’”

- Verbs, on the other hand, show categorial marking, e.g. with infinitive *-re* ending, as in (3a); past tense, characteristically with *-to* past participle ending but not necessarily in analytic past constructions with their auxiliary, as (3b) shows. Here the question intonation is a common comprehension or form check by the learner. Some person marking on the verb is also attested at this stage, e.g. in (3a) where the second underlined form *capisco* may be marking first person in the verb morphology with the characteristic pro-drop. Notice the formal contrast between *capire* and *capisco*. This is precisely the kind of form variation which characterises this ‘lexical’ stage (Stage 2). We should not expect that all of the person marking on the verb would happen at this stage, however, given the very complex form-function mapping required by the Italian verb, as we saw in the previous section.

- b. (14.42 MA) preparato? . uum .. il cibo . per la fami . per . la mia famiglia
 “(I used to) prepare the meals for the family”

(4) (11.867 JO) *grazia signora arrivederci*

Thank you madam, good bye

In neither of the first two stages (the lemma access procedure and the categorial procedure) is there any exchange of information between any parts of the strings of elements produced. Formal changes, as we have seen in the above examples, are local to the lexical item and may exhibit some variation even at the formulaic level: e.g. a learner may not recall exactly the quality of the vowel at the end of a word and may choose to neutralise it or use any available vowel. In (4) for instance the informant uses a formula-based *grazia* instead of the usual *grazie* (“thank you”), but once the interviewer recast the expression correctly JO went on to use the correct form *grazia* 16 times, without hesitation. Agreement and gender marking at either of these stages may happen more by chance than by design, however – indeed it may be due to the phonological design of Italian words, as will be seen below.

Furthermore, a simplified Sentence procedure may also be produced at this stage, with canonical SVO sentences, where a direct mapping from conceptual structure (agent, action, patient) on linguistic forms is assumed (Pienemann, 1998, 84-5). No exchange of information needs to occur to produce such sentences. In early Italian L2 production this may be seen from the absence of subject-verb agreement.

The third stage is characterised by phrasal level morphological processes such as Italian agreement of determiners (other than articles and numerals),⁴ and/or adjectives in attributive function, with the gender/number of the head noun as (5a) shows. Another level of phrasal procedure is hypothesised to generate Verb phrase agreement. In Italian this may shape up as the agreement in the number value (singular or plural) of the copula with a predicative adjective or nominals, including presentative structures as shown in (5b); or a plural person in the auxiliary may be matched to a plural ending in the main verb (some examples are found in Table 1).

(5)

a. (5.26 TI) *no . sono cugini della mia mom mamma*

no are3PL cousins of-the my mother

“No, they are my mother’s cousins”

⁴ The exclusion of articles as indicators of phrasal agreement is proposed in Di Biase (1998).

- b. (3.167 LO) (...) *ho fatto un prac a Leichhardt e ci sono tante um studen tanti*
 have1SINGdone a prac at Leichhardt and there are manyPL-FEM manyPL-MASC
studenti italiani
studentsPL-MASC ItalianPL-MASC

“I did a (teaching) prac in Leichhardt and there are many Italian students.”

- c. (5.205 TI) (...) *e siamo andati al mare*
 and are1PL gone PL-MASC-to-the sea
 “(...) and we went to the seaside”

Notice that in English, on account of obligatory subjects, person variation in the verb-form is placed high the processability hierarchy (i.e. with S' procedure). Italian, on the other hand, being a pro-drop language, maps the person/number (singular or plural speaker, addressee or third person) directly on the verb form without a necessary co-reference to a separate nominal or pronominal 'subject'. Indeed the (nominal or pronominal) subject may well be generated after the verb or may not be expressed at all (except in the verb form). Results from psycholinguistic experiments (e.g. Vigliocco, Butterworth and Semenza, 1995; Vigliocco, Butterworth and Garrett 1996) tend support the hypothesis that subject-verb agreement in pro-drop languages is generated differently from non pro-drop languages and suggest, at least for the former, some kind of independent retrieval of the features of the verb and the features of the subject.

If that is the case, then interphrasal morphology, for Italian and other pro-drop languages, may be more clearly expressed by structures other than 'unmarked' subject-verb agreement, to allow for the fact that at least some of the different person-number forms of the verb may be acquired, as we have just seen, at an earlier stage. With Italian too, interphrasal morphology (Stage 4) still requires S' procedure, that is the procedure for unifying different categories of constituents at sentence or clause-level. At this stage the learner then is able to recognise the grammatical relations (e.g., subject, object) expressed by the various constituents of the clause, as well as identify the category of each constituent, and recognise, more generally, the relationship between predicates and their arguments, including predicates that may be of an adjectival or nominal nature. We have already shown some of these predicates in (5a and c) above.

So what are the candidate structures for Italian at this developmental stage? One structure that can be built on (5a and c) is the unification of the subject features (gender

and number) with non-verbal predicates as in (6). Also good candidates are certain agreements in analytic constructions (with auxiliaries) that are likely to be unified online, provided they require non-default unification. By this I mean NOT the unification of the subject *person* feature, which is carried by the auxiliary, but of the values for *number* and *gender* features of subject which must be unified with the lexical verb.

To clarify with an example, in (7) the masculine plural of the lexical verb form *andati* (“gone”) is unified with the pronominal subject number (*loro*, “they”): plural in both cases. The [gender] value on the other hand is not marked in the pronoun itself (which could indifferently refer to males or females). The referent itself is clearly a mixed case (one of the referents of “they” is male and the other is female: the informant is talking about an event when her parents left her and her siblings at home). The language – Italian in the specific case – resolves this referential conflict by resorting to a default plural, which uses the masculine form. We do not know whether the informant ‘knew’ this grammatical point or she was simply using (when in doubt) the default form. She would have been right in either case.

The next clause, *hanno lasciato noi a casa* (“(they) have left us at home”) also in (7), shows that analytic constructions with a different auxiliary require neither number nor gender agreement with the lexical verb.

- (6) (5.14 TI) ... *i miei parenti sono tedeschi*

thePL-MASC my thePL-MASC relatives thePL-MASC are german thePL-MASC

“My relatives are German”

- (7) (5.36. TI) *no loro sono andati e hanno lasciato noi a casa*

no they are3PL gonePL-MASC and have left us at home (they= PL=> {parents})

“No, they went (away) and left us at home”

- (8) (2.44 LO) (...) *noi siamo ... andate da um Napoli a Palermo (...)*

we are1PL gonePL-FEM from um Napoli to Palermo (...) (we= PL => {the female speaker and her female friend})

“We went from Napoli to Palermo”

In (8) we have a similar analytic past construction as in the first clause in (7), but this time the lexical verb form *andate*, “gone”, carries a plural/feminine ending unified with the subject NP, i.e. the pronoun *noi*, “we” carrying plural number in the course of language generation. (I am following here the tree-building procedure in IPF

(Incremental Parallel Formulator) in De Smedt, 1990.) But, we may ask, where does the feminine gender information of the lexical verb-form come from? Certainly not from the grammatical features of the pronominal subject *noi*, “we” (since, again, it can indifferently refer to males, females or mixed referents). The answer to this question must be that the gender feature is retrieved by the verb lemma directly from conceptual structure, since the referent is more than one and female and both features, gender and number, are required by the verb. The pronominal subject, on the other hand, requires only the number value. I would suggest that these kinds of feature distribution and unification patterns lend support to the ‘independent retrieval’ assumption of Vigliocco and her co-workers who carried out numerous experiments concerning subject-verb agreement in a range of typologically different European languages (Vigliocco et al., 1995, Vigliocco, Butterworth and Garrett, 1996, Vigliocco, Hartsuiker, Jarema and Kolk, 1996, Vigliocco and Franck, 1998). This line of research leads to the suggestion that in languages with subject-verb agreement both the subject and the verb retrieve features independently from conceptual structure and then merge at the S- node.

Referring back now to the summary in Table 1, the last structure I would like to hypothesise for this stage in Italian L2 is the Object-Verb agreement occurring in clauses that topicalise the object by (dis)placing it to the left of the verb. Recall that the object, in Italian, is canonically placed after the verb and it does not usually display agreement with the verb. When the object is mapped as a topic, however, and placed at the beginning of the clause, then the agreement process follows: a resumptive clitic pronoun, co-referential with this topic and agreeing with its number and gender values, is obligatorily placed before the verb. If the verb is in an analytic construction (with an auxiliary carrying subject information as we saw in (8) above) then it will have the same number and gender features as the object.

This structure requires that the learner recognise the full nominal object as a “non-subject”, and mark his/her choice of topic explicitly, in a pro-clitic pronoun as explained above, unifying their features. Johnston (1995) hypothesised a similar set of operations for the acquisition of Spanish as L2. Italian, unlike Spanish, also requires obligatory agreement with past participial forms of the verb in addition to the pronominal clitic resumption of the object. Learners who can produce such agreement are at least at Stage 4 because they must be able to attribute the subject and object functional roles and manipulate their agreement and position patterns. This highly marked structure was not fully produced by any of my informants, however a number of contexts were produced

by the informant who had been exposed to the language for 7 months in Italy. In (9) part of the structure is produced. It is insufficient by itself, however, because the object co-referential with the anaphoric clitic is not produced and the singular masculine agreement endings are defaults.

- (9) (5.269 TI) *no io non l'ho mai visto*
 no I not itOBJ-have never seenSING-MASC
 “No, I have never seen it.”

At the last stage (clause boundary procedure) the learner is hypothesised here to establish morphological marking of subordinate clauses where this marking is obligatory in Italian and is realised by subjunctive verbal forms. Examples of this stage are few and far between. Only the most advanced of my informants produced a *context* for this marking to occur, but she chose the same verb form (the indicative rather the subjunctive imperfective *ero*, “was”) used now by many Italian natives in non-formal varieties.

- (10) (5.315TI) *e lui è venuto . non sapeva che io ero australiana*
 and he is came . didn't know(3SING) that I was AustralianSING-FEM
 “Then he came. He didn't know that I was Australian”

Results

Next, the results from the analysis can only be presented in summary form, for space reasons, but separately for each informant. Beginning with the five adult informants in Table 2, each code name is given together with the hours of instruction in Italian L2 classes at the University of Western Sydney at the time of the student's (30-40 minutes) interview. Exceptionally, the informant Tina (TI) had previously learned Italian in Italy in a natural environment as she lived with an Italian family and went to school together with the teenagers in that family (in a *liceo* secondary school). Her Italian is clearly far more developed than that of other informants.

An emergence criterion for morphology (Pienemann, 1998, 144-5) is adopted throughout. A morphological structure is ‘productive’ and therefore deemed to be ‘acquired’ if the distributional analysis of a particular learner's corpus shows that it is produced more than once, with lexical and structural variation, and it is not an ‘echo’ (i.e. a repetition of something from the previous speaker's turn).

The sign + in a cell indicates that the particular morphological structure for that stage has been acquired. Examples of what these structures look like have been given in Table 1 and further explained in (1-10) above. The sign (+) means that a small number of contexts for the structure was produced and the specific rule was applied but the evidence is insufficient. The sign – indicates that the context for the particular structure was produced but the rule was not applied. The (+/–) sign means that a number of contexts was produced but the rule was only occasionally but not usually applied; in any case the evidence is insufficient. Finally, the slash sign ‘/’ means that there is no evidence of the context being produced for the specific structure.

Structures/informants	Katie 24 hrs	John 50 hrs	Marge 34 hrs oral instr. + 1 yr by corresp	Louise 200 hrs	Tina 7 months in Italy + 60hr instr
Stage 5. Inter-clausal					
Dependency-marking subjunct.	/	/	/	/	(+/-)
Stage 4. Interphrasal processes: Exchange between heads across phrases					
Object-clitic Agr;	/	/	/	/	/
Subject-Predicative Adjective Agreement	/	/	(+/-)	-	+
Subject-Past Participle agreement (in constructions with Auxiliary <i>essere</i> “to be”)	/	/	/	(+/-)	+
Stage 3. Phrasal processes: Exchange within phrasal constituents					
Copula-PredAdj plural Agreement in VP	/	/	(+/-)	/	+
Auxiliary <i>essere</i> and lexical verb (past participle) plural agreement in VP	/	/	/	(+)	+
Plural agreement between noun head and modifiers in the NP	(+)	/	(+/-)	+	+
Stage 2 Lexical processes: Categorical marking and activation of features					
V –to	/	/	+	+	+
V –re		(+)	+	+	+
fem pl art <i>le</i>	-	-	(+)	(-/ +)	+
masc pl art <i>i</i>	(+)	+	(+)	(-/ +)	+
plural Noun –e	(-)	(-)	+	+	+
plural Noun –i	(+)	+	+	+	+
Def marker <i>la; il;</i>	+	+	+	+	+
Stage 1. words (undifferentiated)	+	+	+	+	+

/ no evidence, i.e. no linguistic contexts

- context is produced but rule is not applied

(+) insufficient evidence of rule application, or formulaic use only, or echo effect

(-/ +) various contexts are produced with non-application and occasional, insufficient, evidence of application.

+ sufficient evidence, i.e. evidence for rule application in the presence of contexts

Table 2. Morphological Development Structures for Italian L2. Cross-sectional study. Adults.

Are the hypothesised stages supported in Italian L2 data? Are the stages implicationaly ordered? The answer to both questions is yes, as shown to some extent in Tables 2 and, below, Table 3, which summarise results from the analysis of data from interviews of cross-sectional studies of, respectively, five adult and five pre-adolescent instructed learners of Italian.

As for the adult learners (Table 2) there are gaps for the higher stages but at least one informant (Tina) does show development across the stages with some gaps at Stage 4 and Stage 5. Contexts for those stages are produced but the strict emergence criteria applied in the study do not definitely licence acquisition on the available evidence. Nevertheless what emerges from production appears to adhere strictly to the developmental path traced within PT.

There are further gaps, particularly in the pre-adolescents' data (Table 3), which attests Stages 1 to 3 only, with scant tokens of verbal morphology at the lexical stage and none at the phrasal stage, though nominal phrasal morphology is supported in two cases. The overall production from the pre-adolescent informants in a single session (15-20 minutes) may have been insufficient to get an accurate picture of their lexical knowledge but it is doubtful that these informants may have produced any more structural variety given the almost total absence of lexical verbs.

Structures/informants*	Joel Grade 4	Alex Grade 5	Rachel Grade 4	Wade Grade 4	Sara Grade 6
Stage 3. Phrasal processes: Exchange within phrasal constituents					
Copula-PredAdj plural Agreement in VP	/	/	/	/	/
Auxiliary <i>essere</i> and lexical verb (past participle) plural agreement in VP	/	/	/	/	/
Plural agreement between noun head and modifiers in the NP	/	-	(+)	+	+
Stage 2 Lexical processes: Categorical marking and activation of features					
V <i>-to</i>	/	/	/	/	(+)
V <i>-re</i>	/	/	/	/	+
fem pl art. <i>le</i>	/	/	(+)	/	/
masc pl art <i>i</i>	/	/	/	/	/
pl. <i>-e</i>	/	/	(+)	+	(+)
pl. <i>-i</i>	(+/-)	(+/-)	-	+	+
fem sing art <i>la</i>	-	-	-	+	+
masc sing art <i>il</i>	(+/-)	(+/-)	(+)	+	+
una	(+)	-	-	+	-
un/uno	(+)	+	-	+	-
Stage 1 Words (undifferentiated)					
grazie; mi chiamo; non lo so	+	+	+	+	+

*Informants are English-speaking schoolchildren learning Italian L2 in Australia. They have had between 200 and 280 hours of instruction. Names are, of course, fictitious.

Table 3. Hypothesised Morphological Development Structures for ISL. Cross-sectional study. Pre-adolescents.* (input from primary school instruction only)

3. The role of word structure

Describing the morphological development in learners of Italian L2 in terms of lexical/phrasal/interphrasal progression goes part of the way towards explaining the observations made in other studies cited in Giacalone Ramat (1992). These argue that English L2 and French L2 verbal morphology is acquired ‘late’, while Italian verbal morphology is acquired ‘early’. Indeed the “morphological sensitivity” developed by learners of Italian L2 may well be due to the “perceptually salient morphology” preserved in the final part of the word in Italian (Giacalone Ramat, 1992) – however the learner would have to know, in advance, that the last part of the Italian word encodes certain grammaticisable notions (cf. Slobin, 1997) and, further, he/she would have to discover which ones. The use of the ‘saliency’ principle invoked by Giacalone Ramat may apply here, I would propose, more to phonological (rather than morphological) ‘saliency’, e.g. stress placement, vowel length, pause length, rather than the initial or final position of a ‘morpheme’ in the string.

Here I would like to suggest, then, that Italian *prosodic*⁵ word structure has a role to play in bootstrapping morphological marking. Prosodic and phonological issues are, however, outside the area of operations delineated by PT. Nevertheless this suggestion is advanced as a contribution to understanding how learners may proceed, for instance, from Stage 1, which PT assumes is not language-specific, to Stage 2, which is assumed to be because this stage is characterised by the learning of language specific morphological markers. Prosody, I would suggest, is what helps them to bridge this gap.

For this to work, however, it is necessary to assume that the ‘invariant’ one-word, or formula typical of Stage 1, is actually subject to (phonological) variation before the learner is able to attribute a grammatical function to such variation (and so attain Stage 2). To reiterate in other words: the unanalysed word or formula of Stage 1 remains unanalysed from a ‘morphological’ point of view but it is subject to phonological variation.

One way of conceptualising this is as follows: at the formulaic stage, i.e. Stage 1, with the acquisition of unanalysed chunks and single words, the learner acquires, simultaneously, a phonologically specified prosodic frame for those words – which in

⁵ Following Maiden (1995, 24) in his diachronic description of Italian, “[p]rosodic (or *suprasegmental*) phonology is concerned with domains or ‘stretches of sounds’ greater than the single consonant or vowel segment. Among these are the *syllable*, *stress* (the relative loudness of syllables within some domain – usually the word), and *length* (concerning the the relative duration of a vowel or a consonant).” (Original emphases).

Italian almost invariably end in a small set of vocalic sounds, especially at phrasal boundaries. Longer pauses, in turn, facilitate segmentation. That is, the learner will use their native language-specific process for speech recognition (and speech segmentation is an important part of that) to recognise input from a second language also (cf. Cutler, 1992). The consistent, regular occurrence of this handful of rather prominent vocalic sounds of Italian in the final position of phonological words in the L2 may help learners in word segmentation when engaging in comprehension and production tasks, and may contribute to bootstrapping their “morphological sensitivity”.

It may be appropriate here to exemplify this process from data. When attempting to establish whether one of the five primary school child-informants (code-named Rachel, one of the informants in Table 3) had learned to mark plurality in a language-specific way, all occurrences of noun-like words were analysed using a distributional analysis matrix (as suggested in Tomlin, 1990; Pienemann, 1998, 158) to find possible correspondences between the five possible vowel endings⁶ of those words and either singular or plural contexts. The result is shown in Table 4. Figures represent the number of noun types with a particular vowel ending, while the figures in brackets represent the total number of tokens.

Table 4. End vowel and plural marking on noun-like words. Informant: Rachel

Word-final vowel	Singular context: types (tokens)	Plural context: types (tokens)
-a	7 (8)	Ø
-e	10 (12)	2(3) (*)
-i	2 (6) (*)	Ø
-o	15 (20)	1 (2) (*)
-u	1(2)	Ø

(*) forms not found in native Italian

As can be seen, in a total of 48 singular contexts any one of the five vowels considered may be found in final position of noun-like words. Two of these vowels are also found in the five plural contexts produced. Starred forms, both the ones appearing in plural contexts as well as the *-i* in the singular column, are not found in native Italian. Notice also that no consonant-ending nouns were found despite the word structure of the L1 (English).

⁶ The table excludes oxytones (final stressed vowel words) which display no singular/plural vowel alternation in nouns, and which, in any case, were not produced by the learner.

Such distribution⁷ would suggest first of all the recognised existence of *learner-generated* forms (not from the L1 nor the L2). Second, this variation is not linked to a discernable grammatical function marked by morphological means in either L1 or L2. Furthermore, this range of (phonologically-based) variation exists even though students are at Stage 1, which would mean that the ‘formula’ is not ‘invariant’ at least from a phonological stance. Processability Theory would then need to clarify that the formulaic nature of Stage 1 does not necessarily rule out phonologically-based variation. Third, the range of variation replicates and remains within L2 patterns, not L1. Finally, and most interestingly, the learners’ interlanguage behaviour picks out, very early in the learning process, a key feature of native Italian prosody. Maiden (1995, 77), for instance, points out that “[i]t is a distinctive characteristic of Italian, among the Romance languages, that no native word capable of occurring at the end of a phrase terminates in a consonant”. Learners of Italian will, therefore, be exposed to input which characteristically contains a vowel just before a word or phrase or end of utterance pause, and they identify and use that pattern.

The Prosodic Word in Italian, as in early interlanguage, may then be reasonably well represented by (11)

$$(11) \quad \textcircled{0} \rightarrow \# ______ -V\#\#$$

which ensures that a vowel does appear just before word boundaries. Such a final vowel pattern helps, at least for English background learners, to mark a word as ‘Italian’. Indeed this can be thought of as the learner’s own ‘Italian morpheme’.

This realisation (not necessarily conscious) is significant for morphological learning even though, true enough, gender and number inflections in Italian nouns and adjectives and most verbal inflections are unstressed, therefore not perceptually salient, final vowels. But, together with the end of word pause, the regularity of stress falling on the syllable just before the final syllable (heavy penultimate) helps construct a sort of ‘regular expression’. This prosodic pattern can be considered as a default pattern for modern Italian (cf. Maiden, 1995, 26)⁸ and may then:

⁷ The same pattern of distribution is found in other beginning L2 child-learners, e.g. Table 4a-b in Di Biase (1998) contains a detailed analysis of another child informant (code-named Wade, also appearing here in Table 3).

⁸ According to Maiden (1995, 26), while this is not a powerful constraint on stress placement “...it is indisputable that the overwhelming majority of Italian words tend to conform to this stress, (on the penultimate syllable *nda*) and that modern Italians tend to assume that this rule operates when they pronounce unfamiliar words”. This certainly tends to be the case in Italian-Australian lexicon, e.g. *fensa*, “fence”, *ruffo*, “roof”, *ho smesciato*, “I had a (car) smash.”

- (i) help identify word boundaries;
- (ii) help the Italian L2 learner *produce* a prosodic word frame to characterise his/her own utterance as ‘Italian’ as shown in (12) below (it also helps non-Italian comedians imitate Italians effectively);

and once this pattern, involving penultimate word stress and a very small number of quite distinctive vocalic sounds before a word boundary, is established it may

- (iii) help identify changes in the word final position (cf. Slobin, 1997) and perhaps associate this to some kind of marking of relationships between adjacent items (e.g., at first a kind of phonological unification, then more ‘grammatical’ – e.g. morphological – unification such as marking of plurals etc). (Cf. Giacalone Ramat, 1992, 302-303; Pallotti, 1998, 57.)

Some of the processes whereby beginning learners construct novel items from their L1 lexicon, using their L2 ‘default prosodic word’, are exemplified in (12a-b) from on-line spoken production by adult informants.

- (12) a. 11.408 JO il rettangolo horizontale u verticale? (horizontal or vertical)
- b. 12.464 AN um e er il govern . governente? (‘government’)

This ‘creativity’ may be attributed to the fact that the English and Italian words are cognate, of course, but, again, the learner does not know this in advance and the same process is applied to non-cognates also (e.g. one of my child informants produced the non-cognate *rabbito*). The double underline shows which syllable was stressed and that this stress is not on the same syllable as on the English cognate. Indeed, the process appears to ‘regularise’ the quasi-cognate (the native Italian word for “government” is actually *governo*) by adding one syllable to the interlanguage word as shown in (13), using a ‘segmental spellout’ modelled on Levelt (1989, 324).⁹

⁹ The appropriate phonetic symbols (e.g. for English shwa) were not available to me at the time of constructing (13).

1.3 Exploring the typological plausibility of Processability Theory: Language development in Italian second language and Japanese second language

Di Biase, B. and Kawaguchi, S. (2002). Exploring the typological plausibility of Processability Theory: Language development in Italian second language and Japanese second language. *Second Language Research*, 18 (3), 274–302.

This article, presented below without Kawaguchi's discussion of Japanese processability, marks an important turning point in my SLA research. A number of innovations are introduced here, as against my previous work on the acquisition of Italian L2.

First, the carefully designed methodology of this cross-sectional study includes, beside one native speaker as control, a defined set of informants, purposefully chosen with greater control on variables such as age (only university students), source of input (only formal instruction), and previous language competence (informants who turned out to have used Italian at home, or lived in Italy or a Romance-speaking area such as Brazil and Nicaragua, were excluded). Furthermore, I began to use elicitation tasks, such as 'spot the differences', guided narratives and other communicative tasks, with the specific goal of eliciting richer data for my targeted PT structures. In particular, the extreme paucity of clitics and marked (optional) structures – such as passives and object topicalisations – occurring in free and unconstrained natural production prompted me to design a special communicative task which succeeded in eliciting topicalisations or their alternatives, depending on the stage of development of the learner (cf. Appendix A)

Another crucial development at this stage of my research is a more formal Lexical Functional Grammar (LFG) representation of the structures under investigation, which enhances the generalisability and typological plausibility of my description and findings. This change became possible in the wake of a new set of works on LFG (Bresnan, 2001, Dalrymple, 2001, Falk, 2001), which made this grammatical theory more accessible and relevant to my description of Italian because it now included Bresnan and Mchombo's (1987) insights on the formal inclusion of *topic* and *focus* as syntacticised discourse functions. This helped me, on the one hand, to account for the apparent 'freedom' of Italian word order, and, on the other hand, to

realise that the pre-verbal NP that looks like an object, and is co-referential with a pre-verbal clitic, must have its own syntactic function. As in Chicheŵa, a Bantu language analysed in Bresnan and Mchombo's (1987), this initial NP is a redundant, floating NP_{TOPIC} rather than an object. Indeed, the object is already expressed, anaphorically, by the object marker cliticised to the verb. If this holds true, it must also have developmental implications. That is, the learner must also, somehow, realise that there is a syntactic function there, which is different both from *subject* and from *object*, and that its expression shares grammatical features with the object.

This 'discovery' relating to the acquisition of Italian poses two new questions for PT. The first relates to the status of 'Topic' as a syntacticised discourse function not previously covered in PT. Since this discourse function turns out to be useful in the description of the acquisition of a pro-drop language such as Italian, then it may have a more general applicability. This hypothesis is at the basis of a later theoretical extension of PT and will be resolved through the 'topic hypothesis' presented below in §§ 2.1-2.2). The second question is: at what stage is the learner able to process the grammatical information necessary for the unification of the NP_{TOPIC} and the Verb? Since the heads from different phrases must exchange information, this structure requires interphrasal agreement, and in this article (i.e. § 1.3) it is placed at S-procedure.

However, subsequent work will show that it emerges later than other S-procedure structural outcomes such as Subject-Predicative Adjective agreement (cf. § 2.3). A possible solution is to hypothesise that it involves S'- (S bar) procedure, even though the 'floating NP_{TOPIC}' does not amount to a new clause and does not involve subordination. In fact, this kind of Topic construction is generally licensed by a phrase structure rule:

$$\begin{array}{ccccc} S' & \rightarrow & & XP & S \\ & & & [TOP] & [TOP=GR] \end{array}$$

as shown not only in this article but also in Kroeger (2004, 140). This means that a topic phrase 'XP' (i.e. of *any* category) is identified with some grammatical relation in the next clause. So, it is conceivable that the XP could include subordinate clauses. Then it would make sense that a procedure higher than S- is necessary to make the equation [TOP=GR] processable. Alternatively this could be looked as an intra-stage issue, but this solution opens more questions than

it answers, posing the problem of what processing principles are involved in intra-stage hierarchies.

Di Biase, B. and Kawaguchi, S. (2002). Exploring the typological plausability of Processability Theory: Language development in Italian second language and Japanese second language. *Second Language Research*, 18 (3), 274–302.

This article¹⁰ aims to test the typological plausibility of Processability Theory (PT) (Pienemann, 1998). This is “a theory of processability of grammatical structures ... [which] formally predicts which structures can be processed by the learner at a given level of development” (p. xv). Up till now the theory has been tested mainly for Germanic languages, while here we propose to test it for two typologically different languages, namely Italian and Japanese. Language specific predictions for these two languages will be derived from PT, and the structures instantiating them will be described within a Lexical Functional Grammar (LFG) framework. The occurrence and distribution of relevant structures will then be analysed in empirical, naturalistic data produced by adult learners. To test whether PT is typologically plausible we will demonstrate the following points for Japanese and Italian:

- The notion of ‘exchange of grammatical information’ is a productive concept for typologically different languages.
- Predictions that can be derived from the general architecture of the theory for specific languages will be borne out by empirical observation (Pienemann 1998: 166).

I Introduction

It is a commonly held assumption (e.g. Larsen-Freeman and Long, 1991; Sharwood Smith, 1994) that all normal first language (L1) speakers have the capacity to acquire one or more second languages (with varying degrees of success). Regardless of the typology of the language, any theory of second language acquisition (SLA), therefore, has to demonstrate typological plausibility. Pienemann (1998) makes explicit claims concerning the universal applicability of Processability Theory (PT) to the acquisition

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of any human language. He proposes a universal hierarchy for the acquisition of specific procedural skills needed for processing the target language. This hierarchy is based on the general architecture of the human language processor and parallels a universal hierarchy of key grammatical encoding procedures and routines, implicationally arranged in language generation (Kempen and Hoenkamp, 1987, Levelt, 1989). These procedures are activated in the following sequence:

- 1) lemma access;
- 2) the category procedure;
- 3) the phrasal procedure;
- 4) the S-procedure;
- 5) the subordinate clause procedure, if applicable.

The procedure of each lower level is a prerequisite for the functioning of the higher level. This is the reason for the hierarchical nature of the above list. In a nutshell:

A word needs to be added to the L2 lexicon before its grammatical category can be assigned. The grammatical category of a lemma is needed before a category procedure can be called. Only if a phrasal procedure has been completed and its value returned can Appointment Rules determine the function of the phrase. And only if the function of the phrase has been determined can it be attached to the S-node and sentential information be stored in the S-holder. (Pienemann, 1998, 80)

The learner needs to construct and automatise each of these procedures in the second language (L2) and deploy them in language specific ways, i.e. it is not possible to use those of the L1. For reasons of space we will not go into details here but the reader is referred to Pienemann and Håkansson (this volume and 1999). Suffice it to say, for our purpose, that the predicted structures should be acquired in the order just outlined.

Before proceeding to language specific issues, a further point needs to be made on the system of grammatical description used here, which, following Pienemann (1998), is Lexical Functional Grammar (LFG) (Kaplan and Bresnan, 1982; Bresnan, 2001). A crucial reason for choosing LFG is that ‘feature unification’ is one of its main characteristics. Since PT assumes that the learner has to rely on the exchange of specific L2 grammatical information to be able to produce L2 structures, it follows that ‘feature unification’ is a central asset for choosing a grammatical theory because:

[it] captures a psychologically plausible process that involves (1) the identification of grammatical information in the lexical entry; (2) the temporary storage of that information; and (3) its utilization at another point in the constituent structure. (Pienemann, 1998, 91)

Sections II and III – covering Italian and Japanese respectively – first present a typological characterisation of the morphosyntax of each language, secondly the structures selected for the test of typological plausibility, and finally a discussion of the empirical studies conducted independently by the two authors.

II The acquisition of Italian L2

1 Typological characterisation of Italian

Unlike the Germanic languages tested for PT thus far, where syntactic structure encodes grammatical arguments such as ‘subject of’, ‘object of’, etc., Italian can be seen, typologically, as a head-marking language (as in Bresnan, 2001, 6.3). This refers to the fact that the morphology of a head (verb) may incorporate its pronominal arguments.

Syntactically, Italian is an SVO language where O(bject) is postverbal and, crucially, S(ubject) is optional (can be null, or pro-drop) and its position variable. This null-subject phenomenon is often seen as a phrase structure operation (Chomsky, 1981; Rizzi, 1982) where a phonologically null syntactic phrase representing the subject pronominal argument is licensed by a rich and “uniform” (Jaeggli and Safir, 1989) morphology.

In LFG’s alternative view, however, pro-drop “refers to the functional specification of a pronominal argument by a head; this entails the absence of the structural expression of the pronoun as a syntactic NP or DP” (Bresnan, 2001, 177). The contrast between configurational English vs a more head-marking Italian is illustrated below following Bresnan (2001, 302–04). In Figure 1 the semantic roles of the a(rgument)-structure of the verb “see” map onto the corresponding f-structure functions SUBJ and OBJ respectively. Figure 1 also shows the mapping from c(onstituent)-structure to the corresponding f(unctional)-structure. In Figure 2, on the other hand, it can be seen that, despite the same mapping from a-structure to f-structure, Italian has a different morphological realisation, in c-structure, of subject as verb stem affix and object as a pronominal cliticised on the verb.

Subject–verb agreement is obligatory in Italian. The subject NP, however, can always be omitted prompting a definite pronoun interpretation for the inflection.

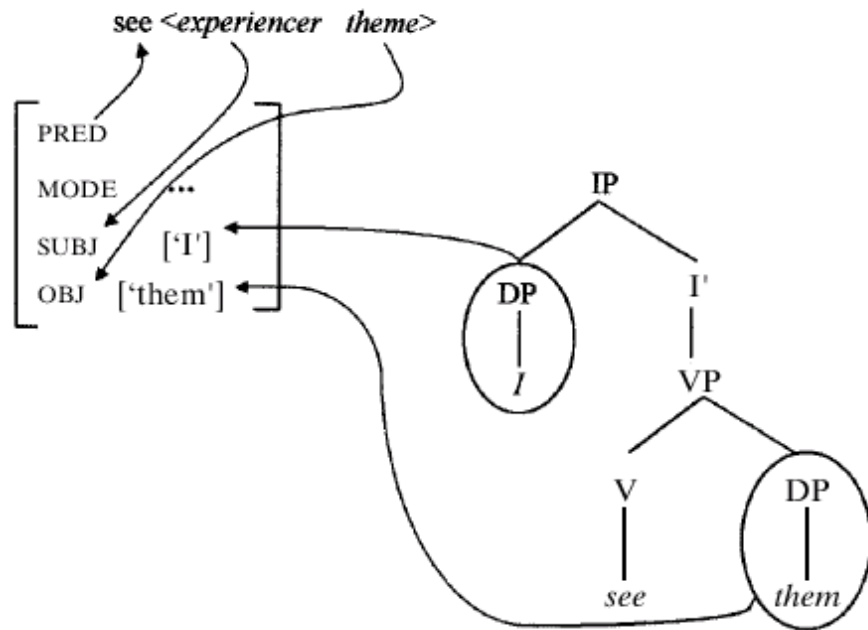


Figure 1 Matching c-structure onto a-structure in English

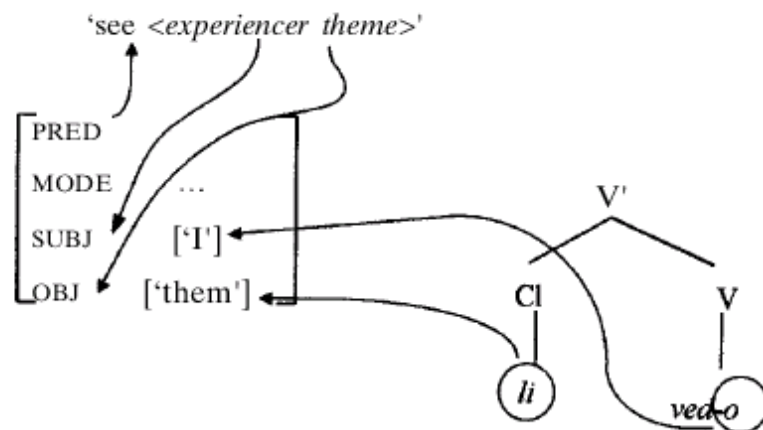


Figure 2 Matching c-structure onto a-structure in Italian

Thus, the verb form *vedo* in Figure 2 is made up of a stem *ved-* and an inflectional ending *-o* which functions as a bound first person pronoun. It contrasts with other inflected forms (i.e. *ved-i*, *ved-e*, *ved-iamo*, *ved-ete*, *ved-ono*), which mark other person and number agreement features, respectively second and third person singular, followed by the plural forms. The subject agreement inflection of the verb (here generalised as SM or subject marker) can be associated with the following functional specification, following Bresnan (2001, 150-51):

SM V infl (↑SUBJ)= ↓
 (↓agr)= α
 ((↓PRED)= 'PRO')

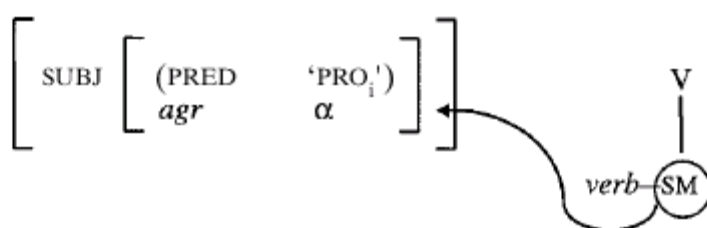


Figure 3 Illustration of structural correspondence of SM

The structural correspondence arising from these specifications is shown in Figure 3, where the parenthesised feature collapses two f-structures: one with the [PRED 'PRO'] feature, the other without it.

While subject–verb agreement is obligatory in Italian the (direct) object marker (ignoring here indirect object and other pronominal clitics) is only optionally present, as shown in (1a) and (1b). When it is present, however, the object NP may also be omitted (as shown in Figure 2). But without the object clitic the object NP can not be omitted, as in (1e):

- 1) a. Giovanni compra i biscotti
 Giovanni buys-3.SING the-MASC/PL biscuits-MASC/PL
 “Giovanni buys the biscuits.”

b. compra i biscotti

buys-3.SING the-MASC/PL biscuits-MASC/PL

“He/she buys the biscuits.”

c. i biscotti li compra Giovanni

the-MASC/PL biscuits-MASC/PL them-ACC.MASC/PL buys-3.SING Giovanni

“The biscuits, Giovanni buys them.”

d. li compra Giovanni i biscotti

them-ACC.MASC/PL buys-3.SING Giovanni the-MASC/PL biscuits-MASC/PL

“Giovanni buys them, the biscuits.”

e. *Giovanni compra

Giovanni buys-3.SING

“Giovanni buys”

Note that while the clitic object marker interacts with word order, the SM fails to do so. (A two-dimensional representation for (1c) is given later.) Dealing for the moment with the word order facts in (1a–e) and Figure 2, they may be represented at c-structure level by R1 and R2 below, where the comma between the two daughter nodes indicates that they are freely ordered:

(R1) S' → (XP) S
(↑TOP)=↓ ↑=↓

(R2) S → (NP) , VP
(↑SUBJ)=↓ ↑=↓

The following two rules account for the accusative object Cl(itic) pronoun (phonologically attached to the verb).

(R3) VP → V' (NP)
 $\uparrow=\downarrow$ ($\uparrow\text{OBJ}=\downarrow$)

(R4) V' → (Cl) V
 $(\uparrow\text{OBJ})=\downarrow$ $\uparrow=\downarrow$

As Figure 2 and (1a–e) show, the Italian (clitic) object marker, like the (inflectional) subject marker, permits pro-drop. But unlike the SM, it is optional because it involves some pragmatic or semantic choice on the part of the speaker. This is the choice of using an anaphoric pronoun. Thus the ‘object’ NP with which the clitic agrees in (1c) and (1d) is, in fact, a dislocated topic, not a direct object generated in the VP. So there is no competition between the clitic (corresponding to the OBJ argument function) and the full nominal which links to a discourse function (TOP), as demanded by the extended coherence condition (see next section). The agreement in gender class and number between the object clitic and this dislocated topic is, then, the anaphoric agreement with its referent. This hypothesis is fully developed with reference to Chicheŵa in Bresnan and Mchombo (1987), who argue that the OM in that language, unlike the SM, is a full-blooded incorporated pronoun. We hypothesise that Italian object clitics behave in a parallel way. The object marker (OM) has the functional specifications shown in (2).

2) OM Cl ($\uparrow\text{OBJ}=\downarrow$)
 $(\downarrow\text{agr})=\alpha$
 $(\downarrow\text{PRED})=\text{‘PRO’}$

The structural correspondence arising from these specifications is shown in Figure 4. Thus the OM, when it is present, always carries a definite pronominal interpretation, which represents the difference between an exclusively anaphoric agreement with a topic (carried by the object clitic), and grammatical agreement with an argument of the verb (expressed by the inflectional subject marker). LFG’s radically different (and nontransformational) representation finds support in experiments on subject–verb agreement, which revealed that the subject and verb constituents can, independently, derive features from conceptual structure: the verb need not inherit or copy features from the subject node. This led Vigliocco et al. (1995; 1996) to conclude that the process of feature merging (or unification in LFG terms) between subject and verb is

psychologically plausible and able to account for null-subject languages such as Italian. A further typological characteristic of Italian is that its morphology is fairly “fusional” (as per Comrie, 1989, 46) and stem-based, unlike English or German, which are word-based. Italian stems, as we have seen for verbs above, do not constitute full words and must bear some inflectional ending. Similarly, Italian nouns, which fall into either the masculine or feminine ‘gender’ class, normally also consist of a stem and an (obligatory) affix indicating number (singular or plural), marked by vowel alternation (Vincent, 1990, 278), as Table 1 shows. For instance, MASC(uline) SING(ular) *libro* alternates with PL(ural) *libri* (“book”, “books”); FEM(inine) SING(ular) *casa* alternates with PL(ural) *case* (“house”, “houses”). Nominal heads in Italian are dependent-marking. Adjectival adjuncts, as well as demonstratives and other nominal modifiers, e.g. *questo*, *molto* (“this”, “many”), obligatorily agree in GEN(der) and NUM(ber) with the NP head. Thus, the value of those features in the adjective and other constituents must not contradict those of the head noun if they belong within the same phrasal function, i.e. they must exchange information (or unify in LFG terms).

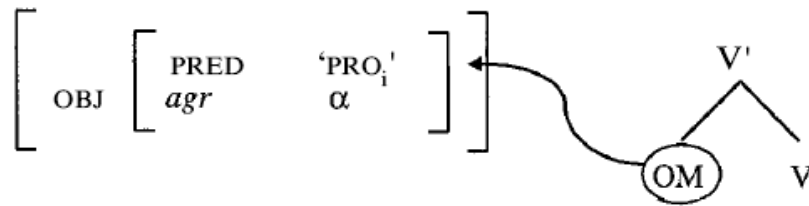


Figure 4 Illustration of structural correspondence of OM

Singular	Plural	Gender
-o	-i	masculine
-a	-e	feminine
-e	-i	masculine or feminine
-a	-i	masculine

Table 1 Noun ending alternation in Italian

Processing procedures	L2 process	Italian morphosyntax
S-procedure	Inter-phrasal information	Topic-object agreement
Phrasal procedure (head)	Phrasal information	NP agreement (plural -i)
Category procedure	Lexical morphemes	-to past marking on verbs -i plural marking on nouns
Word/lemma	'Words'	-

Table 2 Hypothesised hierarchy for Italian L2

2 Italian test structures and their processability

Our test of the typological plausibility of PT for Italian focuses on the development of four morphological and syntactic structures in L2 learners, involving some of the marking and agreement phenomena discussed above. Table 2 offers a summary description of these structures and their hypothesised location in the PT hierarchy. The middle column shows that the PT-derived hierarchy is based on the concept of information exchange between constituents of a string. The structures selected for the test distribute over three implicational stages of the processability hierarchy, i.e. lexical < phrasal < interphrasal. The hierarchy predicts that:

- 1) plural *-i* marking in nouns and *-to* past marking in verbs will be acquired before NP agreement; and
- 2) NP agreement will be acquired before topic–object agreement.

a NP Agreement and noun marking: In LFG, the morphological component, which plays an important role in the selected structures, operates on the basis of a functional description of the sentence, as is illustrated in (3):

- 3) Ho tanti amici australiani
have1-SING many friends australian-MASC/PL
“I have many Australian friends.”

The functional descriptions of the sentence and the lexical entries must match in order to ensure well-formedness. Thus, the c-structure for this sentence, in Figure 5, shows that the lexical entries under the NPOBJ function all share the same NUM(ber) and GEN(der) information. The search for the lexical item *amici* is instigated (according to Levelt’s model) by conceptual structure, which would specify the number and gender information for this item (e.g. *amici*, rather than *amico*, etc.). The specific value of the features of the noun, shown in its lexical entry, are then unified with the other components of the phrase, i.e. the Determiner and the Adjective.

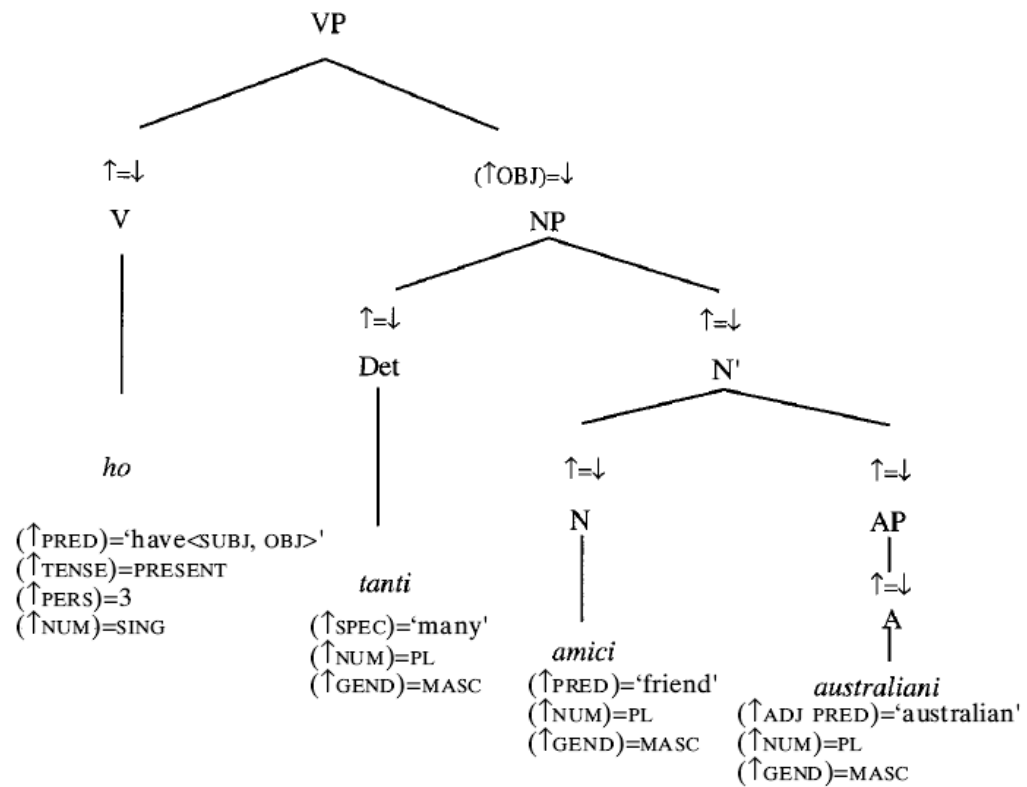


Figure 5 c-structure for *ho tanti amici australiani*

This process of feature unification between the noun and its modifiers is entirely restricted to the noun phrase (the V can indeed have different values as is the case here, yet the sentence is wellformed). To achieve this phrasal morphological matching process the learner must be able to identify the head (source) and exchange the feature information with the modifier(s) (destination).

On the other hand, from a processing point of view, the learning task for assigning the correct value to the characteristic features of the Italian noun (say the NUM feature of *amici* vs *amico*) is a purely 'local' operation whose value depends purely on conceptual information regarding the referent, as is represented in their respective lexical entries in (4).

- 4) amici N (↑PRED)="friend"
 (↑GEN)=MASC
 (↑NUM)=PL
 amico N (↑PRED)="friend"
 (↑GEN)=MASC
 (↑NUM)=SING

This operation requires no exchange of information with other elements and is therefore lexical. The task for the learner is to learn that the lexical category ‘noun’ marks plurality by alternating the end vowel of the word. Of course, the Italian language permits a range of noun classes (compare Table 1), each with its own alternations. But what is of interest here is the process of systematic marking of grammatical or semantic information and how this may involve transfer of information between constituents. The learning of specific morphological affixes is an additional task for the learner, which at present lies outside the scope of PT.

b Verb marking: Another case of local operation occurs in Italian when the morpheme *-to* is added to a verbal form. This is akin to the addition of the past morpheme *-ed* or *-te*, to English or German verbs respectively. Tense information is contained in the lexical entry of the verb. In the case of Italian L2, the addition of *-to* to verb forms is a widely attested early developmental structure used for marking past tense, jointly with perfective aspect. This happens before other kinds of marking (e.g. person) are established (see Giacalone Ramat, 1992, 306). Unlike native Italian, where *Vto* is a nonfinite past participle, normally requiring a finite auxiliary, learners may produce *V-to* without any auxiliary as in (5).

5) * olivi ritornato l’oca (Lois)
 olivesPL returned the duck
 “The duck returned (with) the olives.”

The lexical entry for the learner’s verb may be represented, sublexically, with an entry for the verb stem (*ritorna-*) and another for the affix (*-to*) as in (6)

6) *ritorna-* Vstem (↑PRED)=“return<(↑SUBJ)(↑OBJ)>”
 (↑SUBJ NUM)=. . .
 (↑SUBJ PERS)=. . .
-to Vaff (↑TENSE)=PAST
 (↑ASPECT)=PERF

where the learner’s V(erb) appears without specified subject and person information (usually carried by an AUX in native perfective structures). This is to be expected in

early learners, since an appropriate auxiliary-lexical-verb exchange of information would be characteristic of a higher stage, i.e. would require a phrasal operation. Adding the past affix on the verb, on the other hand, requires no exchange of information with other constituents. The learner's task here is to learn that affixation of the morpheme *-to* adds the feature-value pair [TENSE=PAST] or, alternatively, [ASPECT=PERF(ective)], or both.

c Topic-object agreement: Italian has both grammatical agreement with the subject and anaphoric agreement with the object, either of which would require interphrasal procedure because their production involves an exchange of information between phrases with different heads. However, due to the structural ambiguity of the morphological subject marker, as seen in the previous section, we focus here on the object marker. The interphrasal nature of this agreement was hypothesised for an analogous structure in Spanish by Johnston (1995, 15), who called it “object agreement.” This is reconceptualised here as ‘topic-object agreement’, following from the discussion of Bresnan and Mchombo (1987) above. This is, in short, the exclusively anaphoric agreement of the object marker (OM), cliticised to the verb, with the Topic NP. Thus, when the OM is present it may co-occur, redundantly, with a floating NP_{TOP}. In such cases, the object clitic and the NP_{TOP}, being co-referential, must exchange semantic features such as gender and number. Naturally, if the NP_{TOP} does not occur then the production of the simple clitic attached to the verb does not call for interphrasal procedure.

The diagrammatic representation in Figure 6 shows more clearly the information flow between the constituents of a ‘topic-object agreement’ construction such as (1c) above. The relationship between the c-structure and its corresponding f-structure is further specified in the lexical entry of terminal nodes below.

7)	i	D	(↑DEF)=+
			(↑NUM)=PL
			(↑GEN)=MASC
Biscotti	N	(↑PRED)、“biscuits”	
			(↑NUM)=PL
			(↑GEN)=MASC
li	Cl	(↑PRED)=‘pro’	
			(↑CASE)=ACC
			(↑PERS)=3
			(↑NUM)=PL

(↑GEN)=MASC
 compra V (↑PRED)="buy<SUBJ, OBJ>"
 (↑TENSE)=PRESENT
 (↑PERS)=3
 (↑NUM)=SING
 Giovanni N (↑PRED)="Giovanni"
 (↑PERS)=3
 (↑NUM)=SING
 (↑GEN)=MASC

The f-structure in Figure 6 satisfies LFG's well-formedness conditions (Bresnan, 2001, 63) of completeness and coherence: every function designated by a PRED is present in the f-structure of that PRED and, conversely, every argument function in the f-structure is designated by a PRED. The presence of TOP is accounted for by the 'extended coherence condition', according to which a nonargument or discourse function such as TOP is identified with or anaphorically linked to an integrated function. In Figure 6, the solid line joining the OBJ and the TOP functions indicates that the two functions are co-referential and, hence, anaphorically linked. This is also reflected in the lexical specification of these functions: the entry for the Cl(itic) *li*, bears the same NUM and GEN values as the N(oun) *biscotti*, which is the PRED value of TOP. The information exchange occurring between NPTOP and the clitic object marker in the VP is, according to PT, an interphrasal process, since the unification process involves two different phrases. So the learner must learn to identify the grammatical function of the NPs and verb markers, as well as match gender and number information across different phrases.

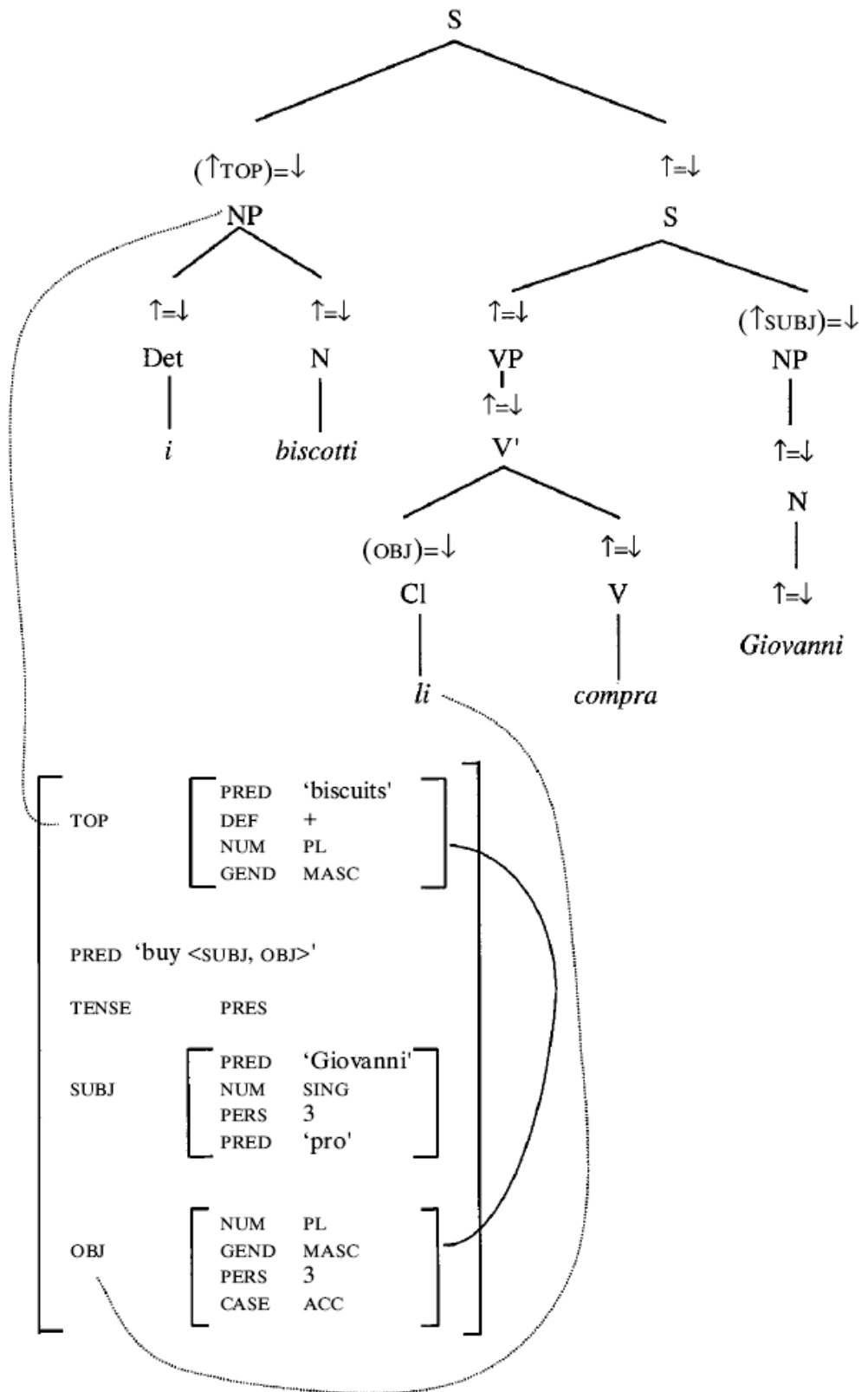


Figure 6 c-structure–f-structure correspondence for *i biscotti li compra Giovanni*

3 The study

An empirical study focusing on the test structures is presented below with results for each informant (names are fictitious), along with the method used for identification and quantification. The data comes from a cross-sectional study involving 6 English L1 learners of Italian L2, 2 each from beginner, intermediate, and advanced courses at the University of Western Sydney, as well as 1 Italian native speaker control. Each informant was interviewed over two sessions totalling between 35 and 60 minutes. One session included free conversation, a picture description, and a story-telling task. A shorter second session focused on an ‘object-first’ communicative task, devised to elicit structures with object clitics. This task presented first the picture of a food item (the semantic object), and then that of an animal (the semantic agent), who was meant to contribute this item to a communal animals’ dinner. Tasks were tried with a native speaker control who produced all targeted structures naturally. The collection yielded a total of 16,779 words, 47.4% produced by the non-native informants. Table 3 below shows results for all informants, including the native speaker control.

The acquisition criteria applied throughout, including the Japanese data in the next section, do not depend on accuracy, but follow Pienemann (1998, 144). He argues that the concept of emergence (first production of a syntactic rule) can be applied to morphological development but with “refined analyses which ‘neutralize’ the effect of unanalysed entries in the learner’s lexicon.” The full distributional analysis must display a productive application of the rule in appropriate contexts. This excludes echoic or formulaic applications by demanding that the rule is supplied more than once in lexically and structurally varied environments. Exemplifying this criterion via the tabulated plural *-i* production, Trish fails to produce the rule in 13 (plural) contexts (–13); she also supplies it five times in singular contexts (>5), and produces it in the appropriate context five times (+5). On closer inspection, the latter include two echoic uses, two cases without final-vowel alternation, and one of contrastive use (*giorno~giorni* “day~days”) but the context was plural in both cases: *cinque giorni*, “five days”, was repaired in her next turn to *cinque giorno*, “five day.” This does not, therefore, satisfy the above-mentioned criterion. By contrast, Lois did, because she supplied the structure 14 times in obligatory contexts (+14), including vowel alternation (e.g. *bambino/bambini*); she nevertheless failed to do so five times (–5), and overgeneralised once (>1) in a nonplural context.

Table 3 Cross-sectional study (Italian L2)

Informants	Trish	Lois	Carrie	Ann	Toni	Amy	Pat (native speaker)
Topic-object agreement	0	+0-19>0	+0-11>0	+1-3>0	+11-1>0	+11-2>0	+16-2>0
NP agreement (-i plural)	+0-1>0	+1-5>0	+3-1>1	+7-1>0	+4-3>1	+6-2>0	+10-0>0
Past/perfective (V-to)	2 (1)	10 (9)	16 (3)	26	112 (11)	54 (3)	60
-i plural marking	+5-13>5	+14-5>1	+12-2>2	+21-21>0	+17-2>1	+10-0>0	+9-0>0

a -i plural marking on nouns: These were scored as plural even where *-i* may be the incorrect formative, i.e. where standard Italian requires an *-e* ending on account of an additional [class] feature. So in (5) above, for instance, **olivi* was scored as plural even though the native plural form is *olive*. All learners, except Trish, acquired this rule.

b V-to past/perfective marking on verbs: Native Italians select an AUX(iliary) as well as the *-to* marker for mapping sentential past/perfective. Learners may produce the morphological marker without the auxiliary; e.g. **ritornato* in (5) above. This developmental characteristic may persist in more advanced learners and is signalled in brackets next to the total production of the marker. For example, Toni adds the affix 112 times, 11 of which are without the auxiliary.

c NP (-i plural) number agreement: Both modifier positions (before or after the noun) were scored. Again, gender or morphophonemic factors were disregarded. Cases such as (8) score twice since both modifiers agree with the noun.

8) non ho tanti amici maschili (native:maschi) (Ann)

not have-1SING many-MASC/PL friends-MASC/PL masculine-MASC/PL

“I don’t have many male friends.”

Trish and Lois create contexts for this rule but do not demonstrate productive use.

d Topic–object agreement: Object clitics produced in pre-verbal position as in (9) were counted, as well as those (few) that were suffixed to nonfinite verbs, provided the coreferential topic NP was also present within the same turn or clause.

9) i broccoli li compra il cane (Toni)

the broccoli-MASC/PL them-MASC/PL buys the dog-MASC/SING

“The broccoli, the dog buys it.”

Amy and Toni produced evidence of clitic agreement with the coreferential topic. The regularity of vowel alternation for mapping the number/gender features on the direct

object clitic allowed for all topic–object agreements to be counted, e.g. in (10) where the topic is feminine and singular and so is the clitic *la*.

10) *la torta .uhm la compra uhm il uhm maiale* (Amy)

the cake-FEM/SING it-FEM/SING buys the pig-MASC/SING

“The cake, the pig buys it.”

The empirical results for all 6 learners support the two hypotheses formulated earlier. The scalability (Hatch and Lazaraton, 1991: 204–16) of the implicational table (Table 3) generated by these results is 1.0, which suggests an implicational relationship between the different processing levels and supports both the PT-derived hypothesised sequencing of structures for Italian and the typological validity of PT.

III The acquisition of Japanese L2

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IV Conclusions

The empirical results from learners of two L2s, Italian and Japanese – which are typologically different from each other and from languages previously tested for PT – support the initial propositions:

- 1) that the notion of ‘exchange of grammatical information’ is a productive concept for typologically diverse languages; and
- 2) that predictions can be derived from the general architecture of the theory for these two languages and that these predictions would be borne out by empirical observation.

The hypotheses would have been falsified if the implicational relationship lexical < phrasal < interphrasal had been contradicted in our studies. But the predictions did turn out in positively both studies, thus supporting the case for the typological validity of Processability Theory.

Acknowledgements

We wish to thank Avery Andrews and Peter Sells for helping us improve our understanding and representation of LFG, and Yasuhiro Shirai for invaluable advice on data analysis. We are grateful to Gisela Håkansson, Yuki Itani-Adams, Louise Jansen and Fethi Mansouri for reading and discussing with us earlier drafts, as well as two anonymous reviewers for *Second Language Research* whose comments greatly improved this article. We wish to thank especially Manfred Pienemann for his generous comments and help at crucial stages in the writing of this article, and we are also very grateful to Simone Duxbury and John DeFrancis for their skilful editing. Remaining errors are solely our responsibility. Finally, we wish to thank our students and helpful informants at the University of Western Sydney.

1.4 Processing constraints on L1 transfer

Pienemann, M., Di Biase, B., Kawaguchi, S. and Håkansson, G. (2005). Processing constraints on L1 transfer. In J. F. Kroll and A. M. B. de Groot (eds.), *Handbook of bilingualism: Psychological approaches*, pp. 128-153. Oxford and New York: Oxford University Press.

This is a very long paper dealing with several languages which are typologically quite different. For reasons of space, only some parts of the published paper are reproduced below: (i) the abstract, in order to give a general overview of the original, (ii) my own specific contribution regarding the acquisition of Italian, and (iii) the conclusion, because I contributed to the general organisation of the paper and discussed with other co-authors their own specific sections.

My own contribution here argues against the "full access/full transfer" hypothesis proposed by Schwartz and Sprouse (1994) and against parametric approaches such as White's (1989). Given the typological nature of the argumentation of the whole paper, Italian, as a pro-drop language, is significant in showing that learners latch on early to the canonical word order of their L2 even when it is different from their L1. Learners of Italian produce null subject sentences from the beginning of their learning, even though their L1 (English) requires obligatory subject. This is because 'canonical order' coincides, universally, with the first L2-specific stage (category procedure), according to PT.

This article, as well as making a strong case for developmental constraints on transfer, clearly states, among other things, PT's position on 'canonical order', anticipating the 'Unmarked Alignment Hypothesis' explicitly formulated in the new PT extension (§ 2.2). For the learner, the initial hypothesis for word order coincides with the most prominent word order in the L2 – the default pattern in that language. This requires no exchange of grammatical information within the sentence because it relies on direct mapping of semantic roles onto surface structure. Consequently it has relatively low processing requirements. This explains why a learner of Japanese L2 can produce perfectly grammatical sentences very early in their learning career (see section on Typological Distance, at no disadvantage to the original paper, not reproduced here, pp. 145-146).

Italian, however, unlike Japanese, has a complex pattern of Subject-Verb agreement, so it is highly unlikely that learners of Italian will

produce grammatically correct sentences at Stage 2 except by chance or by chunk. Indeed, they don't, producing verbs most often with the 'wrong' ending. On the other hand, if "full access/full transfer" was an option for learners, then those with an L1 characterised by obligatory subjects should not take the liberty of dropping them, especially at the beginning (i.e. the last stage of their L1) - but they do drop them and rely on contextual and pragmatic cues, as native speakers also do, to identify person deixis, even though they cannot rely on morphological cues. As a matter of fact, the learning of the full morphological paradigm of the six Italian persons will only happen later rather gradually (hardly a parametric event)

This theme, central to Italian, is further developed in the introductory section to this Chapter 1, while morphological development is the dominant theme of the previous three papers (cf. §§ 1.1-1.3). The next chapter, on the other hand (Chapter 2), will expand on the development of syntax in Italian L2, venturing beyond the boundaries of original 1998 PT.

Pienemann, M., Di Biase, B., Kawaguchi, S. and Håkansson, G. (2005). Processing constraints on L1 transfer. In J. F. Kroll and A. M. B. de Groot (eds.), *Handbook of bilingualism: Psychological approaches*, pp. 128-153. Oxford and New York: Oxford University Press.

Summing up, we find that all learners of Japanese studied longitudinally by Kawaguchi start with SOV word order and with subject omission, although their first languages follow an SVO pattern and one of the L1s does not permit subject omission. Obviously, these findings falsify the hypothesis that first language features are transferred to the second language at the initial state.

This raises the question as to why second language learners would start out with a structure that is typologically rather distant from their first language. The answer is implied in PT, and more specifically, in the ‘developmentally moderated transfer hypothesis’ advocated in this paper. In relation to the initial hypothesis for word order, PT predicts the use of a canonical word order pattern. Japanese follows a canonical SOV word order, which requires no exchange of grammatical information within the sentence as it can rely on direct mapping of semantic roles onto surface structure (cf. our discussion above). In other words, because of the low demands on processability, this word order pattern can be processed at the initial stage of clause development despite the typological distance between the first and the second language; for a more detailed and formal account of information distribution in Japanese syntax see Kawaguchi (2005) and Di Biase and Kawaguchi (2002).

This analysis of the initial word order in the acquisition of Japanese as a second language also highlights a key difference between Clahsen’s (1984) strategies and the processability approach. As Vainikka and Young-Scholten (1994) and Towell and Hawkins (1994) point out, Clahsen’s strategies would predict that the initial hypothesis in L2 acquisition is formed on the perceptual array ‘actor, action, acted-upon.’ thus producing universal SVO patterns for all L2s. No such assumption is made in PT. The only stipulation that exists at this level is that no grammatical information be exchanged within the sentence. This constrains the language processor to produce only structures that can be processed without such information exchange. SVO and SOV both satisfy this condition.

Di Biase (in preparation) has studied another typological constellation of the same kind as Kawaguchi. In his study he focused on the acquisition of a pro-drop language¹¹ (Italian) as L2 by speakers of a non pro-drop language (English). According to White's (1989, 87) analysis, this type of learner has to learn two things: 1) the fact that null subjects are permitted, and 2) the circumstances in which the language makes use of null subjects. These assumptions are derived from the more general assumption that L2 learners transfer the setting of the L1 parameter to the L2.

Di Biase (in preparation) carried out a longitudinal study with two Australian informants over a one-year period. Both informants were university students of Italian. One informant (Ernie) was a beginning learner who had had no previous exposure to the language. The first set of data (= t1) was collected as soon as the learner started producing utterances with more than one constituent. The second informant (Lisa) was an intermediate student when the first set of data was collected.

Table 9				
Realization of grammatical subject with lexical verbs in percent				
	t1	t2	t3	t4
Ernie				
Null	54	64	67	84
Pronominal	4	24	4	2
Referential	43	12	29	14
Lisa				
Null	71	52	59	79
Pronominal	24	45	30	11
Referential	6	3	11	13

¹¹ A language in which the co-referential grammatical subject does not need to be pronominalised.

Table 9 compares the three different types of realisation of grammatical subjects, null, pronominal and referential, in both informants. It is easy to see that, contrary to White's prediction, both learners start with a high level of null realisations of grammatical subjects. In fact, the level of null-subject realisations found in these data is not unlike that found by Bates (1976) in her study of Italian first language acquisition, namely about 70%.

In terms of the processability hierarchy, null-subjects are placed at the same level as pronominal subjects because both are directly derived from c-structure (for a detailed analysis of information distribution in these structures see Di Biase and Kawaguchi, 2002). Therefore Di Biase's finding supports the prediction that the acquisition of a typologically distant L2 does not necessarily cause a learning barrier as long as the structure in question is located at the lower end of the processability hierarchy – even if it does not exist in the L1.

This finding is supported by other studies with the same typological constellation as that in Di Biase (in preparation). For instance, Phinney (1987) studied the acquisition of null subjects in English learners of Spanish (i.e. L1 = - pro-drop, L2 = + pro-drop) and also found an early appearance of null-subjects. Liceras and Diaz (1999) studied the acquisition of L2 Spanish (+ pro-drop) by speakers of Chinese, English, French, German and Japanese (i.e. speakers of both types of languages) and found a consistent early appearance of null-subjects in all informants.

Summary and conclusion

In this paper we proposed that L1 transfer is developmentally moderated. This hypothesis follows from the internal design of PT, which provides a framework for relating specific L1 and L2 structures to a universal hierarchy of processability, based on grammatical information transfer in the production process. This overall framework predicts which processing procedures are required for the processing of specific L2 structures. This is the basis for the general prediction that L1 knowledge and skills can be utilised for L2 processing only if the necessary processing resources have developed.

Our developmentally-moderated-transfer hypothesis was tested empirically in the context of both typological proximity and typological distance. We demonstrated that, in both types of context, transfer may or may not occur. The key predictive factor is always processability. In other words, processability acts as a constraint on L2 transfer

and may override typological distance. In addition to this constraining effect, processability also has a facilitating effect which sets in (given structural L1 – L2 overlap) once the L2 has developed to the point at which the L1 structure is processable. This is evident in the advantage of Turkish learners of German over Russian learners of the same L2, with respect to word order (cf. Haberzettl, 2000).

The empirical studies discussed in this paper also shed light on the validity of the set of competing approaches to L1 transfer discussed above. We can now state that the “full access/ full transfer” hypothesis by Schwartz and Sprouse (1994) is strongly falsified by all cases of non-transfer reported above, since the latter authors assume that the final state of the L1 is the initial state of the L2. The falsification of this assumption is particularly obvious in the study by Håkansson et al. (2002), which shows that Swedish learners of German do not transfer verb-second, although both languages contain this structure.

The so-called “minimal tree hypothesis” predicts that L1 word order is transferred to L2. This is falsified by Kawaguchi’s (in preparation) observation that Australian learners of Japanese start with an initial SOV hypothesis. This observation and the study of Swedes learning German both also falsify the transfer hypothesis implied in the Competition Model (cf. MacWhinney, this volume) according to which all transferable structures will be transferred at an early stage. The above studies show that this prediction is not borne out by empirical data. Swedish learners of German do not transfer V2 to German (which would yield a correct result) and Australian learners of Japanese do not transfer SVO to Japanese (which would yield an incorrect result).

The strong initial transfer assumption inherent in MacWhinney’s (1997, this volume) competition model also produces predictions which are falsified by empirical data, particularly by the Swedish-German study (Håkansson, Pienemann and Sayehli, 2002), which shows that verb-second is not transferred from Swedish to German even though this structure exists in the L1 AND in the L2. All other cases of non-transfer discussed above prove the same point.

In addition, it may be useful to consider the explanatory parsimony of MacWhinney’s assumption that “...all aspects of the first language that can possibly transfer to L2 will transfer” (MacWhinney, 1997, 119). The reader will recall that MacWhinney (1997) illustrates his point about structurally “impossible transfer” using German and English as an example. German nouns are implicitly marked for grammatical gender whereas English nouns are not. He concludes that German learners therefore have no basis for

transferring the German gender system to English. Therefore this set of features is not included in his list of things that will be transferred.

Our point is the following. Whereas L1-L2 contrasts are transparent to the linguist, the question remains as to how the learner recognises these differences. The reader will recall that at the beginning of this paper we argued that the relationship between German and English diacritic features (of nouns) is not obvious to the learner and that a full transfer hypothesis would lead to unwieldy hypotheses. Conversely, it is precisely this lack of transparency in the relationship between L1 and L2 that makes a radical no-transfer hypothesis equally unlikely.

Assuming a lexically driven model of language production such as the one proposed by Levelt (1989), gender is one of several diacritic features residing in the lexical entry for (German) nouns, and the learner will have to discover for all lexical classes (such as noun, verb etc.) which of the L1 diacritic features are also marked in the second language, using known or unknown linguistic means, and which additional diacritic features are marked using which linguistic means. This is a monumental learning task. Assuming that diacritic features such as ‘gender’ are not transferable for structural reasons would amount to a classical conditioning assumption within the competition model, which would assume a strictly linear relationship between input and output, following the motto “if it is not in the input it cannot occur in the output.” As noted above, empirical data falsify such an assumption. This is also illustrated by the well-attested example of over-generalisation in English regular past marking, such as in Cazden’s “She holded the baby rabbits...” (1972, 96).

As these examples show, the assumption of a strictly linear relationship between input and output and a rich transfer assumption produce predictions which are falsified by empirical data – at least for the domain of morphosyntax. A rich transfer assumption is not supported in the area of bilingual first language acquisition either. According to De Houwer (this volume), no studies have empirically backed up the existence of the sort of language repertoires that would be predicted to develop in bilingual children in line with a transfer theory. Indeed she maintains that the interpretation of morphosyntactic features of the two input languages would assume that processing mechanisms in bilingual children would enable them to “approach each input language as a morphosyntactically closed set.”

The gist of the cross-linguistic survey of L1 transfer presented in this chapter can be summed up in two fundamental trends:

(1) Structures higher up the processability hierarchy are never transferred at the initial state – regardless of typological constellation.

(2) Initial word order may vary as long as the flow of grammatical information is restricted to the initial stage of processability.

These trends clearly contradict any theory that places emphasis on extensive L1 transfer at the initial state and support a view of transfer that is sensitive to the developmental state of the learner's language.

Chapter 2

Extending Processability Theory: Exploring the Syntax-Pragmatic Interface

While the first chapter of this thesis presented my contribution to the description of the developmental path followed by learners of Italian L2 within a processability theory framework, Chapter 2 will present my contribution to the extension of PT itself. This extension opens a new area of research for the theory: the development in L2 learners of language-specific discourse pragmatics constraints on their L2 morphosyntax. Crucially, it helps clarify and motivate some turning points in learners' syntactic development, which in the original version of PT relied on an initial hypothesis of syntax based on the serial order principle (Pienemann, 1998, 84 ff) to map conceptual structures onto linguistic form whereby the learner directly mapped the agent onto N, the Agent onto V and the patient onto the following N. PT was then non-committal as to how much this represented a universal order – unlike Clahsen's (1984) 'strategies'.

The new extension proposes instead an Unmarked Alignment Hypothesis, which does not adhere to a universal SVO as the initial syntactic organisational principle in L2 acquisition and leaves the linear order open according to the specific input of the language being learned. In other words after an initial single concept to single word (formulaic) mapping (Stage 1) the learner will order those single words (Stage 2) according to the L2 input, i.e. SVO for English, Chinese, Italian, etc., or SOV for Japanese, Korean etc. This includes the possibility of V, or VO for Chinese or Italian and V and OV for Japanese or Korean (for the so-called 'pro-drop' languages). The 'sentence' at this stage is underspecified ('simplified' in the original PT terminology) but it soon acquires a rigid word order (the canonical order of that language).

To move out of this rigid order the learner will begin to contextualise (e.g. in time, or space and so on) the canonically ordered sentence by *adding* some adjunct to canonical order or questions in focus position. Notice that the canonical order sentence, at this stage, remains underspecified with respect to grammatical function of its core referents. The novelty is that these adjuncts or question words may be introduced, by the learner, as topics (or focus in questions) and, for pragmatic reasons, may come to occupy a prominent position thus nudging the canonical order structure sideways. In the original PT this greater range of structural choices was accounted for by recourse to 'saliency', a general cognitive strategy, as explained in Pienemann (2005b, 26ff.) which, turned out,

in any case, to be unnecessary for German (Pienemann, 2005c, 65ff.). Nevertheless, the Topic hypothesis motivates more clearly, and coherently now, a wider range of phenomena cross-linguistically, including topicalization of arguments, on the basis of grammatical theory, i.e., the syntacticised discourse functions. While responding to the discourse-pragmatic context these syntacticized discourse functions do not, of course, exhaust or fully account for pragmatics and discourse. Rather, as explained in the papers within this chapter, they sit at the interface with syntax and impinge on sentence construction. These have now a formal status in LFG (among other grammatical theories) and go a long way together with Lexical Mapping Theory (see § 2.2) in accounting for the range of word order patterns available to a native speaker.

I have selected three papers to illustrate my contribution to this area, two of them with other authors, which testifies to the importance of working within a research-sensitive context with colleagues who share a theoretical framework and an interest in theory construction – and, fortunately, there is, quite a lively and distributed Australian and international context for PT (cf. Pienemann, 2005c). I will comment on each of the three papers in an attempt to characterise my contribution particularly to the main article in § 2.2 and § 2.3 , a paper which presents the PT extension to an Italian audience and tests the new hypotheses on learners in the Italian context. This paper will conclude Part A of this thesis.

2.1 The Topic Hypothesis in Processability Theory

Paper presented at the 5th PT International SLA and Processability Symposium, Deakin University, Melbourne, 26-28 September 2005.¹²

This paper, concerning the role of the Topic Hypothesis in PT, perhaps best exemplifies the specificity of my own contribution to the overall development of this theoretical extension, engendered, it should be said, from attempting to work out PT-based hypotheses for specific languages such as Italian and Japanese.

The hypotheses explained in this and the following paper, whose genesis I would place around the publication of Di Biase and Kawaguchi (2002), had a rather long incubation time. The article just mentioned (§1.3) forced me to work out an LFG grammatical formalism that could account for certain typological peculiarities of Italian, vis-à-vis the more PT-familiar German and English. Lexical Functional Grammar (Kaplan and Bresnan, 1982, Bresnan, 1982), the chosen grammar for the original PT (Pienemann, 1998), was now even more appealing in the newer version (Bresnan, 2001, Dalrymple, 2001, Falk, 2001) because, in response to problems arising from LFGers' typological work on both configurational and non-configurational languages, it developed its formalism to account, coherently and cross-linguistically, for the mapping of grammatical relations inherent in the lexicon of each language (Lexical Mapping Theory), on the one hand, and the formal mapping of pragmatically motivated 'grammaticised' discourse functions on the other hand (following Bresnan and Mchombo's seminal work (1987) on Topic, pronoun, and agreement in Chicheŵa). Without significantly changing the original 1982 formalism (cf. Falk, 2001, 194), these developments in LFG dealt plausibly with two crucial sources of language-specificity, which are central to SLA research: the lexicon, and surface organisation (c-structure).

While all three authors looked at and worked on the overall article, Kawaguchi's contribution focused on the development of the Lexical Mapping area (cf. Kawaguchi, 2005), but her overall contribution was particularly important as her work focused on Japanese, a language that is both Topic prominent and Subject prominent (Li and Thompson,

¹² The theoretical framework proposed here is based on a joint chapter by Pienemann, M., Di Biase, B. and Kawaguchi, S. (in press). Extending Processability Theory. In M. Pienemann (ed.), *Cross-linguistic aspects of Processability Theory*. Amsterdam: John Benjamins.

1976). Needless to say, the overall fit and coherence for the extension could not have been achieved without the theoretical import of the architect himself of the original PT, Pienemann, who could see how each new component might fit within the architecture of PT and could test their plausibility from a broader psycholinguistic and SLA research perspective.

My contribution to § 2.3 is fairly substantial throughout, I believe. I helped with the formulation of the Unmarked Alignment Hypothesis as an initial ordering principle for learners to move on to various degrees of additions and disruptions of the canonical order, as they learn to attribute grammatical functions correctly and then master discourse-pragmatic choices. One form of this hypothesis was already part and parcel of the original PT (cf. Pienemann, 1998, 84-5), with concepts such as 'serial order strategy' used to "map semantics onto linguistic form," negotiate procedural gaps and organise canonical schema. The current formulation owes as much to Pinker (1984, 1989) as to recent Optimality Theory work done within LFG (e.g. the collection of articles in Sells, 2001).

The Unmarked Alignment Hypothesis, whose title Pienemann selected against contenders such as 'initial state', or 'initial hypothesis of syntax', for instance (cf. Platzack, 1994), signal that PT does not subscribe to a single and rigid universal canonical order, as Bohnacker (2006, 447) still appears to believe. In fact it accommodates Japanese (head-last for L2 as well as L1 acquisition) and in principle any other language. It is not unreasonable to believe, pace Bohnacker, that the canonical order (of a language) is easier to process than alternative orders in the same language, as has been found experimentally (e.g. Sasaki, 1998 for Japanese native and non-native speakers, or Weyerts, Penke, Münte, Heinze and Clahsen, 2002 for German natives).

In regard to the topic hypothesis, Italian is known as a pro-drop language while most of the other languages described in PT (German, Swedish, English) are non pro-drop. Italian word order is also particularly sensitive to discourse focus, and it prefers topicalisation to passivisation when giving thematic prominence to an argument of the verb. I looked at these phenomena from the point of view of having to learn them in the L2 and came to the conclusion that the learning of topic/focus discourse functions obey processing constraints and their development can be predicted much as in the original version of PT. Indeed this hypothesis, introducing Lexical Functional Grammar (LFG)'s notion of functional uncertainty (Bresnan,

2001, 64-9) to developmental issues, helped better characterise how learners gradually proceed from a canonical order position.

Similarly, the Lexical Mapping Hypothesis, which utilises other LFG developments, refined in collaboration with Satomi Kawaguchi and Manfred Pienemann, utilises the same learning principle of developing from default mapping to more marked and special mappings. Again, Pinker's (1984) work on first language acquisition turned out to be seminal, where he introduced the notion of 'exceptional verbs', i.e. verbs such as *receive* which map the Beneficiary (rather than the Agent/Giver) on the Subject. Similarly the L2 learner starts from canonically-mapping verbs (Agent/Experiencer on Subject, Patient/Theme on Object) and gradually learns that not all verbs behave that way.

One more general issue which these new hypotheses help resolve, with the help of LFG's formalism incorporating discourse functions and Lexical Mapping Theory, is that PT is now able to shed the 'saliency' explanation to which it made recourse for a series of 'fronting' and other phenomena in German L2¹³ and English L2 development.¹⁴ Psycholinguistic research (as reviewed in Levelt, 1989) also indicates that languages tend to reserve for Topic the first (or in any case an early) position in the clause. In language processing, the topic is determined before lexical access and is often mapped on the subject, but, depending on the perspective adopted, it may be mapped on other grammatical functions, such as the object or an adjunct, and it may participate in different constructions (active, passive and so on). Learning to assign the topic function in the L2 will involve, then, lexical, syntactic and/or morphological operations (including 'fronting', dislocation, morphological marking and others) which are likely to be language-specific in their distribution. That is what English may preferentially express with a passive construction (involving the Lexical Mapping Hypothesis), and Italian may preferentially express with word order choices (involving the Topic Hypothesis).

The language learner will then need to build those processing resources that allow for lexical mapping and discourse functions to be correctly marked in the target language and respond to language-specific discourse-pragmatic requirements. PT is now in a better

¹³ This was one remaining element of Clahsen's 'strategies' approach, otherwise rejected in the original (1998) PT version.

¹⁴ Cf. Larsen-Freeman and Long's (1991) excellent explanation of what Long named the 'predictive framework', on the basis of conference presentations and published work by Pienemann and Johnston in the mid 1980s.

position to look at integrating discourse pragmatic variables in its research.

2.1 The Topic Hypothesis in Processability Theory

Paper presented at the 5th PT International SLA and Processability Symposium, Deakin University, Melbourne, 26-28 September 2005.¹⁵

Abstract

The objective of this paper is to present an empirical study on the Topic Hypothesis, one of the current Processability extensions (Pienemann, Di Biase and Kawaguchi, forthcoming) and test out its applicability to Italian L2.

The Topic Hypothesis is based on non-canonical mapping of constituent structure onto grammatical functions (technically association between c- and f- structure). In second language acquisition learners will initially not differentiate between SUBJ and other discourse functions (e.g. TOP). The addition of non-arguments adjuncts (XP+Canonical order) instantiating contextual information (time, place of the event, etc.) will trigger a differentiation of TOP and SUBJ which extends successively to core arguments (e.g. Object). This will require learning of ‘new’ functions, characterised in LFG as discourse functions (Bresnan, 2001), specifically Topic and Focus, as well as various types of information exchange (unification) required by the implementation of these functions.

Levelt (1989, 138-ff.) demonstrates in a number of experiments that in discourse speakers use various linguistic devices to guide the listener’s attention. One such device is topicalisation, which allows the speaker to mark as topic the referent that the message is about. Other devices may involve null realisation of subject, variation in word order or prosodic patterns for focusing, active/passive alternation and so on. These devices are to a large extent language-specific and generate syntactic complexity for the learner, (i.e. beyond canonical order). They need to be learned to ensure effective communication, however, because they aid the representation of meaning in the hearer. Their absence may result in failure, by the hearer, to represent the meaning intended by the speaker. Further, and importantly, these devices are syntacticised (i.e. grammatically encoded), therefore their development in the L2 is constrained by the processability of the structures involved.

¹⁵ The theoretical framework proposed here is based on a joint chapter by Pienemann, M., Di Biase, B. and Kawaguchi, S. (in press). Extending Processability Theory. In M. Pienemann (ed.), *Cross-linguistic aspects of Processability Theory*. Amsterdam: John Benjamins.

The TOP hypothesis will be applied to two studies: one longitudinal and one cross-sectional involving English background formal (instructed) learners of Italian L2 in Australian universities. The longitudinal study looks at the way the discourse function (Topic) develops in a beginning learner in four interviews over one year, while the cross-sectional study involves six learners at different stages of development and one native speaker control.

Power point presentation slides

1.

Introduction

- This presentation aims to discuss Processability Theory and its current extension (Pienemann, 1998; Pienemann, Di Biase and Kawaguchi, in press) in connection to the interface between syntax and discourse-pragmatics in second language development.
- In particular I will focus on motivating and explaining the Topic hypothesis, that is, the role of grammaticised discourse functions in Processability Theory.
- Third, I will present some data from two Italian L2 studies which are compatible with the hypothesis.

2.

Processability Theory (Pienemann, 1998)

outlines a universal hierarchy of processing procedures underlying stages of language development, focusing mainly on obligatory morphosyntactic structures which are acquired following an implicational pattern of feature unification:

- (1) lemma access > lexical > phrasal > interphrasal

3.

Processability Theory extension (Pienemann, Di Biase and Kawaguchi, in press)

adds the developmental dimension of speaker-induced discourse-pragmatic *choices* (e.g. passive, topicalisation) and their marking in syntactic and morphological structure.

Two hypotheses propose to account for the development of this syntax-pragmatic interface in L2 learners:

- the Topic Hypothesis
- the Lexical Mapping Hypothesis

4.

What can these hypotheses contribute to PT?

- Internally: they help clarify or account for a number of syntactic phenomena, particularly in languages that rely more on syntax than agreement morphology, as e.g. Chinese, Japanese;
- but also issues such as e.g. the ‘intermediate’ developmental stage in V2 languages such Swedish L2 or German L2, exemplified for GSL in (2) below where the ADV rule can now be characterised more generally in terms of the XP+Canonical Order stage.

5.

(2) GSL (First and Second years) – Implicational scaling: L1 = Swedish, L2= German

(Håkansson, Pienemann and Sayheli, 2002)

Name	SVO	ADV	INV
Gelika (Year 1)	+	-	-
Emily (Year 1)	+	-	-
Robin (Year 1)	+	-	-
Kennet (Year 1)	+	-	-
Mats (Year 2)	+	-	-
Camilla (Year 2)	+	-	-
Johann (Year 1)	+	+	-
Cecilia (Year 1)	+	+	-
Eduard (Year 1)	+	+	-
Anna (Year 1)	+	+	-
Sandra (Year 1)	+	+	-
Erika (Year 1)	+	+	-
Mateus (Year 2)	+	+	-
Karolin (Year 1)	+	+	-
Ceci (Year 2)	+	+	-
Peter (Year 2)	+	+	-
Johan (Year 2)	+	+	+
Zandra (Year 2)	+	+	+
Zofie (Year 2)	+	+	+
Caro (Year 2)	+	+	+

6.

What can this hypothesis contribute to PT? (continued)

- In pro-drop Languages such as Italian and Spanish L2 where the prevalence of pro-drop can now be accounted for in terms of canonical order where the TOP, undifferentiated from SUBJ, is currently in the discourse focus (PT has now few problems in deciding whether it is subject drop or topic drop, c.f. Liceras and Diaz, 1999). Notice that in learners this ‘drop’ happens regardless of the (morphological) ‘subject marker’ (Bresnan, 2001, 150-51) on the verb (cf. Di Biase and Kawaguchi, 2002, 277-79);

- it can help account for those phenomena where topicalisation of arguments by dislocation from their canonical position is more easily done than with passivisation (e.g. Chinese or Italian vs. English).

7.

Contribution to external connectivity

- It connects with linguistics and psycholinguistic research – where there is strong and growing interest in discourse and pragmatic issues
- It partly connects with language professionals e.g. teachers (who sometimes comment that PT “deals only with morphosyntax!”) and interpreters/translators (the new hypothesis can contribute to language assessment and training at higher stages).

8.

Which topic do we mean in the Topic Hypothesis? Sentence topic!

- According to Levelt (1989, 260 ff), the speaker takes a certain perspective on a conceptual structure to be expressed (this happens in the conceptualiser – that is, before lexical retrieval begins).
- In conceptualisation, then, there is first the choice of topic. When the speakers’ purpose is to expand the addressee’s knowledge about something , the message will highlight this topic concept, to distinguish it from the comment that is made about it. In its turn, the formulator will encode the topic in a ‘syntactically prominent’ position. So, notice that in incremental language generation topichood is decided **before** subjecthood!

9.

- What does “syntactically prominent” mean? It can mean that the topic is encoded as a grammatical subject. Otherwise it can mean that the topic will be encoded early in the sentence, whether or not in the role of subject.

10.

Sentence topic: why is it encoded early in the sentence?

Continuing with Levelt (1989): when the speaker’s intention is to expand the interlocutor’s information about something, the interlocutor may want, first, to find or create an address to which the comment information can be attached. This is easier when the topic information appears early in the sentence.

- It is often the case that the two carriers of syntactic prominence coincide: the subject function is often chosen to encode topic information – and usually precedes the comment information. Bock and Warren (1985) called this “conceptual accessibility” and showed that a highly available concept tends to be encoded in a prominent grammatical function (a lot of support comes from psycholinguistic research on passive structures).
- A topic or a highly accessible entity can be encoded early in the sentence without becoming a subject. (This is harder in English than in languages that have freer word order, such as German or Italian.)

11.

Which topic in the topic hypothesis?

Sentence topic: example

To describe an event where some girl buys some bread an Italian speaker can topicalise the bread (which is fronted and accented), without it being the subject, by encoding the scene as

(3) *il pane* *lo* *compra la ragazza*

the breadMASC-SING itOBJ-MASC-SING buys the girl

where the verb *compra* (“buys”) has an object marker *lo* which carries grammatical agreement with *pane* (masculine, singular). A parallel situation would occur in German where “bread” would bear the accusative case.

12.

Which topic in the topic hypothesis? (continued)

Sentence topic: crosslinguistic conclusion

- Bresnan, from an LFG perspective, would then say that this means that the topic, (i.e. the sentence topic) in Italian and in German is grammaticised, i.e. it is grammatically encoded in a regular way.
- So in Chinese, the object is topicalised when it appears earlier than in its more usual (canonical) post-verbal position – and in Japanese and Korean the topic is grammatically encoded morphologically (with postnominal markers *-wa* and *-nun* respectively) so you can’t miss it!

- In English it is not so easy to disentangle fronting effects from the assignment of subjecthood. This is more easily done in languages with freer word order. (See Andrews (1985), Lambrecht (1994), Givon (2001) for a fuller crosslinguistic characterisation and discussion of pragmatic functions of NP topics.)

13.

Prominence

So, Levelt (1989) shows in his discourse model that speakers attribute prominence in discourse in at least three ways:

- by mapping an argument to the most prominent syntactic position (i.e. making it the SUBJ)
- by early appearance in the sentence
- by prosodic means (e.g. pitch accent)

Languages use and combine these in their own specific ways.

14.

Speaker's choices: drawing attention by **prosodic means**

- (4) a. I think Mary likes Peter
 b. I think Mary likes PETER (not John)

In (4a-b) the theme, *Peter*, occupies the unmarked post-verbal position reserved canonically for new information (in English). Attention may be drawn to it by assigning (contrastive) pitch accent, signalling that the information is not only new but also in contrast with some current assumption.

15.

Speaker's choices: prominent **position**

The speaker may choose to place, at the beginning of the sentence, something other than the grammatical subject.

- (5) a. *Mary kissed Peter yesterday*
 b. *When did Mary kiss Peter?*
 c. *Yesterday Mary kissed Peter (finally!)*
 d. *Peter, I am sure, Mary kissed*

(5a-d) may represent the same eventuality from a propositional viewpoint. But the perspective taken by the speaker is different.

16.

Speaker's choices: (syntax/pragmatic interface)

By topicalising the grammatical object in (5d) attention is drawn towards Peter, the participant that is neither the agent nor the grammatical subject, and yet it occupies the most prominent position in linear order.

Other constituents may also occupy a topical (initial) position, as does *why* in (5b) focalising a question, or *Yesterday* in (5c), signalling that the information is in some way relevant, or in contrast with some current assumption or state of affairs.

In (5a) the speaker makes the most predictable and computationally economical choice (Pinker, 1984) in English: the topic, i.e. the most available entity in the conceptualiser, happens to be the 'agent' in the event, is encoded as the subject and is placed in initial position (cf. the Unmarked Alignment Hypothesis below).

Speaker's choices (Levelt, 1989)

- In encoding a message, then, speakers can choose between affirmative and question forms, between active and passive. They may also choose to place constituents in prominent positions by topicalising them, or they may choose not to do so. But why do speakers do this?
- Levelt (1989, 260ff) demonstrates that in discourse, speakers use such linguistic devices to guide the listener's attention: they contribute to the representation of meaning in the hearer.
- This makes for effective communication (at least between mature native speakers).

18.

Discourse functions and their structural correspondence in Lexical Functional Grammar

- Bresnan and Mchombo (1987) and Bresnan (2001) propose that the phrase appearing in sentence initial position in interrogative clauses in English, and many other languages, bears a grammaticised discourse function in the f-structure, the FOCUS function and that the relativised constituent in a relative clause bears a grammaticised discourse function TOPIC (Dalrymple, 2001, 182ff).
- These functions are now incorporated in the PT extension.

19.

PT Extension

Non-canonical choices lead to linguistic non-linearity, that is, they come at a cost in terms of processing.

This means that the production of the structures which are necessary to achieve those discourse-pragmatic choices are constrained by their processability: learners can only acquire what they can process.

So, where do learners start from?

20.

Unmarked Alignment

According to PT, once learners are able to produce strings of more than one word (presumably categorically different ones) in their L2, they will produce Canonical Order structures.

This was predicted in Pienemann's 1998 version of PT as 'direct mapping' of agents to S and patients to O, and it is in line with many other (both rationalist and functionalist) researchers over the previous two decades or so, who noticed a regular relationship between thematic roles and grammatical functions (cf. Bever, 1970; Bock and Warren, 1985; Bresnan, 2001; Choi, 2001; Levelt, 1989; Pinker, 1984; 1989; Sells, 2001; Slobin, 1985; among others).

We are now in a better position to formalise the Unmarked Alignment Hypothesis

21.

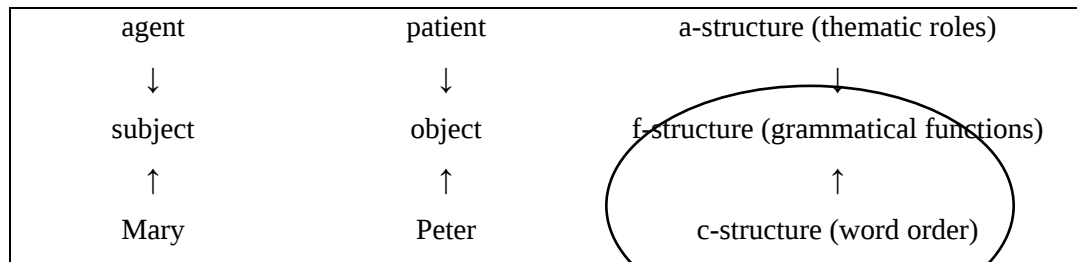
The Unmarked Alignment Hypothesis

In second language acquisition learners will initially organise syntax by mapping the most prominent semantic role available onto the subject (i.e. the most prominent grammatical role). The structural expression of the subject, in turn, will occupy the most prominent linear position in c-structure, namely the initial position.

(cf. Choi, 2001 for an Optimality Theory account of this)

22.

(6) Canonical mapping: “Mary kissed Peter.” kiss <x, y>



The variation in c-structure to f-structure mapping beyond canonical mapping is the concern of the Topic Hypothesis, developed below.

23.

Pecking orders

- There is a preference hierarchy for grammatical functions from subjects, via direct and indirect object to oblique functions (as first pointed out by Keenan and Comrie, 1977);
- and for thematic roles from agent via theme and recipient to source and goal; (Jackendoff, 1990, Bresnan, 2001, Falk, 2001);
- and for linear order, e.g. word order statistics show that 84% of the world’s languages place the subject in front of the verb and objects (Hawkins, 1983).

24.

Bever’s (1970) psycholinguistic experiments with children aged four acquiring English as their first language studied the accuracy with which informants act out test sentences such as (7a-e).

- (7)
- (a) The horse kisses the cow.
 - (b) It’s the horse that kisses the cow.
 - (c) It’s the cow the horse kisses.
 - (d) The cow is kissed by the horse.
 - (e) The dog pats the mother.

(N.B. These sentences were not given in a ‘discourse’ context.)

25.

Bever found that four-year-old children tend to assign the agent role to the first noun in a sentence, even in sentences like (7c) and (7d).

HOWEVER at least two kinds of exceptions have been found experimentally:

- i. event (semantic) plausibility, and
- ii. access to discourse

26.

Semantic plausibility

Strohner and Nelson (1974) confirmed Bever's findings and also included factors such as 'event likelihood' in their analysis, which explains why Bever's heuristics ("first noun = agent") is unlikely to be applied in (7e) which contradicted children's world knowledge ('event likelihood').

27.

Access to discourse: Japanese findings on Bever's 'perceptual strategies'

Hayashibe (1975), and later Sano (1977), applied Bever's experiment to Japanese and confirmed his findings (i.e. children's reliance on Canonical Order at certain stages of development) for Japanese (N.B. Canonical Order = NNV, so there is language-specificity, rather than a single, universally applicable, canonical order).

Otsu (1994) unravels the 'discourse' connection: he also confirms the NNV heuristics for Japanese but shows that 'scrambling' (i.e. the positioning of object before subject) is already accessible in three-year-old children's grammar, **but** that the scrambled argument must be present in the discourse context to be interpretable. This sensitivity to the given-new information pattern is "clearly earlier than any kind of passive, in the acquisition of Japanese grammar" (p. 261).

(N.B. *inter alia*, this implies that NNV is underspecified: we need a specification of N's semantic role and topic function for this 'strategy' to work.)

28.

Otsu's (1994) conclusions on Bever's *perceptual strategies* and their connection to discourse is that:

In sum, children are sensitive to discourse-level cues early in their linguistic development but seem to interpret passives reliably only much later (at age 5 or 6 according to Pinker, 1984, n.d.a.) unless there are clear semantic/situational cues.

29.

Sasaki's (1998) findings on Canonical Order in adult Japanese NS and NNS

Sasaki (1998) demonstrated in on-line comprehension studies of Japanese L2 processing that the canonical sentence schema is easier to process than non-canonical schemata both for native and non-native speakers.

30.

Similarly, on-line evidence of canonical schema used in native speaker adult language processing (Weyerts, Penke, Münte, Heinze and Clahsen, 2002) supports the view that for a configurational language (German) the processor can handle sequences more readily when the subject precedes the object (SVO) than the other way around (OVS), although both sequences do occur in German.

This series of self-paced reading experiments and studies of event-related brain potentials shows a clear subject-first preference and an added processing cost associated with SOV (for German – hopefully not for Japanese!).

31.

Processability Theory (PT), Pienemann (1998) and Topic

The key assumption of PT: L2 learners can produce only those linguistic forms for which they have acquired the necessary processing prerequisites.

PT relies on two fundamental theoretical models:

- ❖ Lexical Functional Grammar (LFG) – A psychologically and typologically plausible formal grammar (Bresnan, 2001, Dalrymple, 2001, Falk, 2001);
- ❖ Levelt's (1989, and further developments) model of the Speaker – A broadly shared psycholinguistic model of language generation (de Bot et al., 2006).

32.

PT's processing procedures form a universal hierarchy based on the architecture of the human processor. These procedures (following Kempen and Hoenkamp, 1987) are activated in mature speakers, given the incremental nature of speech processing in the following order:

1. Lemma access
2. The category procedure (lexical category of the lemma)

3. The S-procedure and the target language word order rules
4. The subordinate clause procedure – if applicable.

Apart from the first one, all of these procedures need to be built for the L2 by the learner (cf. de Bot, 1992). Pienemann (1998) hypothesises that the capacity for the exchange of grammatical information (needed for feature unification) will be acquired in an implicational sequence following the above procedures.

33.

The PT hierarchy was applied to, and empirically tested for, key grammatical structures in a range of typologically diverse second languages (cf. Pienemann, 2005b) including Italian and Japanese (Di Biase and Kawaguchi, 2002). The table in (8) shows an updated set of hypotheses using the new Topic Hypothesis, which contributes critically to syntactic development.

(8) PT-based Hypothesised hierarchy for Italian L2

<i>Processing procedures</i>	<i>L2 process</i>	<i>Topic Hypothesis (Syntax)</i>	<i>Italian morphosyntax (feature unification)</i>
4. S-procedure	inter-phrasal information	TOP ObjCl V S	Topic-Verb agreement (objClitic) Verb agreement with post-verbal Subject Subject-Predicate Adjective agreement
3. Phrasal procedure (head)	phrasal information	XP+Canonical order (Adjunct+SVO)	VP agreement NP agreement
2. Category procedure	lexical morphemes	Canonical Order (ADJ) Canonical order:SVO including pro-drop: VO	past marking on verbs plural marking on nouns
1. word/lemma	‘words’	single words formulae	single words formulae

34.

Extension of PT – Canonical order

- Like many other approaches to explaining language acquisition (e.g. Meisel, 1991, Pinker, 1984, 1989, Slobin, 1985, and later) PT predicts ‘canonical order’ as the unmarked initial syntactic alignment. Canonical Order is language-specific, e.g. SVO (Italian, English, Chinese, etc.); SOV (Japanese, Turkish, Korean, etc.).
- In current LFG this may be regarded as an optimal alignment of the most prominent role in the argument structure hierarchy (say the ‘agent’ role), mapping onto the universally most prominent grammatical function (the subject) occupying the most prominent position in surface structure (initial), as in (6).

35.

- Canonical order is hypothesised at Stage 2 (i.e. category procedure) since the learner can utilise direct mapping of conceptual structure onto linguistic form. No feature information exchange is required.

- This is computationally the least costly means of organising syntax (Pinker, 1984, 1989)

36.

Extension of PT – beyond Canonical Order

To recap some essential points made earlier:

- Levelt (1989, 138ff) demonstrates that in discourse speakers use various linguistic devices to guide the listener's attention, e.g. topicalisation.
- This allows the speaker to mark as TOPIC the referent that the message is about.
- Other attention directing devices – the speaker's pragmatic choice – may involve the selection of particular word orders for focusing or de-focusing, e.g. null realisation of subject, active/passive alternation and so on.

37.

- The language-specific instantiation of such devices generates additional syntactic complexity for the learner (i.e. non-default mappings), but they need to be learned to ensure effective communication because they aid the representation of meaning in the hearer.
- Further, many of these are syntacticised (i.e. grammatically encoded), therefore their development in the L2 is constrained by the processing requirements of the linguistic structures involved.
- The Topic Hypothesis and the Lexical Mapping Hypothesis are then added to PT in order to account for the processability of these grammaticalised functions.

38.

A rapid interlude on functions in LFG (following Falk, 2001, 57-61)

- Argument functions (and the function ADJ) represent the clause-internal aspect of syntactic elements. Clauses do not, however, exist in isolation: they are embedded in each other and form parts of discourses. So, as a secondary function, a syntactic element can relate to its clause's place in larger syntactic or discourse structures.

These secondary functions can be called overlay functions ...

It is generally assumed in the LFG literature that there are at least three such overlay functions: TOPIC (or TOP), which expresses the topic of the discourse (and thus old

information); FOCUS (or FOC), which expresses new information; and SUBJ (subject), which is the default discourse topic, and is a topic-like element connecting clauses in the same sentence.

39.

LFG discourse functions (Falk, continued)

- Note that, while the SUBJ function serves (at least partially) to connect clauses within a sentence, the other overlay functions relate a sentence to the larger discourse. For this reason, functions like TOPIC and FOCUS can be called **(grammaticised) discourse functions** (Bresnan, 2001).
- Discourse functions are not part of discourse representation, any more than argument functions are part of lexical semantics. They are grammatical (i.e. syntactic) functions that express relations that are relevant for discourse grammar.

40.

The Topic Hypothesis

This hypothesis accounts for learning to differentiate discourse from argument functions. This means learning non-canonical mappings of constituent structure onto grammatical functions (associations between constituent-structure and functional-structure):

“In second language acquisition learners will initially not differentiate between SUBJ and other discourse functions such as TOP, i.e. TOP=SUBJ.

The addition of adjuncts (XP+Canonical order) expressing contextual information (time, place of the event, etc.) will trigger a dislocation of the SUBJ from its canonical (first) position.” In (9) the adjunct (*In Australia*) appears in initial position, followed by canonical SVO:

(9) *In Australia boys eat pizza*

41.

TOP=Adjunct (Stage 3, phrasal procedure)

A simplified LFG representation of an Italian example at a stage following Canonical Order

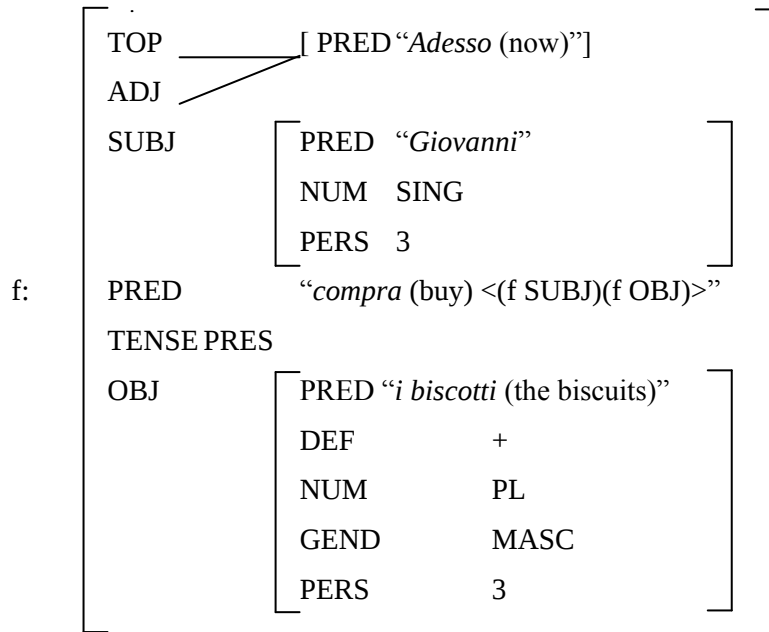
(10)	<i>Adesso</i>	<i>Giovanni</i>	<i>compra</i>	<i>i biscotti</i>
	Now	Giovanni	buys	the biscuits

(c-structure)

$$S' \rightarrow (XP) \quad S$$

$$(\uparrow \text{ADJ}) = \downarrow \quad \uparrow = \downarrow$$

(f-structure)



43.

Bresnan (2001, 69) explains that this structure where external topic is simultaneously an adjunct does not involve functional uncertainty. Bearing the double function of adjunct and topic satisfies completeness and coherence well-formedness conditions on f-structures.

So, in LFG, discourse functions (DF) such as TOP and FOCUS need to be linked to a grammatical function such as ADJ, as in the f-structure in (9);

43.

Looking at it from Pienemann’s (1998) PT perspective, this kind of structure is possible when phrasal procedure is operational (ie. Stage 3) because when TOP is ADJUNCT, it has its own PRED and it does not refer to argument functions, therefore it does not involve information exchange with other constituents of S. The Topic Hypothesis then does away with the (1998) explanation based on ‘saliency’.

44.

The next example (11) shows that, unless they are linked to an ADJ, DFs must be linked to an argument function such as SUBJ or OBJ.

Without this linking there may be an incomplete and incoherent f-structure, e.g. lacking a required OBJ, or having more than one OBJ. The linking of TOP with the OBJ

(marker of the verb, with which it agrees in person, gender and number values) is provided by the functional uncertainty equation which fulfils LFG's extended coherence condition (Falk, 2001, 63-4).

45.

TOP=OBJ (Stage 4, S- procedure)

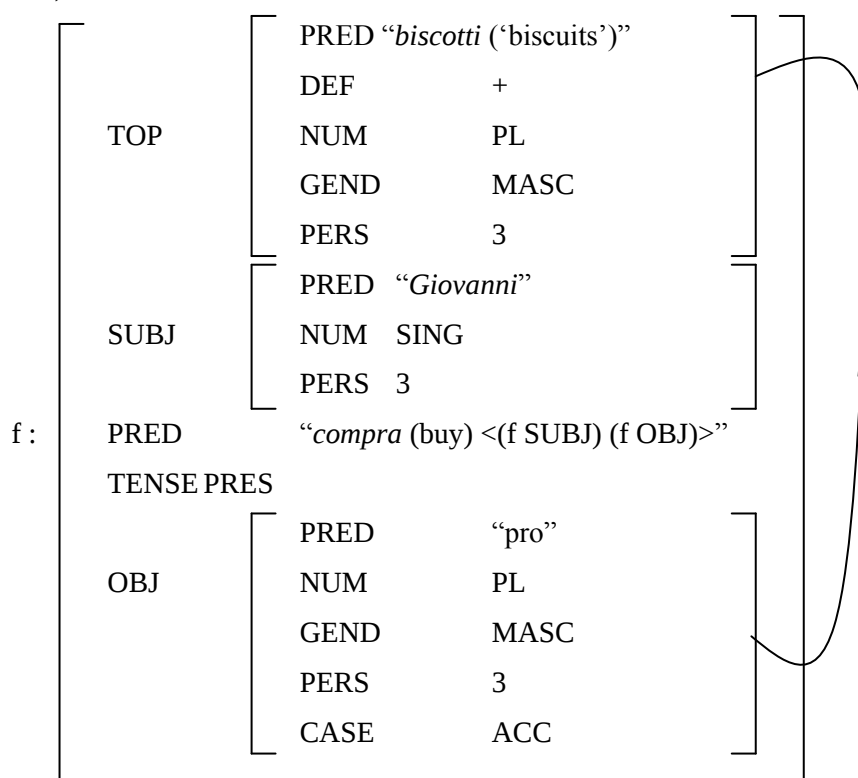
(11) *i biscotti li compra Giovanni*

the biscuits MASC-PL themMASC-PL buys Giovanni

"The biscuits, Giovanni buys them"

(c-structure) $S' \rightarrow (XP) S$
 $(\uparrow TOP) = \downarrow$ $\uparrow = \downarrow$
 $\uparrow TOP = \uparrow OBJ$
 $\uparrow DF = \uparrow GF$

(f- structure)



The curve uniting the TOP and OBJ functions in the f-structure shows co-referentiality and (in Italian) obligatory unification. TOP and OBJ share Number, Gender and Person feature values. The on-line production of this structure involves at least the successful deployment of the S-procedure by the learner, who needs to identify distinct grammatical functions (core and discourse functions) and unify them.

46.

Empirical studies from Italian L2

Italian L2 (English L1 learners)

- A one-year longitudinal study of a beginning learner
- A cross-sectional study of 6 Italian L2 learners (and 1 NS control)

47.

Results

In (12) Table 1 shows that the overt SUBJECT is always initial (and pre-verbal) in declaratives. Table 2 shows that the OBJECT is (symmetrically) always post-verbal. These results supports the Unmarked Alignment Hypothesis for Italian (canonical order is SVO).

Ernie (codename) is an English L1 university student of Italian at ANU. The four data collection sessions took place in the middle and end of his first and second semester of Italian studies. Data elicitation was a mix of free interview and spot the differences or picture description tasks.

(12) Results tables

Table 1. (Ernie) Longitudinal study. Position of referential and pronominal Subjects with Lexical Verbs

Subject Position	t1	t2	t3	t4
Pre-Verbal	14	11	8	11
Post-Verbal	0	2*	0	0

Table 2. (Ernie) Position of Referential and Pronominal) Object s

OBJECT Position	t1	t	t3	t4
Post-Verbal	6	15	3	15
Pre-Verbal	0	2*	0	0

*Both occur with (same) question: *Che cosa vuol dire (Word)?* (“What does X mean?”)

48.

Table 3 shows that Canonical Order, including null subjects (pro-drop), is established early in learners of Italian and strictly adhered to. The addition of adjuncts to canonical order is just as early in post-SVO position but makes no appearance in this learner in

pre-SVO position. The only case of a pre-SVO (a likely TOP) constituent is co-referential with the Subject. So the XP+Canonical order is rather slow in emerging, and the post-verbal subjects (allowed in Italian) and Topic-Object agreement are further in the future. The cross-sectional study in Table 4 confirms the implicational PT hierarchy (cf. Fig 1) and shows that only the most advanced speakers – and the native speaker (NS) control produce Topic-Object structures..

Table 3: (Ernie) XP Adjunction with Lexical Verbs (with lexical verbs, i.e. excluding copular and presentational constructions.)

	t1	t2	t3	t4
Topic(i) ObjCl(i)VS	0	0	0	0
S ADJ VO	0	0	1	0
Topic(i) S(i)*V(O)	0	0	1	0
ADJ (S)V(O)	0	0	0	0
(S)V(O) ADJ	4	2	3	0
SV(O) (with Pronom S)	1	6	1	1
SV(O) (with Referential S)	15	12	6	8
(Pro-drop) VO	13	24	16	37

*Topic and Subject are coreferential

Table 4 Cross-sectional study

Informants	Trish	Lois	Carrie	Ann	Toni	Amy	Pat(NS)
Topic-Object-V- <i>to</i> agreement	0	0	0	0	+0-6>0	+7-3>0	+7-0>0
Topic+Object agreement	0	+0-19>0	+0-11>0	+1-3>0	+11-1>0	+17-2>0	+16-2>0
Copula+Adj/N agreement (plural)	0	+0-1>1	+2-0>2	+7-1>0	+2-6>0	+4-1>0	+5-0>0
Noun+Adjective agreement (plural)	+0-1>0	+1-5>0	+3-1>1	+7-1>0	+4-3>1	+6-2>0	+10-0>0
Past/perfective (V - <i>to</i>)	2 (1)	10 (9)	16 (3)	26	112 (11)	54 (3)	60
- <i>i</i> plural marking	+5-13>5	+14-5>1	+12-2>2	+21-21>0	+17-2>1	+10-0>0	+9-0>0

+ = positive occurrences; – = non occurrence in obligatory context; > overgeneralization

49.

Discussion

- ❖ In this presentation I have shown some of the connections between pragmatic choices in discourse and syntactic structure.
- ❖ Results show how the Unmarked Alignment Hypothesis works for a beginning learner of Italian L2: canonical order structures are acquired early and strictly adhered to by the learner as Tables 1 to 3 in (12) show. (The longitudinal study covered one year of classes of Italian L2.)
- ❖ Non-canonical orders, which reflect pragmatic choices, are acquired after Canonical mapping is in place, as Table 4 in (12) shows for advanced learners. (I have not shown non-default argument mapping but see Kawaguchi, 2005.)
- ❖ These results may help characterise more precisely higher stages of L2 development – or what advanced learners can do.
- ❖ Which, in turn, may have implications for syllabus construction as well as language assessment of higher levels of performance, e.g. as may be required by overseas tertiary students or interpreters/translators.

48.

Conclusions

- ❖ The results shown above are compatible with the extension of Processability Theory.
- ❖ They support both the Unmarked Alignment Hypothesis and the Topic Hypothesis because they show that the development of syntactic constructions that reflect more delicate pragmatic choices obey processability constraints as much as the more fundamental canonical constructions.
- ❖ These hypotheses need further cross-linguistic research for the identification and testing of language-specific processing cost of non-canonical orders as well as language-specific structures at the syntactic/pragmatic interface.
- ❖ In conclusion, structural choices in L2 development increase hand in hand with a wider and more complex lexical and functional learning which ensure greater expressivity and a wider range of pragmatic choices for the learner, thus enhancing effective communication.

50.

Open issues

1. The ‘prosodic’ aspect of the Topic Hypothesis has not been researched in any language yet.
2. Interaction between the extension hypotheses and stages: particularly for mapping passives and ‘exceptional verbs’, but also for morphosyntactic complications arising from topicalisation.
3. Separation of syntax from morphosyntax. Canonical Order is hypothesised at Stage 2 (i.e. category procedure) since the learner can utilise direct mapping of conceptual structure onto linguistic form. No feature information exchange is required. I take this to refer to morphology: at the syntactic level some form of unification should occur in order to keep the language-specific canonical order in place, including pro-drop. In fact languages with no agreement morphology have well-formed sentences (including questions and negation) at this level (Stage 2): e.g. Chinese, Japanese, etc., and require no “simplified S-procedure” as hypothesised for English or German.

2.2 Extending Processability Theory

Pienemann, M., Di Biase, B. and Kawaguchi, S. (2005). Extending Processability Theory. In M. Pienemann (ed.), *Cross-Linguistic Aspects of Processability Theory*, pp. 199-251. Amsterdam, John Benjamins.

While all three authors looked at and worked on the overall article, Kawaguchi's contribution focused on the development of the Lexical Mapping area (cf. Kawaguchi, 2005), but her overall contribution was particularly important as her work focused on Japanese, a language that is both Topic prominent and Subject prominent (Li and Thompson, 1976). Needless to say, the overall fit and coherence for the extension could not have been achieved without the theoretical import of the architect himself of the original PT, Pienemann, who could see how each new component might fit within the architecture of PT and could test their plausibility from a broader psycholinguistic and SLA research perspective.

My contribution to § 2.2 is substantial throughout, I believe. I helped with the formulation of the Unmarked Alignment Hypothesis as an initial ordering principle for learners to move on to various degrees of additions and disruptions of the canonical order, as they learn to attribute grammatical functions correctly and then master discourse-pragmatic choices. One form of this hypothesis was already part and parcel of the original PT (cf. Pienemann, 1998, 84-5), with concepts such as 'serial order strategy' used to "map semantics onto linguistic form," negotiate procedural gaps and organise canonical schema. The current formulation owes as much to Pinker (1984, 1989) as to recent Optimality Theory work done within LFG (e.g. the collection of articles in Sells, 2001).

The Unmarked Alignment Hypothesis, whose title Pienemann selected against contenders such as 'initial state', or 'initial hypothesis of syntax', for instance (cf. Platzack, 1994), signals that PT does not subscribe to a single and rigid universal canonical order, as Bohnacker (2006, 447) still appears to believe. In fact it accommodates Japanese (head-last for L2 as well as L1 acquisition) and in principle any other language. It is not unreasonable to believe, pace Bohnacker, that the canonical order (of a language) is easier to process than alternative orders in the same language, as has been found experimentally (e.g. Sasaki, 1998 for Japanese native and non-

native speakers, or Weyerts, Penke, Münte, Heinze, and Clahsen, 2002 for German natives).

In regard to the topic hypothesis, Italian is known as a pro-drop language while most of the other languages described in earlier PT (German, Swedish, English) are non pro-drop. Italian word order is also particularly sensitive to discourse focus, and it prefers topicalisation to passivisation when giving thematic prominence to an argument of the verb. I looked at these phenomena from the point of view of having to learn them in the L2 and came to the conclusion that the learning of topic/focus discourse functions obeys processing constraints and their development can be predicted much as in the original version of PT. Indeed this hypothesis, introducing Lexical Functional Grammar (LFG)'s notion of functional uncertainty (Bresnan, 2001, 64-9) to developmental issues, helped better characterise how learners gradually proceed from a canonical order position.

Similarly, the Lexical Mapping Hypothesis, which utilises other LFG developments, refined in collaboration with Satomi Kawaguchi and Manfred Pienemann, utilises the same learning principle of developing from default mapping to more marked and special mappings. Again, Pinker's (1984) work on first language acquisition turned out to be seminal, where he introduced the notion of 'exceptional verbs', i.e. verbs such as *receive* which map the Beneficiary (rather than the Agent/giver) on the Subject. Similarly the L2 learner starts from canonically-mapping verbs (Agent/Experiencer on Subject, Patient/Theme on Object) and gradually learns that not all verbs behave that way.

One more general issue which these new hypotheses help resolve, with the help of LFG's formalism incorporating discourse functions and Lexical Mapping Theory, is that PT is now able to shed the 'saliency' explanation (Pienemann, 2005c, 65-66) to which it made recourse for a series of 'fronting' and other phenomena in German L2¹⁶ and English L2 development.¹⁷ Psycholinguistic research (as reviewed in Levelt, 1989) also indicates that languages tend to reserve for Topic the first (or in any case an early) position in the clause. In language processing, the topic is determined before lexical access and is often mapped on the subject, but, depending on the perspective adopted, it may be

¹⁶ This was one remaining element of Clahsen's 'strategies' approach, otherwise rejected in the original (1998) PT version. Pienemann (2005c, 65-66) explains: "In Chapter 7 Pienemann, Di Biase and Kawaguchi propose that the revised version of LFG (Bresnan, 2001) contains a set of principles that permit a parsimonious explanation of the phenomena previously explained with reference to the saliency principle."

¹⁷ Cf. Larsen-Freeman and Long's (1991) excellent explanation of what Long named the 'predictive framework', on the basis of conference presentations and published work by Pienemann and Johnston in the mid 1980s.

mapped on other grammatical functions, such as the object or an adjunct, and it may participate in different constructions (active, passive and so on). Learning to assign the topic function in the L2 will involve, then, lexical, syntactic and/or morphological operations (including 'fronting', dislocation, morphological marking and others) which are likely to be language-specific in their distribution. That is what English may preferentially express with a passive construction (involving the Lexical Mapping Hypothesis), and Italian may preferentially express with word order choices (involving the Topic Hypothesis).

The language learner will then need to build those processing resources that allow for lexical mapping and discourse functions to be correctly marked in the target language and respond to language-specific discourse-pragmatic requirements. PT is now in a better position to look at integrating discourse pragmatic variables in its research.

Pienemann, M., Di Biase, B. and Kawaguchi, S. (2005). Extending Processability Theory. In M. Pienemann (ed.), *Cross-Linguistic Aspects of Processability Theory*, pp. 199-251. Amsterdam, John Benjamins.

The original version of Processability Theory (PT) focused on modelling the transfer of grammatical information within c(onstituent) structure on the basis of feature unification, utilising a simplified version of f(unctional) structure. In this chapter we will explore ways in which linguistic non-linearity can be modelled by including further aspects of f-structure and Lexical Mapping Theory (i.e. the mapping of a(rgument) structure onto f-structure), in order to prepare the way for an extended approach that can capture a wider range of linguistic phenomena, including passives, causatives, topicalisation and so-called 'exceptional lexical entries' (such as "receive" or "please"). The extension of the scope of PT should be seen as a sketch of a future research program.

1. Introduction

In Chapter 1¹⁸ of this volume the original version of PT has been summarised. The reader will recall that PT is based on the notion of transfer of grammatical information which is modelled using feature unification, yielding different degrees of linguistic linearity. Most chapters of this volume utilised this approach and applied it to typologically different languages and different contexts of acquisition, thus demonstrating the typological plausibility of PT.

To highlight the nature of the proposed extension it may be useful to recall that the architecture of Lexical Functional Grammar (LFG) is based on three independently motivated parallel structures that have to be mapped onto each other. This is illustrated in Figure 1, which shows the predicator “see” and its associated argument roles (“experiencer” and “theme”) as an example of an a(rgument)-structure¹⁹ and a rough sketch of the f-structure that this a-structure, as well as the corresponding c-structure, has to be mapped onto. The arrows in Figure 1 indicate the two kinds of mapping processes mentioned above.

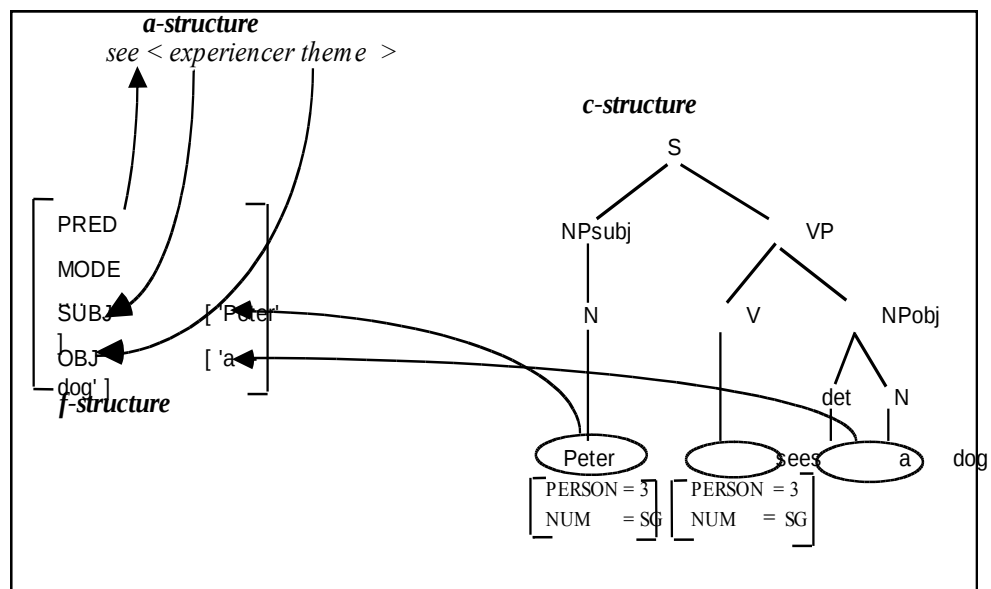


Figure 1: Three parallel structures in LFG

¹⁸ This refers to Chapter 1 of Pienemann (ed.) (2005) where this paper is published as Chapter 7.

¹⁹ In LFG a-structure represents information about the arguments selected by a predicate. F-structure represents grammatical information that is invariant across languages. In contrast, constituent structure is language-specific.

As mentioned above, the original version of PT focused on c-structure and the transfer of grammatical information within it, using feature unification. The modelling of feature unification, as envisaged in this approach, is illustrated in the example sentence shown in Figure 1 (i.e. “Peter sees a dog”). In this sentence the insertion of the verbal affix –s relies on information contained in the subject-noun phrase, namely the features PERS(ON) and NUM(BER) and their values PERS=3 and NUM=SG. These features are unified in S, as shown in Figure 2. In other words, the need to store grammatical information on PERS and NUM during sentence generation illustrates the non-linearity of this morphological process.

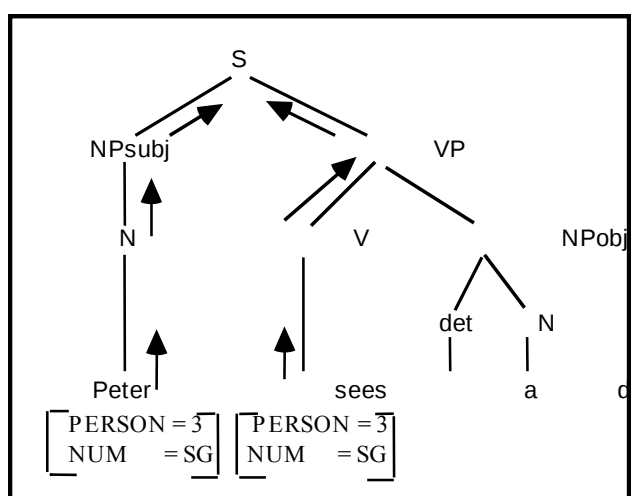


Figure 2: Feature unification in the S-procedure

In the design of PT, the point of unification is related to a hierarchy of processability that reflects the time course of real time processing, as detailed in Levelt (1989). In this way a range of morphological and syntactic processes can be aligned with a universal hierarchy of processability, yielding developmental trajectories for the given target languages, as shown in several chapters of this volume.

The basic point of this chapter is to show that there are other aspects of language generation beyond the transfer of grammatical information within c-structure that generate linguistic non-linearity, and that these aspects of linguistic non-linearity may be able to be mapped onto the processability hierarchy. In particular, we will show that linguistic non-linearity can be created in the mapping of (i) a-structure onto f-structure and (ii) the mapping of c-structure onto f-structure. Both these components are based on

recent innovations in the architecture of LFG, and their inclusion in PT will yield a wider range of phenomena.

Given the psycholinguistic focus of this chapter, it is essential to bear in mind that one cannot assume the relationship between a-structure, f-structure and c-structure to be linear. If these relationships were linear there would be no leeway for surface structure variation. In other words, semantic predicate-argument relationships could only be expressed by fixed surface word and phrase configurations. We know, however, that sentences may vary between active and passive, between affirmative and question forms, and that speakers may choose to place constituents in prominent positions by topicalising them or they may choose not to do so. Levelt (1989) demonstrates that in discourse, speakers use various linguistic devices to guide the listener's attention, including topicalisation and passivisation. Many of the structural choices that exist for the native speaker constitute devices of attention-direction and the representation of meaning in the hearer. In other words, attention-direction devices are necessitated by the nature of the comprehension process. These choices come, however, at a cost in terms of processing, since they require changes to the relationship between either a-structure and f-structure or between c-structure and f-structure. Changes in these relationships will lead to linguistic non-linearity.

In Chapter 1 the phenomenon of non-linearity was discussed in the context of feature unification. This process is illustrated in Figures 1 and 2, which show that English SV-agreement marking involves a degree of non-linearity by virtue of two sets of lexical features being unified across constituent boundaries.

In the mapping of c-structure onto f-structure, non-linearity is created by the addition of adjuncts to canonical structure, and the assignment of discourse functions (FOC and TOP) to elements in c-structure that do not adhere to the canonical pattern. For instance, a canonical (i.e. one-to-one) relationship between c-structure and f-structure can be found in (1) where the first NP is the grammatical subject. In contrast, in (2) this relationship has to be modified.

(1) He likes Anne.

(2) Anne, he likes.

The inclusion of this ‘dimension’ of non-linearity has become possible because of the revised architecture of LFG. Bresnan and Mchombo (1987) and Bresnan (2001) show that some discourse roles (particularly TOPIC and FOCUS) are syntacticised and should therefore be represented in f-structure. They demonstrate that these functions are subject to syntactic constraints in such cases as English interrogative clauses, cleft constructions, relative clauses, etc. These functions have c-structure properties that express their prominence in discourse. In particular, they often precede or c-command other constituents in the clause. The inclusion of the corresponding discourse roles in LFG yields a new dimension of accounting for developing states of interlanguage grammars that allow us to overcome some of the limitations of PT, particularly Kempen’s (1998) concern about the absence of the S-procedure in early interlanguage development.

Non-linearity is even more subtle in the mapping of non-canonical argument structure onto f-structure. It is caused by ‘exceptional lexical entries’ with intrinsic non-canonical a-structure (e.g. “receive”, “please”) and by non-default verb forms (e.g. passives and causative constructions). In both cases, semantic roles are mapped onto non-default grammatical functions. For instance, in the sentence “the result pleased him” the experiencer is mapped onto the grammatical object, and the theme is mapped onto the subject. These mapping processes go against the default the learner creates earlier and thus add to the non-linearity of the overall production process. Again, this dimension of non-linearity in developing interlanguage grammars can be represented only because in the revised version of LFG the correspondence between argument structure and functional structure is modelled by a formal theory, Lexical Mapping Theory (LMT), which has been incorporated into the LFG formalism.

Apart from our objective of extending the scope of PT by capturing systematically the correspondence between the three parallel levels of representation in a dynamic learner system, there is an additional reason for extending PT, namely to overcome limitations of the original theory.

Some of the limitations of PT were discussed and amended in Chapter 2. One additional limitation was raised by Kempen (1998) who pointed out that in PT, sentences were assumed to be assembled at a point in development before the S-procedure had developed that is needed for the assembly of sentences. Pienemann (1998b) responded that PT was based on the assumption that before the development of the S-procedure, learners produce sentences on the basis of a direct correspondence between argument

structure and surface grammatical form. Such direct correspondences (or ‘direct mapping’) do indeed constitute an alternative and processable route that has been assumed to be accessible to beginning language learners by a number of scholars (e.g. Bever, 1970; Slobin, 1985; Pinker, 1984, 1989). The mere assumption of direct mapping processes does not, however, spell out any formal detail of these processes in the context of an overall theory, nor does it formally interface with the architecture of the proposed theory of language development. It is the objective of this chapter to develop such a formal account of the mapping processes required before the development of the S-procedure and to formally interface this with PT and the overall architecture of LFG.

This chapter is structured as follows. In Section 2 we will highlight the role of LFG as a grammatical formalism in the psycholinguistic framework of Processability Theory. This step is crucial because one needs to bear in mind that even though the objectives of LFG and PT overlap they are not identical. Whereas LFG is a theory of grammar, PT is designed to model the developmental dynamics of interlanguage systems on the basis of the architecture of the syntactic encoding system. In Section 3 we will sketch out two sets of correspondence principles entailed in LFG, in order to be in a position to develop our fundamental line of argument. In Section 4 those correspondence principles will be integrated into PT, generating a set of novel predictions for interlanguage development.

2. The psycholinguistic focus of PT and the role of LFG

Given that this chapter aims to explore ways of extending the scope of PT by integrating LFG-style correspondence principles, it may be useful to review briefly the way in which PT handles key psycholinguistic issues and the way in which LFG is used in this endeavour to model the associated processes.

The reader will recall from the overview of PT given in Chapter 1 that PT is a psycholinguistic theory of language development that specifies processable learner grammars in a universal processability hierarchy, and that it thus delineates a hypothesis space that constrains developmental trajectories and interlanguage variation. The key psycholinguistic concept underlying PT is the “linearisation problem” in language generation (Levelt, 1980, 1989). In PT, as well as in Levelt’s own work, the linearisation problem is modelled using feature unification that permits the exchange of lexical feature information within and across constituents and thus ‘solves’ the linearisation problem. Above we used English subject-verb agreement marking to illustrate this process. In the example sentence contained in Figures 1 and 2 the insertion of the verbal affix –s relies on information contained in the subject-noun phrase, namely the features PERS(ON) and NUM(BER) and their values PERS=3 and NUM=SG. In other words, in (1) the -s-affix constitutes a degree of non-linearity of grammatical information because the feature values PRES=3 and NUM=3 are present in the NP_{subj}, and they need to be utilised again after the verb stem. In sentence generation, such feature values have to be stored in a grammatical memory store. As shown above, the above features are unified in S (cf. Figure 2). In other words, the S-procedure that permits the relevant feature unification acts as a grammatical memory store (cf. Kempen and Hoenkamp, 1987).

It was this ability of feature unification to model grammatical memory stores in sentence generation that made LFG attractive as the grammatical theory for PT. Two further characteristics of LFG are also attractive from the perspective of sentence generation, namely (i) the assumption that grammars are lexically driven, and (ii) the separate status of constituency and grammatical functions. The lexically driven nature of sentence generation is an integral part of Levelt’s approach and is backed up by extensive empirical evidence. The independent status of constituency and grammatical functions is also supported by a wide range of psycholinguistic empirical evidence, including research on slips of the tongue and online experiments (cf. Levelt, 1989). In other words, we believe LFG to have a high degree of psychological plausibility. This

was demonstrated again recently in experimental work on sentence production by Pickering, Branigan and McLean (2002) which shows that “constituent structure is formulated in one stage”²⁰ and thus supports the architecture of LFG.

LFG encodes syntactic properties primarily in the lexicon (cf. Schwarze, 2002, 148-9). This makes LFG particularly suitable for the study of dynamic linguistic systems such as developing learner grammars, because it affords a formal account of the linguistic dynamics present in developing learner grammars. These dynamics can be expressed in terms of the composition of feature structures of certain lexical items, or in terms of the acquisition of new lexical items that introduce new features into the grammar. Current psycholinguistic research on lexical access is able to model such featural organisation of the lexicon (e.g. Levelt, Roelofs and Meyer, 1999).

Pienemann (1998a) showed that every level of the PT hierarchy processing procedures can be captured through feature unification in LFG, which in turn shares key characteristics with Kempen and Hoenkamp’s (1987) procedural account of language generation.²¹ In other words, an LFG description of the learner language affords an analysis of key aspects of the psycholinguistic process of grammatical information exchange in the developing interlanguage.

This connection between language generation/acquisition and LFG is not coincidental, because the study of language processing and language acquisition is a key issue in the design of LFG, as the following quotation from Kaplan and Bresnan (1982, 177) illustrates:

“[Children] acquire knowledge and skills that enable them to produce and comprehend an infinite number of novel utterances... The major goal of psycholinguistic research is to devise an explanatory account of the mental operations that underlie these linguistic abilities.”

²⁰ Hence the title of the publication.

²¹ Franck et al. (2002, 376) characterise IPG (Incremental Procedural Grammar, Kempen and Hoenkamp, 1987) and IPF (Incremental Parallel Formulator, De Smedt, 1990) as follows:

“[IPG and IPF] ... conceive syntactic construction as a process of assembling segments into a tree-like architecture using a single combinatorial operation: unification. In IPF, each segment is composed of two nodes, representing syntactic categories, related by an arc, representing the syntactic function that relates the nodes (e.g., S-subject-HN, HN-head-N). Unification of the different segments would result in the formation of a syntactic structure for the sentence. Unification in this model is conceived as a process that merges features from the different segments, allowing, therefore, the computation of long-distance dependencies such as agreement ... Hence, and importantly, in a model such as IPF, agreement is the result of assembling the different segments into a hierarchical structure.”

The connection between language generation/ acquisition and LFG is a good reason to use LFG to model learner grammars in PT. A further reason for this choice is linguistic typology and the universal status of the PT hierarchy. If the PT hierarchy is to be universally applicable to language acquisition, then it needs to be interpretable in relation to grammatical structures of individual languages. This can be achieved by interpreting the processability hierarchy through a theory of grammar, which is typologically plausible.

Typological plausibility is a key feature of LFG. For example, well-formedness can be expressed in LFG by testing the fit and compatibility of feature structures of the lexicon. Further, LFG is able to represent abstract grammatical information such as ‘SUBJECT of’ or ‘subject PERSON’ at the level of f-structure, regardless of whether that information is expressed through morphology or syntax. Hence the architecture of LFG does not depend on configurational structure and categories. This lends LFG a high degree of typological power (cf. Schwarze, 2002). Figures 4 and 5 in Section 3.4 illustrate this point in relation to English (a non pro-drop language) and Italian (a pro-drop language).

There are two fundamental problems in language acquisition that a theory of language acquisition has to be able to explain, namely (i) the logical and (ii) the developmental problem (cf. Clahsen, 1992). The logical problem basically asks for the origin of linguistic knowledge in language learners, whereas the developmental problem asks for an explanation of the universal aspects found in the trajectories of language development. In its original version PT aims at explaining the developmental problem by delineating processable learner grammars. In the long run, however, it also needs to be compatible with an approach that aims at explaining the logical problem. Several scholars that work within the LFG framework utilise the interface between LFG and Optimality Theory for that purpose (e.g. Bresnan, 2000; Sells, 2001). Irrespective of the specific form of the epistemology used for this purpose, Optimality Theory needs to be able to interface with accounts of linguistic representation such as LFG. This requirement is an additional reason for utilising a highly developed, typologically and psychologically plausible theory of grammar as a basis for PT.

Having said all this, one nevertheless needs to bear in mind that the objective of PT is not identical with that of LFG. Whereas LFG is aimed at typological plausibility and the representation of the linguistic knowledge of native speakers, PT is aimed at accounting for developing grammars of non-native speakers, including the dynamics of the developmental process. Therefore accounts of developing linguistic systems may well

differ from accounts of the corresponding target language system. For instance, German, Dutch and Swedish are subject to a categorical V2-constraint. In contrast, this constraint does not apply to early learner-German (learner-Dutch or learner-Swedish). Instead, this constraint is acquired by learners of German (and of other Germanic languages) in a non-categorical manner. Therefore, some aspects of the LFG-based PT account of the development of learner-German will be substantially different from standard accounts of native German (e.g. Berman and Frank, 1996).

Given the commitment of the LFG approach to language acquisition as evident in the above quotation from Kaplan and Bresnan, such discrepancies between native speaker grammars and developing non-native speaker grammars should be seen as a welcome source of knowledge for an understanding of the processes of acquisition and language generation and their relationship to the representation of the linguistic knowledge that underlies these processes.

3. Correspondence principles

3.1. *Correspondence and linearity*

Kaplan and Bresnan (1982, 174) describe the fundamental problem of a theory of syntax in a straightforward manner. The issue is

“... to characterise the mapping between semantic predicate-argument relationships and surface word and phrase configurations by which they are expressed.”

This basic perspective has been maintained in the extended version of LFG (Bresnan, 2001) where the mapping of a-structure onto f-structure and the mapping of c-structure onto f-structure is the driving force behind the grammatical formalism.

As mentioned above, the architecture of LFG is based on three independently motivated parallel structures that have to be mapped onto each other. This is illustrated in Figure 1 above. The reader will recall that one cannot assume the relationship between these three parallel levels of representation to be linear.

In Section 2 we discussed the phenomenon of non-linearity in the context of feature unification. This process is illustrated in Figure 2 above, which shows that English SV-

agreement marking creates non-linearity because two sets of lexical features need to be unified across constituent boundaries.

One type of linearisation problem is brought about by the fact that there is no one-to-one relationship between the natural order of events and the sequence in which these are represented in the course of language production. For instance, in (3) the word “after” signals that the natural sequence of events is not preserved.

(3) He drove off after he jumped into the car.

Levelt shows that this non-linear relationship between conceptual and linguistic structure also applies to concepts that are not based on naturally ordered events but on multidimensional information structure. Levelt (1989, 138 ff.) demonstrates in a number of experiments that in discourse speakers use various linguistic devices to guide the listener’s attention. One such device is topicalisation, which allows the speaker to mark as topic the referent that the message is about. As mentioned above, this and other devices of attention direction aid the representation of meaning in the hearer. In other words, attention direction devices are necessitated by the nature of the comprehension process. On the other hand, they create a degree of non-linearity in the language that is produced.

The processing of non-linear relationships between conceptual and grammatical structure or between lexical and syntactic structure has to rely on the temporary storage of the material not being produced at the point when it is activated. In the case of example (3) the proposition “he jumped into the car” has to be held in a memory store until “he drove off” has been produced. In a similar manner, the values of the features PERS and NUM have to be held in the S-procedure as a memory store in English subject-verb agreement. In other words, language learners may benefit from non-linearity when it serves to direct their attention to prominent information, but it impedes their ability to process language if it requires the use of procedures which they have not yet acquired.

All languages have such devices for directing attention. As has been pointed out repeatedly, however (e.g. Lambrecht, 1994; Van Valin and LaPolla, 1997; Sells, 2001), languages may differ substantially in their use of the principles that govern the linear precedence relations among the elements of a sentence. In languages with flexible word

order (e.g. Italian, Turkish, Japanese) the structural repercussions of focus structure can be massive.²² For example, in Italian the choice between the sequence NP-V and V-NP depends on the NP being topical or focal (Van Valin and LaPolla, 1997, 418). Similarly in Japanese, ‘scrambling’ (i.e. the occurrence of a non-subject argument in initial position) is possible only if the scrambled argument has already been established as a discourse topic (Otsu, 2000).

In this chapter we argue that in (second) language acquisition the correspondence between the parallel syntactic levels of a-, f- and c-structure develops from a linear default relationship to the more complex non-linear relationships found in mature varieties of the target languages, and that this developmental process is constrained not only by feature unification, the mechanism previously implemented in the PT hierarchy, but also by two types of correspondence relationships, namely (i) the language-specific relationship between c-structure constellations and grammatical functions (Bresnan, 2001) and (ii) by the relationship between the thematic hierarchy and grammatical functions (i.e. Lexical Mapping Theory, cf. Bresnan, 2001).

To develop this point further it will be useful to review the latter two concepts within the LFG framework before proceeding to explore the development of the relationship between them in the course of language acquisition.

²² Refer also to note 7.

3.2. Mapping c-structure onto f-structure

In LFG the correspondence relationship between c-structure and f-structure is governed by general principles for annotating c-structure with functional schemata (Bresnan, 2001, 98-108). In the context of this chapter with its focus on language acquisition, it is relevant to note that c-structure configurations are language-specific, whereas f-structure is universal. In addition, a number of principles apply to c-structure. One of the key principles is ‘economy of expression’, which stipulates that of all the possible phrase structure nodes, only those may be used that are required by independent principles.²³

C-structure can be organised in two different ways that correspond to the typological continuum, from configurational to non-configurational. In highly configurational languages c-structure is organised hierarchically following the so-called ‘endocentric principle’, whereas in non-configurational languages c-structure is organised lexicocentrically, with flat c-structures where all arguments are sisters of the verb. As Bresnan (2001, 113) points out, however,

“...languages may freely mix endocentric and lexocentric modes of categorial organisation. This produces a typology of possible syntaxes much closer to a continuum than to a small, discrete parameterisation.”

At an abstract level, language does not contain configurational properties, since functions and arguments of internal structures (e.g. a-structure, f-structure) “are not canonically externalised in phrase structure configurations across languages” (Bresnan, 2001, 82), since the same kind of functional description can be carried by morphology or by phrasal syntax, or by both. Hence configurational properties are language-specific. Therefore the learner of a (second) language does not know in advance what the relevant canonical mapping of the target language will be, nor what its specific ‘mix’ of syntactic-morphological realisation of functional and argument structure will entail.²⁴

²³ In particular ‘completeness’, ‘coherence’ and ‘semantic expressivity’.

²⁴ A mix of endocentric and lexocentric means within the one language can be illustrated with Figure 1, where functional information regarding the agent (e.g. the fact that *Peter* is the SUBJ) is represented, in English, both in the syntactic pre-verbal position of the subject constituent and in the morphology of the verb *sees* which also represents the singular, third person features of the subject.

One key component of Bresnan's approach to structure-function mapping is the definition of (grammatical) functions, which can briefly be characterised as follows. The list of grammatical functions contains the following: TOP, FOC, SUBJ, OBJ, OBJ_θ, OBL_θ, XCOMP, COMP, ADJUNCTS. These functions can be grouped as follows:

<u>argument functions</u>	
(3) <u>TOP, FOC</u> , SUBJ, OBJ, OBJ _θ , OBL _θ , XCOMP, COMP, <u>ADJUNCTS</u>	
non-a-fns	non-a-fns

According to Bresnan (2001, 96)

“[t]he subject and objects are the **core functions** associated with the central participants of the eventuality expressed by the verb. They are formally distinguished from noncore functions... In English, for example, core arguments have canonical c-structure positions which can be occupied only by NPs/DPs; noncore arguments are generally expressed by other c-structure categories (obliques by PPs, other complements by VPs, APs, or CPs, etc.).”

Argument functions bind their expressions to an argument role and they are governed by the predicate, whereas non-argument functions bind their expressions to something other than an argument role. Also, argument functions allow only single instances, whereas non-argument functions allow multiple instances.

As mentioned above, Bresnan and Mchombo (1987) and Bresnan (2001) show that some discourse roles (particularly TOPIC and FOCUS) are syntacticised and should therefore be represented in f-structure. They demonstrate that some of these functions are subject to syntactic constraints, in such cases as English interrogative clauses, cleft constructions and relative clauses. For these reasons, discourse functions have been added to the list of grammatical functions in recent developments of LFG. As a result, there is a further dichotomy of syntactic functions along the discourse/ non-discourse divide, as shown in (4).

<u>non-discourse functions</u>	
(4) <u>TOP, FOC, SUBJ</u> , OBJ, OBJ _θ , OBL _θ , XCOMP, COMP, ADJUNCTS	
discourse-functions	

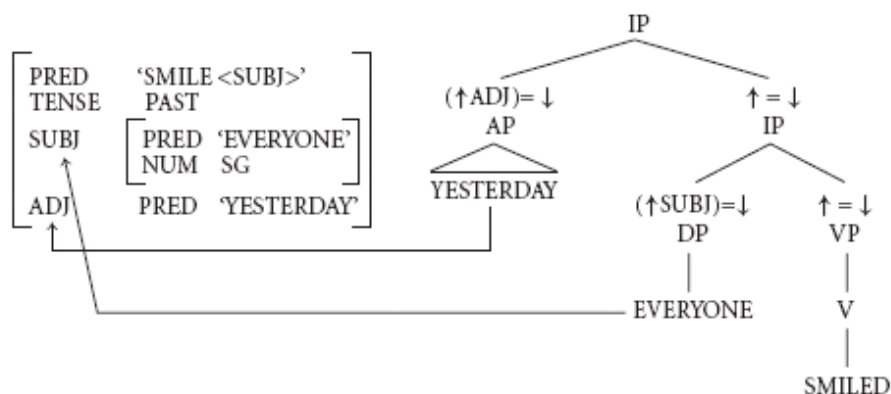
In other words, the hierarchy of grammatical functions can be divided up following two different dichotomies:

- i. argument functions (AF) versus non-argument functions,
- ii. discourse functions (DF) versus non-discourse functions.

Two connections between (3) and (4) are crucial here: the first is that SUBJ is the only function participating in both sets (DF and AF) and the second is the “universal default that optionally identifies SUBJ and TOP” (Bresnan, 2001, 117).

As mentioned above, a set of principles governs correspondence relationships between c-structure and f-structure. One such principle stipulates that specifiers of functional projections are grammaticalised discourse markers (i.e. TOP, FOC or SUBJ). The choice of markers (for specifiers of functional projections) varies across languages. The example in (5) and its annotated c-structure may serve to illustrate this point. In the case of English, the specifier of IP is SUBJ. This explains why in (5) DP is annotated for SUBJ.

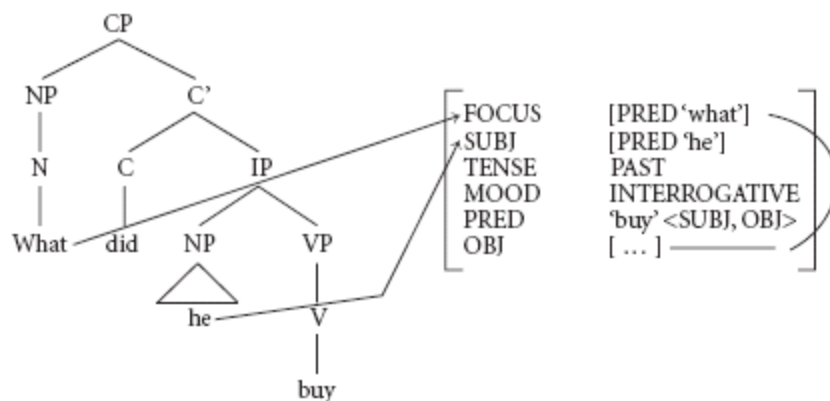
- (5) Yesterday everyone smiled



A further principle stipulates that constituents adjoined to XP are one of the non-argument functions TOP, FOC or ADJUNCT. This licences the annotations on the AP in (5). This ensures that the constituent adjoined to XP is ADJ and that the specifier of IP is SUBJ. (5) also serves to illustrate the mapping of c-structure onto f-structure.

The reader will have noticed that in (5) the initial position in c-structure is occupied by a non-subject. This point is relevant to our discussion of linguistic linearity. We will return to this issue in Section 4 after the principles of mapping a-structure onto f-structure (i.e. Lexical Mapping Theory) have been summarised.

(6) What did he buy?



Structure-function mapping can also be illustrated with WH-questions (cf. Dalrymple, 2001). (6) shows the simplified c-structure of the question “What did he buy?”, and it illustrates the mapping of c- onto f-structure in this example.

The c-structure shown in (6) is based on the following, again somewhat simplified, rule (cf. Dalrymple, 2001, 406):

$$(7) \quad CP \rightarrow \left(\begin{array}{c} XP \\ (\uparrow \text{FOCUS}) = \downarrow \\ (\uparrow \text{FOCUS}) = (\uparrow \text{COMP}^* \text{ GF}) \end{array} \right) \left(\begin{array}{c} C' \\ \uparrow = \downarrow \end{array} \right)$$

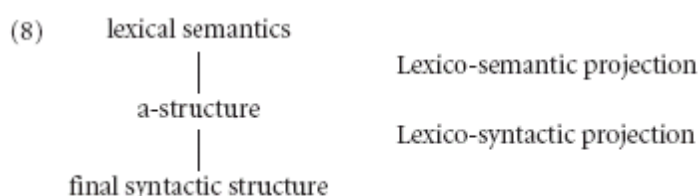
According to the structure-to-function correspondence principle mentioned earlier, only non-argument functions can fill an adjoining XP. In order to secure completeness and coherence we must assume that the DF here (i.e. the Wh-Question) is allowed to satisfy the unsatisfied argument (the OBJ) function as illustrated in the f-structure in (6), where the FOC function is linked to the OBJ function. As can be seen in (6), the Wh-question constituent maps onto both FOCUS and OBJ functions.

In the above section we outlined one additional LFG component that can be integrated into PT, namely the discourse functions TOP and FOC and the ADJ function. In the following section we will outline a further component of LFG that can be integrated into the PT hierarchy, Lexical Mapping Theory.

3.3. *Lexical Mapping Theory*

Many scholars have pointed out a regularity in the association between grammatical functions and their characteristic thematic roles. Fillmore's (1968) pioneering work is a prime example. The universality of argument-function mapping relations has been studied in a typological context (eg. Keenan, 1976; Keenan and Comrie, 1977, Hopper and Thompson, 1980). Within the framework of LFG, Lexical Mapping Theory (LMT) systematically explains this relationship, i.e. how conceptual representation of thematic roles are mapped onto the grammatical functions mediated by a-structure.

In LFG, a-structure has two basic aspects, a semantic aspect that specifies the core participants in events, and a syntactic aspect that provides the minimal information required to identify the dependents of an argument-taking head (Bresnan, 2001). Bresnan treats a-structure as an interface between the semantics and syntax of predicators. In this perspective, a-structure contains the lexical information about type and number of arguments that allows it to be mapped onto syntactic structure. Bresnan (2001, 306) depicts these relationships as in (8).



An a-structure consists of a predicator and its argument roles. In Section 1, we discussed the three parallel structures of the sentence *Peter sees a dog*, illustrated in Figure 1. This example is repeated in (9). The a-structure of (9) is given in (10). In the eventuality described in (9), two participants are involved, i.e. *Peter* and *a dog*. A participant, *Peter*, that is thematically the experiencer, is realised as SUBJ. In contrast, the participant *a dog*, that is thematically the theme, is realised as OBJ. The same eventuality can however be realised as different structural outcomes. For example, if the speaker would like to put more prominence on what is seen by Peter, (11) is the likely structural outcome where *a dog* is promoted to SUBJ and *Peter* is defocused and realised as ADJ. In the case of (11), we need the passive predicator *seen* and the a-structure of (11) is as shown in (12).

(9) Peter sees a dog.

(10) see <experiencer, theme>
 | |
 SUBJ OBJ

(11) A dog is seen by Peter.

(12) seen <experiencer, theme>
 | |
 Ø SUBJ (ADJ)

The example of the passive illustrates that the same eventuality can be related to c-structure in more than one way²⁵ due to, for example, the suppression of an argument role or the assignment of prominence/focus to a particular thematic role. LMT systematically explains what type of association is possible between argument roles (such as experiencer, theme, etc.) and grammatical functions (SUBJ, OBJ, etc.). It also sets out principles to govern this association. Intuitively, we can see (9) as being in some sense more basic than (11). LMT shows why this is the case. In (9), the two thematic arguments of the predicator *see*, i.e. ‘experiencer’ and ‘theme’, are mapped onto SUBJ (i.e. *Peter*) and OBJ (i.e. *a dog*) respectively. In contrast, in (11) it is the ‘theme’ that maps onto SUBJ, whereas the ‘experiencer’ is mapped onto ADJ(unct), or it may be suppressed altogether. In other words, in the active sentence two arguments in

²⁵ The following structural outcomes are also possible, e.g.:

It is Peter who sees a dog.
It is a dog which is seen by Peter.

a-structure link to their functional correspondents (SUBJ, OBJ) in a default fashion, and the canonical sequence of Agent_{SUBJ} and Patient_{OBJ} is maintained in c-structure. In contrast, thematic roles in (12) are mapped onto f-structure in a non-default manner in the passive, and the sequence in c-structure no longer preserves canonicity.

As mentioned above, the same eventuality may correspond to multiple c-structures. A- to f-structure mapping is not, however, arbitrary. There are constraints, regularities and a set of governing principles that apply to this mapping process (cf. Darlymple, 2001). For instance, examples (13) – (16) show that there are no restrictions for any thematic roles (experiencer, theme, agent, patient, etc.) to be mapped onto SUB.

(13) Peter patted the dog. (SUBJ = Agent)

(14) The dog was patted by Peter. (SUBJ = Patient)

(15) Peter saw a dog. (SUBJ = Experiencer)

(16) Dogs are nice. (SUBJ = Theme)

In contrast, only some (restricted) argument roles such as locative can be mapped onto the OBL function.

LMT utilises the following four guiding principles that govern argument to f-structure mapping:

- i. hierarchically ordered semantic role structures,
- ii. a classification of syntactic functions along two dimensions,
- iii. principles of lexical mapping from semantic roles to (partially specified) functions, and
- iv. well-formedness conditions on lexical forms (Bresnan and Kanerva, 1989, 22 ff.).

In order to sketch out the ‘mechanics’ of LMT, it may be useful to briefly summarise each of these principles.

● Hierarchically ordered semantic role structures

In agreement with a number of scholars (e.g. Jackendoff, 1972, Foley and Van Valin, 1984, Givón, 1984), a universal hierarchy of thematic roles is assumed in LMT. The

ordering of the argument roles in an a-structure follows their markedness (or their relative prominence) from left to right in the thematic hierarchy given in (17). In other words, this hierarchy shows the order of prominence languages attribute to these roles.

(17) Thematic Hierarchy

agent > beneficiary > experiencer/ goal > instrument > patient/ theme > locative

(Bresnan, 2001, 307)

● **A classification of syntactic functions**

The mapping of a-structure onto f-structure is not entirely free. Instead it is constrained by the classification of syntactic functions based on the features [+/-r] (i.e. whether they are thematically restricted or not) and [+/-o] (that is, ‘objective’ or ‘not objective’). The feature [+r] refers to syntactic functions that express restricted semantic roles. OBJ_θ and OBL_θ have this feature. For instance, OBJ_θ can express only limited thematic roles such as OBJ_{goal} (i.e. *Mary* in *I gave a book to Mary*). Therefore, OBJ_θ is classified as [+r] (thematically restricted). In contrast, SUBJ and OBJ are [-r] (thematically unrestricted) because they can express any semantic role. The unrestricted nature of SUBJ was shown in (13) – (16) above.

The feature [+o] refers to “objectlike functions that appear as arguments of transitive categories of predicates (Verb and Preposition) but not of the intransitive categories Noun and Adjective” (Bresnan and Kanerva, 1989, 25). OBJ and OBJ_θ possess the feature [+o]. In contrast, [-o] refers to non-objective syntactic functions (i.e. SUBJ and OBL). Bresnan (2001) shows that the four primary (or core) grammatical functions, SUBJ, OBJ, OBJ_θ and OBL_θ can be decomposed into the features [+/-r] and [+/-o], which create four natural classes as shown in (18).

(18) Feature Decomposition of Argument Functions (Bresnan, 2001, 308)

		-r	+r
-o		SUBJ	OBL _θ
+o		OBJ	OBJ _θ

● **Lexical mapping principles from semantic roles to syntactic functions**

Syntactic functions are specified only partially by thematic roles. LMT postulates three lexical mapping principles to regulate the relationship between the thematic hierarchy and the decomposed features. These principles are: (i) intrinsic role classifications, (ii) morpholexical operations, and (iii) default classifications (Bresnan and Kanerva, 1989, 25-28).

“A constraint on all lexical mapping principles is the preservation of syntactic information: they can only add syntactic features, and not delete or change them. This monotonicity is allowed by underspecification” (Bresnan and Kanerva, 1989, 25; emphasis in the original).

According to Bresnan and Kanerva (1989), some thematic roles have intrinsic values, and they apply cross-linguistically:

- Agent has an intrinsic value of [-o]. Agent cannot be encoded as objective function.
- Theme/Patient have an intrinsic value of [-r] realised as SUBJ or OBJ.
- Locative has an intrinsic value of [-o]. Locative expresses only non-objective grammatical functions (i.e. either OBL or SUBJ).

As Bresnan and Kanerva (1989, 26) point out, “[m]orpholexical operations affect lexical argument structures by adding and suppressing thematic roles.” For example, ditransitives involve an operation which adds an extra argument to the lexical argument structure. For instance, the ditransitive predicate *cook for* has an extra thematic role (i.e. a beneficiary role). This is apparent in the comparison of (19) and (20).

(19) Transitive:

a-structure: cook < agent patient >
John cooked pasta

(20) Ditransitive:

a-structure: cook-for < agent patient beneficiary >
John cooked pasta for Mary

In contrast, passive is the case where the highest thematic role (i.e. agent) is suppressed as shown in (21).

- (21) Passive (of transitive)
 a-structure: cooked < agent, patient >
 $\emptyset$
pasta was cooked

In addition to intrinsic role classification, there is a set of default assignments of features. The default value depends on the thematic hierarchy in (17): the thematic role that is highest in the hierarchy receives the default value of [-r] and other roles receive [+r] (see examples below). In Bresnan and Kanerva's (1989, 27) words, "[t]he defaults are designed to capture the generalisation that the highest thematic role of a verb will be the subject."

● Well-formedness conditions on lexical forms

Finally, two conditions ensure well-formedness.

1. *Function-Argument Bi-uniqueness*: each a-structure role must be associated with a unique function, and conversely,
2. *The subject condition*: every predicator must have a subject. (Bresnan, 2001, 311)

These conditions filter out ill-formed structures. In other words, "(i)n every lexical form, every expressed lexical role must have a unique syntactic function, and every syntactic function must have a unique lexical role" (Bresnan and Kanerva, 1989, 28). Thus, functional-argument bi-uniqueness filters out f-structures that yield, for example, double subjects while, at the same time, every predicator must have a subject. Thus, the subject condition forbids f-structures without SUBJ. These two conditions are illustrated in (25) and (27) below.

Summarising Bresnan (2001, 309-311), the basic syntactic principles for mapping a-structures onto surface grammatical functions operate as follows. Thematic roles are freely mapped onto all compatible grammatical functions subject to a few general constraints: if the given role is the initial argument of the predicator, a most prominent role classified [-o], has to be mapped onto the subject function. Note that this rule favours as default an alignment between the three parallel levels of syntactic representation: i.e. the first NP in c-structure aligns with the SUBJect grammatical

function and the <agent> semantic role. If the given a-structure does not contain such a role, a non-agentive role marked [-r] has to be mapped onto the subject function. All other roles are mapped onto the lowest compatible grammatical function on the following hierarchy of core argument functions:

(22) SUBJ > OBJ, OBJ_θ > OBL_θ (cf. Bresnan, 2001, 309).

To illustrate the practical operation of the mapping principles it may be useful to exemplify them with the active-passive alternation. Let's take the previous examples of alternate mapping of the predicator *pat*, *patted* as in (23) – (24).

(23) Peter patted the dog.

(24) The dog was patted by Peter.

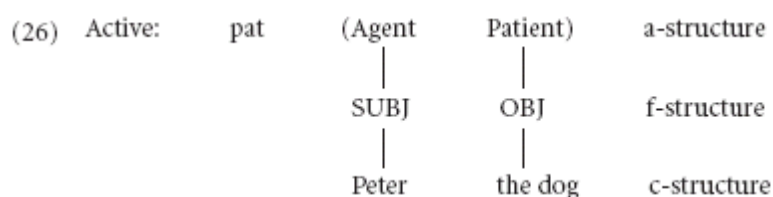
The mapping of (23), which represents English canonical order SVO, is given in (25):

(25)

pat	< agent	patient >
intrinsic	[-o]	[-r]
default	[-r]	
mapping principle		[+o]
	SUBJ	OBJ
	<i>Peter</i>	<i>the dog</i>

The English transitive verb *pat* has two thematic roles, i.e. Agent and Patient. Agent and Patient have intrinsic values of [-o] and [-r] respectively. As Agent is the most prominent argument role (i.e. highest in the thematic hierarchy), the general subject default applies and it receives the value [-r]. Therefore, Agent is mapped onto SUBJ (cf. 17 above). Patient, on the other hand, has the intrinsic value [-r]. Logically it can receive either value [+/-o]. But it should receive [+o] linking to OBJ, otherwise Patient would be linked to SUBJ and this would violate Functional-Argument Bi-uniqueness. This is why the resulting mapping shown in (25) can be considered canonical. (26)

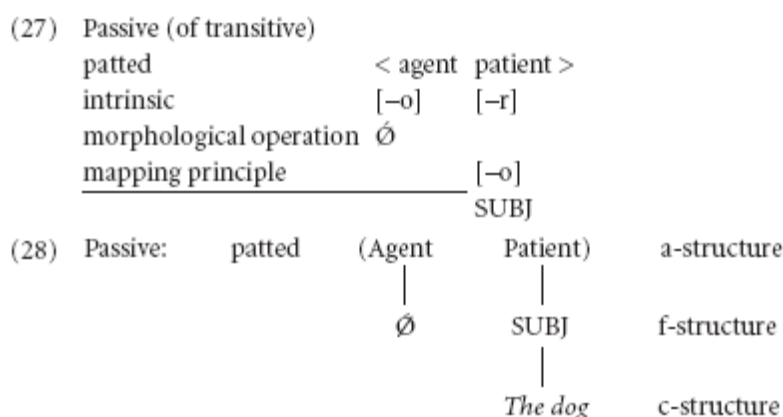
shows more clearly how this alignment of the three parallel structures creates canonical order.



This result is compatible with Optimality treatments of word order (cf. Lee, 2001 and note 8).

Now let us turn to the Passive alternation in (24). A passive morpholexical operation applies and the highest thematic role is suppressed. Therefore, ‘agent’ cannot be associated with any core grammatical functions. The suppressed ‘agent’ may appear as ADJ(unct), however.

The ‘patient’ role has the intrinsic value of [-r]. In order to fulfill the subject condition it must receive the value [-o]. This mapping mechanism is illustrated in (27). In the context of this chapter it is crucial to note that this mechanism is non-canonical because the most prominent argument (‘agent’) cannot be linked to SUBJ.



Note that in terms of c- to f-structure mapping, passives correspond to canonical c-structure i.e. SV(X). We will show below that for these structures non-linearity is caused by non-linear a- to f-structure mapping.

In this section we outlined Lexical Mapping Theory, the second of the new LFG components used in PT. Lexical Mapping Theory constitutes a theoretical basis for further characterising learners' developmental stages on the basis of lexical feature structure of verbs and their relationship to their nominal arguments. We have shown also that there is a degree of choice in the assignment of prominence to specific arguments through non-canonical mapping onto f-structure. In Section 4 we will show that these choices become available to the learner after canonical a- to f-structure mapping is under control.

3.4. *Language-specificity*

There are two sources of language-specificity that are crucial to our current discussion: (i) c-structure and (ii) the lexicon. These have been the object of study and experimentation in psycholinguistics as well as linguistics. In this section we will briefly illustrate the language-specific nature of the lexicon and of c-structure.

One set of studies highlights the language-specific nature of the interplay between conceptual-semantic structure and c-structure particularly well. The studies by Bock and Miller (1991) and Bock and Cutting (1992) examine the interplay between these two parallel structures in English by relating conceptual plurals and singulars with verbal agreement marking in sentence completion tasks. As illustrated in (28), informants are to complete sentences referring to multiple tokens (conceptual plural) and to single tokens (conceptual singular), and response differences are measured.

(28) Sentence completion tasks

(Multiple tokens (conceptual plural):

The label on the bottles ... -> is/are

One token (conceptual singular)

The journey to the islands ... -> is/are

The authors found that errors are equally likely after both preambles. In other words, there was no distributivity effect. The study was initially seen to support a strictly hierarchical model of language production in which conceptual and syntactic processes are entirely independent of each other.

However, a replication of the experiment for Italian (Vigliocco, Butterworth and Semenza, 1995) shows that the non-distributivity of the results for English is due to the specific mechanisms involved in English agreement marking, which differs significantly from those found in Italian. Vigliocco, Butterworth and Semenza (1995) demonstrated in their study that in Italian agreement errors are more likely after preambles containing a conceptual plural. In other words, they demonstrated a significant distributivity effect for Italian. Further studies (Vigliocco, Butterworth and Garrett, 1996; Vigliocco and Nicol, 1998; Franck, Vigliocco and Nicol, 2002) demonstrated that features such as number and gender can be retrieved independently from conceptual structures, for both number agreement between the subject and the verb and gender agreement between the subject and a predicative adjective.

Taken together, these studies support a model of language production that allows for fundamental differences in processing procedures between languages for verbal agreement marking, including the independent retrieval of features such as plurality from conceptual structure. In contrast, the hierarchical model would be based on the assumption that for all languages the verbal subject marker receives its information from a constituent associated with the subject function by virtue of its configurational properties. Vigliocco's model is mirrored in the architecture of LFG's correspondence mechanisms which permit different mapping procedures for English and Italian, with the latter marking SUBJ directly on the verb.²⁶

The language-specific nature of the matching of conceptual-semantic structures onto surface c-structure is illustrated by Di Biase and Kawaguchi (2002), who compare the mapping of the predicator "see" in two different languages, English and Italian. In both languages this predicator requires two arguments, i.e. *experiencer* and *theme*. The *experiencer* and the *theme* map onto the syntactic functions SUBJect and OBJect, respectively in f-structure for both languages (Figures 4 and 5). Despite the invariance of the f-structure, Di Biase and Kawaguchi show that in English the subject function is marked in DP, whereas in Italian it is marked in V by means of a morphological subject marker (SM), as specified in Bresnan (2001, 150-51):

²⁶ These correspondence mechanisms explain two further issues, namely (1) how in pro-drop languages such as Italian and Spanish the subject is recovered from the verb; (2) how word order alternatives to the pragmatically neutral SVO (e.g. orders with postverbal subjects) can occur in those languages without assuming feature copying. Both the recovery of the subject and word order alternations can be accounted for by assuming a merging mechanism at the mother node, that ensures the compatibility of the feature structure of the dependencies.

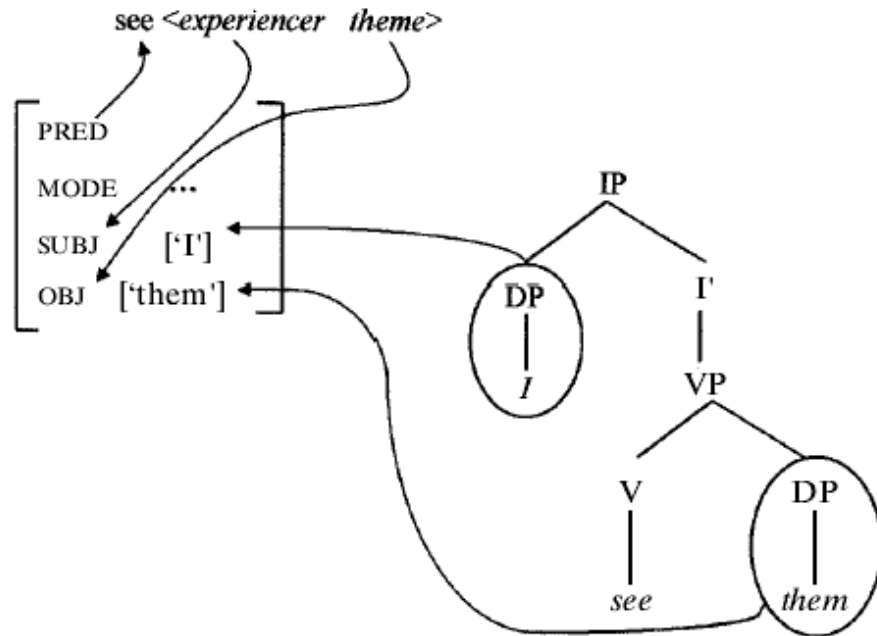


Figure 4 Matching c-structure onto a-structure in English (Di Biase and Kawaguchi, 2002, 277).

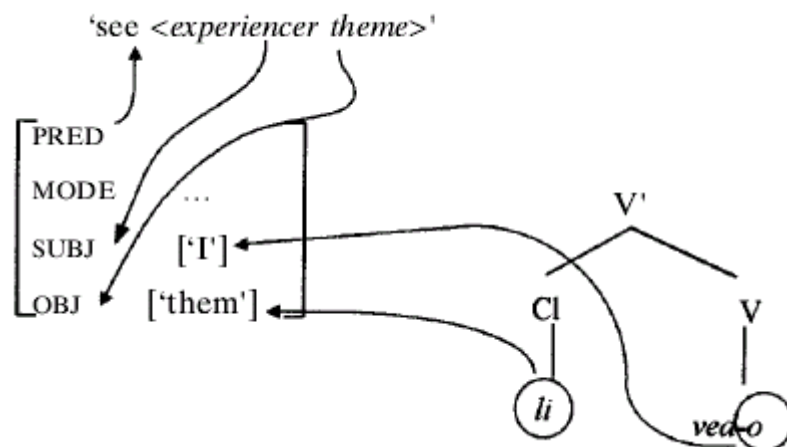


Figure 5 Matching c-structure onto a-structure in Italian (Di Biase and Kawaguchi, 2002, 277).

The differential account of linguistic representation for English and Italian subject marking (illustrated in Figures 4 and 5) deviates significantly from GB and minimalist accounts, in which subjecthood is defined through c-structure configurations. The LFG account corresponds to psycholinguistic studies that demonstrate the existence of differential language-specific online processes in the matching of conceptual-semantic structures onto surface c-structure.

The second language-specific aspect of linguistic representation and learning is the lexicon. This is also implied in the above experiment: the specific conceptual features

(for instance ‘gender’ or ‘number’ of the referent) that a language obligatorily encodes are represented in the lexicon. English for instance does not require that the gender of the referent be marked in words such as *friend*, but Italian does require this marking: *amico* refers to “male friend” while *amica* refers to “female friend.” This, in turn, has morphosyntactic consequences for Italian where determiners, modifiers or predicates must all be marked for gender (feminine or masculine) as can be seen in (29).

- (29) *la mia amica è australiana*
 the F myF friendF is AustralianF
 “my friend is Australian”

Obviously, the English gloss does not reveal the gender of the referent. This simple example illustrates typological differences in the encoding of conceptual information. In one case gender is encoded morphologically. In the other case it is left unspecified.

A less obvious example of language-specific features that are located in the lexicon is related to the mapping of a-structure onto c-structure. Although there are broad areas of correspondence across languages, the relationship between a-structure and f-structure is by no means universal, and learners of a second language will need to learn which constructions and which verbs are exceptional, and how exactly such verbs map which argument to which grammatical function. The Italian verb *piacere* (“to like/to please”) may serve as an example of a verb with marked specification. The mapping processes required for this verb constitute a lexically based learning problem for second language learners of Italian, as illustrated in (30) which was produced by an intermediate L2 Italian learner.

- (30) * *tu piace il film?*
 you.NOM like the movie?
 “Do you like movies?”

In (30) the learner canonically connects two participants with the Italian verb *piacere* to “like”; namely ‘experiencer’ and ‘theme’ as in (31). These thematic roles are canonically linked to SUBJ and OBJ in the same manner as in the English verb *like*. However, the Italian verb *piacere* requires a different mapping. With *piacere* ‘theme’

maps onto SUBJ and ‘experiencer’ maps onto an oblique function, i.e. OBJ_θ. Comparing the two thematic roles, experiencer and theme, the former is placed higher in the Thematic hierarchy (see (17) for Thematic hierarchy). Therefore, default mapping would link Experiencer to SUBJ. But the Italian verb “piacere” requires non-default mapping. This is illustrated in (32).

- (31) * Piacere < Experiencer Theme >
 | |
 SUBJ OBJ
- (32) Piacere < Theme Experiencer >
 | |
 SUBJ OBJ_θ

In other words, L2 learners have to acquire the specific non-default mapping that is associated with the semantics of the verbs of the target language.

4. Processability Theory and correspondence principles

4.1. Non-linearity

As we noted above, the original version of PT was based on one specific measure of linguistic linearity in surface structure that was operationalised in terms of feature unification. This was illustrated above in Figure 1 with the non-linearity of English S-V agreement marking. In this section we include two other sources of non-linearity in the PT framework:

- i. The mapping of non-canonical c-structure onto f-structure. Here non-linearity is created by the addition of adjuncts to canonical structure and the assignment of discourse functions (FOC and TOP) to dislocated elements in c-structure.
- ii. The mapping of non-canonical argument structure onto f-structure. Here non-linearity is caused by exceptional lexical entries with intrinsic non-canonical a-structure (e.g. “receive” or “please”) and non-default verb forms (e.g. passive, causative constructions). In the latter case, constituent structure may be canonical while the a- to f- structure mapping is non-canonical.

It may be useful to illustrate how these two mechanisms can produce linguistic non-linearity. We noted in Section 3.3 that if the initial argument of a predicator is non-objective it has to be mapped onto the subject function. For English this implies that the

default function of the first argument (which is also the first NP) is SUBJ. The linearity of the default mapping of argument roles onto grammatical functions is exemplified in (33).

(33) He bought an ice cream.

The predicator of (33) is given in (34). Its first argument role is an agent which is mapped onto SUBJ – according to the default principle. The predicator of (33) also contains the argument role ‘theme’, which is mapped onto the grammatical function OBJECT.

(34)	buy	_____	<	agent		theme	>	argument roles
				SUBJECT		OBJECT		grammatical functions
				NP _{SUBJ}		NP _{OBJ}		c-structure

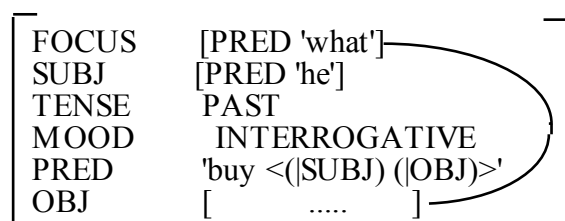
This results in a one-to-one correspondence of argument roles, grammatical functions and c-structure, yielding an optimal alignment of argument roles with the c-structure default. This correspondence relationship requires no exchange of grammatical information across or within constituents. It therefore ranks low on the processability hierarchy. Lee (2001) derives the same relationship between argument roles, syntactic functions and linear order of constituents from her OT-LFG treatment of word order in Korean and Hindi, based on the notion of ‘Harmonic Alignment’ (Prince and Smolensky, 1993; cited in Sells, 2001, 7). In other words, one-to-one correspondence as the natural default follows from a processing perspective as well as from an epistemological perspective.

A deviation from the one-to-one correspondence is evident, for instance in WH-questions such as (35).

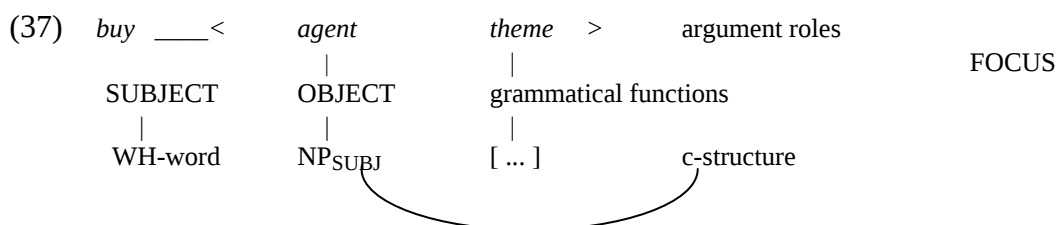
(35) What did he buy?

The predicator of (35) is that given in (34) above. As mentioned in Section 3.3, the FOCUS XP is allowed to satisfy the unsatisfied function as indicated in the f-structure illustrated in (36).

(36)



As can be seen in (36), “what” is mapped onto the FOCUS function, which is linked to OBJ. In other words, FOCUS and OBJ are related to the same constituent in c-structure. As shown in (37), this leads to non-canonical mapping, due to the appearance of a WH-word in the default position of SUBJ.



In other words, information about the link between FOCUS and OBJ needs to be exchanged between the two grammatical functions, and this information exchange constitutes the non-linearity that is present in English WH-questions.

In the same way as learners need to develop means for handling non-linearity caused by feature unification, they need to develop means for handling non-linearity created by non-default mapping. Therefore the lack of such means constrains interlanguage grammar, and the acquisition of these means gradually relaxes the above processing-based constraints on the learner’s grammar. In the sections below we will describe the constraints that are present at the initial state and how these are relaxed by means of developing additional principles governing the relationship between the three parallel levels of structure.

Although there is a strong relationship between the three levels of syntactic representation (i.e. argument, functional and constituent structure), it is crucial to bear in mind that non-linearity caused by c-to-f-structure mapping is quite separate from non-linearity caused by a-to-f-structure mapping.

For instance, the mapping processes found in WH-questions and in topicalisation illustrate the choice for any native speaker of establishing a non-linear relationship between c-structure and f-structure, by bringing a c-structure element into focus. When this choice is made, a non-linear relationship has to be established between c-structure and f-structure. A new (discourse) function (FOC, TOP) now needs to be mapped onto f-structure in addition to the canonical grammatical functions (SUBJ, OBJ etc.). In interlanguage English this is done without changing in any way the argument structure and its mapping onto f-structure. All the speaker needs to do is ensure that the argument function and the discourse function in f-structure are linked, thus satisfying the extended coherence condition.

4.2. *The Unmarked Alignment Hypothesis*

The mapping processes found in WH-questions and passives illustrate the speaker's choice of using non-linear relationships between a-structure, f-structure and c-structure. As shown in the previous section, this mapping process is subject to the constraints specified in LFG's correspondence mechanisms. Putting it boldly, adult speakers of English do not always simply map a linear list of argument roles onto a list of grammatical functions and map those onto continuous c-structures as shown in (39).

(39)	agent	patient	...	argument roles
	SUBJECT	OBJECT	...	grammatical functions
	NP _{SUBJ}	NP _{OBJ}	...	c-structure

However, this is exactly what children aged 4 acquiring English as their first language have been found to do in psycholinguistic experiments. For instance, Bever (1970) studied the accuracy with which informants act out test sentences such as (40 a-e).

- (40) a The horse kisses the cow.
 b It's the horse that kisses the cow.
 c It's the cow the horse kisses.
 d The cow is kissed by the horse.
 e The dog pats the mother.

Bever found that four-year old children tend to assign the agent role to the first noun in a sentence, even in sentences like (40c) and (40d). Strohner and Nelson (1974) confirmed these findings and also included factors such as 'event likelihood' in their analysis, which explains why Bever's strategy ("first noun = agent") is unlikely to be applied in (40e). In other words, the children used English canonical order to interpret the events: i.e. the first linear participant was mapped onto subject function and assigned the agentive role – with the exception of (40e), which contradicted children's world knowledge ("event likelihood"). Naturally, neither Bever nor Strohner and Nelson had the benefit of conceptualising these findings in terms of LFG. Instead, they

viewed their findings in terms of fixed and direct relationships between semantics and surface grammatical form.

Bloom (1994) reports that knowledge of word order appears to exist even before the two-word stage. A study with 17-month old babies showed that they were sensitive to semantic contrasts expressed by word order (Hirsh-Pasek, Golinkoff, Fletcher, DeGaspe Beaubien and Cauley, 1985). Newport and Meier (1985) show that children acquiring American Sign Language, a free word order language, nevertheless initially use word order to express grammatical relations.

Canonical schemata are also present in adult language processing. Weyerts, Penke, Münte, Heinze and Clahsen (2002) present strong evidence from online studies supporting the view that for a configurational language (German) the processor can handle sequences more readily when the subject precedes the object, rather than the other way around, although both sequences do occur in German. The evidence is based on self-paced reading experiments and studies of event-related brain potentials. All studies show a clear subject-first preference and an added processing cost associated with SOV. This research is in line with previous studies by Bates and MacWhinney (e.g. Bates and MacWhinney, 1981; 1982; 1987), showing that speakers of English (an SVO language) tend to interpret preverbal NPs as grammatical subjects.

In second language acquisition, reliance on canonical word order is even more pronounced than in L1 acquisition, particularly in language production. It is a well-attested finding, from a large number of corpus-based studies in most languages that have been studied (including Germanic languages, Italian, Japanese, Chinese and Arabic – for further reference compare the chapters of this volume on the above L2s), that the initial hypothesis of syntax is based on canonical word order.

Sasaki (1998) demonstrated in online comprehension studies of L2 processing that the canonical sentence schema is easier to process than non-canonical schemata both for native and non-native speakers. Sasaki demonstrated longer latency and lower accuracy rates in the comprehension of Japanese causative sentences than in canonical (active) double object sentence (see also Kawaguchi, this volume). He attributed these results to the higher processing cost for sentences requiring non-canonical mapping.

Pinker (1984) reports that in his own re-analysis of Brown's (1973) English L1 data (Eve, Adam and Sara), he found only a handful of verbal passives compared to thousands of active sentences. This corresponds to findings from Bever's (1970) and

from de Villiers and de Villiers' (1973) study of L1 learners' comprehension of passive sentences, which show that passives cannot be processed reliably before age five or six.

These findings parallel Slobin's²⁷ (1984) observation that Japanese verbs such as *morau* ("receive"), whose recipient argument maps onto the subject (and takes nominative case), are acquired late by Japanese children. In experiments, Marantz (1982) found that three and four-year-old children could easily learn made-up verbs whose agent and patient arguments were expressed as subjects and objects respectively. The same informants had difficulties, however, learning verbs with the opposite correspondences.

All of the above studies are compatible with direct canonical mapping. As mentioned above, the notion of direct mapping goes back a long way (e.g. Bever, 1970; Slobin, 1985; Pinker, 1984, 1989). Direct mapping has been discussed in the context of functional as well as rationalist language acquisition research. As Pinker (1984) points out, many linguists have noted a regular relationship between thematic roles and grammatical functions (e.g. Bresnan, 1982; Jackendoff, 1977; Keenan, 1976; Keenan and Comrie, 1977; Perlmutter, 1980;). Pinker (1984, 297 ff.) characterises this relationship as follows:

"In a language's 'basic forms' (roughly, simple, active, affirmative, declarative, minimally presuppositional, and pragmatically neutral sentences; see Keenan 1976), agents (if present) are realised as subjects, themes are realised as subjects if there is no agent and as objects otherwise, and sources, locations, and goals are realised as oblique objects if there is an agent or a theme or both, or as objects if there is only a theme."

According to Pinker (1984), canonical mapping occurs when the lexical entry of the verb specifies thematic roles for its arguments that are associated with their grammatical function, without crossing the links between the two tiers in Figure 6. Also, there must be exactly one thematic role linked to SUBJ (not necessarily the 'agent').

²⁷ Slobin's (1985) explanatory approach to direct mapping is data-driven. Slobin collected and analysed large amounts of L1 acquisition data across different languages and found that the majority of his data on early L1 learner language can be accounted for by a "prototypical scene," which is a highly transitive activity that is mapped onto canonical sentence schemata. In this process the agent-role is linked to SUBJ, and the patient-role linked to OBJ. Slobin claims that the child's association of the prototypical scene with the canonical sentence schema is driven by the frequency and saliency of the linguistic input.

SUBJ	OBJ	OBLIQUE	(grammatical functions)
agent	theme/patient	goal/source/location	(thematic relations)

Figure 6: Canonical mapping following Pinker (1984: 298-307)

However, as Pinker (1984) points out, there are also non-basic verb forms, such as passives, and exceptional (intrinsically non-canonical) verbs such as *receive*, *please*, which do not conform to a canonical association between argument structure and grammatical functions. Pinker (307) proposes that canonical mapping is available as an acquisition mechanism and that it requires less knowledge (phrase structure rules and inflectional rules) and less processing of the input (i.e. parsing the string and observing the roles played by the NP referents) than learning non-canonical associations from positive evidence.

Pinker's hypotheses are reminiscent of aspects of LMT, although LMT was created much later than Pinker's hypotheses. In fact, Pinker's work is based on the early version of LFG (Kaplan and Bresnan, 1982) and is therefore compatible with our overall approach. The mapping processes proposed by Pinker that are sketched out above in Figure 6, however, focused on cases of canonical mapping and offer no formal LFG account of other cases and their variations across languages, or of the development from the initial hypothesis to the mapping processes found in the target language. This was due to the fact that at the time LFG did not contain any general formalism to represent correspondences between argument structure and functional structure across languages. These correspondences can now be represented by LFG's Lexical Mapping Theory. In addition, the correspondence between c-structure and f-structure can be accounted for by the principles outlined in Section 3.2. above.

Lee (2001) treats these correspondence relationships within an OT-LFG framework and on this basis develops a Universal Scale of unmarked mapping such as the following:

“GF: SUBJ > NonSUBJ
Case: NOM > OBL
Position: Initial > Noninitial.” (Lee, 2001, 97)

In other words, Lee's scale implies that the grammatical function SUBJect is less marked than Non-SUBJects, NOMinative case is less marked than OBLique case, and that the initial position is less marked than the noninitial position. This approach permits a generic treatment of mapping principles starting from a universal default and covering the full range of typologically possible variations found in interlanguages and target languages.

We can therefore modify the 'direct mapping hypothesis' on the basis of LMT and c-to-f-structure correspondences as in (41).

(41) *The Unmarked Alignment Hypothesis*²⁸

In second language acquisition learners will initially organise syntax by mapping the most prominent semantic role available onto the subject (i.e. the most prominent grammatical role). The structural expression of the subject, in turn, will occupy the most prominent linear position in c-structure, namely the initial position.

In other words, the Unmarked Alignment Hypothesis predicts that learners will initially organise syntax on the basis of one-to-one correspondences between a-structure and f-structure and between c-structure and f-structure. As we showed above, such one-to-one correspondences will universally result in entirely linear structures that require no internal re-arrangement of linguistic material and no language-specific processors or memory stores. Given this state of L2 linguistic knowledge, the yet immature L2 processor cannot transfer linguistic information, as would be required for the unification of lexical features. These one-to-one correspondences, which are illustrated in Figure 7, therefore guarantee the computationally least costly manner of organising L2 syntax and rely entirely on aspects of the syntactic machinery that are not language-specific, including f-structure, the thematic hierarchy and universal aspects of c-structure.

²⁸ The term 'Unmarked Alignment Hypothesis' is inspired by OT-LFG research (e.g. Bresnan, 2000; Sells, 1999, 2001; Lee, 2001). This connection between PT and OT-LFG has been pointed out to us by Peter Sells.

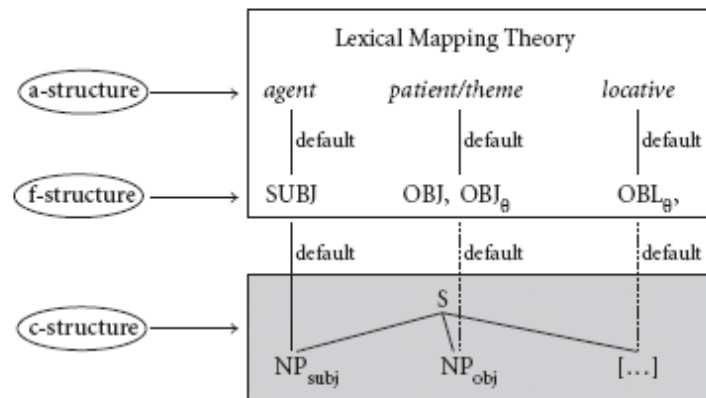


Figure 7: one-to-one correspondences

The reader will recall from Section 1 of this chapter that theories of language acquisition have to address two key issues: (i) the logical problem (i.e. the origin of linguistic knowledge), and (ii) the reason(s) for universal patterns in developmental trajectories (i.e. the developmental problem). Both Pinker (1984) and Slobin (1982) tackled both these issues simultaneously in their approaches. In other words, both authors see their approaches as a contribution to explaining the learning mechanisms as well as the developmental schedules involved in language acquisition.

In contrast, PT was designed as a set of psycholinguistic constraints on what learners can process. This set of constraints that was formalised in the processability hierarchy serves as an explanation of developmental trajectories. In other words, PT does not contain learning mechanisms. It nevertheless interfaces with LFG, i.e. a theory that can model linguistic knowledge, and PT can therefore be extended to also address the logical problem. The OT-LFG interface offers a powerful epistemological approach that can complement the set of developmental constraints inherent in PT. In the extension of PT that is presented here we have not yet completed this step.

The need for such a complementary relationship of developmental constraints and epistemology is evident in the initial hypothesis of language learners. Pienemann (1998b) discusses the differential initial hypotheses found in German L1 and L2

learners. He shows (following Clahsen, 1990) that in L1 learners the initial word order hypothesis is SOV, whereas in L2 learners it is SVO, and that nevertheless both hypotheses are within the constraints defined by the processability hierarchy. In fact, both word order patterns are canonical. It turns out that this initial hypothesis then sets in motion differential developmental trajectories, both of which are in line with the constraints defined by PT, and that the L1 trajectory is less error-ridden and more successful.²⁹ In other words, PT does capture essential aspects of these differential developmental dynamics. It is not set up, however, to determine why L1 and L2 learners start out with different initial word orders. This is an issue that can only be resolved by an epistemological approach, such as the one present in the OT-LFG interface (cf. Sells, 2001).

The Unmarked Alignment Hypothesis implies that L2 learners know the basic architecture of syntax with its three parallel levels of structure. In other words, it implies that L1 knowledge is transferred at an abstract level. This assumption does not in any way contradict the “developmentally moderated transfer hypothesis” (cf. Pienemann, Di Biase, Kawaguchi and Håkansson, this volume), because the latter relates exclusively to language-specific features of grammar, not to its overall design.

Given that many aspects of c-structure are language-specific and the learner can transfer only universal aspects of c-structure to the L2, the ‘developmentally moderated transfer hypothesis’ predicts that at the initial state c-structure is ‘flat’ (e.g. without VP), and the S-procedure as well as phrasal procedures are unable to act as linguistic memory stores for grammatical information because such information is language-specific. For instance, as we showed in Pienemann, Di Biase, Kawaguchi and Håkansson (this volume), the entries to the L2 lexicon have not been annotated for any syntactic features. Also, we noted above that c-structure rules and related principles that ensure positional constraints, such as the auxiliary in second position in English WH-questions, are highly language-specific and can therefore not be transferred to the L2.

In the original version of PT the initial hypothesis of syntax was described as a state in which no information can be transferred from anywhere in the sentence to any other position in the sentence using lexical unification. The reason for this is that at this point of the developmental process no procedures have been developed that would allow the information transfer to be carried out. Kempen (1998) raised the question of how the

²⁹ Some aspects of these developmental dynamics can be modelled by the notion of “generative entrenchment” (Wimsatt, [1986](#)), as shown by Pienemann (1998a).

learner can form sentences at this point if the S-procedure has not been developed. Pienemann (1998b) assumes that the S-procedure is simplified at this point.

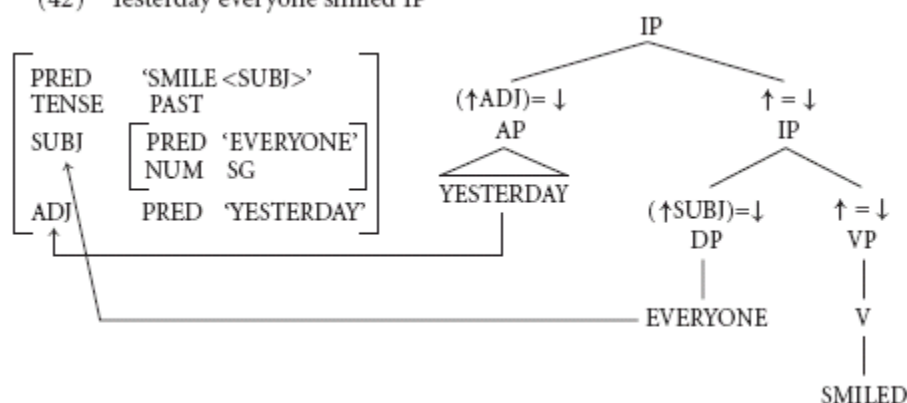
Our present line of argument not only provides an additional motivation for canonical word order at the initial state, but it also allows us to define what is entailed in the learner's simplification of the S-procedure. The Unmarked Alignment Hypothesis implies that a fixed association is established between a-, f- and c-structure when the development of L2 syntax starts. This association relationship specifies how sentences can be formed despite the simple structure of the interlanguage, and it constrains the interlanguage grammar into canonical word order. Viewing SLA from this perspective, the remainder of the acquisition process can be seen as the cumulative adaptation of the interlanguage to the specific linking principles of the L2.

4.3. *Non-linearity and discourse functions: The TOPIC hypothesis*

The departure from the Unmarked Alignment Hypothesis is marked by the first deviation from the canonical sentence schema. Empirical studies of the second language acquisition of a range of configurational languages, such as German or English, identified sentence-initial adverbials and WH-words to be the first non-subjects to occur in sentence-initial position in L2 development. In this section we will first consider these post-initial L2 developmental dynamics in English and German, and we will then attempt to represent the underlying mechanisms in more general terms.

In Section 3.2 we described roughly how structures such as sentence-initial adverbials and WH-words can be accounted for. Now it will be useful to see how non-linearity is created in these structures using the correspondence mechanisms sketched out above. The mechanism applying to sentence-initial adverbials was briefly discussed earlier. It stipulates that constituents adjoined to XP be assigned one of the non-argument functions TOP, FOC or ADJUNCT. This licences sentence-initial arguments adjoined to XP to assume one of these grammatical functions (Bresnan, 2001). One principle governing c- to- f-structure mapping stipulates that specifiers of functional projections are grammaticalised discourse markers (i.e. TOP, FOC or SUBJ). Example (42), which repeats (5), illustrates that in the case of English, the specifier of IP is SUBJ and that the constituent adjoined to XP is ADJ.

(42) Yesterday everyone smiled IP



As mentioned above, in (42) the initial position is occupied by a non-subject. This marks a departure from the Unmarked Alignment Hypothesis, which assumes that the three parallel levels of syntax are mapped onto each other in a strictly one-to-one manner, thus defining the first sentential position as the default for NP_{SUBJ}. The mapping of AP onto ADJUNCT and of DP onto SUBJ is now no longer linear. Instead, assigning the grammatical function ADJ to AP is based on XP-adjunction, and

assigning SUBJ to DP now relies on identifying the specifier of functional projections in c-structure. Note that at this point in interlanguage development the rest of the canonical pattern can nevertheless be mapped one-to-one from c-structure onto the hierarchy of grammatical functions.

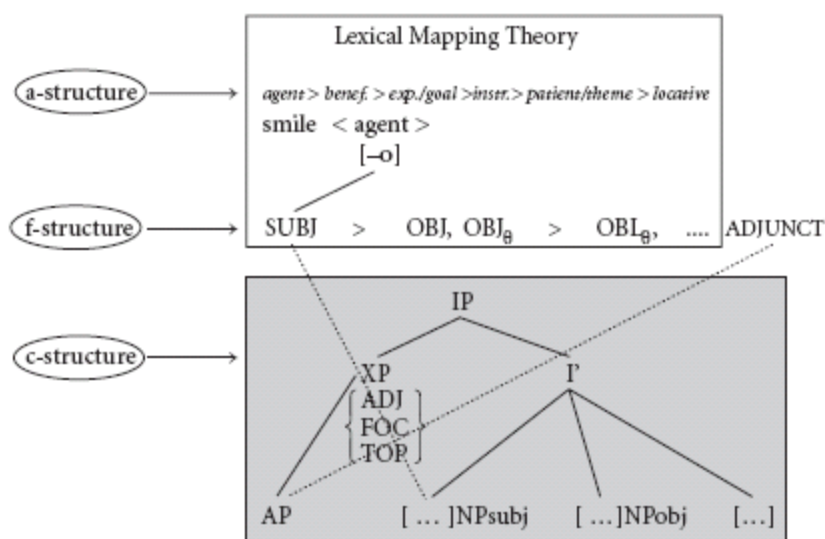


Figure 8: XP-adjunction in interlanguage

The assumption that in the presence of XP-adjunction the rest of the canonical pattern can nevertheless be accounted for by one-to-one mapping is supported by the developmental trajectories found in German, Swedish and English interlanguage systems. Note that in native German XP-adjunction constrains the verb into second position (cf. Berman and Frank, 1996; Berman, 2003). This is similar in Swedish. In English, the XP-adjunction of WH-words that refer to non-subjects constrains an auxiliary into second position (cf. Kaplan and Bresnan, 1982). It is a well-attested finding from research on the acquisition of German as a second language (GSL) that learners of GSL always violate this constraint when they first acquire XP-adjunction (cf. Clahsen, Meisel and Pienemann, 1983; Pienemann, 1981, 1998a). The same is true for Swedish as a second language (cf. Pienemann and Håkansson, 1999; Håkansson, Pienemann and Sayehli, 2002). In a similar vein, ESL learners initially form WH-questions without the auxiliary in second position (cf. Pienemann, 1998a), thus applying

canonical word order after XP-adjunction. Note that all of these interlanguage rules are obligatory.

Pienemann (1998a) showed that the operations required to produce the verb-second constraint in the above Germanic languages are based on the transfer of grammatical information in the S-procedure, and this is an operation that occurs much later in L2 development than XP-adjunction. Hence, for an extended period in L2 development, learners of German, Swedish and English as L2 produce c-structure configurations that violate the verb-second constraint of the target language. Of course, in English the verb-second constraint applies to sentences with WH-words (referring to non-subjects) in XP only.

The interlanguage violation of the verb-second constraint is exemplified in (43). This example is taken from a longitudinal study of an eight-year-old Italian girl acquiring German as L2 - after about one year of contact in a natural setting.

(43) *auf ein blatt wir schreiben was die sagt*
on a sheet (of paper) we write what she says
“we write on a sheet of paper what she says”
(Eva, week 56, Pienemann 1981: 58)

Native German would have required the verb to be placed in second position as shown in (44).

(44) *Auf ein Blatt schreiben wir, was sie sagt.*
“on a sheet of paper write we what she says.”

As this example illustrates, at this stage the c-structure produced by L2 learners can be accounted for by two principles: (i) XP-adjunction and (ii) direct mapping.

In this context it is worth noting the following empirical facts that strongly support this assumption of a greatly simplified interlanguage rule system. In their survey of more than one thousand informants Pienemann and Håkansson (1999) found this interlanguage rule to be categorical. The same is true for the extensive longitudinal and cross-sectional studies by Pienemann (1981, 1998a) which did not document even a

single instance of a verb-second structure at this point in development. In addition, Håkansson, Pienemann and Sayheli (2002) found that even Swedish learners of German follow this developmental trajectory, although the verb-second constraint is present in both languages. Pienemann, Di Biase, Kawaguchi and Håkansson (this volume) explain this on the basis of the “developmentally moderated transfer hypothesis.” In other words, the interlanguage state described by the above set of two rules is supported by robust data.

It is important to note that the changes to the interlanguage system described above are brought about exclusively by XP-adjunction. In other words, these changes can be described solely in terms of the relationship between c-structure and f-structure. The correspondence between a-structure and f-structure remains unaffected by this.

One aspect of XP-adjunction is somewhat similar to processes found in English and German WH-questions. As mentioned above, the c-structure shown in Figure 8 is based on the following simplified rule (cf. Dalrymple, 2001, 406):

$$(45) \quad CP \rightarrow \left(\begin{array}{c} XP \\ ((\uparrow FOCUS) = \downarrow \\ (\uparrow FOCUS) = (\uparrow COMP^* GF)) \end{array} \right) \uparrow = \downarrow \left(C' \right)$$

In order to secure completeness and coherence we must assume that the discourse function FOC is allowed to satisfy the unsatisfied argument function (i.e. OBJ), as illustrated in the f-structure in Figure 9 where the FOC function is linked to the OBJ function. As can be seen in Figure 9, the WH-question constituent maps onto both, FOCUS and OBJ functions.

In other words, information about the link between FOCUS and OBJ needs to be exchanged between the two grammatical functions, and this information exchange constitutes one aspect of non-linearity that is present in WH-questions. An additional aspect of non-linearity is created by the fact that the assignment of SUBJ to a constituent is no longer canonical and instead relies on identifying c-structure regularities similar to the XP-adjunction of ADJUNCTs that was discussed above.

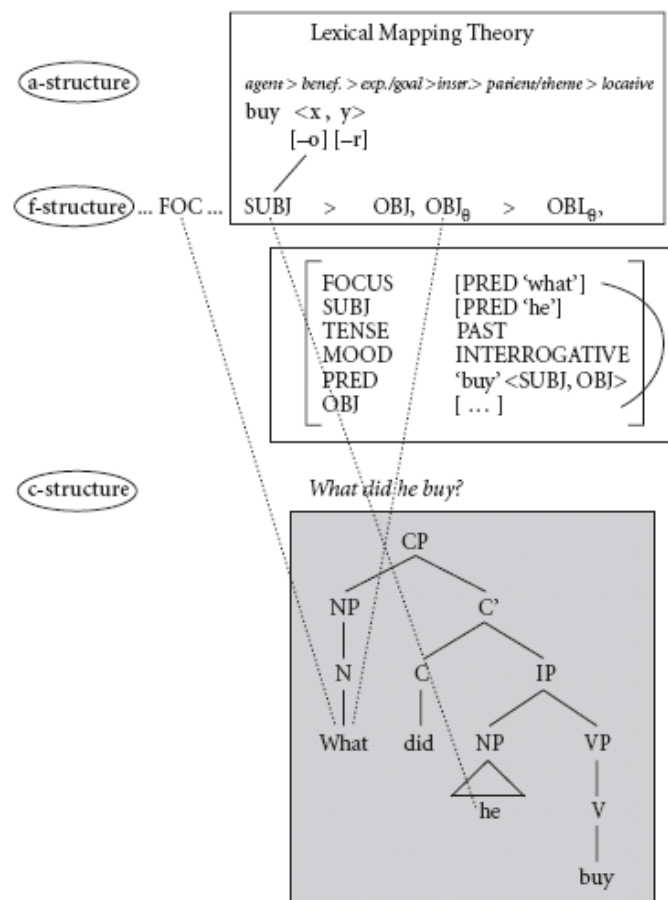


Figure 9: Mapping in WH-questions

As we have seen, WH-questions and XP-adjunction have in common that a constituent annotated for a function other than SUBJ appears in initial position. In English, the difference between the two is that XP-adjunction has no further repercussions in c-structure,³⁰ whereas in English WH-questions the auxiliary is constrained to appear in second position. This can be achieved by tensed auxiliaries appearing in C when inversion is involved and in I when it is not. Dalrymple (2001, 64) adds that the auxiliary appears in the proper position on the basis of “[c]onstraints on the functional structure of constructions requiring or forbidding subject-auxiliary inversion...” Bresnan (1982) and Pinker (1984) specified such constraints on the functional structure in the original version of LFG to account for the position of English auxiliaries.

Pienemann (1998a) showed that the constraints on the functional structure specified by Bresnan (1982) and Pinker (1984) require the type of transfer of grammatical information that is possible only on the basis of information transfer in the S-procedure. The presence of a constituent annotated for FOCUS, however, does not require such information transfer. The non-linearity of this structure is limited to a discourse function appearing in the default position of SUBJ. We have shown for XP-adjunction that the remainder of the mapping process may follow a canonical pattern – as illustrated in Figure 7.

In other languages (e.g. in Finnish³¹) WH-question formation has no further repercussions for c-structure, not only if the WH-word is the grammatical subject, but also for other grammatical functions. Therefore these structures can be produced by learners as soon as the WH-word can occupy the first position in the sentence.

³⁰ This is not the case in German, which requires the inflected verb to appear in second position (cf. Berman and Frank, 1996).

³¹ Cf. Karlson (1987).

Stage	Structure	Direct XP mapping		Core argument V2 in XP acquisition		Examples from German second language
4	WH-question	-	+	+	+	Was ißt der Junge? (What eats the boy?)
3	WH-question	+	+	+	-	*Was der Junge ißt? (What the boy eats?)
2	WH-question	+	+	-	-	*Wann der Junge ißt den Apfel? (When the boy eats the apple?)
	ADV	+	+	-	-	*Jetzt der Junge ißt den Apfel. (Now the by eats the apple.)
1	SVO	+	-	-	-	Der Junge ißt den Apfel. (The boy eats the apple.)

Table 1: German L2 development in c- to f-structure mapping and constraints on c-structure

The developmental pattern that has emerged so far for German SLA is summarised in Table 1, which lists the structures discussed above in their developmental order, together with a number of key features. Table 1 shows that XP-adjunction is acquired as one of the cumulative developmental features of the interlanguage. WH-questions are first formed with non-core arguments in XP position and later with core arguments. Up to this point (i.e. Stage 3) interlanguage structures can be produced with XP-adjunction and direct mapping. The latter, however, must be abandoned when in WH-questions the verb appears (correctly) in second position, based on (target-like) constraints on the functional structure of these constructions, because in the resulting c-structure the grammatical function of a core argument in XP position can only be identified correctly if there is a link between its core function and its discourse function in f-structure - as shown in Figure 9. It is this link that creates a degree of linguistic non-linearity that places this structure at the top of the hierarchy in Table 1.

At a more general level, a number of basic principles emerge from the above overview of German L2 development. It starts out with the Unmarked Alignment Hypothesis, which is characterised by complete adherence to a linear correspondence relationship in which the first and most prominent position in c-structure is occupied by the most prominent syntactic function (the SUBJECT), representing the most prominent argument available. The appearance of an AP in this position constitutes the first modification of this linear correspondence. At this point, XP-adjunction permits constituents to be marked for discourse functions, while the rest of c-structure is

mapped canonically onto the universal hierarchy of grammatical core functions. This state of the interlanguage, with XP adjunction and canonical mapping, is attested as the stage following the Unmarked Alignment Hypothesis in the developmental trajectories of a large number of second languages, including Japanese (see Kawaguchi, this volume), Italian (Di Biase and Kawaguchi, 2002), Spanish (Taylor, 2004) and Turkish (Özdemir, 2004).

XP-adjunction triggers the differentiation of the syntacticised discourse functions TOPIC and FOCUS³² from SUBJECT in the developing interlanguage system. Direct mapping at Level 2 does not allow for the differentiation of SUBJECT and TOPIC. Instead, if SUBJ is present it will always occupy the first position. This close connection between SUBJECT and TOPIC is also reflected in Bresnan's typological perspective. She states that it "...comes from the universal default that optionally identifies SUBJ and TOP" (Bresnan, 2001, 117). The equilibrium of the direct mapping processes is disturbed once adjuncts or WH-words appear in the default position of the constituent mapped onto SUBJ. This was shown in Figure 8 above. When the constituent under XP is mapped onto a discourse function (as in WH-questions), TOPIC is differentiated from SUBJECT

The mapping principles and their structural outcomes are summarised in Figure 10. To account for these dynamics we propose the TOPIC hypothesis in (46).

(46) *The TOPIC hypothesis.*

In second language acquisition learners will initially not differentiate between SUBJ and TOP. The addition of an XP to a canonical string will trigger a differentiation of TOP and SUBJ which first extends to non-arguments and successively to non-arguments, thus causing further structural consequences.

³² Bresnan and Mchombo (1987, 757-8) adopt three principles relating to the role of TOP and FOC functions in the grammars of natural language: 1. the relativised constituent or relative pronoun in relative clauses universally bears the TOP function; 2. the interrogative pronoun or questioned constituent universally bears the FOC function; and 3. the same constituent cannot be both focus and topic of the same level of functional clause structure.

<i>discourse principle</i>	<i>c- to f- mapping</i>	<i>structural outcomes</i>
Topicalisation of core arguments	TOP= OBJ	The TOP function is assigned to a <i>core</i> argument other than SUBJ
↑	↑	↑
XP adjunction	TOP=ADJ	Initial constituent is a circumstantial adjunct or a FOCUS WH-word. TOPIC is differentiated from SUBJECT
↑	↑	↑
Canonical Order	SUBJ = default TOP	TOPIC and SUBJECT are not differentiated

Figure 10: The Topic Hypothesis

The TOPIC hypothesis intends to capture the development of syntacticised discourse functions in second language acquisition. The actual position of the adjunct (before or after the canonically mapped structure) is a c-structure issue which the learner may resolve either way, depending on the specific c-structure constraints of the L2. For instance, in Japanese, a verb-last language, only pre-verbal positions are possible (cf. Kawaguchi, this volume). Once core-arguments appear in initial position, however, linear correspondence is no longer viable. In other words, it is the dynamics of the developmental process, starting with the use of non-subjects in focus position, that leads to the eventual collapse of the learner's exclusive reliance on purely canonical association.

4.4. *Non-linearity and Lexical Mapping Theory*

In the previous section we focused on deriving predictions for developmental trajectories from the mapping of c-structure onto f-structure. In this section we will focus on the mapping of a-structure onto f-structure (i.e. on Lexical Mapping Theory) and the implications of the mapping process modelled by Lexical Mapping Theory for the processability hierarchy.

In the previous section we discussed the issue of default mapping at the initial state. We have shown that default mapping goes across the three levels of representation in LFG. This is illustrated in Figure 7 above, which is based on the Unmarked Alignment Hypothesis. This hypothesis postulates that in second language acquisition learners will initially organise syntax by mapping the most prominent semantic role available onto the subject (i.e. the most prominent grammatical role). In other words, the Unmarked Alignment Hypothesis affects both types of mapping processes, including a- to f-structure mapping, and it implies that learners will initially be constrained to follow the default canonical relationship between a-structure and f-structure. Any future deviation from the default has to rely on additional mapping principles or on exceptional lexical entries, both of which create linguistic non-linearity.

<i>a- to f- structure mapping</i>	<i>structural outcomes</i>
Non-default, complex mapping	Complex predicates e.g. Causative (in Romance languages, ³³ Japanese, etc.), raising, light verbs
↑	↑
Non-default mapping (single clause)	Passive Exceptional verbs
↑	↑
Default mapping, ie. most prominent thematic role is mapped onto SUBJ	Canonical Order

Figure 11: Lexical Mapping Hypothesis

³³ See examples (56)-(57).

(47) * *okaasan-wa kodomo-o ryoorisimasu*
 mother-NOM child-ACC cook-PRES.POL
 Literally: “Mother cooks the child”
 (Intended. “Mother cooks [something] for the child”)

(48) *ryoorisuru “cook” < agent beneficiary > [a-structure]
 | |
 SUBJ OBJ [f-structure]
 | |
 Okaasan kodomo [c-structure]
 “mother” “child”

³⁴ The Japanese benefactive construction process is exemplified below:

169

In a similar way, the Unmarked Alignment Hypothesis also implies a developmental prediction for passives, another area that affects the relationship between a-structure and f-structure. As we pointed out in Section 3.3 above, in the passive the relationship between argument roles and syntactic functions may be altered, as can be seen in the suppression of argument roles and altered function-assignment. In Sections 3.3 we described these alterations for passives, and they are illustrated in examples (49)-(52), which are repeated from Section 3.3.

(49) Peter sees a dog.

(50) see <experiencer, theme>
 | |
 SUBJ OBJ

(51) A dog is seen by Peter.

(52) seen <experiencer, theme>
 | |
 Ø SUBJ (ADJ)

As we pointed out in Section 3.3, sentences (49) and (51) describe the same eventuality involving two participants. The difference between the two is that in (51) the constituent *a dog* that is OBJ in (49) is promoted to SUBJ, and the constituent *Peter* that is SUBJ in (49) is defocused and realised as ADJ.

These alterations of the relationship between argument roles and syntactic functions constitute a deviation from default canonical mapping. Kawaguchi (this volume) argues that in order for non-canonical mapping to be possible, the functional destination of an NP can be established only by assembling information about the constituents and by assembling them at the S-node. “The identification of the phrases’ grammatical functions and their functional assignments in passive, causative and benefactive constructions requires that the learner unify information from different sources: the V and the N phrases. This calls for an interphrasal process” (Kawaguchi, this volume). In other words, Kawaguchi not only shows that in Japanese the passive is based on a non-canonical relationship between a-structure and f-structure, but that this construction requires the S-procedure. This amounts to an exact location of this construction and its associated LMT processes within the processability hierarchy.

Considering the English passive (and that of related languages) from the perspective of the learner, it is important to note that stative passives (“the fence is painted,” “the city is destroyed,” etc.) and predicative adjectives (“he is tall”) have two things in common: (1) aspects of their morphology (i.e. they ‘look’ similar to learners) and (2) the absence of a “suppressed thematic role” (Bresnan, 2001, 310). Given that it is the suppression of the agent role that creates non-linear a- to f-structure mapping, the absence of suppression mechanisms allows for canonical mapping in predicative adjectives and stative passives in interlanguage English. This implies that the corresponding syntactic structures conform to the Unmarked Alignment Hypothesis. In other words, these (stative) passive constructions yield canonical order (i.e. SV(X)) at *c-structure level*. This makes them similar to some English adjectival constructions as in (53a-b). Given the canonical mapping process³⁵ inherent in structures such as (53a-b), the Unmarked Alignment Hypothesis predicts that learners of English as a second language may be able to produce these structures at an early stage. This prediction is borne out by an analysis of our ESL database which shows that passive construction as in (53c) are hardly ever produced by low-stage ESL learners, whereas ill-formed sentences as in (54a-b) do appear early and persist at later stages.

(53) a. *I am bored.*

b. *I am confused.*

c. *Tom was confused by Mary*

(54) a. * *I am very boring* (intended. *I am very bored.*)

b. * *I always confuse* (intended. *I am always confused*)

We believe that this observation is due to the lexical learning process required for the target-like lexical entries of the predicates. The lexical entry for the adjectival predicate *boring*, for instance, requires a single <theme> argument. The learner who produced (54a) intended to express an <experiencer> role. In English, however, this feature appears in the lexical entry of the adjectival predicate *bored* as shown in (55a-b).

Hence, there is a mismatch between the argument required by the predicate form and the role assigned to the SUBJ. It is the lexical entry (category and features) of the form which specifies a-structure and its mapping as exemplified in (55a-e).

³⁵ The existing single argument maps onto SUBJ.

(55)	a.	<i>bored:</i>	Adjective	<experiencer> SUBJ
	b.	<i>boring:</i>	Adjective	<theme> SUBJ
	c.	<i>confused:</i>	Adjective	<experiencer> SUBJ
	d.	<i>confuse:</i>	Verb (transitive)	<agent, patient> SUBJ OBJ
	e.	<i>confused:</i>	Verb (passive)	<agent, patient> Ø SUBJ

In other words, developmental errors shown in (54a-b) which are common among English L2 learners, indicate that the learner has not annotated the specific lexical entry appropriately or that he or she fails to match the correct function due to the fact that the S-procedure has not been acquired.

A further area that affects the relationship between a-structure and f-structure is that of causative constructions. Examples (56) and (57) exemplify intransitive and transitive causatives in Catalan, a Romance language (following Alsina, 1997, 216)

(56) Intransitive causative

L'elefant fa riure les hienes.

the elephant makes laugh the hyenas

“The elephant makes the hyenas laugh”

(57) Transitive causative

Els pagesos fan escriure un poema al follet.

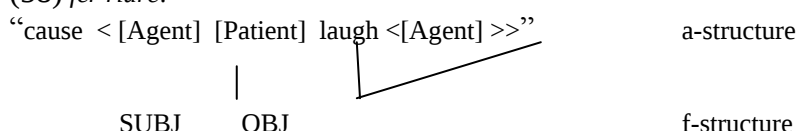
the farmers make write a poem to-the elf

“The farmers are making the elf write a poem”

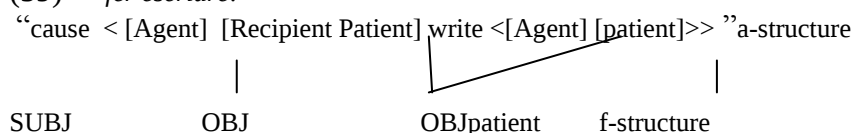
According to Alsina (1996, 193), “...causative constructions in Romance have one single complex a-structure in which the causative verb provides the outer a-structure and the infinitive verb provides the embedded a-structure...” In other words, causatives involve an embedded sub-event at a-structure level but this is realised as a single clause in f-structure.

Alsina assumes that “the causative verb and the base verb undergo predicate composition yielding one, single, complex, a-structure” (p186). The a-structure and associated syntactic functions of (56) and (57) are illustrated below in (58) and (59).

(58) *fer riure*:



(59) *fer escriure*:



Thus two thematic roles are fused into one in f-structure. As a result, the causative verb and the base verb act as one single predicate. Hence this mapping process deviates from the default canonical mapping specified in the Unmarked Alignment Hypothesis, because two thematic roles are fused in the Event and Subevent.

In summary, the TOP hypothesis and the LMT hypothesis contribute to the characterisation of the higher stages of a learner’s development. Structural choices increase hand in hand with a wider and more complex lexical and functional learning which will ensure greater expressivity and a wider range of pragmatic choices for the learner.

5. Conclusion

In this chapter we explored principles of processability that extend beyond the transfer of grammatical information modelled through feature unification. These new principles contribute to a formal account of levels of processability utilising aspects of the extended version of LFG. We showed that correspondence mechanisms make

predictions for developmental trajectories of aspects of interlanguage syntax, starting with the Unmarked Alignment Hypothesis.

The Topic Hypothesis constitutes a prediction on how c-to f-structure mapping develops from rigorously constrained canonical mapping to more target-like principles that allow for a wider range of syntactic variability and expressiveness.

The Lexical Mapping Hypothesis is the counterpart to the Topic Hypothesis, and it allows for predictions on how lexical mapping develops from the constraints of the Unmarked Alignment Hypothesis to more target-like linguistic variability and expressiveness facilitated by the non-canonical mapping principles of the target language.

<i>discourse principle</i>	<i>c- to f- mapping</i>	<i>structural outcomes</i>
Topicalisation of core arguments	TOP= OBJ	The TOP function is assigned to a <i>core</i> argument other than SUBJ
↑	↑	↑
XP adjunction	TOP=ADJ	Initial constituent is a circumstantial adjunct or a FOCUS WH-word. TOPIC is differentiated from SUBJECT
↑	↑	↑
Canonical Order	SUBJ = default TOP	TOPIC and SUBJECT are not differentiated

Figure 10: The Topic Hypothesis

<i>a- to f- structure mapping</i>	<i>structural outcomes</i>
Non-default, complex mapping	Complex predicates e.g. Causative (in Romance languages, ³⁶ Japanese, etc.), raising, light verbs
↑	↑
Non-default mapping (single clause)	Passive Exceptional verbs
↑	↑
Default mapping, ie. most prominent thematic role is mapped onto SUBJ	Canonical Order

Figure 11: Lexical Mapping Hypothesis

We have shown that the two key hypotheses constrain developmental trajectories, and we have identified a number of syntactic structures within this developmental paradigm, including XP-adjunction in a number of L2s, German and English WH-questions, passive constructions, causative constructions and exceptional verbs. We also noted for a number of these structures how they are related to the original PT hierarchy that is based on information transfer. This is evident not only for canonical word order (category procedure) and XP-adjunction (NP-procedure), but also for Japanese passives, which Kawaguchi argued require the S-procedure.

The objective of this paper was to sketch out this extended developmental paradigm. It will be the objective of future research to apply it systematically to specific target languages and to relate the resulting developmental trajectories to the original information-based PT hierarchy.

³⁶ See examples (56)-(57).

2.3 Hypotheses for morphological and syntactic parallel development in the processability of Italian L2

Bettoni, C., Di Biase, B. and Ferraris, S. (in press). Sviluppo sintattico e sviluppo morfologico: ipotesi di corrispondenze nella Processabilità dell'italiano L2. In G. Bernini, L. Spreafico e A. Valentini (eds.), *Competenze lessicali e discorsive nell'acquisizione di lingue seconde*. Milan: Franco Angeli.

An earlier, oral version of this paper was presented at a conference on "Lexical and discourse competencies in the acquisition of second languages," held in Italy at the University of Bergamo, 8-10 June 2006. The fully refereed version in Italian is now in press and is reproduced verbatim below.

The significance of this article is twofold: first, while § 2.3 lays out the theoretical framework for the extension of Processability Theory (PT), here we show how the extension spans out on actual L2 corpus data. Secondly, we draw some parallels with the original PT framework, thus showing specific correspondences between the original unification-based processability and the more lexically and discourse-pragmatics oriented extension. These correspondence hypotheses for Italian L2 are tested here for the first time on an extensive data set with informants living in Italy.

The primary aim of this paper is, then, to give a fuller characterisation to the notion of 'developmental stage.' This was originally characterised in PT primarily through morphological development, and in other paradigms through tracing developmental sequences of particular phenomena within one specific domain. With the current PT extension, a developmental stage can now be characterised, in Italian L2, through correspondences over a range of domains: morphological, syntactic and discourse-pragmatic.

The structure of this article is as follows: first of all, it presents to an Italian specialist readership the two theoretical bases of PT; that is the language generation model of Levelt and others (e.g. Bock and Levelt, 1994; Levelt et al., 1999; Vigliocco, 2001), and Lexical Functional Grammar (LFG) in its more recent versions (e.g. Bresnan 2001), which formally include the syntacticised discourse functions (TOPIC and FOCUS) and the mapping of argument structure (Lexical Mapping Theory). Along with an Italian adaptation of key diagrams from

both theoretical sources, an extensive exemplification is offered. The article then characterises each stage and exemplifies how the learners can use Italian canonical order as an organising principle regardless of morphology. In Italian, however, morphological markers will be needed once the possibility of using pro-drop and/or different orders for the arguments could lead to confusion in the absence of morphological markers.

The corpus used in this article consists of 2 longitudinal studies with fortnightly recordings conducted over 7 months. One of the informants, a 16-year-old male codenamed Ikkram (Pakistani L1 and English L2), had been living with his family in Italy for two months at the time of the first recording. The other informant, a 28-year-old Nigerian adult female codenamed Josephine, married to an Italian, claims English as her L1, and had been living in Italy for 7 years at the time of the first recordings. Both the informants were attending Italian L2 classes for immigrants and the 14 recordings were conducted during class time. A third informant, a Punjabi L1 16-year-old female codenamed Pandita, is a more advanced learner, and was interviewed once only for this study. She had been living in Italy for 5 years prior to the time of the interview and had been normally attending age-appropriate secondary school.

Both the longitudinal learners reach PT Stage 3 with scant evidence for the next stage. They show that morphology and syntax may develop each at their own pace, since neither is necessary for the development of the other. The supplementary data from Pandita, however, shows the correspondence between the development of morphology and advancement towards non-canonical syntactic orders. The more advanced topicalisation stage is not reached by any of these informants – a fact that could be predicted, within the topic hypothesis, from the absence of pronominal clitics from their production. While this higher stage is shown to emerge in more advanced learners of Italian L2 in Australian contexts (§ 2.3), the (detailed) transition between the stages relying on Canonical word order and the more discourse-pragmatic sensitive word orders needs to be placed on the agenda for further and more focused research.

As for the role of the three authors, Bettoni is responsible for drafting the article, and providing the exemplification and some of the data analysis. Ferraris (Bettoni's research assistance) is responsible for data elicitation, recordings, transcriptions and coding, as well as some of the analysis and quantification. My contribution provided the theoretical framework and general organisation.

Bettoni, C., Di Biase, B. and Ferraris, S. (in press). Sviluppo sintattico e sviluppo morfologico: ipotesi di corrispondenze nella Processabilità dell'italiano L2. In G. Bernini, L. Spreafico e A. Valentini (eds.), *Competenze lessicali e discorsive nell'acquisizione di lingue seconde*. Milan: Franco Angeli.

1. INTRODUZIONE

Tra i risultati più significativi della trentennale ricerca acquisizionale c'è che l'apprendimento linguistico procede per stadi obbligati. La Teoria della Processabilità (TP da qui in poi) è una teoria di acquisizione di L2 particolarmente interessante per il tema di questo volume. Infatti, da un lato spiega gli stadi dello sviluppo linguistico partendo dal lessico proponendone la graduale messa a punto grammaticale per mezzo di una gerarchia universale di procedure di elaborazione cognitiva – ossia di processabilità, dall'inglese *processability*. Dall'altro lato sostiene che queste procedure vengono attivate secondo la prospettiva pragmatica e discorsiva del messaggio che il parlante intende trasmettere all'ascoltatore.

La TP è esposta nella sua versione originale più completa e matura in Pienemann (1998), che illustra la progressiva attivazione di queste procedure analizzando gli stadi di sviluppo del tedesco e dell'inglese, con accenni anche a quelli dello svedese e del giapponese. Da allora, nuove lingue – anche tipologicamente molto varie, come l'arabo (cfr. Mansouri, 1997), le tre lingue scandinave (cfr. Glahn/Håkansson/Hammarberg/Holmen/Hvenekilde/Lund, 2001), il giapponese (cfr. Di Biase/Kawaguchi, 2002) e il cinese (cfr. Zhang, 2004) – ne confermano continuamente la bontà di fondo e contribuiscono ad affinarla nei dettagli. Tuttavia, per offrire sia una spiegazione teorica più convincente o più elegante di alcuni fenomeni che la versione originale lascia in sospeso, sia la soluzione di altri che emergono dall'applicazione a nuove lingue, Manfred Pienemann con Bruno Di Biase e Satomi Kawaguchi ne hanno recentemente elaborato una importante estensione (2005) in cui lo sviluppo morfologico è affiancato da quello sintattico, e quest'ultimo è integrato in una prospettiva pragmatico-discorsiva.

Per l'italiano L2 analizzato secondo i principi della TP abbiamo già qualche lavoro. Di Biase/Kawaguchi (2002) ne hanno verificato le principali ipotesi della versione originale del 1998, e Bettoni/Di Biase (2005) ne hanno proposto l'applicazione alla morfologia nominale; più recentemente Di Biase/Bettoni (in stampa) e Bettoni/Di

Biase (in stampa) hanno applicato all'italiano L2 le due principali Ipotesi della nuova estensione, rispettivamente quella del *Topic* e quella del *Lexical Mapping*.

In questo contributo intendiamo riprendere i principi dell'intera TP per vedere quali possano essere le corrispondenze tra lo sviluppo morfologico, centrale nel 1998, e lo sviluppo sintattico meglio affrontato nel 2005.³⁷ La novità sta nel fatto che tanto i lavori nell'ambito della TP in generale, quanto in particolare quelli sull'apprendimento dell'italiano L2 (cfr. Giacalone Ramat, 2003) hanno finora privilegiato il trattamento di percorsi longitudinali di singoli fenomeni, piuttosto che le corrispondenze tra più fenomeni all'interno di singoli stadi, come ha già rilevato Valentini (2005, 202). L'italiano si presta in modo particolare alla ricerca di queste corrispondenze sia per la ricchezza della sua morfologia sia per la sensibilità che la sua sintassi mostra per la natura delle relazioni pragmatiche e discorsive che interessano i costituenti della frase. Nel riprendere qui la TP ci serve però invertire l'ordine cronologico con cui la teoria si è sviluppata e partire dalla sintassi del 2005 piuttosto che dalla morfologia del 1998. In questo seguiamo sia l'ordine della produzione del parlato (cfr. § 2) sia quello acquisizionale (per l'italiano L2 cfr. Bernini, 2003, 7).

2. LA BASE TEORICA

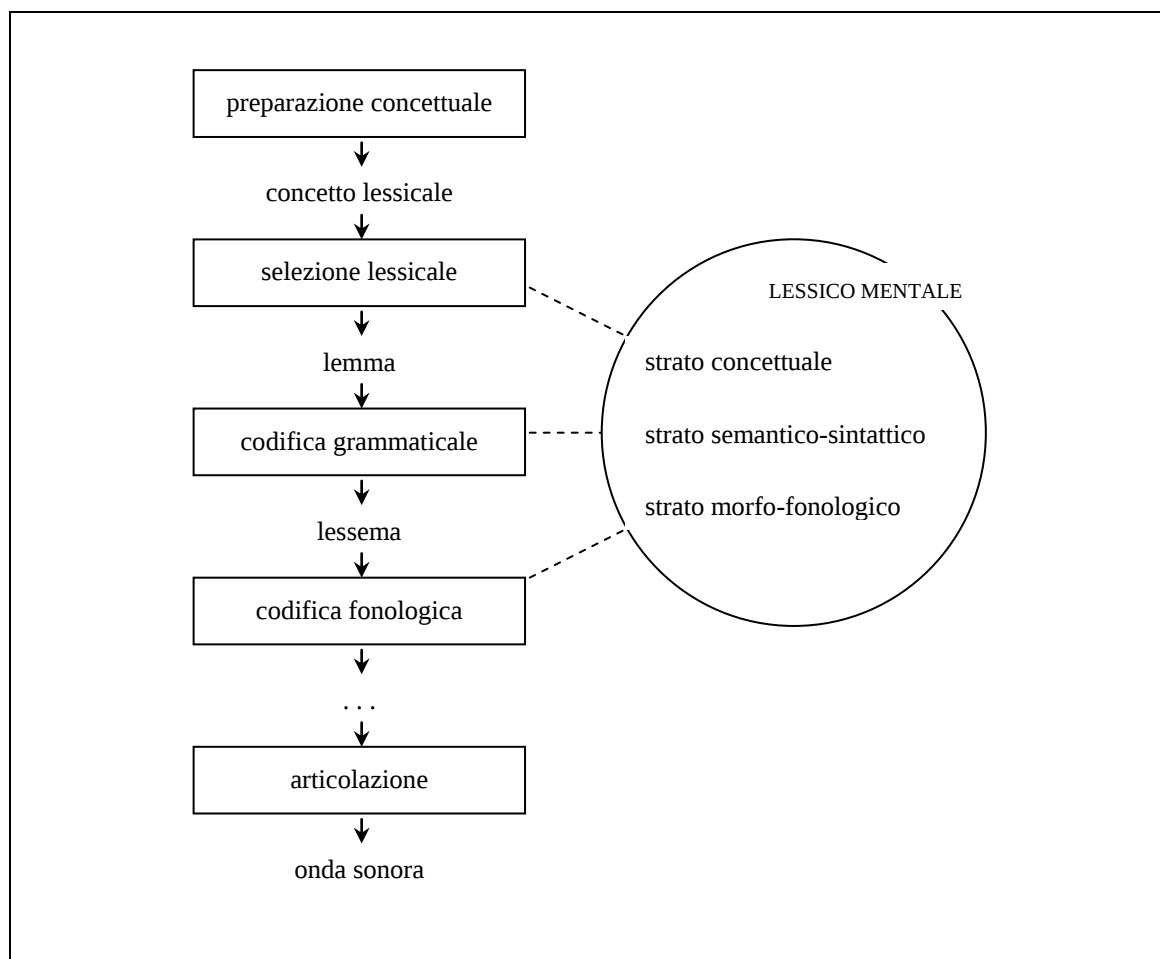
La TP si appoggia su due solide basi teoriche. La prima è il Modello per la produzione del parlato elaborato da Willem Levelt (1989, Bock/Levelt, 1994, Levelt/Roelofs/Meyer, 1999), tenendo conto anche del lavoro di Gabriella Vigliocco e dei suoi collaboratori (Vigliocco, 2001, Vigliocco/Butterworth/Semenza, 1995, Franck/Vigliocco/Nicols, 2002) sul ruolo del lessico e dell'informazione semantica e grammaticale nella codifica della frase nel corso della produzione. La seconda base teorica della TP è la Grammatica Lessico-Funzionale di Joan Bresnan (2001). L'una base è psicolinguistica, e offre un modello della sequenza temporale della produzione del parlato; l'altra è grammaticale, e spiega i rapporti tra le parole. Tutte e due sono rigorosamente formali, ma hanno il notevole pregio, intuitivamente rassicurante per chi è linguista acquisizionale, di essere psicologicamente plausibili e di partire dal lessico – ossia di spiegare come le parole vengano codificate grammaticalmente, piuttosto che come le strutture vengano lessicalizzate.

³⁷ In realtà, per ragioni di spazio, delle due Ipotesi della nuova estensione del 2005 trattiamo solo quella del *Topic*, più prettamente sintattica (cfr. Di Biase/Bettoni, in stampa), e tralasciamo quella della *Mappatura Lessicale* (cfr. Bettoni/Di Biase, in stampa).

2.1. *La produzione del parlato*

Secondo il modello, aggiornato, di Levelt la produzione del parlato è un processo che si sviluppa per fasi in sequenza fissa e incrementale dalla preparazione concettuale all'articolazione (cfr. fig. 1). In ogni fase ogni elaboratore (rappresentato nella figura dai rettangoli) lavora autonomamente sul proprio input e produce il proprio output. In ordine temporale, questo è costituito dal concetto lessicale, dal lemma, dal lessema, ecc. fino all'onda sonora. In questa lunga sequenza alla TP interessa la codifica grammaticale del lessico, ossia come – secondo il messaggio che vogliamo comunicare e la prospettiva pragmatico-discorsiva con cui vogliamo farlo – agli elementi semantici (senso, significato) di ogni parola selezionata si abbinino gli elementi grammaticali (funzioni sintattiche e tratti morfologici).

Figura 1. *Sequenze di produzione del parlato* (adattato da Levelt/Roelofs/Meyer 1999: 3)



Quando intende comunicare verbalmente, il parlante prima traduce nel Concettualizzatore l'intenzione comunicativa in concetti lessicali, poi reperisce nel magazzino lessicale (rappresentato nella figura dal cerchio) le parole che li esprimono. Levelt/Roelofs/Meyer (1999) le chiamano lemmi perché sono pacchetti di informazione complessa: concettuale, semantico-sintattica e morfo-fonologica. Per esempio, nel pacchetto informativo del nome italiano sono annotate proprietà che ne regolano l'accordo di genere, e in quello del verbo specificazioni sui ruoli semantici da selezionare, quali l'Agente, il Ricevente, ecc. Infine, recuperati i lemmi, il parlante li codifica grammaticalmente nel Formulatore prima creandone l'ambiente sintattico e poi specificandone la forma morfologica. Qui di seguito vedremo come si articolano questi due percorsi grammaticali, ma prima ci serve capire come già nel Concettualizzatore viene organizzato il materiale del messaggio.

Lo scopo del parlante è non solo di espandere la conoscenza dell'ascoltatore, ma di farlo anche in una determinata prospettiva a proposito di qualcosa di preciso. Questo qualcosa è il Topic della frase, "the thing which the proposition expressed by the sentence is about" (Lambrecht, 1994, 118), "the constituent the sentence is about" (Levelt, 1989, 98-99), che va evidenziato nel messaggio e tenuto distinto da quello che di esso verrà predicato, cioè dal Focus. Nel Modello di Levelt (1989, 260-sgg.) la scelta del Topic frasale avviene già nel Concettualizzatore, e dunque prima ancora di accedere ai lemmi nel Magazzino lessicale e di codificarli nel Formulatore. Ma poiché all'ordine con cui vengono concettualizzate le parole corrisponde l'ordine con cui vengono reperite nel Magazzino lessicale, cui a sua volta corrisponde quello in cui opereranno le procedure di codifica grammaticale (Levelt, 1989, 244-45), non sorprende che la posizione default del Topic sia generalmente all'inizio della frase. In Italiano, per esempio, è la natura topicale o focale dei SN in (1)-(4) che ne determina la posizione preverbale o postverbale:

- (1a) *[che fa Don Abbondio?]*
Don Abbondio si è appena svegliato
- (1b) *[chi si è appena svegliato?]*
si è appena svegliato Don Abbondio ³⁸
- (2a) *[che cosa sta cucinando Perpetua?]*
Perpetua sta cucinando i fagioli
- (2b) *[chi cucina i fagioli?]*
i fagioli li cucina Perpetua
- (3a) *[chi piace a Don Rodrigo?]*
a Don Rodrigo piace Lucia
- (3b) *[a chi piace Lucia?]*
Lucia piace a Don Rodrigo
- (4a) *[a chi regala i quattro capponi Renzo?]*
Renzo regala i quattro capponi al dottor Azzecca-garbugli
- (4b) *[da chi riceve i capponi il dottor Azzecca-garbugli?]*
il dottor Azzecca-garbugli riceve i capponi da Renzo

³⁸ Questo potrebbe anche essere un esempio di enunciato tetico, di tipo senza Topic, cfr. nota 3.

Come mostrano questi esempi, per imprimere al discorso un'opportuna prospettiva pragmatica, il parlante può dare salienza al Topic con vari mezzi, sia grammaticali con la topicalizzazione/focalizzazione, come in (1)-(3), sia lessicali con la scelta dei lemmi, come in (4), sia ancora lessico-grammaticali con l'alternanza della diatesi attiva/passiva, ecc., per non parlare della prosodia. Ma, appunto, una volta scelto il lemma del Topic in prima posizione, le ripercussioni strutturali possono essere notevoli.³⁹

Per questa commistione di libera scelta pragmatica del parlante e di conseguente obbligatorietà strutturale, tutto questo è notoriamente difficile da formalizzare, tanto che una decina di anni fa Sornicola (1996, 332) ammetteva che mancava una definizione esaustiva di Topic e di Focus, poiché “[b]oth terms cover phenomena belonging to the whole spectrum of syntax, semantics and pragmatics, with an extension to the phonological level.” Tuttavia oggi possiamo ricorrere al formalismo della Grammatica Lessico-Funzionale, la seconda base teorica della TP. Ne ricapitoliamo qui di seguito in § 2.2 i punti salienti che ci interessano, perché – sebbene non si tratti ovviamente di una Grammatica procedurale – essa, tra altro, fa rientrare il Topic e il Focus tra le funzioni sintattiche frasali. Infatti, se riprendiamo l'iter della produzione del parlato, dopo che i lemmi sono stati reperiti nel Magazzino lessicale con la prospettiva e l'ordine assegnati loro dal Concettualizzatore, il Formulatore deve grammaticalizzarli, ossia sistamarli nel loro ambiente sintattico e specificarne la forma morfologica.

2.2. La grammaticalizzazione dei lemmi

Secondo la GLF, il problema fondamentale di una teoria sintattica è quello di “characterise the mapping between semantic predicate-argument relationships and surface word- and phrase-configurations by which they are expressed” (Kaplan/Bresnan, 1982, 174). Ne deriva che il formalismo grammaticale si basa

³⁹ In effetti la faccenda del Topic è complessa (cfr. Levelt, 1989, 98-99). Innanzi tutto, dopo che la sua salienza è stata affermata altrove nel discorso o nella situazione extralinguistica, esso può essere omesso; infatti tutte le frasi (1)-(4) potrebbero ridursi – come succede spesso nel parlato normale – all'elemento nuovo focale. Inoltre, il Topic non coincide necessariamente con l'informazione vecchia; infatti una frase ne può introdurre uno nuovo e contemporaneamente il commento su di esso, come in *gli untori fanno danni gravissimi*. Qui l'ascoltatore, sebbene non sappia ancora chi siano *gli untori*, lo prenderà come Topic frasale per via della posizione prominente attribuitagli, aspettando che il parlante lo chiarisca poi, ma avrà comunque immagazzinato il commento sulla loro pericolosità sotto il nuovo indirizzo mentale per gli sconosciuti referenti. Infine, il Topic può mancare se il parlante non vuole essere preciso sull'argomento della predicazione; in questo caso, poiché dal Concettualizzatore esce un messaggio senza indirizzo, il Formulatore produrrà una frase senza Topic frasale, come *c'è un untore in strada*; qui, l'articolo indefinito indica che il messaggio non concerne un untore specifico, e la frase potrebbe riferirsi ugualmente all'untore, alla strada, al parlante o allo stato della strada.

essenzialmente sulla corrispondenza (*mapping* in inglese) che intercorre tra le tre strutture parallele che costituiscono la frase: la struttura argomentale, la struttura funzionale e la struttura costituente. Vediamole brevemente illustrandone le gerarchie.

La struttura argomentale di una frase consiste di un predicatore (che è il verbo) e dei suoi ruoli argomentali. Questi sono disposti nella seguente gerarchia,⁴⁰ determinata dalla loro crescente marcatezza procedendo da sinistra a destra:

(5) Agente > Beneficiario > Esperiente/Fine > Strumento > Paziente/Tema >

Locativo

Per esempio, in

(6) Lucia bacia Renzo

Lucia è Agente (l'entità che attiva e controlla l'evento), e *Renzo* è Beneficiario (l'entità che trae beneficio dall'evento).

La struttura funzionale consiste non solo del Soggetto, degli Oggetti, dei Complementi e degli Avverbiali circostanziali o modali (*Adjuncts* in inglese), come nella grammatica tradizionale e in altre teorie, ma è un punto qui per noi importante della GLF, come accennato sopra, che ne facciano parte anche il Topic e il Focus. Queste infatti sono funzioni discorsive funzionalmente sintatticizzate se soddisfano la *Extended Coherence Condition* che richiede che siano associate o a una funzione argomentale, come il Soggetto e gli Oggetti, o ad Avverbiali circostanziali integrati nella struttura funzionale della frase. Le funzioni sintattiche risultano così essere di tre tipi: argomentale, discorsivo e 'altro' (cioè né argomentale né discorsivo); e si distribuiscono in due dicotomie, argomentale e discorsiva, secondo l'ordine illustrato rispettivamente nelle figure 2 e 3, adattate da Pienemann/Di Biase/Kawaguchi (2005, 209-210), che a loro volta la ricavano da Bresnan (2001, 112). Nella prima dicotomia, argomentale, ci sono il Soggetto, gli Oggetti e i vari tipi di Complemento, che sono funzioni sintattiche di tipo argomentale nel senso che sono governate dal predicatore e che ce ne può essere una sola di ogni tipo per frase, mentre il Topic, il Focus e gli

⁴⁰ Riprendiamo qui la gerarchia di Bresnan (2001, 307), che nonostante qualche differenza marginale ha fondamentalmente carattere universale; per la conferma, cfr. Jackendoff (1972), Keenan/Comrie (1977), Hopper/Thompson (1980), Foley/Van Valin (1984), Givón (1984), e più recentemente, inter alia, Lambrecht (1994), Givón (2001) e Culicover/Jackendoff (2005).

Avverbiali sono funzioni sintattiche di tipo non argomentale, che non sono governate dal predicatore e che possono ricorrere anche più di una volta nella frase.

Figura 2. *Dicotomia argomentale delle funzioni sintattiche*

		<i>funzioni argomentali</i>			
Topic	Focus	Soggetto	Oggetti	Complementi	Avverbiali
<i>funz. non argomentali</i>					<i>funz. non argom.</i>

Nella seconda dicotomia, discorsiva, ci sono il Topic, il Focus e il Soggetto, che sono funzioni sintattiche di tipo discorsivo, mentre gli Oggetti, i Complementi e gli Avverbiali non lo sono. Le tre funzioni discorsive, pur mettendo in relazione la frase con il discorso più ampio, non fanno parte della rappresentazione del discorso ma sono frasali, funzioni sintattiche della frase che esprimono relazioni rilevanti per la grammatica del discorso (Falk, 2001).

Figura 3. *Dicotomia discorsiva delle funzioni sintattiche*

			<i>funzioni non discorsive</i>		
Topic	Focus	Soggetto	Oggetti	Complementi	Avverbiali
<i>funz. non argomentali</i>					

In queste due dicotomie è cruciale rilevare che il Soggetto è l'unica funzione sintattica che partecipa a tutte e due. Infatti, oltre che essere indubbiamente di tipo argomentale, per la GLF acquisisce per così dire il diritto di stare anche tra quelle discorsive perché, coincidendo molto spesso con il Topic, diventa il Topic per antonomasia, il Topic di default (cfr. Bresnan, 2001, 117, Levelt, 1989, ch. 7, Lambrecht, 1994, Sells, 2001, Lee, 2001). Infatti la funzione normale del Soggetto è

proprio quella di veicolare l'informazione del Topic. Bock e Warren (1985) chiamano “accessibilità concettuale” (*conceptual accessibility*) questa coincidenza di default tra Soggetto e Topic, e dimostrano che un concetto facilmente accessibile tende infatti ad essere codificato in una funzione sintatticamente prominente, quale appunto è il Soggetto. Quando invece ragioni pragmatico-discorsive non permettono al Topic di coincidere con il Soggetto, l'accessibilità del concetto topicale (ossia la prominenza del Topic non soggettivale) viene garantita o con la prima posizione (per esempio con la topicalizzazione, lo spostamento in prima posizione dell'elemento non soggettivale) o con la prosodia. Insomma, scelto il lemma topicale, per evidenziarlo, il Formulatore lo codificherà in modo prominente – cosa che può fare in tre modi: (i) codificandolo come Soggetto della frase; (ii) mettendolo all'inizio della frase, con o senza il ruolo di Soggetto; e (iii) prosodicamente. Per esempio, in (1a), (2b), (3b)-(4b) e (6) più sopra Topic e Soggetto coincidono, mentre in (7a) *per pranzo* è il Topic della frase in prima posizione, ma la sua prominenza topicale potrebbe anche essere evidenziata anche prosodicamente⁴¹ in diversa posizione (7b):

(7) [che ha cucinato Perpetua per pranzo?]

(7a) per pranzo Perpetua ha cucinato i fagioli

(7b) Perpetua per pranzo ha cucinato i fagioli e per cena la polenta

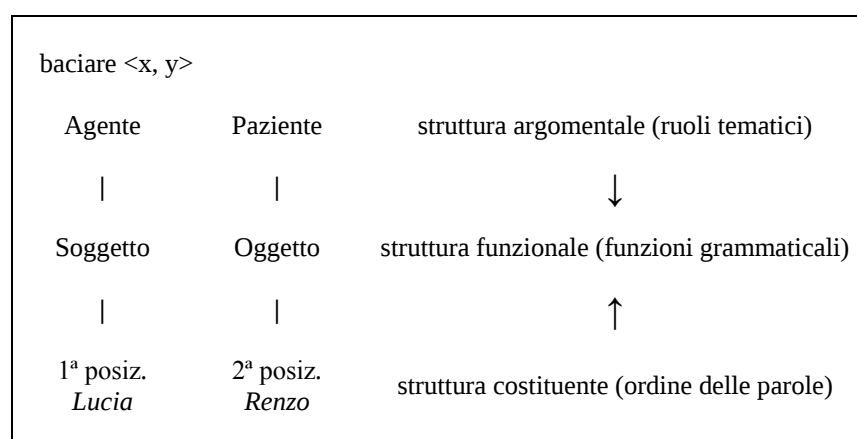
Infine, nella terza gerarchia, quella della struttura costituente, la prima posizione è quella che ottiene il maggiore grado di prominenza, poi seguono le altre posizioni.

La corrispondenza tra queste tre strutture – argomentale, funzionale e costituente – può essere più o meno lineare, secondo se sono o meno allineate l'una con l'altra le loro tre gerarchie. In (6) il mapping è lineare, poiché *Lucia* è al contempo Agente, Soggetto e in 1^a posizione, e *Renzo* è al contempo Beneficiario, Oggetto e in seconda posizione⁴² (cfr. fig. 4). Qui Topic e Soggetto coincidono.

⁴¹ Qui di seguito trascureremo la prosodia, notoriamente complessa da formalizzare e ancora poco studiata dal punto di vista acquisizionale.

⁴² In questo mapping diretto, si noti bene che Bresnan non asserisce che SVO è l'ordine universale, ma solo che questa corrispondenza tra le tre strutture sembra ottimale e più armonica. Lo supporta il fatto che, tra le sei permutazioni matematicamente possibili tra i tre elementi (Soggetto, Verbo e Oggetto), tre permutazioni rappresentano l'ordine basico del 98% circa delle lingue del mondo, e che in tutte e tre (VSO, SVO, SOV), se si tralascia la posizione del Verbo come fa Lee (2001), il Soggetto ricorre prima dell'Oggetto.

Figura 4. *Mapping canonico di Lucia bacia Renzo*



Il mapping non è invece lineare in

- (8) *[che succede adesso?]*
adesso Lucia bacia Renzo

dove *Lucia* è ancora Agente e Soggetto, ma dove l'Avverbio circostanziale *adesso* l'ha scalzato dalla sua posizione canonica di default topicale. Né lo è in (7a), dove il Topic avverbiale *per pranzo* è entrato in concorrenza con la posizione di default del Soggetto. E lo è ancora meno in

- (9) *[chi bacia Renzo?]*
Renzo lo bacia Lucia

dove *Lucia*, pur essendo ancora Agente e Soggetto, è finita in posizione postverbale di Focus, mentre l'Oggetto *Renzo* ha preso la posizione tipica del Topic. Anche senza il formalismo della GLF, è intuitivo che *Lucia bacia Renzo* è più lineare di *adesso Renzo lo bacia Lucia*. Ma, come abbiamo visto sopra, a volte è necessario complicare sintatticamente le cose perché come parlanti vogliamo imprimere al nostro discorso la prospettiva pragmatica che meglio guidi l'ascoltatore a costruirsi la rappresentazione del significato così come l'intendiamo.

Una volta creato ai lemmi l'ambiente sintattico nel modo appena esposto (ossia avendone mappato la struttura costituente sulla struttura funzionale), per concluderne la codifica grammaticale nel Formulatore deve seguirne la morfologizzazione. Infatti,

come abbiamo visto sopra, nel Modello di Levelt/Roelofs/Meyer (1999) ogni lemma, oltre ai due strati di informazioni concettuali e semantico-sintattiche, ne contiene un terzo di informazioni morfo-fonologiche. Dunque i lemmi possono avere dei tratti che selezionano un proprio valore. Per esempio, i verbi italiani hanno i tratti di tempo, aspetto, persona, ecc., ciascuno con il loro insieme di valori (rispettivamente PRES, PASS, ecc.; PERF, IMPERF, ecc.; 1^aPERS, 2^aPERS, 3^aPERS; ecc.), la cui specificazione è obbligatoria. Così il lemma *cucinare* ricorre come *cucino*, *cucinereste*, *cucinando*, ecc. secondo il valore assegnato a ognuno dei tratti.

Anche se obbligatoria, questa specificazione dei valori avviene per ragioni diverse, secondo i tratti interessati, che hanno caratteristiche di diversa natura. La prima è semantico-concettuale: alcuni tratti, come il numero e il tempo, sono già specificati nella rappresentazione concettuale. Concependo il messaggio, l'informazione che *i fagioli* di cui parliamo siano più di uno l'abbiamo già pensata prima della selezione lemmatica; analogamente, la prospettiva temporale del messaggio viene determinata nel Concettualizzatore, prima della grammaticalizzazione: lo decidiamo noi, non la grammatica, se parliamo del presente o del passato. Altri tratti invece, come il genere del nome con referente inanimato o il modo di una proposizione dipendente, sono un fatto solo formale, e i loro valori vengono specificati nel Formulatore durante la codifica grammaticale. Così la 'maschilità' di *fagioli* è una proprietà intrinseca del lemma che determina l'accordo nel suo ambiente sintattico, per esempio in (10) dell'articolo e del predicativo, mentre la selezione del congiuntivo *siano* dipende da un'annotazione contenuta nel pacchetto di informazione grammaticale di *purché*:

(10) i fagioli gli piacciono purché siano ben cotti

La seconda caratteristica dei tratti morfologici è di natura formale. L'italiano, lingua fusionale, esprime più di un valore in un solo morfema. In *cucinavate*, *-vate* marca insieme 2^aPERS, PLUR, IMPERF, ecc. Inoltre, uno stesso morfema può istanziare diversi pacchetti di informazione. Per es. in *cucina*, *-a* marca 3^aPERS SING INDIC o 2^aPERS SING IMPER, e di contro 2^aPERS SING IMPER può uscire in *-a* (*cucina*) o in *-i* (*cuoci*). Siccome, nell'ambito della TP questo rapporto forma:funzione viene solo accennato e comunque trattato come un modulo separato rispetto alla preoccupazione primaria della teoria, che in morfologia è lo scambio tra i costituenti dell'informazione sui valori dei tratti (Pienemann, 1998, 154-156), qui non lo trattiamo oltre. Lo abbiamo però nominato perché vogliamo sottolineare in primo luogo che, con la corrispondenza tra

forma e funzione ben lontana dal rapporto ideale 1:1, la morfologia italiana è un fenomeno formalmente molto complesso; e in secondo luogo che, per stabilire la sequenziazione degli stadi di acquisizione, la TP si basa sull'emergenza dei fenomeni piuttosto che sulla inevitabile gradualità con cui questa complessa morfologia italiana viene padroneggiata.

La terza caratteristica dei tratti morfologici è di natura sintattica. Indipendentemente dal fatto che i tratti nascano come annotazione semantica o formale, il loro valore può rimanere localizzato nell'ambito di un solo lemma, o invece esigere riscontri in altri lemmi nel sintagma e/o nella frase. Nel caso dell'italiano, gli elementi che condividono lo stesso tratto devono scambiarsi l'opportuna informazione affinché i loro valori si accordino. Per esempio, se don Rodrigo ingiunge ai suoi bravi di tacere dicendo:

(11) scellerati, silenzio!

i due tratti di *scellerati* (NUM e GEN) con i rispettivi valori (PLUR e MASC) interessano solo il singolo lessema. Se invece dice

(12) state zitti!
*stato zitto!

lo scambio di informazione sul NUM tra il verbo e l'aggettivo unifica il valore PLUR tra questi due elementi, come esige l'italiano.

3. L'APPRENDIMENTO

Sulla base di questi principi teorici (la produzione del parlato, ossia la sequenza di produzione, e la codifica grammaticale del lessico, ossia la creazione dell'ambiente sintattico e la morfologizzazione dei lemmi), la TP ipotizza che l'acquisizione della grammatica della L2 segue la sequenza della produzione del parlato, e che la sequenza dipende,

- per la sintassi, dal grado di linearità del mapping tra le strutture argomentale, funzionale e costituente (TP 2005), e più specificamente – nei limiti che ci

interessano qui⁴³ – dalla corrispondenza tra le costellazioni della struttura costituente e le funzioni grammaticali, affrontata con l’Ipotesi del Topic;

- per la morfologia, dalla distanza sintattica tra gli elementi i cui tratti richiedono l’unificazione (TP 1998).

È sempre una questione di elaborazione cognitiva, di processabilità, così per la nuova TP come per la vecchia: quanto più lineare il mapping e quanto più breve la distanza tra gli elementi unificati, tanto minore il costo di elaborazione, e dunque più precoce l’apprendimento. Di contro, un mapping meno lineare e una distanza sintattica più lontana comportano tutti e due un costo di elaborazione maggiore e dunque un apprendimento più avanzato.

Per l’italiano L2, come già accennato in § 1, gli stadi di sviluppo sono già stati individuati separatamente per la sintassi (cfr. Bettoni/Di Biase in stampa, Di Biase/Bettoni in stampa) e per la morfologia (cfr. Di Biase/Kawaguchi 2002, Bettoni/Di Biase 2005). Adesso ne proponiamo le corrispondenze. La tavola 1 segue il percorso di Levelt, e presenta prima la sintassi sulla sinistra, dipendente da scelte pragmatiche e discorsive, e poi la morfologia sulla destra, dipendente dall’ambiente sintattico.

⁴³ Abbiamo già detto alla nota 1 che qui non trattiamo la corrispondenza tra i ruoli semantici e le funzioni grammaticali, che è affrontata con l’Ipotesi del Mapping Lessicale.

Tav.1. Sequenze e stadi di processabilità in italiano L2 (Bettoni e Di Biase 2006; Di Biase e Bettoni 2006)

stadio	s i n t a s s i			m o r f o l o g i a		
	mapping	struttura	esempi	scambio informaz.	struttura	esempi
4	non-lineare (non-canonico)	Top + OggClit + VS	<i>i fichi li mangia l'orso</i>	inter-sintagmatico	accordo Sogg-Agg predicativo	<i>i fichi sono buoni</i>
		OVS?	<i>cosa mangiano i orsi?</i>			
		VS	<i>sono arrivati gli orsi arrivano i orsi</i>		accordo Sogg-V	<i>gli orsi mangiano i fichi; i orsi sono arrivati</i>
3	non-lineare (non-canonico)	X + SVO? (Foc≠Sogg) OSV? (Foc=OggWh)	<i>quando l'orso mangia? cosa l'orso mangia?</i>	intra-sintagmatico	accordo entro SV	<i>sono buoni; sono partiti</i>
		SVO? (Foc=SoggWh)	<i>chi mangia i fichi?</i>			
		Avv + SVO (Top≠Sogg)	<i>oggi l'orso mangia fichi</i>		accordo entro SN	<i>tutti buoni</i>
2	lineare (canonico)	SVO? (Sogg=Top default)	<i>orsi mangia fichi?</i>	nessuno	marca persona/categoriale (molto limitata) sul V	<i>mangia-mangi</i>
		SVO (Sogg=Top default)	<i>orsi mangia fichi</i>		marca passato/categoriale sul V	<i>mangia-mangiato- mangiare</i>
		pro drop	<i>(orso) venire domani</i>		marca plurale sul N	<i>bambino-bambini</i>
1	nessuno	singole parole e formule	<i>bambino, fico; mi chiamo Peter</i>	nessuno	singole parole e formule	<i>orso, fico; mi chiamo Peter</i>

3.1. *Stadio 1*

Mettendo in atto la procedura di elaborazione lemmatica, pre-morfologica e pre-sintattica, l'apprendente usa lemmi e formule, cioè parole non analizzate morfologicamente (soprattutto nomi), che organizza pragmaticamente e discorsivamente nella sequenza lineare con cui escono dal Concettualizzatore, senza ulteriore organizzazione grammaticale, cioè senza unificazione:

(13) mi chiamo Ikkram (Ikkram, t6)⁴⁴

(14) SF: *qua è difficile giocare a cricket e qui in Italia che cosa fai?*

Ik: sport no

SF: *guardi la televisione?*

Ik: poco ehm libro (Ikkram, t1)

(15) SF *siete in tanti in famiglia?*

Ik: sì ehm papà mamma quattro sorelle (Ikkram, t4)

3.2. *Stadio 2*

A questo stadio inizia la codifica grammaticale, e l'apprendente applica la procedura categoriale, nel senso che incomincia a distinguere le parole l'una dall'altra, tipicamente il nome dal verbo (cfr. anche Bernini, 2003, 27). Per quanto riguarda la sintassi, all'inizio il mapping è lineare, e l'estensione della TP propone appunto l'Ipotesi di Allineamento Non Marcato (*Unmarked Alignment Hypothesis*), secondo cui

[i]n second language acquisition learners will initially organise syntax by mapping the most prominent semantic role available onto the subject (i.e. the most prominent grammatical role). The structural expression of the subject, in turn, will occupy the most prominent linear position in c-structure, namely the initial position. (Pienemann/Di Biase/Kawaguchi, 2005, 29)

⁴⁴ Questi esempi e quelli che seguono fanno parte del corpus dei tre apprendenti (Ikkram, Josephine e Pandita) che presentiamo più avanti in § 2.2.

Eccone qualche esempio:

(16) io parlare pakistani (Ikkram, t1)

(17) io bevi caffè io bevi un'altra cosa tè (Josephine, t2)

(18) mia famiglia sorella fratello mangia dolce swedish (Ikkram, t7)

Senonché è opportuno chiarire che a questo stadio, che è il primo di transizione da un'organizzazione solo pragmatica a una sintattica, in italiano non si tratta ancora tanto della messa a punto di una struttura costituente vera e propria, di un ordine dei costituenti, quanto di un ordine delle parole. Infatti anche la struttura costituente si forma gradualmente, e con il mapping diretto non è strettamente necessaria. Lo diventerà invece quando si collocano le parole in posizioni diversa da quella di default o quando se ne aggiungono altre più numerose. Con il mapping diretto il Soggetto per adesso è tipicamente l'unico elemento preverbale (in prima posizione) e coincide con il Topic. Dal punto di vista del costo computazionale, questa è la soluzione ottimale richiesta dall'organizzazione sintattica dei lemmi.⁴⁵

Comunque molto spesso in questa prima struttura sintattica il Soggetto/Topic della frase manca, e l'apprendente per comunicare all'ascoltatore l'argomento della sua predicazione si affida al contesto situazionale o linguistico, usando la struttura prodrop,⁴⁶ che è parte dell'ordine canonico italiano:

(19) sono brasil [= lei è brasiliana] (Ikkram, t1)

(20) venghi nigeriano [= vengo dalla Nigeria] (Josephine, t2)

⁴⁵ In questo modo vengono a coincidere due diverse posizioni sull'interlingua iniziale. Da una parte, con l'Ipotesi dell'Allineamento Non-marcato anche la TP – come altre teorie dello sviluppo linguistico (per es. Meisel, 1991; Pinker, 1984, 1989; Slobin, 1985) – prevede che la sintassi emerga con gli elementi organizzati secondo l'ordine canonico, che in italiano è SVO. Dall'altra parte, non considerandoli ancora costituenti veri e propri, concorda con i lavori del noto progetto dell'*European Science Foundation* sull'apprendimento di varie L2 europee (per es. Perdue, 1993, 2000), e con quelli dell'altrettanto noto progetto di Pavia per l'apprendimento dell'italiano L2 (per es. Andorno/Bernini/Giacalone Ramat/Valentini, 2003, 126-135), che a questi bassi livelli di competenza, piuttosto che di ordine SVO, preferiscono parlare di ordine pragmatico e semantico, e quindi evitano la parola Soggetto. Con la differenza, però, che mentre questi ultimi intendono Topic e Focus come concetti esclusivamente pragmatico-discorsivi, la TP segue la GLF e li intende come funzioni discorsivamente motivate sì, ma frasali.

⁴⁶ Come del resto fa il parlante nativo nel 67% circa dei casi durante il parlato spontaneo (Bates, 1976).

- (21) SF: *alla sera? di notte?*
Ikk: dormire [= (io) dormo] (Ikkram, t5)

In morfologia, allo stadio 2 l'apprendente incomincia ad 'annotare' gli elementi lessicali che ha già imparato, distinguendo alcuni tratti grammaticali di alcune categorie, tipicamente quelli che hanno più chiara natura semantica già specificata nella rappresentazione concettuale, come il numero del nome, e il tempo o la persona del verbo. Quindi la forma delle parole incomincia a variare secondo i valori espressi dalla L2. Tuttavia non c'è ancora scambio di informazione tra le parole, e ogni elemento lessicale viene trattato separatamente. Per esempio, per il nome Ikkram pare scegliere coerentemente il valore plurale del tratto NUM in (22), e per il verbo incomincia a contrastare i valori passato vs non-passato del tratto TEMPO in (23)-(24):

- (22) due pizzi, due caroti. e due uovi e pane (Ikkram, t2)

- (23) vado scuola no (Ikkram, t14)

- (24) ho andato scuola a cinque sei anni (Ikkram, t14)

3.3. *Stadio 3*

Allo stadio della procedura sintagmatica, in sintassi incomincia la spiegazione dell'Ipotesi del Topic vera e propria. Questa – come abbiamo detto – si basa sulla linearizzazione del mapping della struttura costituente sulle funzioni grammaticali. Man mano che con la crescita del lessico si espandono le possibilità comunicative dell'apprendente, la comparsa di un nuovo elemento in prima posizione costituisce una prima modifica della corrispondenza lineare del mapping. Quando il nuovo elemento scalza il Soggetto dalla sua posizione canonica, l'apprendente deve decidere quale funzione assegnargli, e questo comporta un maggiore costo cognitivo. In altre parole, mentre allo stadio 2 Soggetto e Topic coincidono, l'aggiunta di un elemento fa scattare la necessità di distinguere tra Soggetto e Topic. In un primo momento il costo di elaborazione è minore se l'elemento discorsivo aggiunto non è argomentale (ossia Topic, Focus o Adjunct), perché non richiede aggiustamenti all'ordine canonico SVO.

In seguito, allo stadio 4, il costo cognitivo aumenta quando l'elemento sarà argomentale. Vediamo qualche esempio di produzione a questo stadio 3:

(25) sabato sabato papà lavoro e vengo dodici dodici [= il sabato il papà lavora e torna alle dodici] (Ikkram, t5)

(26) SF: *dove sei arrivato? Verona Milano?*

Ik: Milano. sì. Milano mezz'ora dopo mio padre viene [= dopo mezz'ora che sono arrivato a Milano è venuto a prendermi mio padre] (Ikkram, t15)

(27) oggi io si arriva a casa come persona normale [= oggi ho una casa e vivo come una persona normale] (Josephine, t13)

Appartengono a questo stadio 3 anche le strutture interrogative SVO? e X+SV? o OSV?. Nella prima il Focus coincide con il Soggetto (28); nelle altre due l'aggiunta focale, Adjunct (29) o Oggetto (30), scalza il Soggetto dalla prima posizione e quindi obbliga il parlante a distinguere tra un primo elemento non Soggetto e il Soggetto, crucialmente però senza modificare l'ordine canonico:⁴⁷

(28) chi aiuta i promessi sposi?

(29) quando fra Cristoforo viene?

(30) cosa la monaca di Monza vuole?

Per quanto riguarda la morfologia allo stadio 3, sintagmatico, l'apprendente riconosce la 'testa' categoriale del sintagma e comincia ad annotare i tratti grammaticali al suo interno. Nel sintagma nominale italiano questa notazione va calcolata su tutto il sintagma, dove gli elementi che modificano o specificano il nome (articoli, quantificatori, aggettivi, ecc.) devono unificare l'informazione di numero e di genere con il nome stesso. In (31), anche se non è chiaro che cosa esattamente intenda dire Josephine, il contesto assicura che i referenti del suo discorso sono una donna anziana e due gemelli, per cui i due sintagmi nominali (*una donna anziana* e *due bambini gemelli*)

⁴⁷ Per queste strutture (28)-(30) sono esempi fittizi poiché non ne abbiamo di reali nel corpus dei tre apprendenti considerati in questa sede.

risultano accordati; e in (33) Ikkram è in grado di scambiare il valore +PLUR del tratto del numero entro il sintagma verbale:

(31) e una donna anziana sotto sa senti loro due bambini gemelli [= ?]
(Josephine, t15)

(32) SF: *quale cosa ascolti di solito?*
Ik: musica indiana pakistana. guardare televisione i film indiani e pakistani (Ikkram, t14)

(33) sono mussulmani (Ikkram, t14)

3.4. *Stadio 4*

A questo stadio il mapping della struttura costituente su quella funzionale si complica ulteriormente. Dopo avere imparato a individuare il Soggetto e a tenerlo distinto da costituenti preverbalì non argomentali, adesso l'apprendente impara a distinguerlo anche da quelli argomentali, ossia gli Oggetti, Diretto e Indiretto, e i Complementi. Sapendo quindi distinguere il Soggetto dagli Oggetti, è quindi in grado di fare due cose nuove importanti. In primo luogo, può spostare il Soggetto dovunque la sua lingua target lo richieda, e dunque in italiano spesso in posizione focale postverbale, specialmente con il verbo inaccusativo e con molti tipi di domanda:

(34) quando viene capo parlare italiano [= io parlo/noi parliamo italiano]
(Ikkram, t14)

(35) vicino dove stiamo noi (Josephine, t14)

(36) cosa ha fatto mio marito? (Josephine, t14)

(37) cosa ha detto quello donna poliziotto? (Josephine, t15)

In secondo luogo, l'apprendente è in grado di mappare il Topic in prima posizione su elementi diversi dal Soggetto ma adesso non solo su quelli non argomentali come gli Adjunct allo stadio 3, ma anche su quelli argomentali, e dunque tipicamente sugli Oggetti nella dislocazione a sinistra.⁴⁸ Infatti, l'italiano permette in posizione di Topic vari tipi di Oggetto, e ne permette anche più di uno:

(38) i fagioli li ha cucinati Perpetua

(39) a Renzo i fagioli (glie)li ha cucinati Perpetua

Ma questa non canonicità dell'ordine dei costituenti, adesso OS, comporta una notevole messa a punto grammaticale, che l'apprendente deve imparare. Se il Topic in prima posizione non è il Soggetto ma un sintagma nominale esterno coreferenziale con l'Oggetto Diretto, come in (38), come può il parlante comunicarne la funzione all'ascoltatore? L'italiano prevede che la funzione debba essere marcata sul verbo con un clitico anaforico e che il Soggetto venga messo in posizione focale postverbale. Un allineamento linguistico non lineare di questo tipo è molto costoso in termini di processabilità. Infatti richiede non solo l'impiego della procedura frasale, nel senso che l'apprendente deve identificare le funzioni grammaticali e unificarle al nodo frasale, ma anche l'identificazione e l'impiego di funzioni sia argomentali sia discorsive, nonché la loro collocazione al posto giusto nella struttura lineare. Non sorprende che dei nostri apprendenti nessuno lo abbia ancora appreso.

In morfologia, allo stadio 4, la procedura frasale permette di scambiare informazione tra le teste di sintagmi diversi. Così, per esempio, adesso l'apprendente è in grado di accordare l'aggettivo predicativo del sintagma verbale (*è vecchia* e *erano arrabbiati*) con il sintagma nominale Soggetto (rispettivamente *signora donna* e *tutti*):⁴⁹

(40) signora donna è vecchia (Ikkram, t15)

(41) per questo tutti erano arrabbiati (Pandita)

⁴⁸ Come mostra l'esempio (28) l'Oggetto in prima posizione è già possibile allo stadio 3 ma solo relativamente all'interrogativa (dove il primo elemento è Focus, non Topic) e senza l'inversione VS.

⁴⁹ In questo esempio ci sono altri due casi di unificazione: uno del tratto NUM=PLUR tra *erano* e *arrabbiati* all'interno del sintagma verbale, e l'altro dei tratti NUM=PLUR e PERS=3^a tra il sintagma nominale Soggetto (*tutti*) e la copula *erano*.

A questo punto il lettore attento avrà notato che qui e nella Tavola 1 non abbiamo considerato l'accordo di persona tra il Soggetto e il verbo. Non lo abbiamo fatto non perché non sia di per sé frasale, ma perché come prova del raggiungimento del quarto stadio è poco affidabile. Ci spieghiamo. La TP originale del 1998, rifacendosi a Kempen/Hoenkamp (1987), che a loro volta si rifacevano a Chomsky, intendeva che l'accordo partisse da una fonte, che aveva i suoi determinati tratti, e si irradiasse al target, che li copiava. Così, per esempio, in italiano l'accordo sarebbe partito dal Sintagma Nominale Soggetto e avrebbe imposto il suo morfema di persona al Verbo. Nella GLF, invece, i tratti appartengono al lessico, e quindi sia alla testa del Sintagma Nominale Soggetto sia al Verbo, come dimostrano, per esempio, Vigliocco et al (1995) e Vigliocco et al. (1996).⁵⁰ Ne consegue un elemento di autonomia tra i lemmi, che in prima istanza possono essere marcati solo individualmente, ossia categorialmente allo stadio 2. Certo, affinché la produzione risulti formalmente corretta, non ci deve essere contraddizione tra i tratti dei costituenti, che dovranno quindi scambiarsi l'informazione – e appunto accordarsi. Ma lo scambio, quando avviene, ha luogo solo al nodo sintattico superiore. In questo modo la TP del 2005 non concepisce più una fonte e un irradiazione al target, ma l'unificazione (*merging*) dei tratti dei costituenti lessicali marcati indipendentemente, i quali scambiandosi l'informazione controllano l'accordo – nei nostri due casi al nodo del Sintagma Nominale per l'accordo Nome-Aggettivo, e al nodo della frase per quello Soggetto-Verbo.

3.5. Corrispondenza entro gli stadi

Ricapitoliamo la corrispondenza tra l'emergenza delle strutture sintattiche e quella delle strutture morfologiche entro i singoli stadi. Allo stadio 2 la procedura categoriale, assegnando i lemmi a una classe e tipicamente distinguendo tra nomi e verbi, permette in primo luogo che essi vengano sistemati secondo l'ordine di default dell'Ipotesi di *Unmarked Alignment* (quello canonico in cui il Soggetto e il Topic coincidono in prima

⁵⁰ Nicol/Teller/Greth (2000) chiamano “referenziale” (*referential hypothesis*) questa ipotesi della Vigliocco dell'accordo di numero tra il soggetto e il verbo. Si contrastano così due posizioni: secondo Chomsky l'accordo avviene “verso destra” con la *copia* del numero del soggetto sul verbo. Secondo la posizione ‘lessicale’ adottata dalla GLF, invece, se i costituenti devono essere *unificati* ogni costituente ha una sua specificità indipendente che gli viene tramite un proprio nesso con il referente a livello di rappresentazione concettuale. Questa soluzione spiega anche come in lingue pro-drop come l'italiano nella produzione del parlato il Verbo possa essere marcato correttamente sia quando il Soggetto è nullo (come può irradiare sul target la propria influenza una fonte assente?), sia quando il Soggetto è post-verbale (come può una fonte irradiare la sua influenza su un target già uscito dal Formulatore?).

posizione), e in secondo luogo che vengano annotati secondo il valore di alcuni tratti (tipicamente quelli con più chiara connotazione semantica). Tra le due serie di strutture, sintattica e morfologica, non esiste però alcuna relazione di necessità. Infatti l'ordine canonico non richiede per i lemmi alcuna marca di valore trattuale. Neppure allo stadio 3 le strutture sintattiche e morfologiche devono progredire necessariamente insieme poiché l'ordine canonico viene mantenuto. È infatti ipotizzabile che un apprendente (per esempio cinese, con una L1 senza morfologia) possa passare sintatticamente allo stadio 3 e usare in prima posizione un Topic non Soggetto senza annotare morfologicamente alcun tratto non solo entro il sintagma ma neppure categorialmente; questo può avvenire perché l'elemento iniziale diverso dal Soggetto non è argomentale.

Non è invece possibile proseguire sintatticamente allo stadio 4 senza uno sviluppo morfologico adeguato. In altre parole, per organizzare i costituenti in un ordine diverso da quello di default è necessaria la morfologia. Producendo l'ordine VS, cioè Verbo+Nome, il secondo elemento può essere inteso come Soggetto solo se lo marca come tale il Verbo con la coniugazione della persona (per es. *arrivano i bravi* vs *arriva don Rodrigo*). Allo stesso modo, producendo l'ordine OVS, cioè Nome+Verbo+Nome (per es. *i fagioli li cucina Perpetua*), il primo elemento può essere inteso come Oggetto solo se lo marca come tale il Verbo con la cliticizzazione (non per niente la GLF considera il clitico un morfema della flessione verbale).⁵¹ Infine, se si tratta di frase VS con un tempo composto, sintassi e morfologia sono entrambe necessarie per sistemare sia la marca di Soggetto del Verbo intransitivo e quella di Oggetto del verbo transitivo, sia il loro rispettivo accordo sul verbo lessicale. Insomma, se sotto la pressione comunicativa le parole possono essere sistemate pragmaticamente e discorsivamente con qualsiasi ordine, come mostrano questi due esempi:

(42) questo gatto io non sa [= io non so che cosa faccia questo gatto]
(Josphine, t11)

(43) mangiare io tutto (Fatma)⁵²

⁵¹ Con l'esempio dei *fagioli* e di *Perpetua* ci sarebbe comunque la semantica verbale che segnala che non sono i fagioli che cucinano Perpetua. Ma se avessimo *Renzo lo bacia Lucia* senza la marca clitica dell'Oggetto sul verbo, l'ascoltatore non capirebbe correttamente il messaggio del parlante.

⁵² Ringraziamo Gabriele Pallotti per questo esempio di Fatma, la bambina marocchina seguita longitudinalmente all'asilo la cui interlingua è stata analizzata in parecchi lavori (e.g. Pallotti, 2001, 2005).

la prova della loro sintatticizzazione (ossia unificazione) in italiano richiede la morfologia. Le produzioni in (42)-(43) appartengono infatti allo stadio 2, sia perché in sintassi, trascurando la posizione del verbo, l'ordine è ancora SO, sia perché in morfologia non c'è prova di assegnazione su più lessemi del valore dei tratti.

4. LE PROVE EMPIRICHE

I nostri soggetti sono:

- Ikkram è un ragazzo pakistano di 16 anni seguito da Stefania Ferraris per 7 mesi. All'inizio delle registrazioni ha raggiunto la famiglia in Italia da due mesi. Dice di parlare pakistano e inglese. Nell'ultimo periodo della raccolta dei dati inizia a lavorare in una pizzeria.
- Josephine è una donna nigeriana di 28 anni, anch'essa seguita longitudinalmente da Stefania nello stesso periodo. È moglie di un italiano e madre di un bambino in età prescolare, e fa la casalinga. Dichiarò di avere come L1 l'inglese e di non conoscere nessuna lingua o dialetto africano. All'inizio delle rilevazioni è in Italia da sette anni.
- Pandita è una ragazza indiana di 16 anni di lingua madre punjabi; all'epoca del fieldwork è da 5 anni in Italia, dove frequenta la scuola superiore.

Il corpus longitudinale di Ikkram e Josephine è stato raccolto effettuando una serie di registrazioni durante le lezioni di un corso di italiano L2 che i due immigrati frequentavano presso il comune di Peschiera del Garda, ed è costituito da materiale interlinguistico di livello iniziale e poi medio-basso. Il corpus di Pandita invece è trasversale⁵³ e contiene materiale di livello medio-alto; fa parte del progetto Cofin 2003 di Camilla Bettoni e Gabriele Pallotti che vuole analizzare la variabilità dell'interlingua secondo diversi parametri situazionali (cfr. Pallotti/Ferraris, in questo volume).

I nostri dati conforteranno le ipotesi di corrispondenza se l'ordine di emergenza delle strutture sarà conforme a quello della figura 4. Le falsificheranno invece se trovassimo, per esempio, che l'Avverbiale circostanziale che precede la struttura canonica (Avv+SVO), possibile allo stadio 3, compare nei dati prima di quello che la segue (SVO+Avv), ipotizzato invece allo stadio 2; oppure che il Soggetto postverbale o

⁵³ Per adesso soltanto, poiché per il suo dottorato all'Università di Verona Stefania Ferraris ha già raccolto nuovi dati ripetendo tasks simili a un anno di distanza, e intende raccoglierne altri l'anno venturo.

un Oggetto preverbale viene prodotto prima dell'Avverbiale. Oppure ancora se dovessimo trovare che la topicalizzazione cliticizzata compare a uno stadio precedente l'inversione VS. Per il cruciale problema metodologico di stabilire a priori esattamente quante volte una struttura debba essere anomalmente precoce rispetto alle attese per falsificare la sequenziazione gerarchica, e quante volte invece debba essere presente al suo consono stadio per definirne l'emergenza, ci rifacciamo ai criteri proposti in Pienemann (1998, cap. 4, ma cfr. Pallotti, in stampa).

Ikkram (cfr. tab. 1), riguardo alla sintassi, pur nella scarsità dei dati all'inizio del periodo di rilevazione in cui parla poco, dopo una chiara preferenza per il prodrop allo stadio 2 nella prima metà del periodo di rilevazione, sembrerebbe passare allo stadio 3 nel secondo periodo e con minore incertezza nelle ultime due rilevazioni (4 e 6 occorrenze rispettivamente). Non raggiunge tuttavia lo stadio 4, poiché non sembrano dare sicura prova di unificazione le due uniche occorrenze di VS:

(44) in pizzeria parlare [= parlo/parliamo] pakistano quando viene capo⁵⁴ parlare [= parlo/parliamo] italiano (Ikkram, t14)

(45) bebe dice mia mamma di mamma [= "bebe" è una forma di saluto che dice la mamma di mia mamma] (Ikkram, t14)

Per la morfologia, fin dall'inizio Ikkram pare assestato allo stadio 2 per la marca del plurale sul nome, mentre sul verbo la marca della persona emerge dopo circa tre mesi e quella del tempo solo nelle ultime due rilevazioni. In questo ultimo mese compare consolidato anche l'accordo intrasintagmatico dello stadio 3, con 5 e 6 occorrenze entro il sintagma nominale, mentre è una sola quella dell'accordo entro il sintagma verbale. Anche allo stadio 4, per l'accordo tra Soggetto e Aggettivo predicativo abbiamo un unico esempio, il (42) riportato più sopra.

⁵⁴ Qui si tratta probabilmente di apprendimento specifico più o meno formulaico di questo verbo, poiché molto spesso *venire* ricorre con il Soggetto in posizione focale. Per avvenuto passaggio allo stadio 4 avremmo invece maggiore certezza se il verbo usato nella costruzione VS avesse normalmente il soggetto in posizione preverbale.

Tab. 1. *Ikkram – sviluppo longitudinale della sintassi e della morfologia*

stadio	strutture	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t14	t15
	s i n t a s s i														
4	Top + OggClit + VS														
	VS													2	
3	Avv + SVO					1			1	3	1	1		4	6
2	SV(O)	2	3			1		1	10	4	3	4	3	33	17
	pro drop	4	5	4		8	5	4	1	12	2		2	44	23
	m o r f o l o g i a														
4	accordo Sogg-Agg predic														1
3	accordo entro SV													1	
	accordo entro SN												1	5	6
2	marca passato V													3	2
	marca persona V									5	3		1	26	15
	marca plurale N		3		3	3	1		8	1	1		4	10	14

Tab. 2. *Josephine – sviluppo longitudinale della sintassi e della morfologia*

stadio	strutture	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t14	t15
	sintassi														
4	Top + OggClit + VS														
	OVS?												2	1	1
	VS	1			1					1				2	
3	Avv + SVO												1		
2	SV(O)	19	4		2	24	13	2	10	21	4	27	154	31	84
	pro drop	34	12		7	27	13	10	27	28	12	34	208	41	93
	morfologia														
4	accordo Sogg-Agg predic	1				1							1		1
3	accordo entro SV	1													1
	accordo entro SN	16	4		4	2	1	1	1	3	3	4	45	11	2
2	marca passato V	6	1		1	3		2	2	1	1	16	43	7	20
	marca persona V	22	4		6	18	5	7	20	28	4	37	129	38	66
	marca plurale N	9	5		9	1	2	3	3	3	2	3	57	8	14

Anche Josephine (cfr. tab. 2) di sicuro ha raggiunto lo stadio 2 tanto in sintassi quanto in morfologia fin dall'inizio del periodo di rilevamento. Dopodiché pare più avanzata morfologicamente che sintatticamente, con numeri anche notevoli per l'accordo sintagmatico nominale dello stadio 3.

Pandita, come abbiamo detto, offre dati solo trasversali ed ha decisamente una competenza più alta di Ikkram o Josephine, per cui la troviamo già consolidata allo stadio 3, tanto in sintassi quanto in morfologia. Lo è anche allo stadio 4 per quanto riguarda sia l'inversione del Soggetto sia l'accordo frasale tra il Soggetto l'Aggettivo Predicativo. Ne prendiamo alcuni esempi dal racconto di un episodio del film *Modern Times* di Charlot e da un'intervista sulla scuola che frequenta:

- (46) Pan: allora cadono sulla strada tutti e tre poliziotto e cherè-lo m
Int: e Charlot
 Pan: Charlot e la ragazza

- (47) per questo tutti erano arrabbiati

Nei dati di Pandita analizzati finora mancano invece contesti per provare che sia emersa anche la struttura con la topicalizzazione dell'Oggetto, ma lo dubitiamo poiché Pandita omette ancora sistematicamente il clitico Oggetto:

- (48) Pan: c'era un uomo che anda:va a una: dove fanno le navi?
Int: in un cantiere
 Pan: sì e loro [gli] danno lavoro

- (49) e scappa da signor:: signora che [l']ha vista: rubare dice ha rubato
 il pane

- (50) c'erano due bambini che arrivano. dà cioccolati [= gli dà/dà loro]

- (51) lei dice non ha rubato un uomo il pane, [l']ha rubato una donna.
 allora il panettiere [le] corre dietro: h ispettore h, e dice non [l']ha rubato unu un vuomo,
 [l']ha rubato una donna

5. CONCLUSIONE

Sebbene, come dimostrano largamente i dati dei nostri tre apprendenti, sia ragionevole supporre che nei primi tre stadi dello sviluppo dell'interlingua italiana le strutture sintattiche e quelle morfologiche di solito emergano parallelamente a ogni stadio, in teoria tra le due serie non c'è relazione di necessità: sintassi e morfologia possono

svilupparsi in tempi diversi, l'una non essendo necessaria allo sviluppo dell'altra. Allo stadio 4 invece lo sono. Non lo sono finché viene lasciato intatto l'ordine canonico SVO, che in italiano non richiede particolari marche morfologiche di caso – indipendentemente dalla presenza o assenza di elementi topicalizzati diversi da Soggetto, argomentali o meno. Le marche morfologiche diventano invece necessarie per segnalare le funzioni dei sintagmi nominali linearizzati in un ordine diverso da quello canonico.

Nella corrispondenza tra sintassi e morfologia, allo stadio 4, per l'italiano L2 possiamo così ipotizzare queste sequenze:

- l'emergenza dell'accordo frasale Soggetto-Aggettivo Predicativo precede quella dell'ordine non canonico, sia quello VS degli inaccusativi, sia quello TOP-OVS (cioè l'accordo del nominale TOP con l'Oggetto cliticizzato al Verbo);
- l'emergenza del clitico oggettivale in assenza del suo elemento referenziale precede quella del clitico in cui il referente è presente; questo perché nel primo caso (*li mangia volentieri*), per quanto formalmente complessa, si tratta di marca verbale categoriale, nel secondo (*i fagioli li mangia volentieri*) di accordo frasale Topic-Verbo;
- l'emergenza dell'accordo Soggetto-Aggettivo Predicativo o Soggetto-Participio Passato nei tempi composti dei verbi coniugati con *essere* precede quella dell'accordo, nei tempi composti, del nominale TOP con l'Oggetto cliticizzato al Verbo e con il verbo lessicale.

Non meraviglia perciò che emerga per ultimo un enunciato come *i fagioli li ha mangiati Renzo*, che ha bisogno sia del soggetto postverbale, sia dell'accordo frasale dell'Oggetto referenziale tanto con il clitico quanto con il participio passato.

Insomma, siamo consapevoli di avere usato dati minimi tanto per confermare l'effettivo sviluppo delle due sequenze della sintassi e della morfologica separate proposte dalla TP, quanto per proporre noi una corrispondenza tra l'una e l'altra di queste sequenze entro i singoli stadi. D'altra parte, a nostro minore sconcerto, notiamo che niente nei nostri dati qui, o anche in Di Biase/Bettoni (in stampa), falsifica quanto abbiamo proposto nella tavola 4 e nelle tre sequenze qui sopra. Offriamo questa prima verifica come primo passo verso prove più solide.

Part B

Advancing the practice

Part A of this thesis presented my contribution to both the development of PT-based hypotheses for the acquisition of Italian L2, and an extension of the theory itself. Part B presents my research into the practices involved in L2 teaching and learning. It addresses important issues derived from the encounter – one could also occasionally characterise it as a clash – between two equally strongly held beliefs: on the one hand, that Theory enlightens and should influence practice, and on the other, that Practice enlightens and should influence Theory and be itself an important area of research.

This kind of research (on practice) contributes to advancing the theory by testing it and showing its strengths and limitations, thus stimulating further theoretical advances. For instance, in an attempt to work out a detailed learning and teaching schedule for the Italian primary school program, PT revealed its strength in hypothesising what stages the learners are likely to traverse. Yet it also revealed its limitations, in so far as a number of details within a stage could not be treated within PT because they respond to a different set of constraints. For example, PT treats both ‘gender’ and ‘number’ features as ‘lexical’. In Italian nouns, then, should gender endings be treated before, after or at the same time as number endings? Where the form-function correspondence (Andersen, 1984) is complex, this would need to be treated by a ‘different module’ (Pienemann, 1998), and handled by hypothesising ‘stages within a stage’ (Mansouri and Håkansson, 2004) or by bringing to bear on PT updated lexical access theory and language processing theory – such as Levelt et al. (1999), Vigliocco and Franck (2001) – an agenda for future research.

On the other hand, and at the same time, this type of research on practice contributes to advancing a theory of practice by providing theoretical points of reference for professional action. It can answer important questions such as whether and which kinds of corrective feedback may be useful in the classroom context in order to bring about measurable learning achievement. These are the themes of Chapter 3, which presents a selection of three contributions, spanning over almost a decade, concentrating on a longitudinal investigation involving three schools with Italian L2 programs (cf. § 3.1). This three-year project was supported jointly by an Australian Research Council grant

and Co.As.It. as the Industry partner (cf. Appendix D.E and the Report to ARC in § 3.1).

Does second language instruction make a difference? In response to this key question posed by Long (1983), my results support a positive role for instruction, which can become more efficient in terms of inputs and effective in terms of learning, provided that both syllabus design and feedback are developmentally moderated. Indeed it would be interesting to see whether in a non-instructed environment learners would pick up at all the finer-grained morphological structures proposed in instructed learning (cf. Håkansson, 1997).

Such research results, then, should not remain confined to research journals and researchers' conferences. Advancing the practice involves dissemination of research results in close dialogue and interaction with its end users, that is, teachers, administrators, and of course more autonomous adult learners. Hence, I identified dissemination of research in professional contexts as an appropriate focus for Chapter 4.

Theory-practice interaction, in turn, actually enriches and expands research by illuminating hitherto hidden issues and uncovering problems which may be beyond the reach of the researcher. For instance, the attempt to show teachers the importance of 'focus on form' and how to apply it in classroom practice (cf. §§ 4.2, 4.3, 4.5) forced me to make a sharper difference between its application to syllabus construction and to corrective feedback – cf. the extensive discussion in Doughty and Williams' (1998) on the 'focus on form continuum' and various ways of interpreting form-focused instruction and feedback; pace R. Ellis (2001), and Nicholas, Lightbown and Spada (2001).

Chapter 4, then, presents a selection of three articles clustering around the issue of lexical and grammatical development and in relation to L2 instruction. Two of these (§§ 4.1 and 4.2) are published in professional journals in Australia, and one, co-authored with Bettoni, in Italy (§4.3). They all aim at disseminating research findings within professional contexts and cultivating an ongoing relationship between research and L2 teachers, as a contribution towards advancing the quality and professionalisation of L2 teaching.

Chapter 3

Looking into the classroom ‘black box’

A theory of practice needs, amongst other things, research on practice, research ‘in vivo’ – as against, or as a complement to, laboratory research. It involves looking “inside the black box” (Long, 1980) of language learning in the classroom, which is notoriously difficult for both practical problems (in relation to ethics, logistics, appropriate equipment) and research-related issues, such as the bewildering complexity of the interactions in a live classroom, or the intractability of ‘method’ as a research construct (cf. Long, 1991, Norris and Ortega, 2000).

All three contributions to this chapter (spanning between 1998 and 2006) gravitate around an ARC-SPIRT longitudinal classroom-based project (18 months of data collection). The ‘longitudinal’ aspect is important in the study of L2 development since “longitudinal studies of children [...] and adults [...] are distressingly rare” (Doughty and Long, 2003, 3). Each contribution is prefaced by its own introductory remarks, so I will limit my comments here to a couple of points. The first is that this project was preceded and partly motivated by the results of a questionnaire-based survey of teachers of Italian L2 (cf. Di Biase and de Rachewiltz, 1998), which revealed a rather eclectic approach to curriculum and classroom practices. Thus there seemed to be a need to know what research could do for them and an openness to receive its results.

The second point I wish to make here is that even my limited attempts to advancing a theory of practice in L2 teaching proved, I believe, quite fruitful, in so far as they lead to the development of what I called the Developmentally Moderated Focus-on-Form Hypothesis, a PT-based hypothesis dealing with the issue of feedback and learner output in the L2 classroom (cf. § 3.3). This hypothesis nicely brings together a number of lines in theory and research on practice (e.g. Long, 1980, 1983, 1989, 1991; Krashen, 1982; Pienemann, 1984, 1998; Swain, 1985, 2000; Swain and Lapkin, 1982; Lapkin, Hart, and Swain, 1991; Doughty and Williams, 1998), on feedback in L2 interaction (e.g. Carroll and Swain, 1993; Oliver, 1995), and on the implicit-explicit learning debate (e.g. N. Ellis, 1994; Long and Robinson, 1998), as well as current work on the neurolinguistics of bilingualism (Paradis, 2004).

3.1 A comparative study of second language teaching program outcomes under different implementation conditions in upper primary school

Di Biase, B. (1998). A submission to the Australian Research Council. Manuscript. University of Western Sydney.

What follows is the verbatim submission I wrote in 1998 to obtain support from the ARC Strategic Partnerships with Industry - Research and Training (SPIRT) seeking funding for a classroom-based, three-year longitudinal project comparing Italian L2 teaching program outcomes under different implementation conditions in upper primary school. This submission was reviewed by two named and three anonymous ARC reviewers, and the funding granted. Following the submission, reproduced below are also the main parts of the project report, written in 2004. Since both the submission and the report are largely self-explanatory in terms of content, I will restrict my comments here first to a brief explanation of how the actual implementation of the project differed from the original proposal, and then to some formal issues regarding their reproduction.

It should also be pointed out that I am the sole author responsible for both the submission and the report. The other two principal researchers, Malcolm Johnston and Roberta Pizzoli, needed to withdraw from the project for health reasons within the first year of its life. They were both consulted and their suggestions incorporated in the draft submission, together with those of the Research Office of University of Western Sydney (Macarthur), particularly its director, James Walsh, whose timely encouragement and help I wish to acknowledge here. Likewise, I wish to acknowledge the proactive help from the Industry partner's executive and education officers, Susi Schio and Ginetta Morato Ippoliti respectively, without whose support the project would not have been possible. Schio, in particular, was also responsible for providing the Industry Partner's report to the ARC Report (cf. Part F: Report on collaboration by the Industry Partner, below), as well as for describing Co.As.It.'s Educational activities (cf. Appendix D.E).

As for the differences between the submission and the actual research project, two major changes were implemented in response to reviewers' and advisers' concerns with methodology and data collection. First, the design was modified so that each of the schools had both experimental and control class groups, thus neutralizing the effects

of a series of variables (e.g. teacher, program, socio-cultural environment) from the explanatory framework. This meant that the project could only be carried out in schools with large Italian L2 programs, and that two equivalent classes had to be found in the same grade – fortunately it did happen. Secondly, following Catherine Doughty's suggestion, all classes were video-recorded from strategically pre-set camera and microphones, through a timing instrument. I would like to acknowledge here the selfless and meticulous work carried out in all three schools of invaluable technical all-rounders Fabio Cavadini and Rus Hermann. The teachers, who also cannot be thanked enough for doing this, loaded and activated the video-recorder at the beginning of their lesson and switched it off at the end, unloaded the tape and wrote the class and time details on it. For ethical reasons the teachers, along with the schools and the participating children will not be named here, but I thank them wholeheartedly.

From the formal point of view, for reasons of space, two sections in this submission (Section 3, Budget and Justification, and Section 4, Researchers and other Contributors) have been omitted. From the report, only those parts are included which do not duplicate material already presented in the submission and that are informative in terms of the aims of this thesis. These are Part D (Project Outcomes and Impact), which summarises the findings and significance of the project, Part E (Research Collaboration) and Part F (Report on Collaboration by the Industry Partner). These last two parts help clarify the wider professional and community context of the project and also the contextualisation of this thesis. The full report is available at the ARC site:

https://gams.arc.gov.au/AB1405_1693+0/home

Di Biase, B. (1998). A submission to the Australian Research Council. Manuscript. University of Western Sydney.

0. Introduction

This longitudinal study will compare the achievement of learners of Italian as a Second Language (L2) in 4 primary schools in New South Wales (NSW) over a period of 3 years, beginning in Grade 3. Over the observation period the two experimental schools will use, in a consistent way, a specific instructional design, namely 'focus on form'. The other two schools, which will be generally comparable to the two experimental

ones, will simply get on with their usual Italian L2 program. Progress in both schools will be profiled against specified stages of acquisition at initial, middle and final points over the observation period.

1. Aims and Significance

This project aims to investigate the role of instruction in language acquisition through the following **research question**:

Are primary school Second Language programs which adopt consistent instructional strategies and practices with a 'focus on form' more effective than programs which don't?

The main **hypothesis** to be tested is that regardless of program type or methodology adopted by the teacher, students learning a second language will, fundamentally, follow the same developmental path. Where the teacher adopts instructional strategies with a consistent 'focus on form', however, students' progression along the developmental path will be faster.

In the process of testing the above hypothesis the project will attempt to provide answers related to the role of instruction in second language acquisition and practical questions of particular importance to the Industry partner:

- What language learning outcomes can be realistically expected of Italian L2 programs resourced by Co.As.It. in primary schools under current program conditions in NSW?
- How closely do these outcomes match the expectations of stakeholders?
- Is it possible to improve outcomes by adopting particular instructional strategies?
- What are key elements of best practice in successful language programs?
- What kinds of resources are indispensable for the success of L2 program?

The news value and scientific merit of the project proposed herein involves three aspects:

- its context - i.e. this is a classroom-based study of upper primary school aged children learning an L2 in ordinary language classrooms in Australia, within normal time constraints;

- the opportunity for clarifying the role of instruction by testing the potential of a specific instructional strategy (focus on form). This has not been tested before in the above described context, nor with this specific L2 (Italian), within a longitudinal experimental design. This experiment will help determine whether learning an L2 may proceed at a faster rhythm under this condition.
- the construct validity of the frame of reference used for the assessment of the learners' language development during the course of this experiment i.e. Processability theory. This has not been used previously for Italian L2 assessment of learner language. Unlike proficiency-type scales, this assessment framework has construct validity grounded in extensive naturalistic sets of data in at least three languages.

1.1 Instruction and Focus on form

According to Long (1991), rather than looking at a broad and arguably untestable and unverifiable unit such as 'method' in L2 research it is more useful to look at a psycholinguistically relevant design feature to distinguish instructional practices. Any instructional program, syllabus, method used in language instruction can be classified according to whether it requires a focus on form, i.e. a focus on the target language as object. This specific instructional strategy "...overtly draws attention to the linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication." Focus on form is different from focus on forms where they (the forms themselves) are the focus of instruction rather than meaning. This incidental drawing of attention to a feature of the linguistic code by the teacher or by one or more students is "triggered by perceived problems with comprehension or production" (Long and Robinson, 1998).

Other researchers such as Doughty and Williams (1998, 4) clarify that the two are not opposite notions but part of a continuum where "...focus on form *entails* a focus on formal elements of language, whereas focus on formS is *limited* to such focus" and remark that form focused instruction is predicated on the crucial assumption that "meaning and use must already be evident to the learner at the time that attention is drawn to the linguistic apparatus..."

This project then does not propose to adopt a return to grammar teaching nor a syllabus made up of grammatical forms themselves, even though code-focused language instruction has a long and honoured tradition and can be shown to achieve results in

laboratory experimentation (Robinson, 1997) and also in university classrooms. Håkansson (1997) for instance reports a study of informal and formal Swedish L2 and the result was that the structures were acquired in the implicational order that is predicted by Processability Theory (Pienemann, 1998). All learners followed the same order of acquisition but the formal learners (ie instructed) reached the top level (stage five) after 3-6 months, whereas the informal learners (not instructed in Swedish L2) reached that level after 3-4 years.

But this is, notoriously, not the case with children (Harley, 1993), who are said to learn just from exposure to the appropriate language environment and given sufficient motivation. Focus on form, however, in the sense of the above definitions, can coexist with immersion, content-based, thematic, task-based and other curricular orientations commonly used with children (cf Spada and Lightbown, 1993). So, from the point of view of this project, instruction with a consistent focus on form design, being a specific instructional strategy rather than a total ‘method’ has the advantage of being a relevant feature of instructional strategy that can be integrated with a variety of content (subjects, themes, situations) but it is at the same time sufficiently discrete to be identifiable. Long (1991) backs his stance on focus on form with a review of second language acquisition research findings which lend support to the contention that instruction with focus on form may be advantageous in at least three ways: it speeds up progress on the developmental route, promotes long-term accuracy in the use of the L2 and may raise the level of ultimate attainment in the target language.

At the same time Long advocates further carefully controlled studies comparing programs with focus on form both with traditional grammar teaching (focus on forms) and programs with no overt focus on form. This project will attempt the latter comparison following Long’s suggestion as well as Robinson (1997), who also believes that “classroom-based studies are needed both as a way of testing findings from theory-driven laboratory studies and as a way of generating new insights into learning.”

1.2 The problem from the Industry Partner standpoint

The industry partner, Co.As.It., a major Italian Language Provider in New South Wales, operates in a context which has experienced a remarkable increase in Second Language (L2) Programs in primary schools during the current decade. In fact more than 70% of primary schools have an L2 program as against 30% in 1992 (White, 1997). Secondly Co.As.It. have been encouraged, by the NSW Department of School Education, to bring

all of their programs known as “insertion classes” up to at least two hours of instruction (Mansueto, 1996). This change, already being implemented over the last three years, has methodological implications, namely converting these programs from a “language experience” orientation towards a program which emphasises language knowledge and skills (Mansueto, *ibid*), an operation which requires, among other things, professional development interventions of considerable quantity and quality. Thirdly, a point intimately connected with the previous one, Co.As.It. has sponsored work on the first syllabus for Languages Other Than English in NSW, namely the *Italian K-6 Syllabus* (Board of Studies NSW, 1997) which is currently being distributed to schools for implementation. The Syllabus espouses the general skills orientation mentioned above by including “skills in communicating in Italian” and “knowledge of the Italian language as a system” within its three aims (p. 8) while, at the same time, it acknowledges that “The Italian language has been identified as one of the priority languages to be studied in NSW schools. It is widely studied in the primary stages of schooling in all states of Australia and is well established at the secondary and tertiary level. Italian has an extensive personnel and resource base” (p. 7).

Essentially a communicative approach is suggested without mandating any specific program option, e.g. whether a program should be “content or subject-based” or “language arts/language object” program: “Current practice based on research into language acquisition, favours a communicative approach to the teaching and learning of Italian in authentic situations. The communicative philosophy underpinning this syllabus emphasises the development, through integrated activities, of communication skills” (p. 6).

As a large provider of Italian as a second language programs which cover over 30,000 pupils in NSW government, Catholic and independent schools, as well as out-of-school-hours classes, Co.As.It., after almost two decades of experience in the language education mainstream, is keen to gain an up-to-date understanding of:

- what are the most effective program design features and teaching strategies in light of the new syllabus to be implemented;
- how to improve existing programs and assist them to implement the new syllabus by activating those features and best practice, e.g. through professional in-service.

It is crucial for Co.As.It. to achieve this understanding in a context of greater public accountability and increasing economic constraints whereby educational systems are reluctant to allocate more time to L2 programs or move towards full scale immersion or bilingual education programs, such as those implemented in Canada since the late sixties, but nevertheless expect to optimise L2 programs and demonstrate tangible outcomes.

1.3 Previous research on L2 programs in Canada and Australia

Now, from a field-theoretical viewpoint, following three decades of Canadian immersion experience, a communicative approach has been commonly adopted in L2 program and curriculum design in Australia. This content-oriented approach is characterised by a stress on meaning and message rather than linguistic form. It attempts to emulate some kind of “natural” environment to promote the acquisition of a second language in the classroom. In an early immersion model, for instance, English-speaking background children begin their schooling via the L2, i.e. French, and can continue to be taught some of the subjects in French through their schooling career (Harley, 1993). There are many variants of this model in terms of the age at which immersion is introduced (early, medium, late), or the range and combination of subjects and the time distribution (total, partial and so on), but this is the basic idea.

Evaluations show that L2 skills of students in these programs are better than those of comparable children in traditional language programs, that the earlier and more extensive immersion give better L2 results than later and partial immersion, and that skills in either the subjects or the L1 are comparable to those achieved in traditional schools (Swain and Lapkin, 1982, 1986; Genesee, 1987). Nevertheless, while *comprehension* results in the L2 (in French immersion programs) are generally equivalent to native French speaking controls, the students’ *production* in French displays, in general, a number of non-native features which appear to suggest that there is room for improvement (Harley, 1993).

Bilingual immersion programs in Australia are few and far between: four in Queensland (two French, one German and one Indonesian), two in Victoria (one late immersion Hebrew, and one early partial immersion in French), one in the ACT (French), one other bilingual program in NSW (a single independent school with six different languages) and several programs of French and Japanese day schools, mainly for French and Japanese children of temporary residents (Clyne et al., 1995, 11). A few partial

immersion programs do exist, among which the successful Bayswater South Primary School in Victoria (Fernandez, 1996) is probably the best known. Most of these partial immersion programs, however, have limitations in program time far more restrictive than those used in the Canadian programs. In any case, researchers and language educators who have had the opportunity to examine the achievement potential of such programs are moving towards a reappraisal, in Australia as in Canada, of both the role of instruction in language acquisition and the significance of metalinguistic knowledge, or grammar. Kinder (1996, 43), for instance, points out that the (Western Australia) students in the Partial Immersion Program who were observed for this study had received little formal instruction in Italian grammar in the course of their five years in the program. While this is perfectly understandable given the expectations placed on the teachers in the program, it came as no surprise to learn from the interviews that many of the teachers are concerned about this lack of formal language instruction. This concern has also surfaced as an important issue in Canada (Lapkin, Hart and Swain, 1991).

A similar concern is expressed by Clyne (1997, 145-146) who concludes that “An early emphasis on communicative competence makes the language useable, but long term progression and fluency ultimately depend on structural accuracy (ie. grammar).”

Consequently it is to be expected that research on L2 programs, which has mostly concentrated on types of program and whether some types may give better results than others (eg Clyne, 1986; Clyne et al., 1995, 1997; Barratt-Pugh, Breen, Kinder and Rohl, 1996) needs to develop new directions, e.g. towards investigating – as the present project proposes to do – what may be the relationship between specific design features or instructional strategies, and L2 development (cf. Harley, 1993).

Two reasons strengthen this prediction: first, the comprehensible input-hypothesis (Krashen, 1982) and the attendant ‘natural’ approaches have been tried to saturation point and found insufficient (albeit necessary) for native-like production even in extensive immersion programs. Second, and most importantly in the Australian situation, the vast majority of L2 programs remain at about two hours per week on average or less (cf. Di Biase and de Rachewiltz, in press) despite the success and the emulation of partial immersion programs such as the L2 program at Bayswater South Primary School in Victoria (well described in Fernandez, 1996).

Thus, if the way to greater time allocation for language programs is not practicable it is crucial to find out whether specific instructional strategies are capable of optimising language skills, or, in other words, improving the effectiveness of instruction. This is, at

bottom, what this project intends to do. And it is particularly crucial for Italian and not just in NSW, because it is, by far, the most widespread and popular L2 program in Australian primary schools (Di Biase et al., 1994).

Recent studies in Australia (e.g. Clyne, 1986) have described partial immersion programs, illustrated advantages to teachers and educational authorities, attempted to describe, in some detail, results and language development of students in those programs (Baratt-Pugh et al., 1996), sometimes comparing them with other types of program and discussing them in relation to language policies (Clyne et al., 1995) and in relation to the language background of students (Clyne et al., 1997). The last three works mentioned also contain studies of Italian L2 programs.

1.4 Previous Studies of Italian L2

Clyne et al.'s (1995) study compares three schools in Melbourne over a period of three years: I1, a 3-hour-per-week content-based program, I2, a 3-hour-per-week language object program and lastly I3, a 1-hour-per-week 'insertion' class. Results contradicted researchers' expectations to some extent I2 (the 3-hour "language object" program) did better than the other two except in listening comprehension. The other two schools achieved an almost identical overall score, despite the fact that the content-based I1 had about three times more time than I3.

The reliability and validity of the 1995 results and those of its predecessor (Clyne, 1986) were questioned by Davies (1997), who criticised the test design, the lack of background information on the children, the lack of clear-cut definition of the curriculum models being tested and the absence of an 'initial state' or baseline against which to measure and interpret achievement.

Clyne et al. (1997) examine cross-sectional data from 36 speakers of Italian from five different schools. The study will not be considered here because it does not relate directly to instructional issues but rather attempts to identify factors contributing to language maintenance, or lack thereof, of background speakers, whether socio-economic, linguistic, psycho-pedagogical and so on. Results are difficult to interpret and are possibly not significant in terms of the present project, which does not propose to examine language maintenance issues.

Kinder (1996) takes a longitudinal look at two Western Australian schools which in 1991 introduced, voluntarily, an Italian partial immersion program of 4 hours from Year

3. The description covers 22 children in one of the schools at two specific points: the second and the fifth year of the program. Language use and language development are described, with reference to the development of morphology, against a scalar description of ‘phases’ put forward by Clyne (1986). The result is a description of the progression of the 22 children across the four phases (but there are intermediate points such as Phase 1-2, 2-3, etc) with some of these moving up three notches between the two test points and 2 of the children reaching phase 4. The results are attributed to the partial immersion curricular option of the program, without any pretence of comparison. The teachers, nevertheless, expressed concern at interviews that, by the later year, the children should have been producing more Italian than they actually did.

1.5 Wider benefits of the project

To conclude this part it can be said that, notwithstanding the Canadian examples and the pioneering work by Clyne and others, bilingual immersion programs in Australia remain, to date, few and far between in the primary school and even fewer in the secondary school if the Canadian time allocation criterion is employed. The number of programs, however, which employ immersion principles, in the sense that some curriculum segment is taught in the target language, seem to be growing in Australia as well as in other countries. Clyne (1995, 11) believes these should be named ‘content-based’ programs, while ‘language object’ programs are those in which “the language and not the content is the focus of the classes” (ibid). It is difficult, however, to imagine any primary school language program which could genuinely be referred to as ‘language object’ for reasons discussed above.

Even the more traditional L2 programs would use some kind of thematic focus (eg colours, clothes, family, food, seasons etc.) which provides some sort of “content” to the language lesson, and this content could be easily seen as belonging to one or another of the key learning areas of the primary school curriculum. In fact according to a survey of more than 30 primary school and out-of-school hours teachers of Italian in NSW conducted with Co.As.It. (Di Biase and de Rachewiltz, in press) most teachers use theme or topic approaches in communicative everyday situations. A very small minority (less than 10%) focus on grammar “often” while the majority “rarely” or “never” focus on grammar. When confronted with a set of direct questions on whether they use mainly “content-based” or “language object” or a mixture of both, a two-third majority believes they use a mixture. This means that the distinction between “content-based” and

“language object” is neither clear nor very useful as a L2 program descriptor, at least in the NSW situation and, arguably, more generally in Australia. Therefore it need not be used in this project.

The implication that can be drawn from the above discussion is that if the main hypothesis of this study is borne out, the application may have a much wider audience than the Industry Partner or the NSW programs, in the sense that a specific teaching strategy may improve the outcomes of L2 programs that adopt it even within the normal time and resources constraints of the program.

2. Research Plan and Methodology

“Processability Theory, in tandem with ‘focus on form’ offers the clearest theory of the relationship between second language acquisition research and grammatically based instruction” (Dyson, 1998). The relationship between stages of acquisition and instruction is expressed in Pienemann’s Teachability Hypothesis tested in Germany and in Australia (Pienemann, 1984, 1989, 1998; Dyson, 1996), while the relationship between assessment, syllabus construction and developmental stages is discussed in Pienemann, Johnston and Brindley (1989), Johnston (1994, 1997), Di Biase (1997) and Pienemann (1998). Essentially what is proposed in these works is that the learner can only learn what he or she is ready to learn (or ready to process), i.e. depending on the stage reached by the learner at a given point in time. This “stage” is capable of specification and can be assessed or profiled within Processability Theory.

2.1 Language assessment and Processability Theory

As well as the construct of ‘focus on form’ outlined above, the research plan, is grounded on Pienemann’s (1998) Processability Theory which is based on commonly accepted principles of human cognition (cf Levelt, 1989, 1992) and postulates a hierarchy of processing resources which can be applied to typologically different languages. Acquiring a second language is seen, specifically, as the acquisition of a composite skill involving the automation of information exchange procedures as the principal mechanism which the learner needs to develop, gradually and cumulatively. These skills are the same as those the native speaker develops for acquiring the first (or native) language. Thus the second language (L2) learner will need to develop language-specific processing resources and devices, as well as the lexicon, necessary for

grammatical information exchange in connected discourse, hence for speaking in real time.

Processing resources are developed in a lock-step (or implicational) fashion, i.e. they form a hierarchy where the acquisition of each processing device is the prerequisite of the next processing resource as illustrated below on the basis of Pienemann (1998).

7. clause boundary	-	-	-	-	-	-	+
6. Word Order Rules	-	-	-	-	-	+	+
5. S-procedure	-	-	-	-	+	+	+
4. function (Appointment. Rules)	-	-	-	+	+	+	+
3. Phrasal procedure (head)	-	-	+	+	+	+	+
2. category procedure	-	+	+	+	+	+	+
1. word/ lemma	+	+	+	+	+	+	+

While such processing hierarchy is postulated as an explanatory and predictive framework (tested for German, Swedish, English, with work in progress in Spanish, Japanese, Italian and other languages) the actual L2 outcomes need to be specified and validated against the specific morphosyntactic behaviour of learners of each language.

Such behaviour can be inferred from speech data, spontaneously produced by learners, in real time and in naturalistic communicative situations (rather than by testing specific items). Cross-sectional studies of learners are often used in conjunction with longitudinal studies in order to obtain the specific L2 structural outcomes from developing processing resources (Larsen-Freeman and Long, 1991).

To ensure the production of ‘rich’ data, interview techniques include the use of communicative tasks specifically designed to trigger critical structures in a naturalistic way. Data recorded from learners is then transcribed according to specified conventions (Di Biase 1997b, 41-42) and checked by a researcher other than the first transcriber. A distributional analysis is then carried out with the help of computer software capable of generating specified concordances and indices (e.g. Conc 1.76, or later versions, of the Summer Institute of Linguistics). The analysis is focused on specific structures (as in 2.2 below) which are interpreted to have been acquired if the “emergence criterion” is satisfied, i.e. with the emergence in the learner of the first *productive* use of the structure (Pienemann, 1988).

2.2 Test structures: Italian Morphology

Word Order (WO) in Italian is more an expression of thematic organisation (where pragmatic considerations prevail) hence it is difficult to find naturalistic conversational contexts for obligatory WO patterns without bringing pragmatic factors to bear. So learners may avoid producing certain WO patterns. Therefore morphological structures are better suited to reveal developmental patterns in this language given their highly language-specific, pervasive and obligatory nature (cf. Berretta, 1990). Italian morphological structures, hypothesised on the basis of Pienemann's Processability Theory, were empirically tested on data from learners of Italian as a second language in primary school (Di Biase, 1998). These morphological structures are distributed over four stages (more stages are needed for Italian Syntax) as in the table below.

Processing procedures	L2 Structural outcomes	Italian morphological structures
4. S-procedure	inter-phrasal information	‘inter-phrasal morphemes’ Subject (number/gender) - Main Verb agreement; Object-Verb-agreement
3. phrasal procedure	phrasal information	‘phrasal morphemes’ Spec Head Mod/N agreement in NP gender/number, N marking (art)
2 (b). category procedure	lexical morphemes	‘lexical morphemes’ Verb: restricted marking e.g., sing/plural person, non-past/past Noun: singular/plural forms (no agreement) Categorial/definiteness marking, restricted gender marking in nouns (no agreement), plural-i (no agreement) categorial marking of nouns (la/il)
2 (a). word/lemma segmentation procedure	phonologically marked ‘words’ with phonological diacritic (unification of ‘words’)	-words with variable final syllable -new forms e.g., rabbito, govermente -phonologically motivated agreement
1. word/lemma access	‘words’	invariant forms (single constituents)

As far as the analysis is concerned, the proposed investigation will concentrate only on some of the morphological structures characterising each stage. This will make the analysis faster and interpretation more efficient without any loss of accuracy because key structures are selected at each level, as in the table below:

Stage 1: formulae	single words, formulaic chunks
Stage 2: Lexical morphology	Plural in NOUN past/person marking in VERB
Stage 3: Phrasal morphology	Art/NAdj plural agreement Copula/predicate person/number agreement
Stage 4: InterphrasalMorphology	Subject and Main Verb agreement when Aux is ESSERE and Subj is Feminine and Object clitics agreement with NP and Main Verb in topicalised construction

2.3 Sample, timeline and milestones

This longitudinal study involves observation, over 2.5 years, of 4 schools with Italian L2 instruction programs in an Australian context. The schools will be chosen among those who indicate, voluntarily (through their Principal and Teacher of Italian) their interest in joining the research project. Schools are invited among those whose L2 program is substantially supported by Co.As.It. and are believed, by the immediate stakeholders, to be successful programs overall. These four schools, henceforth School A, School B, School C and School D, will all share a generally communicative style of instruction and will be matched for general socio-economic indicators, but two of the programs, the two designated as experimental, will, in some crucial respect, differ in so far as their teachers will use consistently a “focus on form condition” at least over the research period. The differences are summarised in the diagram below:

Focus-on-form condition	Comparison classes
School A	School C
School B	School D

The schools' participation, and that of their respective teachers and mainstream education authority, will be negotiated by the Industry Partner. Co.As.It. will also ensure that teachers released at the appointed times for training and/or other research related tasks on the project will be adequately replaced, in class time, by casual staff. Beginning in February 1999 the Grade 3 classes in the participating schools will all be observed and assessed at regular intervals over a period of 30 months. At that time (June 2001) the continuing children (we expect about 60 in the experimental and 60 in the comparison group) will be midway through Grade 5 – this will avoid any disruption or added pressures in the children's final primary school year – with the aim of describing learning outcomes in each of the four programs and assess whether there are significant differences, and if so, whether these differences can be attributed to a specific feature or features of the program. The two main reasons for choosing two schools for each condition are first, to have a statistically not insignificant population (about 60 children in each condition = about 120) and second, in order to factor out individual idiosyncrasies, at least to some extent, and thereby increase the generalisability of findings, especially if patterns in School A and B match to a broad extent and are different, as a group, from B and C, which also should, broadly speaking, match between themselves. The evaluation of the impact of the L2 program on learners and the school community through a series of specific questionnaires for each subgroup (children, teachers, parents) will be conducted mainly by the industry partner with input from the chief investigators.

The Timeline, to be coordinated and managed by the Partner Investigator, will be as follows:

1999: Term 1 and 2: training of teachers and researchers, design of tasks, assessing instruments etc; collection of children's biodata, tape-recorder used in class to familiarise students with recording themselves and playback. Term 3 and 4: pretest of Schools ABCD and begin observation, selection of 10 students in AB and 10 in CD for detailed profiling, record production, begin data transcription, begin focus-on-form in a consistent fashion.

2000: Term 1 and 2: Continue treatment etc.; questionnaire for stakeholders distributed and collected.

Term 3 and 4: Mid-point test and continuation of treatment in experimental group.

2001: Term 1: continue treatment in experimental group. Term 2: post-test (all).

Term 3 and 4: Finalise analysis of result, draft reports.

2.4 Expected outcomes and tangible products

- confirmation of the main hypothesis and clarification, from the experimental classrooms, of the various dimensions and variety of strategies employed by the teachers (or the children) for the practical application of focus on form, as well as a faster procedure for L2 assessment;
- a set of tasks and tests for elicitation of specific structures – tasks and tests may be used for teaching purposes (some specific to Italian and others that may be used for other languages as well);
- contribution to the creation of professional in-service packages with ideas and examples of focus on form;
- creation of relevant exemplary resources and materials (including audio-visual and CALL) to help language programs;
- enhancement of the expertise and/or qualifications of participating teachers;
- a series of articles in professional publications during the life of the project and one or more articles to be submitted to refereed journals with discussion of findings;
- disseminate information on findings and facilitate access to selected products from the project by placing materials on Internet (both Co.As.It. and LARC UWSM⁵⁵ sites).

* * *

FINAL REPORT ARC SPIRT

Grant C59906982. https://gams.arc.gov.au/AB1405_1693+0/home

Part D PROJECT OUTCOMES AND IMPACTS

D1 Did the project meet its initial objectives or approved revised objectives?

Yes

D2 Describe briefly the significance, results and outcomes of the project.

⁵⁵ This was the University of Western Sydney (Macarthur) partner of the Language Acquisition Research Centre (in partnership with the University of Sydney)

The project found that L2 programs in schools can, indeed, provide a broad lexical basis for learners but little, if any, grammatical development that could be measured in overt language production in the L2 of the participating children. This may, indeed, be accounted for, partly, by the decidedly limited exposure children may have to the L2 in the school environment. On the other hand, however, the project shows that even small doses of (developmentally moderated) form-focused instruction appeared to bootstrap grammatical development in the learners. The experimental groups, where **form-focused feedback** was directed exclusively to the (developmentally) targeted structure, displayed greater accuracy and faster acquisition of more complex form-function mappings occurring within the same developmental stage.

D3 Did the project lead to exciting new research directions, innovations and/or collaborations, and/or lay the foundations for new research and/or new partnerships?

Yes

If yes, please describe briefly how.

This project's findings and database provide a strong foundation for the development of learner profiling for Italian L2, on which a principled design for future curriculum and materials development can be based. The project provides a foundation for new partnership in research with an Italian consortium with a current funded project (2003-2005) investigating strategies of lexical and textual construction in Italian L2 (particularly collaboration with Prof. C. Bettoni, University of Verona). The results of the project appear to be in line with similar projects in Europe where a policy of L2 teaching in primary school is being currently implemented, whereas Australia already has some experience in this area. A joint application with the Universities of Paderborn, Hamburg, Lund and Sassari (and UWS), for a project involving a range of L1-L2 constellations and learners in primary schools as well as SLI (specific language impairment) children, was made to the VW Foundation in 2003. This attempt was not successful but a further attempt to develop profiling instruments for various languages is being planned under the European Commission 6th Framework Program.

D4 Are there identifiable national benefits—including economic, social, cultural and/or environmental contributions—resulting from this project?

Yes

If yes, please describe briefly the national benefits.

L2 programs incorporating developmentally moderated form-focused instruction, other

things being equal, will improve L2 program effectiveness and language outcomes without increasing inputs to programs. What is required is, for any particular L2, basic research to sort out developmental patterns which in turn should be streamed into teachers' knowledge for the development and application of:

- L2 developmental stages in syllabus construction as well as practical (rapid) language assessment in the classroom to monitor learners' progress and adjust teaching to what is learnable
- a range of form-focusing techniques, adjusted for age
- a range of communicative tasks sensitive to age and relevance to the learner.

This may be achieved through professional in-servicing and ad hoc literature on these subjects. Naturally, further research is needed for other L2s and for the development of practical, language-specific profiling instruments.

Part E RESEARCH COLLABORATION

E1 List the Industry Partners named in the application.

Co.As.It. SYDNEY, Not-for-profit organisation Australia

E2 Summarise briefly the nature and extent of the collaborative arrangements.

Co.As.It. played a key role in the project: identifying a pool of potential schools, ensuring the consistency and coherence of the research environment, the cooperation of the NSW Department of Education, the principals, and teachers involved (who were in charge of handling the videorecorders for data collection), as well as their replacement when the teachers were needed for in-servicing and reporting. Co.As.It. met the cost of an extra teacher for the research in one of the schools. Co.As.It. purchased the equipment necessary for recording in three schools (3 cameras, 3 vidorecorders, 3 time/date generators, 3 sound mixers, 6 microphones and other minor equipment) and met 50% of the cost. It also fully met the cost of equipment insurance, the payment of technicians involved in the purchasing, installation of equipment, trial and training of teachers in using the equipment correctly, troubleshooting and dismantling the installation at the end of the project. The Education Officer of Co.As.It. was involved directly in all phases of development of the project and participated with the teachers and the researchers in strategy meeting and in-servicing.

E3 Summarise briefly the ways the project fostered a greater understanding and

appreciation of industry needs and expectations, including research training needs.

By directly involving the Industry partner in the research and research training process, the project achieved a higher degree of awareness of the need for research to underpin the planning and action of the Industry partner in terms of programming, professional development and resource development for its L2 teaching coordination.

E4 Outline any cooperative links between the higher education sector/industry/public sector users of research that resulted from the project.

There has been a series of Professional In-service courses including intensive week-ends, jointly organised by Co.As.It. Sydney and UWS. The Principal researcher on this project was called to contribute to the language programming of the new Italian Bilingual School, set up by Co.As.It. in 2000, and is a current member of its Advisory Board. The collaboration on professional development (5 in-services in 2002-2004) is currently on-going and is extended to other Committees e.g. Italian School Committee (ISC), Sunshine Coast, Queensland, 8-9 July 2002; FILEF⁵⁶ School Committee, Adelaide, South Australia, 18-19 December 2003; and (forthcoming) one in November 2004; CIAC⁵⁷ in Canberra, Australian Capital Territory, 13-14 November 2004. The project's research is the basis for this Professional Development activity. Also there were a number of articles written by researchers on the project for *Italiano e Scuola* (Italian at School) which is the professional journal Italian Co.As.It. produces for teachers of Italian.

Part F REPORT ON COLLABORATION BY INDUSTRY PARTNER/s

[Industry Partner: 1]

F1 Industry Partner Details

Co.As.It. SYDNEY

F2 Please comment on whether this project built on a previously established collaborative relationship or if it was a new initiative.

previously established collaborative relationship

F3 How beneficial has this collaborative research project been from your organisation's viewpoint?

⁵⁶ Federation of Italian Migrant Workers and their Families (Federazione Italiana Lavoratori Emigrati e Famiglie).

⁵⁷ Canberra Italo-Australian Centre.

Very beneficial

F4 Summarise the major outcomes of the project from your perspective with particular comment on the benefits to your organisation.

- It has offered Co.As.It. and our Education Team understanding and insight into what language learning outcomes can be realistically expected of an Italian L2 program.
- Co.As.It. has adopted instructional strategies into its teaching practices.
- It has opened the debate on what is 'Best Practice' in a successful language program.
- The teaching of Italian for the first time in a Co.As.It. program has been documented, allowing for scrutiny of its 'scientific merit'
- Funding and accountability: it has allowed Co.As.It. to argue on a educational merit basis for continued funding.
- The University of Western Sydney and Co.As.It. are now working on the preparation of a CD (which includes material already distributed to teachers during in-services conducted by the University of Western Sydney for Co.As.It. 2003/04) that will assist teachers in designing in a principled way and in exchanging materials and tasks for their classroom. Co.As.It. will distribute the CD to all its 120 teachers in NSW.

F5 Provide comment on your intended or actual use of the research outcomes.

- The research confirmed the main hypothesis that the practical application of 'focus on form' works.
- Co.As.It. teachers who participated in the experiment found that their expertise in the area improved.
- The research allowed Co.As.It. to have realistic expectations of language acquisition, of what can be taught at what point of the learner's development, and what outcomes to expect. It also facilitates the creation of a set of tasks that may be used in the classroom.
- Cannot comment on the commercialisation aspect as this was never an objective of the Research.

F6 Would your organisation be open to participating in a collaborative arrangement under this program in the future?

Yes.

Briefly outline your reasons for your response

Yes, if the teaching of Italian would benefit from the Research.

[...]

3.2. Focusing strategies in second language development: a classroom-based study of Italian L2 in primary school

In Di Biase, B. (ed.) (2002). Focusing strategies in second language development: a classroom-based study of Italian L2 in primary school. *Developing a second language. Acquisition, processing and pedagogy of Arabic, Chinese, English, Italian, Japanese, Swedish*, pp. 95-120. Melbourne: Language Australia Ltd.

This is the main paper written at the end of the school-based research project introduced in § 3.1. It represents a confirmation of the early stages I hypothesised for Italian within a PT framework. It also confirms the formulaic and lexical nature of L2 learning in a primary school environment. This need not necessarily be the case, but generally happens when time and resources are limited, unless specific kinds of intervention in the L2 program, such as that described below, are made. Indeed, as this paper shows, a developmentally moderated linguistic syllabus (see Appendix D.A), such as that used in the research project, helped the children progress over the developmental path from morphosyntactic Stage 1 (formulaic) to Stage 3 (phrasal agreement) in just over three months.

This paper is otherwise self explanatory and requires no further contextualisation here except to note that, for reasons of space, the rather extensive appendices that came with the originally published chapter have all been moved, verbatim, to Appendix D (Methodology components for classroom-based research) of this thesis: These appendices are simply listed here:

A An excerpt of the schedule used for the 5-10 minute form-focused instruction intervention in the Italian L2 class program in the three schools involved in the ARC/SPIRT project;

B The set of operational instructions given to teachers on the project on how to conduct the form-focused intervention and the focus-on-form feedback in the experimental group and the comparison group;

C The observation form with the analytical categories and coding created to analyse the teacher's linguistic behaviour in the lessons;

D Examples of various forms of recast, clarification requests, explanation request and explicit corrections and other output enhancement strategies actually used by the class teacher and the children's response to these.

In Di Biase, B. (ed.) (2002). Focusing strategies in second language development: a classroom-based study of Italian L2 in primary school. *Developing a second language. Acquisition, processing and pedagogy of Arabic, Chinese, English, Italian, Japanese, Swedish*, pp. 95-120. Melbourne: Language Australia Ltd.

1. Objectives

This paper⁵⁸ will first discuss 'Teacher talk' as an area of interest for both first and second language acquisition research in relation to the contribution of the linguistic environment, e.g. linguistic input, to language acquisition and its relationship with developmental readiness. Second it will present some preliminary findings from a current research project linking developmental readiness with form-focused aspects of instruction and feedback and, third, attempt to relate variation in learning rates among groups of learners to aspects of teachers' linguistic behaviour. The categories used in the observation of teachers' linguistic behaviour will be exemplified from the research data. This latter part will of necessity be somewhat exploratory given the *in vivo* character of classroom-based research and the hitherto limited quantification.

2. Teacher talk and linguistic input

There are parallels between teacher talk (the language used by teachers when talking to learners) and caregivers' talk (the language used by mothers/caregivers to growing infants). Their role in language acquisition, perhaps taken for granted in popular belief, has come into question and has often been the object of intense debate and subsequent study in the last forty years or so. This is the kind of topic which suggests a fruitful collaboration between the fields of first and second language acquisition – the L1-L2 connection has been 'underexploited' yet most of the 'big questions' in the two fields

⁵⁸ Earlier versions or specific components of this paper have been presented at the first Symposium on Processability and SLA, UWS November 2000; MARCS Auditory Laboratories, UWS, August 2001; the conference *Languages: the new millennium*: 6-7 July 2002 Hilton International Sydney, and ALAA, 12-14 July 2002, Macquarie University. This paper benefited greatly from discussions following presentations in the contexts just mentioned, as well as with Michael Long and Catherine Doughty at the University of Hawai'i at Manoa. I would like to thank the reviewers of this paper, as well as Gisela Håkansson and Satomi Kawaguchi, for their discussion and suggestions. All remaining errors are my responsibility.

are inherently connected (Foster-Cohen, 1999). I will only touch on two of the four ‘big questions’ examined in Foster-Cohen’s review (ibid): One of these key questions is the extent to which language acquisition is natural and the other is the nature of the input and the use learners make of it.

In L1 success in learning the language is guaranteed given basic favourable conditions. But the jury is still out on whether there is a special, language-specific acquisition device or whether other more general cognitive factors are the main agents.

In L2, with the exception of natural child second language acquisition and cases of bilingual first language acquisition, failure to acquire is common and well documented. In the face of this common failure to acquire the L2, the onus is on those who think that there is a natural language acquisition device involved in adult SLA to prove that that is the case. In L1 studies, on the contrary, those who argue for non-specific mechanism are more frequently called to prove that such a mechanism can indeed result in the complex knowledge commonly acquired in first language acquisition.

As for the second key issue, ‘the nature of the input’, Foster-Cohen notices a renewed interest in the didactic nature of the input in L1 researchers. This is complemented by the continuing interest in L2 studies in the utility of didactic and other input and their relationships to the acquisition of language knowledge and skills. This is the issue which the present study aims to explore.

To remain within the ‘nature of the input’ theme, together with his *language instinct* assumption Chomsky (1965, 1981, 1986) also proposed his ‘poverty of the stimulus’ problem: learners converge on the same grammar in broadly similar patterns of acquisition, and in a relatively short time, even though the language input is degenerate, variable and lacking in negative evidence. What the child acquired could not have been taught by the mother. First language researchers have since tried to determine what the input could teach a child. Many studies attempted to show that mothers’/caregivers’ language was grammatical and suggested that it provides more or less subtle cues for dividing the speech stream into words, for learning vocabulary items, forming word categories. Some studies attempt to show that children do receive negative feedback and explicit instruction which they can use, e.g. Clark and Grossman (1998). Such studies do not show, however, that negative feedback is more than peripheral. It is not that hard to correct words but it is rather more difficult to talk about or correct agreement features or long distance dependencies.

The role of instruction

In SLA the debate revolves around the question of how exposure becomes ‘intake’. Some believe that instruction is not necessary, at least for some aspects of language. One of the most influential claims in language instruction is the ‘non interface’ position taken by Krashen (1982) who proposes, in his Monitor Theory of SLA, a learning/acquisition dichotomy. Knowledge of consciously learned language, Krashen argues, is distinct from unconsciously acquired language knowledge and that only the latter (ie the acquired knowledge) can be deployed in fluent (unmonitored) language use and, crucially, there can be no interaction between the two knowledge systems. Acquisition happens by exposing learners to sufficient ‘comprehensible input’.

Needless to say those who adopt this position, termed as *noninterventionists* by Long and Robinson (1998), see no role for focus on form in language teaching, or more generally for form-focused instruction. This has led to the widespread adoption of ‘communicative’ approaches to language teaching accompanied by a laissez-faire attitude to accuracy (no explicit corrective feedback) and avoidance of explicit teaching of (grammatical) rules. But noninterventionists also fail to provide any other expedient solution to the lack of learner accuracy (Doughty and Williams, 1998b) which are apparent, especially in *production*, even after many years of communicative and immersion programs (Harley, 1993).

In any case, while exposure to linguistic input can be assumed to be a necessary (though not sufficient) condition for acquisition what is it that makes input ‘comprehensible’? What is it that makes some items emerge earlier in learners? Is it frequency? Is it the nature or the quality of interaction that occurs between learners and their interlocutors?⁵⁹

It is not established that the frequency with which linguistic items occur in the input determine the order of acquisition. Long and Sato (1983) for instance found no significant relation between Krashen’s (ibid) average order of acquisition of grammatical morphemes and the frequency order of the same morphemes in ESL teachers’ speech. On the other hand, interactional modification, e.g. through conversational adjustments such as confirmation checks, repetitions, clarification requests etc., may be a reasonable candidate for another necessary condition for acquisition because of its role in *negotiation* for meaning, which “helps make input

⁵⁹ An innovative project looking at “timing” aspects of the “quality of interaction” in the classroom is being conducted at MARCS Auditory Laboratories by Stephen Malloch and others.

comprehensible while still containing unknown linguistic elements, and, hence, potential intake for acquisition” (Larsen-Freeman and Long, 1991, 144).

Developmental readiness and focus on form

In a recent review of feedback studies Nicholas, Lightbown and Spada (2001) point out that “the effectiveness of recasts may depend in part on the overall developmental level of proficiency or interlanguage variety of the learner.” This parallels findings by Oliver (1995) who, in an interesting study of conversation between child native and non-native speakers, found that 60% of non-native speaker errors received some form of negative feedback from native children through clarification requests, confirmation checks and other negotiation of meaning. Recasts, i.e. corrective reformulations of the learner’s utterance which preserve the learner’s meaning (cf. Long and Robinson, 1998, 25) also occurred. NNS children, however, incorporated only just under 10% of recasts into their following utterances. This may seem a surprisingly low rate but, as Oliver herself points out, conversational appropriateness may have played a role and, crucially, “NNSs can only incorporate structures when it is within their morphosyntactic ability to do so” (Oliver, 1995, 476).

Thus for a correction to be incorporated it has to be developmentally within reach for the particular learner, i.e. the structure must be *learnable* as Pienemann (1984) demonstrated in a classroom experiment. Pienemann’s ‘teachability hypothesis’ (1984, 1985, 1989, 1998) suggests that instruction can promote language acquisition, provided the interlanguage (the language of the learner) is close to the point when the structure to be taught is acquired in the natural setting.

Pienemann’s proposal, following from the earlier ZISA⁶⁰ project (Meisel, Clahsen and Pienemann, 1981) is, in a nutshell, that acquisition proceeds by stages along a ‘natural’ path, that these stages are implicationally ordered and that, therefore, the learner can not skip stages, not even with instruction. Table 1 below schematically presents the procedures characterising these developmental stages. Pienemann’s hypothesis predicts that the effect of external factors such as natural exposure to, or formal instruction in, a target structure, will be constrained by the learner’s developmental readiness. Or, as

⁶⁰ This was a largescale SLA project carried out in Germany in the Seventies, under the direction of Jurgen Meisel, looking at the acquisition of German as a second language by Italian and Spanish immigrants. ZISA stands for Zweitsprachenwerb Italianischer und Spanischer Arbeiter.

Larsen-Freeman and Long (1991, 280) succinctly put it: “Items will only be successfully taught when learners are psycholinguistically ‘ready’ to learn them.”

Table 1: Hypothetical hierarchy of processing procedures

(Pienemann, 1998, 2002)

	t₁	t₂	t₃	t₄	t₅
S'-procedure	-	-	-	-	-
S-procedure	-	simplified	simplified	simplified	inter-phrasal information exchange
Phrasal procedure VP	-	-	phrasal information exchange in VP	phrasal information exchange in VP	phrasal information exchange in VP
Phrasal procedure NP	-	-	phrasal information exchange in NP	phrasal information exchange in NP	phrasal information exchange in NP
category procedure (lex. category)	-	category + affix	category + affix	category + affix	category + affix
word/ lemma	no information exchange, lemma access	lemma access	lemma access	lemma access	lemma access

If this is the case the linguistic environment or external intervention, such as instruction, is unable to alter the *course* of development. Instruction may, however, influence the *rate* of development, particularly if it takes developmental readiness into account. Now we can resume the discussion on pedagogical intervention. Long (1991, 45-46) proposes an instructional approach he names ‘focus on form’. This specific instructional strategy “...overtly draws attention to the linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication.” Focus on form is different from focus on *forms* where they (the forms themselves) are the focus of instruction rather than meaning. This *incidental* drawing of attention to a feature of the linguistic code by the teacher or by one or more students is “triggered by perceived problems with comprehension or production” (Long and Robinson, 1998). Long’s original proposal relates, essentially, to *feedback* in the context of a meaning-based or communicative instructional setting rather than a particular instructional program or syllabus per se.

Other researchers such as Doughty and Williams (1998b, 4) propose that the two terms (focus on form vs. focus on formS) are not opposite notions but part of a continuum where “...focus on form entails a focus on formal elements of language, whereas focus on formS is limited to such focus,” and remark that *form focused instruction*⁶¹ is predicated on the crucial assumption that “meaning and use must already be evident to the learner at the time that attention is drawn to the linguistic apparatus...” This brings us right back to the issue of ‘developmental readiness’ and how feasible it may be, as suggested by Dyson (1998), to couple this basic constraint with the instructional approach proposed by Long (‘focus on form’) or in any case achieving some model of L2 instruction which is capable of integrating form and meaning (cf. Doughty and Williams, 1998c, 257).

3. The experiment

This longitudinal quasi-experimental project (see note 1) attempts to couple developmental readiness and form-focusing. It aims to compare the achievements of learners of Italian as a second language (L2) in three primary schools in New South Wales over an observation period of 30 months. These schools had an ‘insertion’ Italian

⁶¹ Ellis (2001) uses the term “form focused instruction” even more broadly to refer to “any planned or incidental instructional activity that is intended to induce language learners to pay attention to linguistic form. It serves as a cover term for a variety of other terms that figure in the current literature – ‘analytic teaching’ (Stern, 1990), ‘focus-on-form’ and ‘focus-on-forms’ Long, 1991), corrective feedback/error correction, and ‘negotiation of form’ (Lyster and Ranta, 1997).”

L2 program supported by Co.As.It. (see Appendix D.E)⁶². Two equivalent class groups in the same upper primary grade (Grade 3) were involved in each school respectively. Both classes in each of the schools share the same teacher and Italian L2 program.

In one of the classes in each school a specific instructional technique, namely ‘focus on form’, was to be used, as a constant feedback strategy. This was the *experimental* group. The other class, the *control* group, had the same Italian L2 program but without specific form-focusing in feedback. The two classes’ progress in each school was observed and profiled against specified stages of Italian L2 acquisition. At the beginning this process generated a ‘baseline’ of what had been acquired so far. Progress was monitored through videotapes of each Italian session over the 30-month observation period. The two classes involved were in their final term of Grade 3 at the start of the project. Video recordings of Italian lessons continued up to the second term of Grade 5, totalling over six terms of recordings.

The project investigated the role of instruction in language acquisition through the following research question: Are primary school second language programs which adopt consistent instructional strategies and practices with a ‘focus on form’ more effective than programs which don’t?

The main hypothesis to be tested was that: regardless of program type or methodology adopted by the teacher, students learning a second language will, fundamentally, follow the same developmental path. Where the teacher adopts instructional strategies with a consistent ‘focus on form’, however, students’ progression along the developmental path will be faster.

The L2 instruction program

The children in all three schools had been receiving instruction in Italian L2 for about three years by the time of the start of the project. Instruction typically consisted of about two sessions (of about 40-50 minutes) of instruction per week. Computing this into hours and allowing for normal attrition (assemblies, pupil-free days, sports carnivals, presentations etc.) the yearly total may average about 120 hours per class-group per year. The L2 content is usually organised around one or more *themes* within the general school program (from the ‘Human society and its environment’ key learning area), e.g. seasons and the weather (thus clothes used in different weather conditions). Teaching

⁶² All appendices referred to in this article are found under Appendix D at the end of the thesis.

approaches include ‘communicative’, ‘language arts’ and occasional mildly ‘grammatical’ approaches in a rather ‘eclectic’ mix (as described in Di Biase and de Rachewiltz, 1998).

The research program intended to minimise intervention in the normally planned program. So the ‘focus on form’ was conceived, initially, as applying exclusively to *teacher feedback* in one of her classes (the *experimental* class) rather than to the instruction program. The teacher would use then ‘focus on form’ technique in a sustained way and according to the learners’ developmental schedule, in her feedback to learners. In her other class (the *control* group) she was to use her usual feedback techniques. On the other hand Long’s definition of ‘focus on form’ is predicated on a consistently communicative, possibly task-based approach, with negotiation of meaning as a key activity. (cf. the Option 3 analytic approach in Long and Robinson, 1998). Such programs would require more time than the 2-hours per week most primary schools allocate and much greater integration within the total school program.

A developmental schedule for Italian L2

Following from the assumption of a fixed developmental path as formulated in the above hypothesis, the structures to be targeted for feedback during the experimental period were those immediately following, in the processability hierarchy (Pienemann, 1998), the developmental stage reached by the learners. The analysis of baseline data showed that according to a processability-derived hypothesis developed for Italian (Di Biase, 1999), learners were generally at the Developmental Stage 1: they were able to produce many words in Italian such as names of animals, fruit, colours, numbers and so on, as well as greetings and other formulaic expressions used in classroom interaction. They could not, however, produce – by and large – structures such as the plural of nouns. This was the case right across the board in all three schools, and we suspect this to be generally true for all Italian L2 programs in similar grades.

This realisation caused a major change in the project: if we wanted to see ‘development’ we should perhaps intervene not only at the level of *feedback* but also at the level of the ‘linguistic’ syllabus with brief focused instruction on the morphosyntactic structures we believed were *teachable* at that point. We opted for integrating form and meaning at least for a part (about 20%) of the available class time as suggested in Doughty and Williams’ (1998c, 250) *Model 1*:

- Brief, explicit instruction of formal knowledge (through some task)
- Focus on form activities with signals and brief intervention.

Table 2 summarises (following Vincent, 1990) the noun *forms* targeted for instruction, i.e. Italian noun endings, only for the main classes, with their plural marking form (masculine or feminine gender is inherent). Table 3 summarises adjective forms targeted which mark gender/number variation. Italian adjectives must agree in gender/number with the noun i.e. their form will alternate according to the gender/number of the noun they modify. Adjectives are far more regular than nouns and mostly fall into two main classes: those with four endings (shown in the shaded area of Table 3) which vary with both gender and number, and those with two endings which only vary in number.

<i>Singular</i>	<i>Plural</i>	<i>Gender (Eg)</i>
-o	-i	masculine (libro)
-a	-e	feminine (casa)
-e	-i	masc/fem (pane, fame)

Table 2: Italian Noun forms (major classes)
(Noun gender is inherent and autonomous).

<i>Singular</i>	<i>Plural</i>	<i>Gender</i>
-o	-i	masc
-a	-e	fem
-e	-i	masc/fem

Table 3 Italian Adjective forms
(Adjective's gender and number depend on the Noun's).

Early in the research it was decided to focus on the feature **number** for the purpose of developmental measurement because it is conceptually based and with clearer form/function correspondence than **gender**, which is often arbitrary in Italian (Di Biase, 2001 and cf. Glahn et al., 2001). At the start of the observation period a few children were showing sign of actually beginning to vary the form of nouns or adjectives which showed that they were 'developmentally ready' to learn Stage 2

structures such as marking plural of nominals. So, having assumed that the Formulaic stage was stable across the board (as amply confirmed by baseline analyses) structures from Stages Two and Three of Italian L2 acquisition were the clear candidate *learnable* structures. Table 4 below summarises the hypothesised processability hierarchy for Italian and highlights the structures targeted in the project.

Processing procedures	L2 process	Italian morphosyntax
S-procedure	inter-phrasal information	topic-object agreement
Phrasal procedure (head)	phrasal information	NP agreement (plural -i)
Category procedure	lexical morphemes	-to past marking on verbs -i plural marking on nouns
word/lemma	‘words’	–

Table 4 : Hypothesised hierarchy for Italian L2⁶³

Examples for the targeted structures are:

- **Stage 2** Lexical (category and features):

Noun marking: Singular/Plural alternation: *triangolo* --> *triangoli* (triangle/triangles)

Adjective marking : Plural alternation (four-form) *rosso* --> *rossi* (red)

(two-form adjectives) *verde* ---> *verdi* (green)

- **Stage 3** Phrasal Agreement in the Noun Phrase

due triangoli (two triangles) (a plural numeral requires plural noun form)

triangolo rosso-->*triangoli rossi* (red triangle/s) (noun/modifier agreement)

Methodology for focusing

The Focus on Form Intervention in the Class Program included:

- Specific time for presentation of FonF-related structures (through a task in the initial 10 minutes).
- A schedule of structures (see excerpt in Appendix D.A) was proposed by the researchers and discussed with the teachers. An agreed Basic Lexicon (listed by

⁶³ The above hypothesis is supported by results from a cross-sectional study (Di Biase and Kawaguchi, 2002) which tested processability theory for, respectively, Italian and Japanese.

teachers on the basis of their experience in their respective classes) was to be used for constructing the tasks for presentation of teachable structures. The schedule included structures for review, structures for presentation with key examples, indications for tasks and further examples. In light of the baseline the teachers would especially focus on lexical and then phrasal marking of plural in the Noun and then the Noun-Adjective group, and only in the fourth term start focusing on Verbs, particularly singular/plural third person marking.

- Incidental follow-up during the remaining 75-80% of class time (negotiation of meaning, recast, explicit correction, modelling etc.) was to be done only in the experimental group. Focus on form treatment was to concentrate on corrective recast (only spoken production) and explicit correction, making the learner notice and then supply, when necessary, the correct form. For the purpose of Fonf, during class time teachers were asked to ignore grammatical mistakes that were not relevant to the specific scheduled item(s) for that week.

Data collection –

- Video-recordings (continuous) were activated by the classroom teacher herself through a fixed camera mounted on a wall facing the children (wide angle).
- Additional direct audio recording was carried out by the researchers with individual, paired or small group learners. This collection was task-based.
- Transcription, coding and checking was carried out by the researchers for selected sessions.

Preliminary Results

Tables 5 and 6 below summarise results concerning the production of plural *-i* and *-e* in nominal and adjectival forms in one control and one experimental primary school groups of children instructed in Italian L2.

The example below shows production from two children, Amy and Lara, learning Italian at Time 2. The task showed pictures of one or more objects with identifiable attributes (eg colour) and aimed at the production of plural endings of nouns, adjectives, and noun/adjective plural agreement, where Amy has difficulties in producing

alternative forms of the adjective *arrabbiato* (angry) while Lara successfully produced (-i/-i) plural agreement.

Examples from project data: and noun-adjective agreement

Invariant forms

R	le stelle sono? ... arrabbiate proviamo il triangolo com'è il triangolo (the starsFEM-PL are? ... angryFEM-PL, let's try the triangle...)
AMY	una triangolo è arrabbiate (aFEM-SING is angryFEM-PL)
R	è arrabbiato e i triangoli come sono? (is angryMASC-SING and the trianglesMASC-PL...)
AMY	due traingolo arrabbiate (two *traingolo ⁶⁴ angryFEM-PL)

Form variation and noun-adjective agreement.

LARA tre triangoli	(three trianglesMASC)
RESEARCHER di che colore?	(what colour?)
LARA rossi	(redPL-MASC)
RES bravissima (shows card with green triangle)	(excellent!)
LARA un triangolo verde	(a green triangle)
RES sì (shows green squares)	(yes)
LARA due quadrati verdi	(two greenPL-MASC
squaresMASC)	
RES bravissima (shows yellow triangle)	(excellent!)
LARA un triangolo giallo	(a yellow triangle)
RES brava (shows red crosses)	(good)
LARA tre croci *rossi	(three redPL-MASC
crossesFEM)	

Note that the starred form in the last line of the example fails to instantiate feminine gender but it does mark plural, so it would have been counted as positive phrasal agreement (only for number). At this point the learner may not yet have completed the

⁶⁴ The spelling reflects the informants pronunciation rather than native conventions.

lexical annotation for the noun (*croce*, “cross”) which is classed as FEMinine in the target language.

In the tables below Time 1 shows production at the beginning of the 18-month observation period (after instruction in Italian for about three years). Time 2 shows production after 18 weeks of form-focused instruction for both groups in the first ten minutes of class time. The difference between the Control group and the Experimental group is that with the latter the teacher was expected to apply focus on form feedback consistently for the rest of the lesson (see class procedure in Appendix D.B).

Table 5: Control Group
Noun and Adjective plural -i and -e marking (Lexical stage)

Learner's code	Time 1Noun		Time2Noun		Time1Adjective	Time2Adjective	
	N-i	N-e	N-i	N-e		A-i	A-e
Amy			7	2(?)		1(?)	5?
Car	1		2				5
Chr		1			1		
Coum							
Jor	1		7	1			11
Jos			15			1(?)	15
Kie		1(?)	7	1(?)			12
Nik	1	2	5	3			8
Olg				2			

Table 6: Experimental Group
Noun and Adjective marking (Lexical stage)

Learner's code	Time1Noun		Time 2 Noun			Time1Adjective		Time2Adj	
	N-i	N-e	N-i	N-e		A-i	A-e	A-i	A-e
Adr		3	6	1				6	2
Ale			2	2				2	
Alli			3	4				7	5
Chrs			17					7	1?
Katv			3	3				4	6
Lau			5	2				3	1
Matw			4	2		1?		3	2?
Sar		1	3	1			1	2	3
Sop		1	5	2				2	

Light shade: insufficient evidence; darker shade: marking acquired i.e. more than one occurrence in obligatory context with lexical and morphological variation

NB Acquisition was checked for 'productivity'

A cursory examination of the results shows that even though at Time 1 both groups were almost perfectly matched in terms of developmental readiness in Italian, by Time 2 the experimental group has made more consistent progress in the next developmental stage (plural marking both in noun and adjectives) and reached Stage 2 (Lexical stage).

Likewise the following two Tables 7 and 8 show progress towards Stage 3, characterised by phrasal agreement in the noun phrase between nouns and adjectives, with a more consistent development in the experimental group.

It must be noted that the marked plural agreement (-e/-e) which applies to a subgroup of feminine gender nouns matching a subgroup of adjectives (those with four possible endings) is predictably less consistent, overall, than the default agreement in -i which applies elsewhere. A similar pattern is also apparent at the previous stage (Lexical), but less so at the basic (Formulaic) stage, where the word form is learned without (or regardless of) its grammatical features. Thus a number of children displayed -e marking, and more so in the control group, already at Time 1.

Table 7: Control Group
Noun/Adjective agreement marking (Phrasal stage)

Learners	Time 1 Agreement			Time 2 Agreement		
	N + _	_A +	NAagree	Noun +	Adject+	N+Adj+
Amy			0(2)	Ni5Ne2?	Ai1?	4(11)
Car			0(3)	1	2	3 (12)
Chr	1		0(4)			0(10)
Coum			0(2)			0(11)
Jor			0(3)	1	1	8+1(11)
Jos			0(3)	1	1	14(16)
Kie			0(0)	1	2	9+1(15)
Nik			0(9)		2	5 (8)
Olg			0(0)	2		0(13)

Figures in brackets represent the number of contexts for agreement produced by the learner

According to Table 7, at Time 1 there was practically no marking of plurality in either noun or adjective in the control group, even though most of them did produce contexts (figure in brackets) for plural agreement. By Time 2 the number of contexts produced increases dramatically for all nine children. We also find that this time most of the children (6 out of 9) do mark agreement. In order to interpret the table let us focus for a moment on Jor's results, for instance. At Time 2, the table says (last column) that he produced 11 plural agreement contexts overall and marked them 8 times with *-i* /*-i* plus once with *-e* /*-i* (*lune verdi*, correctly). Moving leftwards we also find that he marked one member only of the agreement pair: plural adjective once and plural noun once; while at Time 1 he had produced three contexts for agreement but no marking at all of either adjective or noun.

Table 8: Experimental Group
Noun/Adjective agreement marking (Phrasal stage)

Learners	Time 1 Agreement			Time 2 Agreement		
	N + _	_A +	NAagree	Noun +	Adject +	N+Adj+
Adr			0(10)	3	3	4+1(12)
Ale			0(3)	1	2	2+1(9)
Alli			0(0)		Ae2Ai1	3+1(9)
Chrs			0(0)	Ni4		10(14)
Katv			0(3)	Ne2	Ae2	4+2(11)
Lau			0(5)	3	1	4+1(9)
Matw			0(3)	Ne1	Ae2?	3+2(9)
Sar			0(2)	1	1	3(7)
Sop			0(4)	2	1	3(8)

As for the 9 children from the experimental group, all of them appear to have acquired noun/adjective agreement marking. For both groups it can be said that the agreement acquired is the default agreement in *-i*, while the marked agreement in *-e* and the *-i*, *-e* mixes is not acquired yet in most cases.

In concluding this section the progress of both groups from Stage 1 to Stage 3 may be fairly attributed to the form-focused instruction they received over the 18 weeks (less than 36 hours all up) between Time 1 and Time 2. Pienemann's developmental hypothesis is also supported: all of the children who acquired Stage 3 had also acquired Stage 2. The difference between the two groups is mainly in the consistency of results and the emergence of the more marked agreement in the experimental group. It may be said up to this point that form focused instruction plus Fonf feedback promotes faster acquisition and perhaps more accurate use of learnable structures (eg beginning to differentiate marking with additional features). Could this difference be attributed to the greater consistency of focus on form in this group?

4. Observing teaching behaviour

Why did the experimental group do somewhat better? In fact the scheduled structures were presented in both groups, which also had the same program. Probably the teacher behaved in somewhat different ways with each of the groups? How did the teacher

interpret her Fonf role? To answer these questions the class behaviour of the teacher in those two groups was observed over five randomly picked video recordings each for an experimental and a comparison group, *as close as possible within the first 18 weeks of instruction*. Detailed observations were scored by a trained research assistant who counted instances of linguistic behaviour according to an observation schedule (see Appendix D.C) using the categories listed in Table 9 below.

This part of the research, which looks at the teacher's linguistic behaviour, is far more 'exploratory' than the results obtained in terms of development. The researchers here tried to look at the verbal behaviour of the teacher without imposing too much interpretation on the act. This may have led to an underspecification of what we were actually looking at. There is still much debate about recasts and negative feedback (Long, 2003) and further analysis may contribute some more concrete finding. At this stage the results in Table 9 below must be taken with great caution in any case. Further refinement of categories and perhaps some further coding is required, e.g. to establish whether the recasts (which show a much higher ratio in the control group rather than viceversa) were actually 'focused' on the scheduled structure or were distributed across a greater range of structures including perhaps lexical recasts. The areas where there seems to be greater difference in the teacher's behaviour between the two groups are in the more 'negative' and more 'explicit' kind of feedback (cf. Carrol and Swain, 1993) in favour of the experimental group.

Code	Teacher Linguistic Behaviour in Class	Experimental group	Control group	Ratio
Q	Asks Question	318	490	0.6489
NC	No Correction	3	16	0.1875
+FB	Positive Feedback (+form)	101	75	1.3466
RR	requests repetition (individual or choral)	48	52	0.9230
{R	Recast (+stress)	27	41	0.6585
CUE	(BLang) + {Verbal/ +Parallel(+)}	(12+38+6)	(16+46+16)	
	Total provides cue	56	78	0.7179
FORM+	Provides form (+in fonf schedule)	7	17	0.4117
{RW(+)}	Repeats wrong form (+stress)	15(2+)	2	8.5
{CL	Clarification request (what)	6	2	3
EC(+)}	Teacher's explicit correction (+form /EXPL) (NOT this but THAT)	12	0	12:0
O	Other output enhancement	2	0	2:0
{EX	Explanation request (why)	0	0	0

(Experimental group observation dates 29/3; 5/4; 8/5; 31/5; 14/6)

(Control group observation dates 5/4; 10/4; 8/5; 12/5; 17/5).

Table 9. School A: Teacher's linguistic behaviour in Experimental and Control group over 3 months (5 sessions observed per group)

Codes used in the observation schedule (Appendix D.C) are schematically explained below. Examples instantiating the specific behaviour typical of some categories are found in Appendix D.D below.

1. Q Question

Teacher asks a question. This is by far the most common form of engagement used by this teacher, and more so in the control group than in the experimental group. In the 10 classes observed the teacher asks a total of 808 questions, i.e. an average of about 80 questions per lesson.

2. NC No Correction

Teacher does not intervene in the event of a student's production error when the targeted structure is involved. This does not happen much but, naturally, it happens more in the comparison than in the experimental group (more than 5 to 1).

3. +FB Positive Feedback (+form)

Explicit approval equivalent to: Good! OK! Bravo! and/or when Teacher repeats form approvingly (see also RW example 3 in Appendix D.D). This is done often, an average of more than 17 times per lesson.

4. RR requests repetition (individual/choral)

Teacher asks child or group to repeat (correct) production. This behaviour is roughly equally distributed between the two groups. About 10 times per lesson on average.

5. CUE provides cue (BL) {V/ Parallel(+)} (–miscue)

Teacher provides Verbal or non-verbal (Body Language) cues.

BL separately account for over 20% of CUE behaviour.

Verbal cue, e.g. providing elements for completion (word or phrase without ending), using opposites (“Is the sun cold?”) or giving parallel expressions, e.g. showing a picture of three black dogs and another with three black cats: “If these are two black dogs these are two ...?”

More cues were given to the Comparison group (7.8 per meeting on average) than the Experimental group (5.6 per lesson).

6. FORM+ Provides form (+in fonf schedule)

The teacher provides a new form (usually if no one else seems to know it). This happens two or three times per lesson and more often in the Comparison group.

7. {R Recast (+stress)

Simple recast (without stress) is the most common (and apparently the least effective) form of corrective feedback (implicit correction), where the teacher correctly recasts an item which the student produces with some formal error. The recast may be limited to the wrong word or even just an ending. Naturally this happens more in the Comparison group (4.1 per meeting) rather than the Experimental group (2.7), since this is exactly the point where explicit feedback could be given.

8. (Negative feedback techniques)

RW: Teacher repeats wrong form

CL: Clarification request by the teacher

EX: Teacher requests an explanation

EC: Teacher engages in explicit correction and may also offer correct form or explanation.

All of these are exemplified in Appendix D.C. Taking all of these strategies together they amount to only 37 instances for the Experimental group against 4 for the Comparison group (about 9:1). This is the most striking difference in the teacher's treatment of the two groups.

9. O: Other input enhancement used by the teacher

This open category attempts to capture forms of input enhancement which could not be attributed fairly to any of the other categories. As it was there were only two such instances in 10 meetings and both occurred in the experimental group.

5. Conclusion

The main hypothesis of the study is supported. Many of the language learners in this study seem to develop from Stage 1 (formulaic) to Stage 2 (lexical) **and, in most cases,** Stage 3 (phrasal). This development may have happened because of the explicit form focused program. In fact the previous three years of exposure to Italian instruction resulted in children having a working vocabulary but their lexical items did not show any grammatical marking, e.g. of plurals, let alone any morphological agreement between heads and dependents. Within the first 18 weeks of instruction for this study, however, the experimental group (with focus on form feedback) showed a more consistent development than the control group.

Why did the experimental group seem to have better results? Was there any consistent difference in the teacher's behaviour that might have promoted these results? Table 9 seems to show that the teacher in School A interpreted the differential treatment of the two groups mainly in the provision of negative feedback, analysed here as RW (repeats wrong form), CL (clarification requests) and EC (explicit correction). It is remarkable that, even though these categories seemed to show the most dramatic difference in ratio between the two groups (8.5:1; 3:1 and 12:0 respectively), they were actually used very sparingly by the teacher even in the experimental group: RW was used, on average, 3.4 times per lesson, CL only 1.2 per lesson and Explicit Correction 2.4 per lesson. Perhaps other categories in the mix may have contributed to the better result for the experimental group, e.g. a slightly higher positive feedback ratio (4:3 in favour of the experimental group), but this may have been counterbalanced by other items that seemed to favour

the comparison group, e.g. the latter had a higher ratio of Q (asks questions) and for CUE (provides cue). Overall though a higher use of negative feedback appears to offer the most striking difference in the teacher's treatment of the two groups.

The research did not aim to look in detail at the language teachers actually use when engaging in the macro-categories of linguistic behaviour identified by the project. This is one of the limitations of this study, but the available data could easily lend itself to such scrutiny. Also, since there is interest in our Centre at UWS (MARCS Auditory Laboratories) in investigating acoustic characteristics of speech and their affective effects it will be interesting to look at possible correlations between particular acoustic dimensions and fonf-generated linguistic behaviour.

* * *

The five appendices referred to in this article are found under Appendix D at the end of the thesis.

3.3 Developmentally moderated focus-on-form

Paper presented at the *5th Pacific Second Language Forum Brisbane*, 4-6 July 2006, University of Queensland, Brisbane, Australia.

This paper represents, I believe, the most innovative of my contributions to a theory of practice. The previous two papers (cf. §§ 3.1-3.2) show how developmental considerations should inform the (morphosyntactic) syllabus. Here I show the advantages of moderating developmentally also the feedback to learners (following up on Oliver 1995). This allows for repeated production and comprehension of a learnable item, in context, thus increasing the opportunities for the language processor to proceduralise a particular structure and the lexical access that goes with it. This became clearer to me on reading Paradis (2004), particularly the chapter on implicit and explicit language processes (pp. 34-61).

The clarifications gleaned from Paradis (2004) offered the opportunity for a re-analysis of the data presented in Di Biase (2002, reproduced here as § 3.2). While the form-focused intervention can explain the developmental progress in both groups, the faster progress of the experimental group could be explained only partially in that paper, since the focusing strategies used by the teacher were, in fact, only marginally different between the experimental and the control groups. Consequently, not just the 'manner' of the intervention, but perhaps its 'content' could have made the difference; that is, the fact that the experimental group received feedback concentrating primarily on the targeted structure turns out to be the critical factor for the differential achievement. At a theoretical level this seems to resolve satisfactorily the puzzle proposed by that insufficiently explained difference. It remains now to be seen whether similar results are obtained in different contexts, with different learners and different languages.

One matter I'd like to raise briefly here concerns the notation I used for the first time to diagram example (5) in Slide 18. This style of notation, borrowed from Andrews and Manning (1999), shows the unifying features at the node where unification is assumed to occur. This is a very useful improvement on LFG representation, I believe, because it shows how, in the specific case of NP agreement in Italian, a particular feature such as CLASS belongs independently to the noun and the adjective, it is intrinsically lexical and it does *not* unify at

the NP node. This particular information set is easily missed if the features are only listed with the lexical entry.

Paper presented at the *5th Pacific Second Language Forum Brisbane*, 4-6 July 2006, University of Queensland, Brisbane, Australia.

Abstract

The aim of this paper is to show how the combination of two components in L2 instruction, that is (a) a principled psycholinguistic developmental schedule for the L2, such as Processability theory (Pienemann, 1998) applied to Italian L2 (Di Biase, 1998, 2002) in combination with (b) focus-on-form (Long, 1991, Long and Robinson, 1998) used in feedback on developmentally targeted structure(s), results in measurable gains in development and accuracy. From a more general theoretical stance this kind of study may illuminate the highly controversial issue of the interface between explicit and implicit learning (Long and Robinson, 1998; Paradis, 1994, 2004).

The study presented here follows a pretest-delayed post-test design focusing on the learning of the singular/plural form contrast in nouns and adjectives and their agreement in the Italian NP. It is part of a larger ARC-supported project, with a community organisation (Co.As.It., Sydney) as industry partner, looking at outcomes of Italian L2 programs in primary schools. Here we concentrate on 18 learners from the same school with the same teacher, half of them from the experimental class, where focus-on-form feedback was directed exclusively to the (developmentally) targeted structure, while the other half of the learners (from the comparison class) had the usual corrective feedback from the teacher (i.e. on any error).

The delayed post-test results show that even small doses of (developmentally moderated) form-focused instruction appeared to bootstrap grammatical development in the learners who mostly reached Stage 3 (NP plural agreement) after 16 weeks of instruction. In particular, the experimental group, where form-focused feedback was directed exclusively to the (developmentally) targeted structure, displayed greater accuracy and faster acquisition of more complex form-function mappings occurring within the same developmental stage. Results seem consistent with Paradis' position that the link between explicit and implicit L2 learning is indirect and mediated through practice.

Power point presentation slides

1.

Objective of this presentation:

- To show that the combination of two elements in L2 instruction is critical to more efficient L2 learning:
 - a) the use of a principled, psycholinguistically plausible developmental schedule for the L2, which is then used to moderate

b) form-focused feedback.

- To show that results from classroom-based research involving primary school learners (Di Biase, 2002) appear to support this claim.

2.

Acknowledgement:

This investigation, looking at more efficient outcomes in L2 programs, was supported by ARC/SPIRT grant n. C59906982 and CoAsIt NSW as Industry partner.

3.

Key terms:

- A ‘principled psycholinguistic developmental schedule for the L2’ here means a schedule based on Processability theory (Pienemann, 1998) applied to Italian L2 (Di Biase, 1998, 2002, Di Biase and Kawaguchi, 2002). This schedule refers (exclusively) to morphosyntactic development in spoken production. (Note: Italian was the L2 being learned by the primary school children involved in the investigation.)
- ‘Focus-on-form’, as proposed by Long (1991, 45-46) is an instructional approach which “...overtly draws attention to the linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication.”
- This incidental drawing of attention to a feature of the linguistic code by the teacher or by one or more students is “triggered by perceived problems with comprehension or production” (Long and Robinson, 1998).
- Notice that Long’s original proposal relates, essentially, to feedback in the context of a meaning-based or “communicative” instructional setting, rather than a particular instructional program or syllabus per se.
- In this presentation the key concept is that ‘developmentally moderated feedback’ is activated by the teacher on a specific developmentally targeted structure (as it arises incidentally in the communicative exchange).
- This treatment should result in measurable gains in ‘development’ (i.e. the morphosyntactic stage achieved by the learner), and ‘accuracy’ i.e., the relative frequency with which the targeted structure is produced.

4.

- The (quasi-experimental) study

- This is part of a larger ARC-supported project (Australian Research Council), looking at outcomes of existing Italian L2 programs in three (government) primary schools in Sydney. All L2 classes were video-recorded for about one year and a half.
- The present study concentrates on 18 learners from the same school with the same teacher and same program:
 - nine learners from the **experimental** class, where Fonf feedback was directed exclusively to the (developmentally) targeted structure,
 - the other nine learners were from the **comparison** (control) class, which had the usual corrective feedback from the teacher (i.e. on any error).

5.

Research Questions

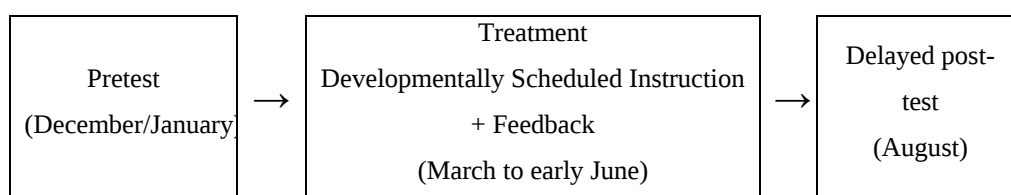
- Can more effective learning be achieved through developmentally moderated instruction and the use of focus-on-form feedback techniques?
- Can this be done more efficiently? That is, without increasing resource inputs (principally program and teacher time)?

6.

The (quasi-experimental) study

It follows a pretest-delayed post-test design focusing on the learning of Italian L2 singular/plural form contrast in nouns and adjectives and their agreement in the NP (Noun Phrase).

(1)



7.

Time 1: Pretest

- Children were pretested in order to establish a developmental baseline since they had been learning Italian over the previous 2-3 years, for about 2 hours per week.
- The pretest attempted to engage children in naturalistic conversation, in Italian, one or two at a time, out of the classroom, with the researcher who used simple

elicitation tasks, e.g. a picture description task with about 20 or so opportunities for Nouns and 20 or so for Adjectives.

8.

Pretest (T1) Results:

Results showed that the L2 instruction, received over a two to three year period, provided a broad lexical basis but no grammatical development that could be measured in overt language production, suggesting that the form of knowledge then was mainly “declarative” (Paradis, 2004).

- In Processability terms, learners were at Stage 1, that is, they could comprehend and produce invariant words (overwhelmingly nouns, some adjectives and some greeting expressions).
- BUT no form variation: i.e. they could not produce plural forms nor, naturally enough, the agreement of these forms as required by the L2.

9.

Informants	Noun-i	Noun-e	Adjective-i	Adjective-e
Amy	0	3	0	1(?)
Car	1	0	0	0
Chr	0	1	1	0
Coum	0	0	0	0
Jor	1	0	0	0
Jos	0	0	0	1?
Kie	0	1(?)	0	0
Nik	1	2	0	1
Olg	0	0	0	0

Table 1: Control Group - Time 1: Production of plural forms of Nouns and Adjectives (out of about 20 chances)**10.**

Informants	Noun-i	Noun-e	Adjective-i	Adjective-e
Adr	0	3	0	0
Ale	0	0	0	0
Alli	0	0	0	0
Chrs	0	0	0	0
Katv	0	0	0	0
Lau	0	0	0	0
Matw	0	0	1?	0

14.

More features and more values:

The etc. in the previous slide was not rhetorical: there are indeed more features and values attached to the Noun category in Italian: that is GENDER. This feature complicates things for the learner because it is also obligatory and it interacts with number.

So, every Italian noun is attributed this **GENDER** feature with one of two values: either MASCuline or FEMinine. Gender is intrinsic to each noun and needs to be learned (annotated in the lexicon) in each case. It may be conceptually transparent such as when it corresponds to sex (in the case of human and some other animals) but in most cases it is conceptually opaque and downright arbitrary (though there are some phonological regularities).

15.

More features and more values

So a more complete representation (in highly simplified LFG-style lexical entries) would be:

(4)	N			N
	<i>gatto</i>	Num=sing	or	<i>gatti</i>
		Gen=masc		Num=pl
				Gen=masc

So we do not have a one-to-one form-function mapping here but (at least) one form-to-two functions. It is reasonable to assume that the learner will proceed with caution here and very gradually.

15.

<i>Singular</i>	<i>Plural</i>	<i>Gender (Example)</i>
-o	-i	masculine (<i>libro</i> , “book”)
-a	-e	feminine (<i>casa</i> , “house”)
-e	-i	masc/fem (<i>pane</i> , “bread”/ <i>neve</i> , “snow”)

Table 3: Italian Noun forms (major classes only)

(Noun gender is inherent and autonomous)

<i>Singular</i>	<i>Plural</i>	<i>Gender (Example)</i>
-o	-i	masculine (<i>rosso</i> , “red”)
-a	-e	feminine (<i>rossa</i> , “red”)
-e	-i	masc/fem (<i>verde</i> , “green”)

Table 4: Italian Adjective forms

(Adjective’s gender and number agree with the Noun’s)

16.

Stage 2: form variation:

- All of that form variation belongs to Stage 2.
- You may be forgiven for thinking that Stage 2 is far too complicated and now realise why the children sat rather comfortably at (formulaic) Stage 1 for two or three years!

(But think: this is really equivalent to between 140 and 210 hours of instruction).

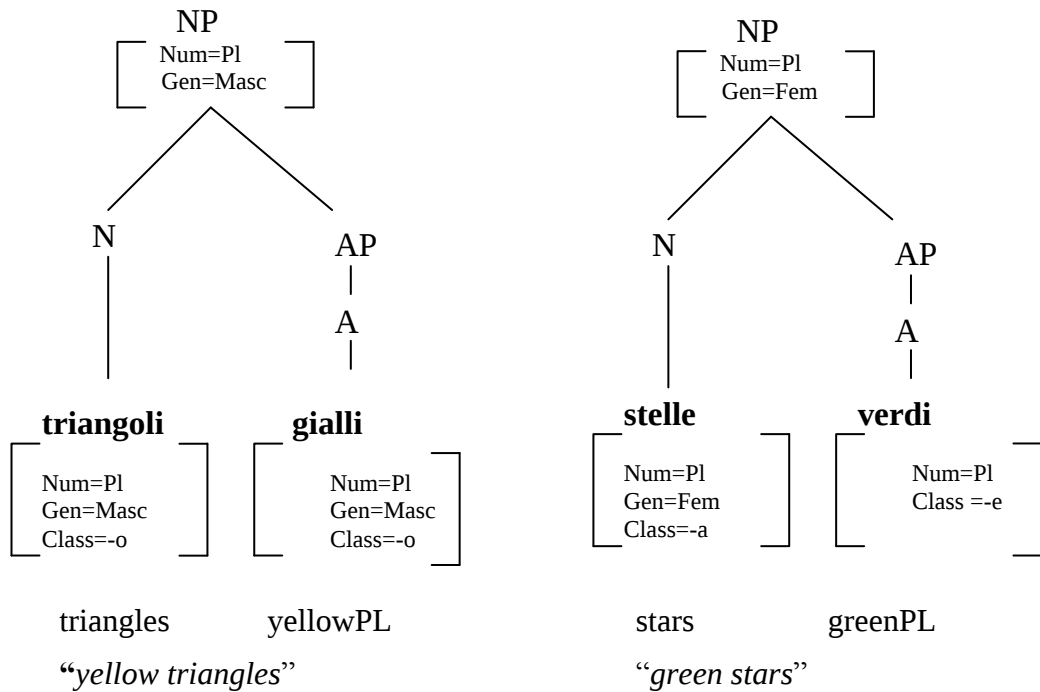
17.

Stage 3?

In any case, if you want to know, Stage 3 involves **agreement** between features of the noun and features of its modifier(s), where the form-function can be rather complex because of the range of possible combinations of both N and A – each of which may belong to different classes.

18.

(5) Examples of Stage 3 agreement (italian phrasal morphology)



19.

Methodology for focusing:

The Intervention in the Class Program, common to both experimental and comparison groups, included:

- Schedule of structures and an agreed Basic Lexicon (listed by teachers on the basis of their experience in their respective classes).
- These were used to construct the tasks for presentation of **teachable structures**.
- The schedule included structures for review, structure for presentation with key example, indications for tasks and further examples.
- Specific time for presentation of developmentally moderated structures in a form-focused way, through a task in the initial 5-10 minutes.

20.

Developmentally moderated ‘focus on form’ feedback in the **experimental** group

- Incidental follow-up during the 75-80% remainder of class time (negotiation of meaning, recast, explicit correction, modelling etc.) was to be done in the experimental group targeting only the structures introduced that week (or the immediately previous week).
- Feedback treatment (only with **spoken** production) was to use either corrective recast or explicit correction, making the learner notice. The teacher would supply, when necessary, the correct form.
- In the **experimental** group, furthermore, teachers were asked to ignore, during class time, grammatical mistakes that were not relevant to the specific targeted item(s) for that week.

21.

Business-as-usual feedback in the **control** group:

- In the control (or comparison) group teachers were asked to behave as they normally did in class, i.e. provide feedback on grammatical mistakes whether or not they were relevant to the specific targeted item(s) for that week.
- Hard to avoid influence from the experimental class though! Nevertheless, the recordings, activated by the teacher herself at the beginning of each lesson, would tell the story.

22.

T2: The delayed post-test:

- Data collection at Time 2 (delayed post-test) occurred outside of class time eight weeks or so from the time the structures had been presented in class. It followed a similar procedure as T1, with one child talking to the researcher.

23.

T2 Post-test Results:

- A cursory examination of Time 2 results shows that even though at Time 1 both groups were almost perfectly matched in terms of developmental readiness in Italian, by Time 2 the experimental group had made more consistent progress in the next two developmental stages.

- **All** informants in the **experimental** group reached Stage 2 (Lexical stage) and were able to mark plurals both in noun and adjectives. Many of the **Controls**, but not all, had also reached this stage.
- Likewise the following two tables 7 and 8 show marked progress towards Stage 3, characterised by phrasal agreement in the noun phrase between nouns and adjectives, again with a more consistent development in the **experimental** group.

24.

Informants	Noun-i	Noun-e	Adjective-i	Adjective-e
Amy	7	2(?)	5	0
Car	2	0	5	0
Chr	0	0	0	0
Coum	0	0	0	0
Jor	7	1	11	1
Jos	15	0	15	0
Kie	7	1(?)	12	0
Nik	5	3	8	0
Olg	0	2	0	0

Table 5. **Control Group - Time 2:** Production of (lexical) plural forms of Nouns and Adjectives

25.

Informants	Noun-i	Noun-e	Adjective-i	Adjective-e
Adr	6	1	6	2
Ale	2	2	2	0
Alli	3	4	7	5
Chrs	17	0	7	1(?)
Katv	3	3	4	6
Lau	5	2	3	1
Matw	4	2	3	2(?)
Sar	3	1	2	3
Sop	5	2	2	0

Table 6. **Experimental Group - Time 2:** Production of (lexical) plural forms of Nouns and Adjectives

26.

Informants	Noun+Adjective Agreement	Noun+	Adjective+
Amy	4/11	Ni5Ne2?	Ai1?
Car	3/12	1	2
Chr	0/10		
Coum	0/11		
Jor	8+1/11	1	1
Jos	14/16	1	1
Kie	9+1/15	1	2
Ni	5/8		2
Olg	0/13	2	

Table 7. **Control Group - Time 2:** Production of Phrasal plural agreement of Nouns and Adjectives* (PT Stage 3)

* **Note to Table 7:** In the ‘Noun+Adjective’ column (second from the left) a simple fraction represents the successful production of the default *–i* plural agreement. Where a figure preceded by ‘+’ is found it means that a successful *–e* agreement (non-default) was produced. The total number of contexts for agreement are after the slash. Figures in the ‘Noun+’ and ‘Adjective+’ columns represent the number of occurrences of successful plural marking of, respectively, the Noun or the Adjective in contexts requiring agreement; i.e., the plural *agreement* fails but one of the items is correctly plural-marked. For example, the informant Jor (the fifth from the bottom) produced a total number of 11 plural agreement contexts, of which he successfully produced nine, eight of which with the default *–i* ending plus one case with the non-default *–e* ending. Question marks denote unresolved uncertainty in the interpretation of the end vowel by either or both the transcriber and the checker.

27.

Informants	Noun+Adjective Agreement	Noun+	Adjective+
Adr	4+1/12	3	3
Ale	2+1/9	1	2
Alli	3+1/9		Ae2Ai1
Chrs	10/14	Ni4	
Katv	4+2/11	Ne2	Ae2
Lau	4+1/9	3	1
Matw	3+2/9	Ne1	Ae2?
Sar	3/7	1	1
Sop	3/8	2	1

Table 8. **Experimental Group - Time 2:** Production of Phrasal plural agreement of Nouns and Adjectives* (Stage 3)

* See Note in Slide 26.

28.

Discussion:

- After 3 months of instruction the majority of informants from the control group (6 out of 9) have successfully developed to Stage 3 while all of those from the experimental group (9 out of 9) are comfortably at Stage 3.
- It must be noted that the marked plural agreement (-e/-e) which applies to a subgroup of feminine gender nouns matching a subgroup of adjectives (those with four possible endings) is, predictably, less consistent overall than the default agreement in -i which applies elsewhere. A similar pattern is also apparent at the previous stage (Lexical), but less so at the basic (formulaic) stage, where the word form is learned without (or regardless of) its grammatical features. Thus a number of children displayed -e marking already at Time 1, and slightly more so in the control group.
- By Time 2 however,, the experimental group was producing more accurate and more complex form-function mapping (beyond default agreement) compared to the control group. Why?
- the progress of both groups from Stage 1 to Stage 3 may be fairly attributed to the form-focused instruction they received over the 18 weeks (less than 36 hours all up) between Time 1 and Time 2.

- Pienemann's developmental hypothesis is also supported: all of the children who acquired Stage 3 had also acquired Stage 2.
- The difference between the two groups is mainly in the consistency of results and the emergence of the more marked agreement in the experimental group.

29.

Conclusion:

- It may be said up to this point that form focused instruction plus Fonf feedback is **effective**: it promotes faster acquisition and more accurate use of learnable structures (e.g., beginning to differentiate marking with additional features).
- It can also be said it is **efficient**: No additional inputs in terms of program time and teacher allocations were necessary to achieve these results.

Could the differences between control and experimental groups be attributable to the greater consistency of focus-on-form feedback in the latter group?

- Looking at teacher's behaviour (Di Biase, 2002) proved inconclusive.
- Is it a matter of the learner noticing, or paying attention to 'surface elements' (Schmidt, 2001)?
- Or is it a matter of output practice (e.g. Swain, 1985, 2000 output hypothesis)? This latter position finds support from neurolinguistics evidence compiled by Paradis (1994, 2004). Some recent studies seem to point in the latter direction (e.g. Loewen, 2005, studies reported in Paradis, 2004).
- Further analysis of the classroom data collected for this project may throw some further light on these, e.g. studying the successful uptake and practice occurring in the classroom.

Chapter 4

Disseminating research for professional practice

The previous chapter looked at the investigation of classroom practice and showed that theory can inform and enhance practice and give it a sense of direction. As we saw, practice, in return, can enlighten the theory not only by confirming or refining its implications and showing ways for further theoretical advances, but also by highlighting the limits of theoretical implications and applications, which pushes theory to further refinements. This desirable kind of symbiotic relationship between theory and practice requires that those in professional practice are kept informed about the advances made in the field, without expecting the busy language teacher to delve into the kind of theoretical detail often contained in research journals. The onus of translating technical detail into blueprints for action, however partial these blueprints may be, falls somewhere between the two, but it is my belief that the theoretician is in the logical position to initiate and maintain such a relationship by making the results available to the practitioner in non-technical language and in journals likely to circulate in schools. A theory-based, or at least a theory-informed, practice requires on the one hand dissemination of ideas and findings from research among practising professionals, and on the other their own feedback from practice back to research.

In this spirit of exchange between theory and practice, this chapter presents a small sample of three papers written between 1997 and 2006. These are selected as representing specific turning points in the chronology of my own understanding of PT issues and witness my continuous dialogue with the teaching profession. Two of them were published in Australia in a bilingual professional journal for teachers of Italian as L2⁶⁵, the language most widely taught in Australian primary schools and among the first five in secondary schools and universities (Baldauf et al., 1998, Di Biase et al., 1994, Wyatt et al., 2002). As the objective of this journal is, among other things, to support bilingualism among the teachers, both languages, English and Italian, were used. Consequently, one of these two papers is in English, and the other in Italian. These

⁶⁵ The journal *Italiano a Scuola/Italian at School* is published in Sydney by Co.As.It, a community organisation that provides teachers of Italian for both public and private schools. Co.As.It. also provides more generally for language maintenance needs (after-hours Community Language Schools), as well as professional in-service for Italian teachers in the two Australian states with the largest population (New South Wales and Victoria). It also creates and manages educational resources including a vital lending library service for teachers and all learners of Italian.

papers were read and reviewed by the journal's editorial committee but were not anonymously reviewed.

The remaining paper in this chapter is co-written with Camilla Bettoni, a linguist at the University of Verona, who has been researching Italian L2 as learned and used by recent immigrants in Italy. This paper, still in press, has been formally reviewed and will be published in Italy, in Italian with a summary in English, in a publication intended for teacher educators and teachers of Italian L2. The co-authorship with an Italian colleague offered the opportunity to disseminate PT results to a growing reading public who stands to learn a lot from Australian research. The teaching of Italian L2 in Italian schools is a very recent enterprise, often done with more enthusiasm than knowledge, but it is now part and parcel of the Italian educational reality thanks to the increasing presence of immigrants from Africa, Asia, the Middle East and Latin America.

4.1 The Lexicon in early Italian L2 development

Di Biase, B. (1997). Il lessico nello sviluppo dell'Italiano L2 – The lexicon in early Italian L2 development. *Italiano e Scuola – Italian at School. Bulletin for Teachers of Italian*, 2 (1), 15-23.

This article, written in Italian, examines the building-up of resources in learning a second language. It focuses particularly on the early acquisition of Italian lexical items and their use by primary school children. Some of the findings are also compared with those from adults learning the language in a formal environment. It is included here, and introduced in some detail, for two main reasons. First, it is the only contribution towards an understanding of the L2 lexicon (as against morphosyntax) in this thesis; and secondly, it presents findings relating to current research interests, such as the child-adult contrast in L2 learning, the relationship between lexical acquisition and the emergence of grammar, the nature of early categories and the noun/verb dominance debate in acquisition and the use of the L1 by the L2 learner.

The primary data come from 8 English L1 learners of Italian L2, 5 children and 3 adults. The 5 children (3 girls and 2 boys) were 9 or 10 years old from an Inner West primary school in Sydney where Italian was part of the school program for all children; two of them are in Grade 6, two in Grade 5 and 1 in Grade 4 and have received instruction in Italian L2 for 180 to 270 hours. The 3 adult learners are students at the University of Western Sydney; two of them (one male, one female) are in their first semester of classes in Italian, the third (female) is in an intermediate class and has studied Italian for roughly the same number of hours of formal instruction as the children.

The child data was collected in the context of an experimental reading and listening program (Di Biase, 1994, 1995) and was recorded at a single session of about 15-20 minutes with the child informants, and just over 30 minutes with the adult informants. One of the children, code-named Karen, is looked at in detail because she is the child with the least number of hours of formal instruction. The elicitation procedure consists of a naturalistic free conversation between the learner and the researcher.

One reason I believe to be important for placing this article in a professional journal is that teachers are often observed to

concentrate on errors in learners' production, perhaps because they are not explicitly aware of the process of learning (as a process quite separate from teaching). This issue is discussed, and the point is also made that errors are the natural result of acquisition, which begins with formulaic learning of words for both children and adult learners. Since a word, in morphologically rich languages such as Italian, needs to vary with different morphosyntactic or phonological environments there are many opportunities for errors. This formulaic learning however is to be encouraged rather than interfered with, since the learner (child or adult) may not be at a stage where the correction can be apprehended: *input* does not necessarily mean *intake*, as Corder (1967) taught us. In any case a number of both cross-sectional and longitudinal studies for typologically different languages (Fenson et al., 1994; Caselli, Casadio and Bates, 1999; Devescovi & Caselli, 2001) show that in first language acquisition "grammatical abilities develop not only as a function of age but also depend crucially on lexical abilities. Indeed, word combinations are usually absent when children still produce less than 100 words and remain infrequent until the vocabulary reaches 300 words" (Sansavini et al. 2006, 2000). This seems to apply also in child L2 acquisition.

My data confirm the often reported initially slower development in child L2 learners (e.g. Snow and Hoefnagel-Höhle, 1978, Krashen, Long and Scarcella, 1979, Singleton, 1989), which is also found among Canadian immersion children (Harley, 1986). Two further notable differences between child and adult L2 learners emerge from the data reported in this paper. One is the much greater use of the L1 by child learners, which amounts to well over 50%, except for the two informants in grade six. Under pressure to communicate, early L2 child learners appear to use predominantly basic L1 structure and function words with a re-lexification strategy which allows for the insertion of identifiable L2 words. The example used at the beginning of the article below is a good case of this strategy: *Does your **animali** hop?* (a question from a child informant, playing a "guessing the animals" game with the researcher). The question frame, the pronoun and, crucially, the verb, are from the child's native English, while the nominal insertion is Italian. In the case of Italian these insertions are characterised by phonological shape. The internal structure of words is explained, in the article below, in terms of Levelt's (1989) 'lemma' as the building block of the mental lexicon, together with the fact that the learner has to build, piece by piece, a new set of lemmas in the L2, even where there are affine words between Italian

and English. In fact some of the affines are not integrated at all (*penguin*) and others are (*rainoceronte*).

In contrast, neither of the two *ab initio* adult informants display anywhere near 50% rate of L1. In the adults' production the rate of L1 use per session does not reach even 20%. So it seems that in naturalistic communication child learners use their L2 in a 'bilingual mode', while adult learners tend to use it in a 'monolingual' mode. Even though they know that their interlocutor does speak both languages, adult learners only resort to the L1 in specific situations, such as requesting the meaning of a word, clarification of a form or similar metalinguistic interventions.

The second notable child-adult difference concerns the nature of the words learned by early learners. Interestingly, the child L2 learner first acquires mostly noun-like words, few relational terms (descriptive adjectives, yes/no), some numbers and word fragments, but, surprisingly, no verb-like items at all (this is after about 180 hours of instruction). It would be desirable for similar analyses of the specific character of the lexicon to be extended to other child early L2 learners, in different contexts. My results below are consistent with the 'noun dominance' currently reported cross-linguistically both for L1 acquisition (Gentner and Boroditsky, 2001) and for bilingual first language acquisition (Qi, Di Biase and Campbell, 2006). If this obtains also in child L2 acquisition, this would tell us something about cognitive development and its linguistic correlates and constitute an important difference between child and adult L2 learners. In fact, in the case of adult L2 learners, verb-like forms (that is, lexical verbs to the exclusion of presentational or copular formulas) come about very early, after just 25 hours of instruction in the case of a university student such as Katie (one of the adult informants reported on in this article), as opposed to the 180 hours for the Grade 4 primary school child Karen.

If these differences hold, then teachers should know them, because they have implications for the teaching of the L2 to children and adults.

Di Biase, B. (1997). Il lessico nello sviluppo dell'Italiano L2 – The lexicon in early Italian L2 development. *Italiano e Scuola – Italian at School. Bulletin for Teachers of Italian*, 2 (1), 15-23.

Does your animali hop?

Is your animali a mammal?

Qual è la lingua di queste domande? Inglese? Italiano? Italese? O semplicemente la lingua di un apprendente che sta cominciando a produrre alcuni elementi nella lingua che sta imparando?

Se si guarda a questi “prodotti” con l’occhio dell’insegnante a caccia di errori si potrebbe quasi negare che ci sia qualcosa di “italiano” in quelle due frasi, perchè

- solo due parole su un totale di nove si possono riconoscere come “italiano”
- si tratta infatti di una sola parola (animali) che viene ripetuta – quindi il rapporto italiano/inglese cala ulteriormente
- questa unica parola ha una forma “plurale” mentre il contesto richiederebbe un singolare. Ciò indica che la parola è usata come “formula”, cioè sempre con la stessa forma a prescindere dal contesto.
- il verbo coniugato, le parole più “grammaticali” (come l’articolo o il possessivo), i meccanismi per la formazione della domanda, quindi tutte le parti “strutturali” della frase, appartengono decisamente all’inglese.

C’è da dire inoltre, subito, che questo tipo di comportamento linguistico è abbastanza tipico di bambini che hanno ricevuto circa 150-200 ore di istruzione in italiano L2 (lingua seconda), equivalenti a circa 4 o 5 anni di scuola se si calcolano due sessioni settimanali (di 40-45 minuti) dedicate alla L2. Comportamenti simili sono documentati non solo per l’italiano ma anche per altre lingue (vedi Clyne et al., 1995) e si possono osservare anche in bambini di seconda o terza generazione se l’italiano viene usato poco o sporadicamente in casa.

Comprensione versus Produzione

Viene spontaneo chiedersi allora se valga la pena dedicare sforzi ed energie all’insegnamento di una L2 nelle elementari. Stiamo attenti però. Prima di gettare la spugna e dichiarare che è troppo difficile o addirittura inutile insegnare una L2 nelle elementari è bene riflettere sul processo di apprendimento e vederlo anche alla luce di dati che vanno emergendo dalla ricerca per capirlo e per poter individuare meglio obiettivi, aspettative e metodologie nell’insegnamento della lingua seconda nelle elementari. L’italiano è tuttora la L2 più insegnata nelle elementari in Australia e quindi

offre una gamma di situazioni, una varietà di apprendenti e di programmi tale da consentire studi e ricerche utili anche per l'insegnamento di altre L2.

Riprendendo il discorso dunque, bisogna chiedersi che cosa deve succedere nell'apprendente prima che appaia qualche parola riconoscibilmente italiana nella sua produzione? Di quali risorse ha bisogno? Come si acquisiscono o si costruiscono queste risorse? Quanto tempo ci vuole ad arrivare ad un determinato punto? E come si procede oltre? Bisogna chiedersi per esempio quanto, effettivamente, debba imparare l'apprendente per riuscire a produrre le frasi proposte all'inizio, tenendo conto naturalmente del fatto che si tratta di produzione orale non guidata ma spontanea, e che l'interlocutore dell'alunno parlava in italiano (diversa cosa è un esercizio preparato, scritto, o un test). E appunto considerando la totalità della conversazione da cui ho estratto quegli esempi si può dedurre, in questo apprendente, uno sviluppo dell'abilità di comprensione dell'italiano di gran lunga superiore a quello della sua abilità di produzione. Allora, quando ci si domanda: ma quanta lingua hanno imparato? uno dei fatti da non sottovalutare è l'abilità di "comprendere" la lingua seconda.

La quantificazione di ciò che riesce a capire l'apprendente non è facile e non corrisponde direttamente alla produzione. Infatti sarebbe un errore (non solo per il ricercatore ma anche da parte di chi insegna) mettere le due cose sullo stesso piano. Se la produzione dell'apprendente in una determinata situazione arriva, per esempio, a 20 parole, non è legittimo credere che queste rappresentino la totalità del lessico conosciuto dall'apprendente. Per sapere quale sia questo totale il ricercatore dovrebbe avere molto tempo disponibile con l'apprendente, in situazioni comunicative diverse e con una buona batteria di test e attività. Ma anche tutto questo non darebbe alcuna garanzia che si sia riusciti a misurare tutto. Nell'insegnante che non sa questo fatto, d'altronde, la scarsa produzione orale dell'apprendente potrebbe far scattare un effetto inibitore: voglio dire che l'insegnante meno esperto potrebbe reagire facendo maggior ricorso all'inglese in classe e parli *meno* italiano con l'alunno per paura che questi non capisca. Tale evenienza è da evitare perchè innesca un circolo vizioso che riduce la quantità di *esposizione* alla lingua, che è la cosa più importante che possa dare l'insegnante ai suoi alunni.

Il tempo di esposizione alla lingua materna di cui ha bisogno un bambino che stia apprendendo la prima lingua per arrivare ad uno stadio di produzione simile a quello che stiamo esaminando si aggira sulle due o tre mila ore circa – mentre l'insegnamento a scuola (certo di bambini più sviluppati) riesce evidentemente a portare l'alunno a

questo stadio in una frazione di questo tempo (dal 5% al 10%). Sempre che, appunto, l'input linguistico ci sia.

Ognuno degli interrogativi proposti fin qui merita, però, un trattamento ben più specifico ed impegnativo di quanto si riesca a fare in un breve articolo che vuole essere di carattere pratico piuttosto che teorico. Devo dire però, per amore di completezza e per chi può essere interessato ad approfondire aspetti anche teorici di questi quesiti, che quanto segue poggia su ricerca e costrutti teorici elaborati dalla psicolinguistica moderna, si veda Larsen-Freeman and Long (1991) e in particolare sul lavoro di studiosi come Pienemann (1984, 1989 e in stampa) e McLaughlin (1987), sul modello della produzione del parlato di Levelt (1989), su applicazioni di tale modello alla produzione bilingue (de Bot et al., 1996). I riferimenti bibliografici si trovano in fondo a questo articolo.

Lo sviluppo di risorse lessicali

Dunque esamineremo insieme, in quanto segue, alcuni aspetti dello sviluppo delle risorse linguistiche nelle prime fasi dell'apprendimento e della produzione dell'italiano come L2 in studenti di scuola elementare. La messa a fuoco sarà sulla creazione del lessico da parte dell'apprendente, vale a dire che esamineremo dati lessicali da un punto di vista cognitivo, cercando di capire cosa sta cercando di fare l'apprendente e come lo fa. La prospettiva che qui si adotta è, in sintesi, la seguente: quando si parla in tempo reale l'accesso al lessico è rapidissimo e la produzione di strutture linguistiche deve essere possibile senza che il parlante vi eserciti un'attenzione cosciente. L'attenzione infatti ha luogo nella memoria a breve termine che è troppo limitata per poter ospitare tutte le operazioni necessarie per produrre enunciati, anche i più semplici. Quindi l'acquisizione linguistica va vista come automatizzazione delle operazioni linguistiche, cioè dell'insieme di meccanismi di produzione linguistica, che ci consentono di parlare.

Naturalmente quando impariamo una seconda lingua operiamo con gli stessi meccanismi psicologici che usiamo per la prima lingua però ci dobbiamo gradualmente creare le risorse e procedure automatiche *specifiche* della seconda lingua. Facciamo un esempio: l'anglofono che, quando parla la sua lingua, usa la parola italiana *pizza*, (vista e mangiata la pizza il nostro amico ha ben chiaro il concetto {pizza} ed avendo visto l'etichetta scritta sa anche che si scrive con una p iniziale seguita da una i, due z ed una a finale). Egli produce dunque la sequenza di suoni che caratterizzano questa parola, ma lo fa in base al "suo" sistema di suoni (cioè il sistema fonologico dell'inglese). Quindi

vi sarà aspirazione della /p/ iniziale per esempio, e la consonante media sarà probabilmente più vicina a /dz/ che a /ts/ ecc. La parola sarà perfettamente comprensibile e legittima per un altro anglofono. Anche chi parla solo l'italiano la riconosce, perché sorvola su certe differenze non rilevanti alla comprensione del messaggio. La conclusione fin qui è che l'anglofono può imparare parole "italiane" e produrne una approssimazione sonora sulla base dei suoni della propria lingua.

Si può dire allora che il nostro amico "conosca" l'elemento lessicale italiano appena illustrato? Certo, dirà il lettore, perché conosce il concetto e sa produrre la corrispondente stringa di suoni che lo rappresenta. Ed ha ragione. Sicuramente conosce l'oggetto, o la classe di oggetti, a cui si riferisce, quindi ha il concetto {pizza}. Infatti se qualcuno enunciasse la parola *pizza*, in un momento in cui il nostro amico anglofono avesse fame, gli farebbe venire l'acquolina in bocca: segno certo che il concetto {pizza} è stato acquisito. E abbiamo detto anche che sa dire la parola. Dunque, legata alla componente concettuale o semantica esiste una sequenza di suoni vocali emessi in un certo ordine: /pitsa/. Infatti se noi dicessimo per esempio /tsapi/ la parola non avrebbe un riscontro nel sistema concettuale tale da scatenare certi effetti sulle ghiandole salivari – nonostante il fatto che abbiamo usato esattamente gli stessi suoni (ma in ordine diverso).

Comunque queste due parti (significato e suoni) non esauriscono l'elemento lessicale. (Ancora un minuto di pazienza e ci arriviamo). La parola o lemma ha anche una componente per così dire "grammaticale" e questa è la componente che, oltre alle due precedenti, l'apprendente di italiano dovrà imparare per poter usare la parola correttamente in ogni contesto. E qui si differenzia dall'utente occasionale di parole italiane. Infatti quando il nostro anglofono vorrà chiedere "due pizze" userà la procedura di pluralizzazione inglese e dirà probabilmente:

Two pizzas please

perché egli non associa al lemma *pizza* il tratto "genere" con il valore di "femminile" che questa parola ha nella lingua di provenienza. Il tratto "genere" per l'appunto non caratterizza la forma del nome in inglese (diversamente dal tratto "numero" per esempio). Ed avrebbe poco senso dire che il nostro ipotetico anglofono abbia commesso un "errore" e cioè che avrebbe dovuto usare la forma *pizze* perché questa parola, nel lessico italiano, è di genere femminile ed esce in -a, quindi il plurale dovrebbe uscire in -e.

Riassumendo il discorso fin qui, abbiamo visto che esistono almeno tre livelli di informazione lessicale (seguendo la terminologia di Levelt, 1989): il *concetto*, che si riferisce al significato dell'elemento lessicale nel sistema concettuale del parlante, il *lemma* che è portatore delle specificazioni semantiche e sintattiche, ed il *lessema* che è il livello dei suoni e delle regole che li combinano.

Chi impara una L2 dopo la L1 non impara, in genere, nuovi concetti o se li impara questi non hanno una specificità linguistica tale che bisogna re-impararli nella nuova lingua. Quindi una volta imparato il concetto {pizza} ed i suoni che lo realizzano lo si può usare sia in italiano che in inglese o in giapponese (anche se in ognuna delle lingue i suoni utilizzati saranno un po' diversi, come si è detto). Quindi non c'è bisogno di conoscere l'italiano per utilizzare questa parola in un'altro sistema linguistico.

Se invece stiamo cercando di parlare l'italiano allora dobbiamo imparare (conoscere, memorizzare) non solo i due livelli precedenti ma anche il livello "lemma" e cioè la parte dell'elemento lessicale che porta l'informazione semantico-sintattica (grammaticale). Questa è la parte più linguisticamente specifica o marcata, e bisogna costruirselo tratto per tratto, pezzo per pezzo (stavo per dire pizza per pizza), proprio come deve fare un parlante nativo che lo va facendo mentre cresce.

Per ricapitolare questa parte va detto che l'apprendente non potrà usare bene la parola *pizza* fino a quando non avrà automatizzato, nella memoria, tutte le informazioni relative a questo elemento, incluso il fatto che il suo tratto "genere" ha valore di "femminile", e che, essendo un nome, può assumere le funzioni che normalmente vengono assunte da altri lemmi della stessa categoria lessicale (per es come oggetto o soggetto grammaticale di una frase). L'aggiunta di queste informazioni "grammaticali" dipenderà appunto dallo stadio in cui si trova la "sua" grammatica (quella dell'apprendente) della L2, costruita su una traccia comune ma con ritmi individuali. (Ecco perché la stessa lezione può dare una varietà di risultati in alunni diversi).

Attenzione però: se non può usare bene questo lemma in tutte le istanze non vuol dire che non lo possa usare affatto! Tutt'altro. Proprio come il nostro ipotetico amico anglofono l'apprendente può benissimo usare la parola ed a volte il suo uso risulterà comunque "corretto" a prescindere della completezza delle conoscenze specifiche del lemma:

Insegnante — Che cosa hai mangiato ieri sera?

Apprendente — Pizza.

Tutto questo discorso voleva dunque sottolineare la complessità dell'apprendimento e dell'uso di un vocabolo in modo da mettere in una prospettiva ragionata e scientifica il comportamento di cui si parlava all'inizio, che a prima vista poteva sembrare insufficiente rispetto al numero di ore di insegnamento.

Quale lessico si impara prima?

Ora all'interno del quadro tracciato sin qui, vediamo brevemente qualche altra caratteristica della produzione lessicale dell'apprendente che abbiamo incontrato negli esempi iniziali (una bambina di circa 9 anni al momento dell'intervista) comparandolo per grandi linee ad altri apprendenti ed al lessico dello stesso apprendente a poco più di un anno di distanza dalla prima intervista. Dopo di che tireremo qualche conclusione sull'apprendimento e sull'insegnamento.

Tornando perciò ai nostri esempi iniziali, troviamo dunque che il grosso della produzione di questa bimba (che chiameremo col nome fittizio di Karen o K che parla con il ricercatore R) è di matrice inglese con alcune parole italiane per esempio *animali* ma usate in modo invariabile. Un esempio un po' più ricco lo troviamo nella Tabella 1. (Nella trascrizione le battute sono contrassegnate con K per Karen ed R per ricercatore. Le convenzioni di scrittura sono leggermente diverse dal normale, per es. il punto indica pausa, due punti pausa più lunga).

K	it's colourful .. they are like the characters and that
R	mhm
K	and they are all dancing
R	they're all dancing okay . quali sono i personaggi qua . questo chi é?
K	Arlecchino . Colombina . Pucinella .. I don't know him (indica una quarta maschera)
R	ah questo . forse ci sono qua
K	uh up there . Doctor Ralanzone
R	eh forse è Dottor Ralanzone yeah brava okay va bene
K	and the numbers are up there as well (ridendo)
R	ah ci sono tutti qua eh bene senti . bene mi puoi descrivere il vestito di Arlecchino?
K	com'è?
K	he' s got X of colours
R	puoi dire i colori quali sono?
K	giallo rosso bianco blú nero .. e verde
R	e verde certo e Colombina?
K	rosso .. bianco . blú (..)
R	mhm bene

Tabella 1

Questa bimba dunque, al momento della prima intervista, aveva avuto circa 180 ore di istruzione in italiano ed era al suo quarto anno di istruzione nella L2. In contrasto con la

sua produzione, di struttura largamente di L1 (inglese), ciò che colpisce subito leggendo le sue battute è il buon livello di comprensione e il modo in cui legge (anche letteralmente) l'ambiente dell'aula in cui erano esposte maschere, numeri, parole ecc. Il ricercatore, al punto del dialogo riportato qui, le aveva mostrato un'immagine con una scena del carnevale e le aveva chiesto di descriverla.

Da un punto di vista quantitativo Karen è intervenuta 104 volte nel discorso producendo quasi 500 parole in tutto e circa 211 lemmi (parole non ripetute) incluso qualche “frammento” come spesso succede in qualsiasi conversazione. Come abbiamo osservato c'è parecchio inglese frammisto all'italiano. Più precisamente vi sono 151 parole inglesi e 60 parole riconoscibilmente italiane quindi oltre il 70% in questa mescolanza è inglese. Da notare che in lingue vicine come le due nostre c'è un buon numero di parole che sono identiche o comunque molto vicine e rappresentano le stesse classi di referenti. La gamma di queste parole affini (o quasi) è ben rappresentata infatti nel nostro piccolo campione e si trova nella Tabella 2 la quale segue, grosso modo, la tipologia di de Bot et alii (1996) ma include anche ciò che chiamerei un idiologismo, e cioè una parola creata, almeno in parte, dall'apprendente: cavalaro (per “cavallo”) e che conto tra le parole “italiane”.

LEMMA	n di occorrenze	tipo di affinità e uso dell'apprendente
1. koala	(1)	affine
2. no (noh)	(9)	affine (usato come negativo olofrastico)
3. blu	(1)	affine
4. bi	(1)	affine (si tratta della lettera B)
5. in *	(4)	affine (usata sempre in contesto inglese)
6. zoo /dzu:/*	(2)	quasi-affine (senza adattamento fonologico)
7. zebra /dzibra/*	(1)	quasi-affine (senza adattamento fonologico)
8. penguin *	(1)	quasi-affine (senza adattamento fonologico)
9. lione	(1)	quasi-affine (con adattamento fonologico)
10. rainoceronte	(1)	quasi-affine (con adattamento fonologico)
11. animo.male	(1)	quasi-affine (con adattamento fonologico)
12. cavallaro	(1)	non-affine (idiologismo)

Tabella 2. Parole affini usate dall'apprendente Karen

Ma, appunto, come si fa a sapere quali di queste parole si possono contare come “italiane” e quali no? Perché da una parte ci sono parole affini in tutto come “in” che però (come le altre parole segnate con asterisco nella tabella 2) vengono contate solo

come “inglese” nonostante la strettissima affinità. Perché? Perché le parole che precedono e quelle che seguono “in” sono inglesi in tutte e quattro le occasioni (occorrenze) in cui appare questo lemma. Quindi, per il ricercatore, il primo metodo per classificare i lemmi come appartenenti all’una o all’altra lingua è di stabilire il contesto immediato del lemma. Più difficile decidere sul “no” come negazione olofrastica, appunto perché prende il posto di tutta la frase che nega, e quindi spesso non è preceduto né seguito da nessun’altra parola. Ma questo è un caso più unico che raro.

Come caratterizza l’apprendente il proprio italiano?

Ma l’interrogativo ancora più interessante da porre è: come fa l’apprendente stesso a segnalare all’interlocutore (o a “marcare”) le parole italiane rispetto a quelle inglesi? Perché è abbastanza ovvio che Karen sa benissimo quali sono le parole italiane che sta usando e quali quelle inglesi. L’uso misto delle due lingue non è affatto frutto del caso né tanto meno di confusione nella mente dell’apprendente, ma come vedremo ora, un uso sistematico (cf. Johnston, 1994) e ordinato che riflette lo stadio di sviluppo della grammatica della L2 nell’apprendente fino a quel momento. Dunque, tornando al nostro interrogativo, il metodo usato da Karen per far emergere l’italiano si basa sulla caratteristica struttura fonologica della parola, che in Italiano (con poche e/o poetiche eccezioni) finisce in vocale ed è piana, vale a dire che l’accento cade sulla penultima sillaba.

Ecco allora che ha senso escludere, in base alla mancanza di adattamento fonologico, parole altrimenti quasi-affini come “penguin” pronunciata con accento sulla penultima sillaba ma senza vocale finale – qui il ricercatore deve ignorare l’affinità mentre il maestro potrebbe invece farla notare all’alunno (se opportuno).

Ora, per tornare alla sistematicità dell’apprendente diamo un rapido sguardo qualitativo alla sua produzione (circa il 30%) “italiana”. I dati sono riportati sommariamente nella Tabella 3. Le categorie usate non sono strettamente formali e tentano di riflettere la loro funzione (l’uso) nella grammatica dell’apprendente.

TIPOLOGIA DEI LEMMI	AREA LESSICO-SEMANTICA
lemmi nominali	nomi propri (4), animali (17), e pochi altri nomi comuni come: classe, carne, carnevale, gambe,
lemmi aggettivali	numeri (1 a 20), colori (8), grande
Congiunzione	e
Affermativi e Negativi	sì, no
frammenti e/o pezzi ritagliati da formule ripetute dopo il ricercatore	c'è, le, il, con

Tabella 3

Si nota subito l'assenza totale di verbi, e sarebbe prematuro parlare di verbi o altra categoria lessicale a questo punto dato che l'apprendente stessa ancora non categorizza i lemmi (italiani). Si può solo notare che i lemmi che produce vengono collocati in "caselle" di tipo nominale (abbiamo l'inglese accanto che ci fa vedere questo). Poi, c'è solo una congiunzione, che serve a legare nomi. Nessun altro operatore grammaticale. Si tratta quindi, in maggioranza assoluta, di elementi nominali o aggettivali in ristrette aree semantiche. E questo è parte della sistematicità e coerenza dell'apprendente – che a questo punto ha poche risorse procedurali e riesce ad usare, in italiano, solo la prima procedura e il primo tipo di morfemi, quelli lessico-semantiche, come ipotizzato da Pienemann (in stampa) che ipotizza una gerarchia ordinata di procedure nell'apprendimento di una L2.

A scanso di equivoci è bene precisare che la nostra Karen è una bambina vivace e ben sviluppata dal punto di vista linguistico. Infatti la sua produzione in inglese (ricordiamo che si tratta del 70%) manifesta nell'intervista una gamma qualitativa (grammaticale e concettuale) di tutto riguardo:

- nomi specifici anche molto astratti (mammals, flippers, category) con marca plurale dove necessario e variamente accompagnati da specificatori e modificatori quali articoli e aggettivi o sostituiti da pronomi e anche nomi derivati da verbi (climbers)
- verbi, inclusi ausiliari, modali e copula con le rispettive e opportune marche temporali, modali, aspettuali, di persona
- avverbiali ed altri modificatori frasali

- una gamma rispettabile di congiunzioni (per la coordinazione e subordinazione) ed altri operatori grammaticali.

Si tratta quindi di un parlante con una grammatica completa e un lessico discretamente accurato.

Come cresce l'italiano

E non pensiamo che Karen sia un caso particolare nel suo uso dell'italiano e dell'inglese tra coloro che imparano l'italiano come L2. Infatti analizzando la produzione di vari alunni di scuola elementare si riscontrano dati come quelli sommariamente presentati nella Tabella 4, che include, oltre a Karen (1° e 2° intervista), altri bimbi con relativo numero di ore di istruzione. I nomi sono, naturalmente, tutti fittizi. Da qui si può, velocemente, osservare che il tasso di inglese cala, tendenzialmente, con l'aumento delle ore di istruzione.

La nostra stessa Karen, alla seconda intervista (poco più di un anno dopo) già arriva al 60% - che non rappresenta un grande balzo ma forse questo è dovuto alle esigue dimensioni del secondo campione. Comunque, dal punto di vista qualitativo il salto è molto evidente perché presenta, senza dare i dati specifici qui per ragioni di spazio, quattro verbi, incluso un ausiliare, articoli e dimostrativi, una preposizione e la solita (ancora unica) congiunzione “e”.

Alunni di scuola elementare	Ore di istruzione	N. di lemmi / N. di occorrenze	rapporto lemmi L1/L2	% lemmi L1 (inglese)
Karen (1)	180	211 / 470	151:60	71.6%
Joe	210	170 / 329	105:45	70%
Wal	210	332 / 971	193:139	58%
Ali	240	114 / 191	48:66	42%
Sally	270	212 / 458	67:145	31.6%
Karen (2)	260	84/156	51:33	60.4%
Studenti universitari (ab initio)				
Katie	25	383 / 1082	58:325	15.1%
John	50	341 / 1037	66:275	19.4%
Louise	200	409 / 1129	67:342	16.4

Tabella 4

A questo punto (seconda intervista) c'è anche un salto di qualità di rilievo: Karen inizia a produrre alcune delle marche morfologiche come quella del plurale. Per esempio differenzia *la bambina* da *due bambini*, cosa che non faceva nella prima intervista (ricordate la forma plurale della parola *animali* degli esempi iniziali che non era affatto motivata da un contesto plurale?). Ciò vuol dire che stanno emergendo, nel lessico, le marche grammaticali necessarie per cominciare ad usare il lemma in accordo con altri elementi della frase. E qui la nostra Karen si differenzia da quel nostro ipotetico anglofono che, non conoscendo l'italiano, chiede in inglese, giustamente:

Two pizzas please

Risulta infine, da una rapida occhiata a dati paralleli di tre adulti, che gli apprendenti delle elementari tendono ad usare la L1 molto di più di quanto non lo faccia l'apprendente adulto – il quale si appoggia alla sua L1 di tanto in tanto ma in proporzione sempre inferiore and un quinto anche dopo poche ore di istruzione. Questo fatto (che gli adulti sono inizialmente più veloci) è abbastanza assodato nella ricerca (Larsen-Freeman and Long, 1991) la quale però trova che, alla lunga, la qualità della produzione di chi ha imparato da piccolo è superiore a quella di chi ha imparato la L2 da adulto.

Riflessioni sull'insegnamento

Concluderei con qualche riflessione sull'insegnamento – anche se la schematica è molto parziale: Gli apprendenti devono avere occasione di essere esposti alla lingua che devono imparare perchè le cose da imparare, ancor prima di dire qualche parola, sono tante, per esempio suoni, struttura di sillaba e di parola della L2, modi di separare le parole (segmentando il flusso di suoni che è il parlato) e così via. Per fare ciò è molto probabile che si appoggino sulle conoscenze linguistiche acquisite con la lingua materna o L1. La presenza anche massiccia di questa nel lessico iniziale non deve preoccupare l'insegnante eccessivamente. E certamente non la deve distogliere dal fornire il massimo dell'esposizione linguistica in classe (senza preoccuparsi troppo di controllare la comprensione, cosa comunque non facile).

L'apprendente deve inoltre avere occasione di sperimentare (dire) quello che sa o riesce a dire nella L2 senza però essere sottomesso alle pressioni di un insegnante che li corregga continuamente quando usa l'inglese (se lo si correggesse il 70% delle volte che

dice una parola sicuramente non dirà più niente di lì a poco). L'insegnante può anche essere di manica larga con gli sbagli commessi dai bimbi quando formano parole e espressioni nel loro italiano. Questi non sono altro che il prodotto, come abbiamo visto, dello stadio a cui sono arrivati nella costruzione del loro italiano. Infine, è bene tener conto della gradualità dell'apprendimento (ma anche dei possibili salti di qualità) e quindi di non pretendere tutto subito ma di avere la costanza e la pazienza di aspettare il momento giusto per cogliere il frutto delle reciproche fatiche.

4.2 What to teach when in Italian L2

Di Biase, B. (2001). What to teach when in Italian L2. *Italiano e Scuola – Italian at School. Bulletin for Teachers of Italian*, 6 (1), 23-26.

The motivation for offering this paper to teachers is twofold. On the one hand, early results from my research project introduced in chapter 3 revealed a strong attainment in terms of learning words and formulaic expressions together with a general lack of grammatical development in the Italian L2 of primary school learners. Lexical strength needed to be shown clearly as a developmentally determined opportunity for progress, a basis on which to build the next stages of regularized form variation, and later of agreement between forms. On the other hand, the frustration many L2 teachers experience at the seemingly chaotic behaviour of learners when it comes to morphological accuracy clearly pointed to the locus of the developmental problem.

So a couple of critical issues needed to be explained in as clear and non-technical terms as possible. First, in this article I illustrate the predominantly fusional nature of Italian morphology, where the value of features such as gender and number is expressed mainly through a matrix of final vowel alternation rather than the addition of a morpheme as in English or Spanish. The suggestion advanced in this paper is to concentrate on one feature at the time, and to go first for NUMBER, which is conceptually transparent from a cognitive point of view, and then for GENDER, which turns out to be an intrinsic grammatical feature to be annotated case by case on the noun. I should point out here that PT does not make a difference between conceptually transparent and conceptually opaque features as they all belong, indiscriminately, to the 'lexical' stage.

The second critical point I concentrate on in this paper to help allay teacher's frustrations has also not been made before in PT. It suggests that a particular feature, say the ubiquitous GENDER, may be, indeed, ubiquitous also in terms of the PT stages. That is, there is not one single stage to which a particular feature may belong in a given language. Italian GENDER, for instance, will trigger expression at the Lexical stage through form variation, at the Phrasal stage through agreement between the noun and all of its dependents, and at Interphrasal stage through agreement of the Subject with its

adjectival predicate, and Topic with its co-referential clitics as well as the lexical verb under certain conditions. Thus marking gender accurately can be a very irksome and difficult task for the learner as well as a source of disappointment for the teacher. Detailed knowledge of these phenomena may help the teacher organize the syllabus more rationally (from a processing point of view) and hopefully diminish the frustration that sometimes accompanies L2 teaching.

Di Biase, B. (2001). What to teach when in Italian L2. *Italiano e Scuola – Italian at School. Bulletin for Teachers of Italian*, 6 (1), 23-26.

In this article I will address some aspects of the teaching of grammatical features of Italian, such as ‘gender’ or ‘number’ particularly in the early stages of learning the language.

‘Communicative language teaching’ is perhaps the methodology⁶⁶ most in vogue although it is not clear how widely it is actually used since many language teachers, e.g. teachers of Italian in the primary school, seem to adopt an eclectic approach.⁶⁷ In any case, whether you use a communicative methodology, an eclectic one or a broadly structural one, at some point you need to ask yourself some specific questions that relate to fundamental characteristics and features of the language you teach and make some decision as to how and when they are going to come into what you do in the classroom. You’ll need to do this because there is, as yet, no methodology that can claim completely satisfactory results: even the best possible communicative methodology, eg the Canadian immersion programs, have some problems at least from the language ‘production’ point of view.⁶⁸

One of the key characteristics of Italian is that words are rarely ‘free’ morphemes. Apart from some closed classes, such as conjunctions or adverbs, the major classes ie nouns, verbs and adjectives, which account for close to 95% of entries in a common dictionary,⁶⁹ all experience some morphological (form) change characteristic of their class. For example, Italian nouns belong, inherently, to one of two genders: they are

⁶⁶ For an updated discussion on language teaching methodologies see Long and Robinson (1998).

⁶⁷ See Di Biase and de Rachewiltz (1998).

⁶⁸ Harley (1993).

⁶⁹ For instance out of the nearly 12,000 entries in the Dizionario Italiano (Sabatini Colletti, 1997) Nouns make up 61.6%, Adjectives 23% and Verbs 9.6%.

either masculine or feminine. So *casa* (house) is feminine but *libro* (book) is masculine. Another key feature is that plural number is also expressed morphologically (in the form of the noun) and not only with a separate numeral or quantifier as happens in some languages (eg Chinese or Japanese).

These two features (gender and number) are “fused” in the form of Italian nouns, that is they are not easily ‘segmentable’. This is different from languages such as Spanish where, for instance, the final *-s* in the word *libros* (“books”) may be segmented out, into a base form (*libro*) and a suffix (*-s*) which expresses the meaning ‘plural’ in a similar fashion as English⁷⁰. In Italian *libri* (“books”) presents a serious challenge to segmentation. If the final vowel *-i* is segmented out we are left with the root *libr-* which, conceivably, still represents the meaning but it does not amount to a full legal word in standard Italian. Further, this affix *-i* fuses both key features of the Italian noun lexical class: gender and number, whose values, in the case of *libri*, are MASCULINE and PLURAL respectively. But the one-vowel ending is not further segmentable into gender and number components. Number and gender features of the noun, then, are shown, in Italian, by a pattern of vowel alternation as represented in Table 1 (after Vincent, 1990, 278). A similar pattern of vowel alternation (or inflection) also encompasses adjectives, articles and other determiners, ordinal numbers, possessives, unstressed or clitic pronouns (such as those representing accusative case *lo, la, li, le* ‘it, them’) – generally elements that relate to, or fill in for, nouns.

Table 1. Noun endings patterns

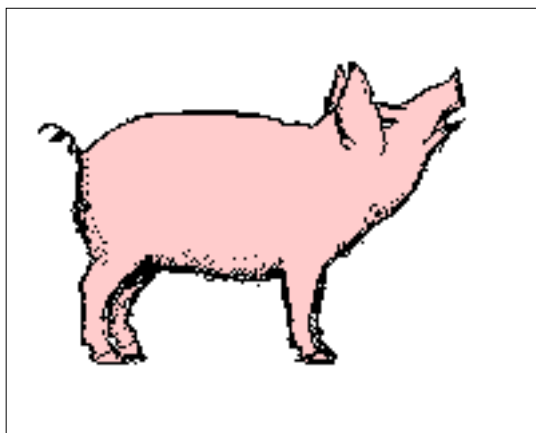
<i>Singular</i>	<i>Gender</i>	<i>Plural</i>	<i>Examples</i>
-o	m.	-i	<i>libro</i> ‘book’, <i>ragazzo</i> ‘boy’
-a	f.	-e	<i>casa</i> ‘house’ <i>donna</i> ‘woman’
-e	m. or f.	-i	<i>monte</i> m. ‘mountain’ <i>mente</i> f. ‘mind’
-a	m.	-i	<i>problema</i> ‘problem’ and other words of Greek (<i>sistema, programma</i> , etc. or Latin (<i>artista, poeta</i> , etc.) origin

For these reasons it is crucial for the learner to know what the gender of a noun might be. The ‘number’, on the other hand, can be derived directly from knowledge of whether the referent is countable and is more than one. But how does the learner figure

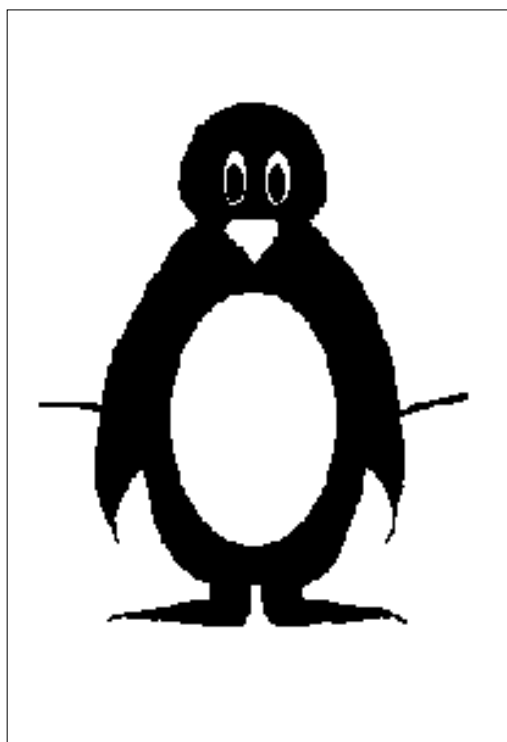
⁷⁰ Unlike Western Romance languages such as French, Spanish and Portuguese, Italian did not adopt *-s* suffix for marking plural.

out what the gender of a noun is - short of reaching for a pocket dictionary and looking it up? Well, one cue is the biological gender of the referent (see *donna*, *ragazzo*, in Table 1). But, apart from recalcitrants such as *sentinella* (sentry), *guardia* (guard), etc. as well as a whole host of animals where one may find biological gender difficult to tell anyway, the majority of referents are probably made up of inanimate (*libro*, *casa*, *monte*) or abstract items (*idea*, *problema*) where biological gender is not relevant.

The end vowel of a noun could be a cue: eg most nouns ending in *-o* are masculine and those ending in *-a* are feminine. However, a set of *-a* ending are indeed *problematic* because they are masculine. And what of the *-e* endings which (see Table 1) could be either? It is not my intention to chase here the numerous exceptions and irregularities of Italian nouns but just to point out that, even within the confines of major noun groups exemplified in the ‘*singular*’ column of Table 1, the relationship between end vowel and the diacritic feature, ‘gender’ is anything but one-to-one: three different vowels represent ‘masculine’, two vowels represent feminine, two vowels may represent either. As Maiden (1995, 106) puts it “the grammatical gender of a noun is largely arbitrary: there is little correlation between meaning and gender and little correlation between gender and grammatical form”. So this diacritic feature of Italian nouns, ultimately, needs to be checked by the learner *case by case*.



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On the other hand the ‘*number*’ column in Table 1 presents fewer complications. There are only two vowels expressing this diacritic feature: *-e* represents plural only for a subset of feminine nouns while *-i* covers plurals elsewhere. An unfortunate problem with *-e* is that it can also to express the singular number (as we learned from the first column) in a large number of nouns while *-i* is, fortunately for the learner, a consistent exponent of the ‘plural’ number only – don’t shoot me if you find a few exceptions like *crisi, tesi* (crisis, thesis) and few other learned terms which, however, maintain their *-i* ending in either number.

So diacritic features such as gender and number seem to present, as Pienemann⁷¹ predicts, varying degrees of difficulty. In our case we have seen that gender is an idiosyncratic feature of Italian nouns and it presents a more complex formal system than number, which is also a ‘lexical’ feature of the noun. The latter is not idiosyncratic as it can be inferred from conceptual structure.

What does this mean for teaching and learning? Isn’t it best to teach the main gender-number paradigm together (and perhaps later teach the exceptions)? The question is legitimate because in Italian, as we saw earlier, these two features tend to appear (fused)

⁷¹ Pienemann (1998, 159).

together in the same exponent, so they are usually taught together. But this may not be the best option. First language acquisition studies⁷² find that, while several inflections are present from the earliest age, Italian children do not master any of the major inflectional paradigms before the age of 3.0. Only individual forms are acquired.⁷³

Another element that tends to be taught in one breath with nouns is the definite article, perhaps because it very often does accompany them. The frequency of is beyond question: De Mauro et al.'s⁷⁴ study of spoken Italian found that about one out of ten words uttered by Italians is a definite article. However, the article paradigm is more complex than the gender/number vowel alternation and is amongst the most difficult morphological paradigms for children to acquire (see first study mentioned in note 7). But how on earth can you teach nouns without articles? Well indeed, it would be difficult to utter much connected discourse without them - we have just seen that they are at the peak of the frequency rates. However, one thing is the *input* (provided by the teacher) and another the *production* of specific items by the learner. So, the teacher should feel free to produce the necessary articles in connected speech, but may choose NOT to require the learner to (re)produce them, at least in the early stages.

The discussion so far would indicate that, if you have to bet on which feature/exponent pair a the learner would automate first, you would probably put your money on the pair [plural / -i]. That is, once a few default noun forms are learned eg *pinguino* ('penguin'), *maiale* ('pig') etc (remember these forms embody the 'singular' diacritic for its gender, whether the learner is aware of it or not) the first contrast the teacher could focus on is the plural form - so for the lesson you choose, of course, nouns that have an -i plural form. Doing so consistently and reinforcing the ending alternation contrast with a few card games, memory or guessing games, crosswords and so on, may have the effect of the learner noticing, amongst other things:

- (a) that the end vowel of Italian words may change
- (b) that this change is not a haphazard characteristic of Italian but it reflects a particular concept (ie plurality)

⁷² See for instance Pizzuto and Caselli (1992); Caselli et al. (1993).

⁷³ Compare this to Turkish children's "almost perfect use of the nominative/accusative distinction by 2.5 years of age" which is ultimately attributed to the greater clarity and regularity of Turkish morphology. Caselli and Devescovi (1982).

⁷⁴ De Mauro et al. (1993).

(c) (generalising) that different vowels at the end of Italian words seem to bear contrastive or additional information (hence I should attend to them)

If the teacher manages to establish these facts about the language early, it is just possible that the task of presenting more complex combinations beyond the ‘lexical’ stage maybe facilitated. The specific value of the lexical feature of a noun will have, in fact, consequences at other linguistic levels, such as those involving agreement patterns; eg:

- in the noun phrase:

tanti pinguini {many penguins}

- with predicative adjectives:

i maiali sono contenti {the pigs are happy}

- in the verb phrase:

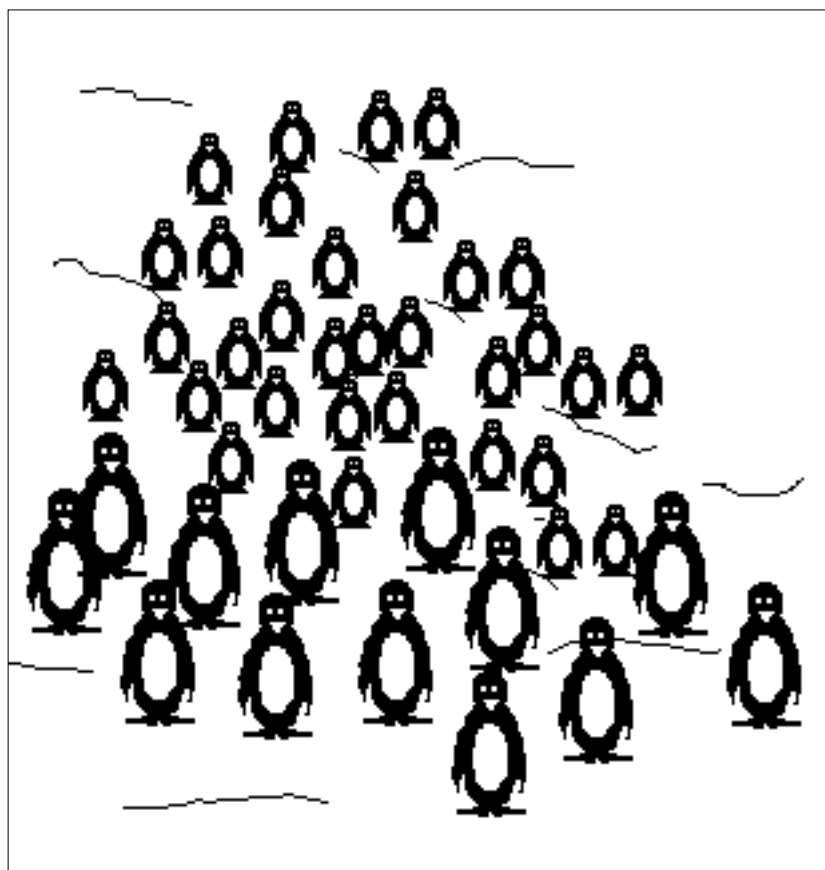
sono arrivati (i pinguini) {the penguins have arrived}

- beyond phrasal level:

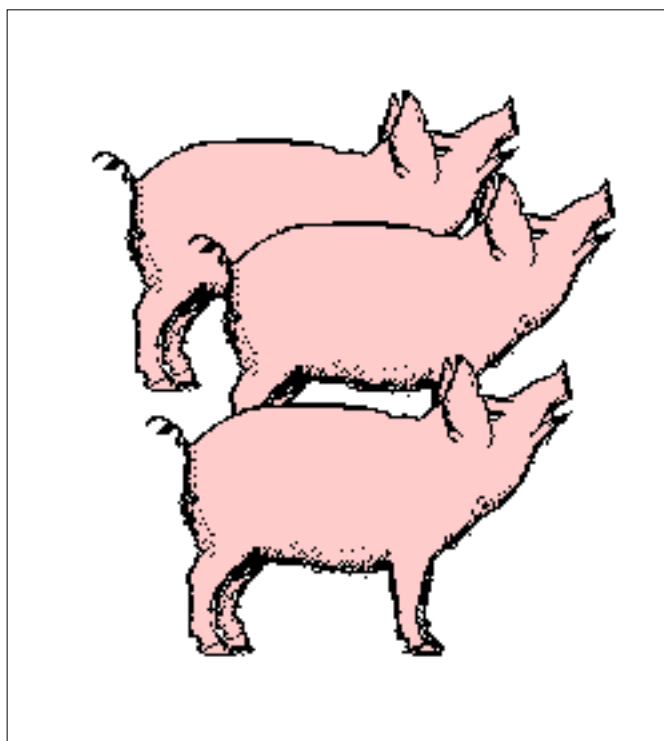
i maiali li ha comprati Paul {the pigs have been bought by Paul}

Notice that the last sentence, a typically Romance pattern, has been glossed with a passive because English does not thematize in the same way. In my experience this last type of structure involving a pre-verbal clitic pronoun (*li* ‘them’) is usually avoided by learners of Italian, even fairly advanced ones, and I suspect that one of the reasons for this may be the uncertainties surrounding the source and the operation of agreement patterns.

Thus, to conclude, it is possible to single out a lexical feature, eg. plural *-i* for sustained and focused treatment in class. This is probably very useful to do for Italian teaching given that morphological alternation patterns are key features of the language hence they are highly pervasive not only at the lexical level, but also at other levels of linguistic structure. The discussion of *how* you can focus on specific features is best left, for now, to a forthcoming issue of *Italiano e Scuola*.



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4.3 Verbal Lexicon and Processability issues in Italian L2

Bettoni, C. and Di Biase, B. (in press). Lessico verbale e questioni di Processabilità in Italiano L2. In M. Barni and P. Troncarelli (eds.), *Lessico e apprendimenti*. Milan: Franco Angeli Editore.

An earlier oral version of this paper was presented at Siena, 6-8 2006 at the 14th national conference of GISCEL, a branch of the Italian Linguistics Society (SLI) particularly devoted to shedding light on the interface between linguistics and the teaching of first and second languages in primary and secondary schools. The version presented below is the written version of the oral paper, which was submitted for publication, refereed and accepted as a chapter in the proceedings of the conference. Bettoni is responsible for the drafting, selection and analysis of data and exemplification, while I am responsible for its general organisation and the theoretical framework used.

This paper is innovative for two reasons. First, it presents to an Italian professional and academic readership the Lexical Mapping Hypothesis of the newly published extension of Processability Theory (PT) (cf. § 2.2). This is done in accessible and non-technical language. Furthermore, to make a complex matter easier to understand, the two pillars on which PT rests are also presented, however briefly; they are Levelt's speech production model in its extended lexical access theory (Levelt, Roelof and Meyer 1999), and Bresnan's (2001) recent formulation of Lexical Functional Grammar's (LFG) additions, that is, the syntacticised discourse functions (Topic and Focus) and Lexical Mapping Theory (LMT). Secondly, and importantly, for the first time the new PT Lexical Mapping Hypothesis is applied to and illustrated through Italian, using longitudinal data from an adult learner acquiring Italian L2 in Italy.

This paper also identifies a range of 'exceptional' verbs in Italian and some of the ways in which apparently innocuous verbs may behave exceptionally. Since this paper is intended primarily for teachers of Italian L2, it warns them to take care when introducing verbs, and to start first with verbs that behave more 'canonically', and only once these are under control to then proceed to the exceptional ones.

Bettoni, C. and Di Biase, B. (in press). Lessico verbale e questioni di Processabilità in Italiano L2. In M. Barni and P. Troncarelli (eds.), *Lessico e apprendimenti*. Milan: Franco Angeli Editore.

Tra i risultati più significativi della trentennale ricerca acquisizionale c'è che l'apprendimento linguistico procede per stadi obbligati. La Teoria della Processabilità (TP da qui in poi) è una teoria di acquisizione di L2 particolarmente interessante per il tema di questo volume poiché spiega gli stadi dello sviluppo linguistico partendo dal lessico e ne propone la graduale grammaticalizzazione per mezzo di una gerarchia universale di procedure di elaborazione cognitiva – di processabilità, dall'inglese *processability*. La TP è esposta nella sua versione originale più completa e matura in Pienemann (1998), che illustra l'attivazione di queste procedure analizzando lo sviluppo soprattutto della morfosintassi tedesca e inglese. Da allora nuove L2 ne confermano la bontà di fondo e contribuiscono ad affinarla nei dettagli. Per l'italiano, ne verificano le principali ipotesi Di Biase e Kawaguchi (2002), mentre Bettoni e Di Biase (2005) ne propongono l'applicazione alla morfologia nominale. Adesso, per offrire una spiegazione più convincente di alcuni fenomeni e la soluzione di altri, Pienemann et al. (2005) ne hanno elaborato un'estensione in cui lo sviluppo morfosintattico è integrato in una prospettiva pragmatico-discorsiva.

In questo contributo intendiamo illustrare un'ipotesi di acquisizione per alcuni verbi italiani, evidenziando proprio questo nesso tra la pragmatica e il discorso da una parte e la sintassi dall'altra. Intendiamo pertanto contribuire alla ricerca incoraggiandone la verifica sui dati, e offrire qualche spunto applicativo per chi è impegnato nell'insegnamento dell'italiano ad apprendenti immigrati o stranieri.

La TP si appoggia su due solide basi teoriche: il Modello per la produzione del parlato di Levelt (1989, Levelt et al., 1999) e la Grammatica Lessico-funzionale di Bresnan (2001). L'una, psicolinguistica, offre un modello della sequenza temporale della produzione del parlato; l'altra, grammaticale, spiega i rapporti tra le parole. Tutte e due sono rigorosamente formali, ma hanno il notevole pregio, rassicurante per chi non è teorico, di essere psicologicamente plausibili e di partire dal lessico – ossia di spiegare come le parole vengano codificate grammaticalmente, piuttosto che come le strutture vengano lessicalizzate. Partiamo da queste teorie perché – secondo la TP – da qui deriva la ragion d'essere formale degli stadi dell'apprendimento, e perché – secondo noi – dagli stadi obbligati dell'apprendimento dovrebbe derivare la ragion d'essere pratica

delle modalità dell'insegnamento. Se l'insegnamento non sempre garantisce l'apprendimento, una ragione potrebbe essere la mancanza di rispetto per questi stadi.

La produzione del parlato

La Teoria di Levelt riguarda la sequenza temporale della produzione del parlato. La rappresentiamo semplificata nella figura 1. Secondo questa teoria la produzione del parlato è un processo che si sviluppa per fasi in sequenza fissa, dalla preparazione concettuale all'articolazione. In ogni fase ogni elaboratore (rappresentato nella figura dai rettangoli) lavora autonomamente sul proprio input e produce il proprio output. In ordine temporale il concetto lessicale diventa lemma, poi lessema, ecc. fino all'onda sonora. Nel parlato normale il processo è così veloce (due-tre parole al secondo) da non lasciare il tempo di pensare a come far funzionare gli elaboratori, che devono lavorare automaticamente. In questa sequenza alla TP interessa come, dopo aver reperito nel magazzino lessicale (rappresentato dal cerchio) i lemmi che esprimono i concetti che intendiamo comunicare, creiamo loro l'ambiente sintattico e ne specifichiamo la forma morfologica. In questa sede consideriamo l'aspetto sintattico di alcuni verbi italiani.

Per capire come assegnare ai lemmi una funzione sintattica e assemblarli in costituenti ci soccorre la Grammatica Lessico-Funzionale, la seconda base teorica della TP. Ne nominiamo solo l'aspetto che riguarda la corrispondenza che intercorre tra le tre strutture gerarchiche che costituiscono la frase:

- la struttura argomentale, ossia i ruoli semantici;
- la struttura funzionale, ossia le funzioni sintattiche;
- la struttura costituente, ossia la configurazione lineare.

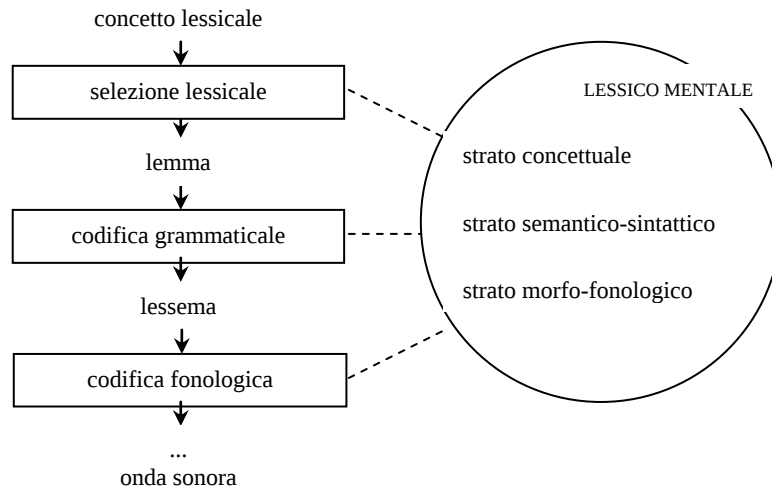


Fig. 1. Sequenze di produzione del parlato (da Levelt *et al.* 1999: 3)

Le illustriamo brevemente. La struttura argomentale di una frase consiste di un predicatore (il verbo) e dei suoi ruoli argomentali. Questi sono disposti in una gerarchia universale, che presenta crescente marcatezza da sinistra a destra: Agente > Beneficiario > Esperiente/Fine > Strumento > Paziente/Tema > Locativo. Per esempio, in

(1) Lucia bacia Renzo

Lucia è Agente (l'entità che attiva e controlla l'evento), e *Renzo* è Beneficiario (l'entità che trae beneficio dall'evento). Le funzioni sintattiche della seconda gerarchia sono il Soggetto, gli Oggetti, gli Avverbiali Circostanziali, e per la GLF anche i ruoli discorsivi sintatticizzati come il Topic e il Focus. Per esempio, in

(2) [che ha fatto Perpetua ieri?] ieri Perpetua ha cucinato i fagioli

ieri è Topic della frase, *Perpetua* Soggetto, *ha cucinato* Predicatore, e *i fagioli* Oggetto. Infine, nella terza gerarchia, che raggruppa i lemmi in costituenti, la posizione più prominente è la prima, poi seguono le altre.

Ebbene, la corrispondenza (*mapping* in inglese) tra queste tre strutture può essere lineare o meno, secondo come sono allineate l'una sull'altra le gerarchie. In (1) il mapping è lineare poiché *Lucia* è Agente, Soggetto e in 1^a posizione, e *Renzo* è Beneficiario, Oggetto e in 2^a posizione (cfr. fig. 2).

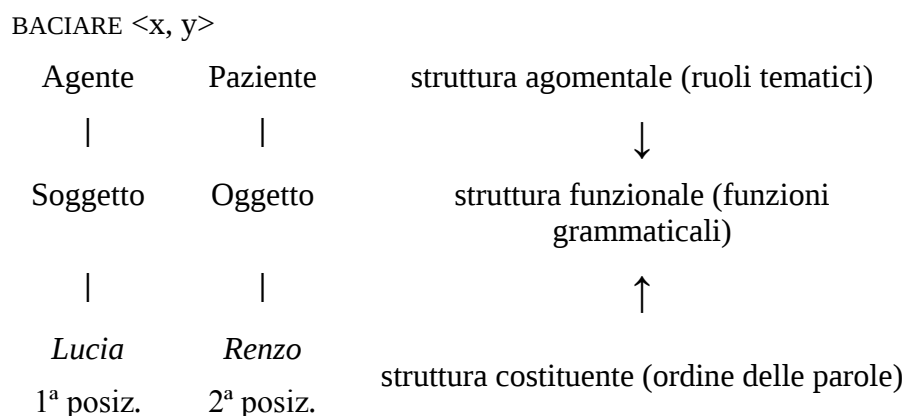


Fig. 2. Mapping canonico di *Lucia bacia Renzo*

Il mapping invece non è lineare in (3), dove *Lucia* è Agente e Soggetto ma in posizione postverbale di Focus, e l'Oggetto *Renzo* è preverbale. Né lo è in (4)-(5), dove, nonostante l'ordine SVO, sono i ruoli tematici di Paziente (semanticamente passivo) per *Renzo* e di Agente (semanticamente attivo) per *Lucia* – espressi dalle proprietà lessicali dei verbi *essere baciati* e *ricevere* – che non sono lineari alle rispettive funzioni di Soggetto e di Oggetto:

- (3) Renzo lo bacia Lucia
- (4) Renzo è stato baciato da Lucia
- (5) Renzo ha ricevuto un bacio da Lucia

Anche senza le formalità della GLF, è intuitivo che *Lucia bacia Renzo* è più lineare di (3)-(5). Perché allora complicare le cose? Perché come parlanti vogliamo scegliere la prospettiva pragmatica che meglio guida l'ascoltatore a costruirsi la rappresentazione del significato così come noi l'intendiamo. E nel modello di Levelt lo facciamo prima di grammaticalizzare la frase, perché siamo noi, non la grammatica, che decidiamo se partire con *Lucia* o con *Renzo*. Tutte le lingue permettono di scegliere la prospettiva del discorso e offrono vari mezzi per farlo, sia lessicali (scelta dei lemmi), sia grammaticali (topicalizzazione, focalizzazione, alternanza attivo/passivo, realizzazione nulla/piena del Soggetto, ecc.), ma lingue diverse organizzano diversamente i rapporti semantici del proprio lessico e la linearizzazione della frase. Per l'apprendente queste scelte sono difficili, perché il loro sviluppo è soggetto alla processabilità delle strutture grammaticali coinvolte. Ma vanno apprese perché aumentano l'efficacia comunicativa.

L'apprendimento

Sulla base di questi principi teorici (sequenza di produzione di Levelt, e creazione dell'ambiente sintattico di Bresnan), la TP ipotizza che (i) l'acquisizione della grammatica della L2 segue la sequenza della produzione del parlato, e (ii) la sequenza dipende dal grado di linearità del mapping tra le tre strutture argomentale, funzionale e costituente. È una questione di processabilità cognitiva: quanto più lineare il mapping, tanto minore il costo di elaborazione e più precoce l'apprendimento. Di contro, un mapping meno lineare comporta un costo di elaborazione maggiore e un apprendimento più tardivo.

Nello specifico, la TP sostiene che la corrispondenza tra le tre strutture della frase si sviluppa dalla semplicità del mapping lineare, caratteristica dei primi stadi dell'interlingua, alla maggiore complessità delle varie prospettive pragmatico-discorsive ottenibili con un mapping meno lineare, caratteristica delle varietà native. Poiché in ogni lingua le fonti di specificità sono due (lessico e struttura costituente), lo sviluppo è formalizzato con due ipotesi: l'Ipotesi del Lessico, per il mapping dei ruoli semantici sulle funzioni grammaticali e l'Ipotesi del Topic, per il mapping dei costituenti sulle funzioni grammaticali. La differenza tra le due Ipotesi può essere colta in

(7) ai bambini piacciono le mele

(8) ai bambini le compro io le mele

dove in (7) sono in gioco esigenze anche lessicali, poiché *piacere* mappa l'Esperiente come Oggetto Indiretto ma lo vuole in 1^a posizione, mentre in (8) sono in gioco esigenze solo pragmatico-discorsive, poiché il parlante vuole dare prominenza al Beneficiario. Per i dettagli delle due Ipotesi cfr. Pienemann et al. (2005), e per l'applicazione dell'Ipotesi del Topic all'italiano L2, cfr. Di Biase e Bettoni (in stampa). Qui illustriamo sull'italiano L2 l'Ipotesi del Mapping Lessicale.

Come altre teorie acquisizionali (Meisel, 1991, Slobin, 1985, ecc.) anche la TP prevede che, dopo un primo stadio pre-grammaticale senza verbi, la sintassi emerga con i costituenti organizzati nell'ordine canonico, SVO in italiano. Come abbiamo visto, questa soluzione è ottimale per il costo computazionale richiesto nell'organizzare i lemmi. Per il lessico la soluzione è ottimale con i verbi attivi che hanno i ruoli argomentali Agente/Esperiente in funzione Soggetto, e Paziente/Tema in funzione Oggetto:

(9) la bambina (*ag/sogg*) mangia la mela (*paz/ogg*)

(10) il papà (*esper/sogg*) non sente la musica (*tema/ogg*)

Tuttavia alcuni verbi ‘eccezionali’ (Pinker, 1984), pur avendo in 1^a posizione l’Esperiente, richiedono che questo venga mappato come Oggetto Diretto (per es. *affascinare*, *annoiare*) o Indiretto (per es. *piacere*, *manicare*), e che il Paziente/Tema venga mappato come Soggetto. Ne consegue una relazione non lineare tra le strutture funzionale e costituente:

(11) mi (*esper/ogg dir*) preoccupa il temporale (*tema/sogg*)

(12) da bambini ci (*esper/ogg dir*) annoiavano le passeggiate (*tema/sogg*)

(13) alla zia (*esper/ogg indir*) sono piaciuti i fagioli (*tema/sogg*)

(14) ai finocchi (*esper/ogg indir*) mancava il sale (*tema/sogg*)

Altri verbi invece sono eccezionali perché, pur avendo il Soggetto in 1^a posizione, questo non è Agente bensì Beneficiario/Paziente. È il caso di *ricevere* e *imparare*, mappati meno linearmente rispetto a *dare* e *insegnare*:

(15) Salvatore (*benef/sogg*) ha ricevuto un fiore da Assunta (*ag/ogg*)

(16) Assunta (*ag/sogg*) ha dato un fiore a Salvatore (*benef/ogg*)

(17) Candida (*paz/sogg*) ha imparato a nuotare da Innocenzo (*ag/ogg*)

(18) Innocenzo (*ag/sogg*) ha insegnato a nuotare a Candida (*paz/ogg*)

Per la diatesi la soluzione ottimale è il verbo attivo, poiché quello passivo richiede il mapping dei ruoli semantici in funzioni grammaticali non default, con conseguente non linearità tra la struttura argomentale e quella costituente:

(19) la proposta (*tema/sogg*) verrà valutata dal consiglio (*ag/ogg*)

(20) i corpi (*tema/sogg*) sono stati recuperati dai sommozzatori (*ag/ogg*)

In tutti questi casi, sia per l’ordine canonico (S)V(O), sia per la tipologia dei verbi lessicali, la TP prevede che emergeranno prima posizioni default. Verranno così prodotti solo verbi prototipici in forma attiva che richiedono per Soggetto il ruolo tematico più alto della gerarchia. Poi, quando il lessico si arricchisce e include i verbi eccezionali, questi saranno mappati con Tema (post-verbale) come Oggetto, e con Esperiente (preverbale) come Soggetto (21)-(24). Per le coppie simmetriche, invece, la scelta default userà l’elemento prototipico con il significato di quello eccezionale (25):

(21) [io] preoccupa il temporale

- (22) da bambini [noi] annoiavamo passeggiare
- (23) Bianca è piaciuta fagioli
- (24) i finocchi mancavano il sale
- (25) me l'ha imparato la maestra

Ecco alcune produzioni autentiche di verbi eccezionali da parte di Josephine, una donna nigeriana residente a Peschiera del Garda, in cui l'Esperiente è Soggetto in 1^a posizione:

- (26) mi piac io piace de studiare l'italiano
- (27) lui diverte piace cartoni animati
- (28) maschio sempre piace matematica femmine poco
- (29) adesso [io] manco quello lì mio fratello di ventisette
- (30) e lui e io non manchi niente
- (31) lui manca un anno a scuola
- (32) mi disturbo troppo troppo casino

Vari tentativi di insegnare altri lemmi 'eccezionali' non hanno raccolto frutti, nel senso che Josephine, anche sollecitata, non li ha prodotti. Notiamo però che in (26)-(32) il 'Soggetto' è preverbale non perché quello postverbale sia sconosciuto; con verbi più canonici Josephine già lo usa produttivamente:

- (33) di solito pasta col sugo xxx non mangio io. mangi mio marito
- (34) dopo passano un po' di mesi

Possiamo insomma ipotizzare questi quattro stadi:

- (S)V(O) per i verbi canonici
- (O)VS per i verbi canonici
- presunto 'SVO' per i verbi eccezionali
- (O)VS per i verbi eccezionali

mentre si sarebbe potuto pensare che il terzo potesse essere saltato.

Infine, riguardo alla morfologizzazione del verbo, che come abbiamo detto qui non trattiamo, osserviamo solo che, finché l'apprendente mappa canonicamente anche i verbi eccezionali, l'accordo Soggetto-Verbo, anche se è già stabile su verbi più regolari, risulterà spesso errato:

(35) io piace la cioccolata

(36) mi piace le caramelle

Conclusion

Con l'aiuto di Levelt e di Bresnan la TP spiega formalmente lo sviluppo grammaticale in base alle scelte lessicali e di prominenza pragmatico-discorsive che il parlante compie per guidare l'attenzione dell'ascoltatore. Così l'apprendente partirà lessicalmente da verbi 'normali' attivi, e sintatticamente dall'ordine SVO – che sono scelte cognitivamente meno costose ma comunicativamente limitate, per passare man mano a verbi 'eccezionali' e ordini differenziati, più costosi ma anche più efficaci.

I nostri dati empirici confortano l'Ipotesi del Mapping Lessicale: le costrizioni di processabilità sembrano effettivamente determinare lo sviluppo delle costruzioni sintattiche che riflettono le diverse scelte di prominenza pragmatico-discorsiva del lessico. L'Ipotesi necessita tuttavia di ulteriore verifica in varie direzioni: occorrono dati più abbondanti, di vari apprendenti, a vari livelli di competenza, in vari contesti di apprendimento, e relativamente a vari verbi eccezionali e a varie strutture (causative per es. oltre che passive).

Offriamo questa presentazione come stimolo alla ricerca e cautela nell'insegnamento: se *dare* è già sistemato giusto, non necessariamente lo sarà *ricevere*. Se (37) è comunque interpretabile confidando nella semantica lessicale, (38)-(39) potrebbero causare malintesi:

(37) la mamma preoccupa pochi soldi

(38) gli italiani preoccupano gli immigrati

(39) ricercatori impari insegnanti

Chapter 5

Conclusion

This contextualised thesis outlines work spanning over ten years in which I endeavoured to develop testable hypotheses for the development of morphology and syntax of Italian as a second language in adult learners, as well as in primary school children. Adopting a PT approach and its empirically grounded methodology, from the start, provided me with a clear framework to refer to in the face of apparently ‘messy’ naturalistic data. The theory was also open and ‘bold’ enough to allow for building on it further modules on the basis of specific linguistic patterns emerging from the analysis of ‘new’ second languages.

The later empirical work on Italian L2, both on Australian and Italian data has not contradicted any of the PT-generated hypotheses. Rather it has, I believe, refined and enriched the theory through collective work on its extension. Needless to say, much remains yet to be done, and I will attempt to briefly summarize below, from the vantage point of Italian L2, some of these areas for further development and research, first in the area covered in Part A (Advancing the Theory) and then in the area of Part B (Advancing the practice).

At the most general level my findings are compatible with the notion that learning a second language proceeds from learning, first, the most pervasive, default, patterns in that L2, regardless, or even in spite of, the L1, and then move towards an increasingly marked set of structural choices. While all of these are L2-specific (the learner has to build, somehow, an L2 mental lexicon and an L2 formulator) the L1 will most likely have an influence both in terms of the rhythm of acquisition and in terms of the progress that can be expected in specific areas of the L2, e.g., learning a richly morphologized language for learners whose L1 makes hardly any use of morphology for marking grammatical features (cf. Valentini’s (1992) work with Chinese L1 learners of Italian L2). The precise nature of the influence of the L1 certainly deserves more specific cross-linguistic investigation.

My work on Italian morphology yields the following implicational hierarchy covering from formulaic to interphrasal stages

(1) **Morphological development**

Word > (Prosodic Word) > Lexical morphology > NP Agreement > VP Agreement > Subject-Predicate Adjective Agreement > Topic-Verb agreement.

This progression is consistent with PT. However, work remains to be done especially in areas such as the development of heavier-load processing with agreement running over more than two elements (common in Romance and other languages with rich inflectional morphology). The emergence of ‘Prosodic word’ seems to be an important developmental step (not covered in PT). I have hypothesized a ‘prosodic bootstrapping’ as a way of bridging the gap between the word as a semantic-phonological unit and the emergence of morphological marking in Italian L2. This notion has not been investigated in any detail as yet. More generally, PT has not developed yet a module for prosodic development. This may be interesting also in terms of the Topic Hypothesis since in some languages (e.g., English) there is a prosodic (as against a word order) marking of prominence or contrastive focusing.

The Subordinate Clause procedure was hypothesized as part of morphosyntactic development, but did not emerge in the learners investigated here, not even the most advanced ones. This reflects, in part, the paucity of subjunctive marking in native Italian speech. Its elicitation in naturalistic speech would require highly specific task development.

One of the most important challenges emerging for PT development here is what I would call “the lexical paradox” in fusional languages. This refers to the lexical status of, e.g., verbal forms in Italian where a single lexeme will enclose a complex bundle of features – including Subject person, Subject number and so on – entailing a high developmental stage (S-procedure level). At present this lexical complexity has no theoretical status as PT consigns this issue to a theoretical module (to be developed) which would tackle form-function mapping. Following this line of thought, the status of conceptually transparent features (e.g., ‘number’) versus conceptually opaque features (such as, in many cases, ‘gender’) is likewise confined to such different theoretical module. A possible solution has been attempted by hypothesizing discrete stages within a stage (or ‘intra-stages’). My own orientation would rather go towards a psycholinguistically principled ‘lexical development’, uncoupled from morphological development. Some light may come from a greater understanding of the conceptual stratum of the lexeme (leading from lexical access work such as Levelt, Roelof and Meyer, 1999) and its interface with the building of syntactic frames in language generation.

As for syntactic development, this is best accounted for within the PT extension (Pienemann, Di Biase and Kawaguchi 2005). The implicational hierarchy consistent with the Italian L2 empirical data on which this thesis is constructed reveals the following progression:

(2) **Syntactic development**

Single Word/Formula > Canonical Order (including null subject) > XP + Canonical Order > post-verbal Subjects > Topic_i + ObjCl_iVS

This sequence is consistent with the PT Extension and is supported in the data. Notice however that the nature of null subjects and their relationship to pragmatic is still under-investigated: learners of Italian do use null subjects early, but what does this mean for them? Certainly not quite the same as it may mean to advanced learners or native speakers. Further, the last structure in (2) indicates the Topic and the Clitic representing the object are coreferential. This requires that the grammatical function of the arguments is recognized by the learner (i.e. the S-procedure must already be in place). The identification and agreement of the Topic with the following clause signals a greater freedom for the learner's word order (becoming closer to the native's use). This requires further corroboration from empirical data and a testing of the hypothesis against the many possibilities of word order once the adjunct becomes part of the picture. A greater challenge here is to investigate more explicitly the other syntacticized discourse function (FOCUS) particularly in the development of Italian question formation in interaction with word order. Not much is known about the development of language-specific structural choices from pragmatic (attention-drawing) inputs, e.g. passives in English versus topicalization in German or Italian.

Interesting work remains to be done in lexico-syntactic development especially where non-default mapping is involved, for instance, with 'exceptional verbs' (Pinker 1984) behaviour in Italian and cross-linguistically, as well as in complex predicates, e.g., causatives, following the theoretical work in Alsina, Bresnan and Sells (1997), Andrew and Manning (1999), and how these are learned in L2.

For the more practice-oriented research, which is critical for theory construction, as we have seen in Part B, the *Developmentally moderated feedback* hypothesis requires a fuller test on classroom-based speech data from teachers and learners in other studies and possibly other languages. Given the advances in the description of Italian and many other languages now, the possibility of working out developmentally moderated syllabi

and curricula is becoming more realistic. Thus, language development, focus-on-form and neurolinguistic research could make a greater contribution to L2 teaching and learning.

Testing for the separate nature (double dissociation) of implicit-explicit learning as well as the separate nature of metalinguistic knowledge-linguistic knowledge; pragmatic-syntactic modules would allow for a greater understanding of what could be done better and more efficiently in L2 learning and teaching. In this spirit, and in view of the increasing demand for L2 learning and teaching in primary schools, it is necessary to achieve a better understanding of the differences between child and adult learners of a second language as much as the effect of L2 instruction for second generation immigrants – which is more difficult to investigate and precious little is known in any detail in spite of the many so called ‘language maintenance’ programs.

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Appendix A

Methodological aspects: Elicitation procedures, sample tasks

TASKS for ITALIAN L2 CROSS SECTIONAL STUDY (cf. § 1.3)

Tasks: Target Structures (cf. Larsen-Freeman and Long, 1991, pp. 27-30)

N. of Informants = 6 (optimal)

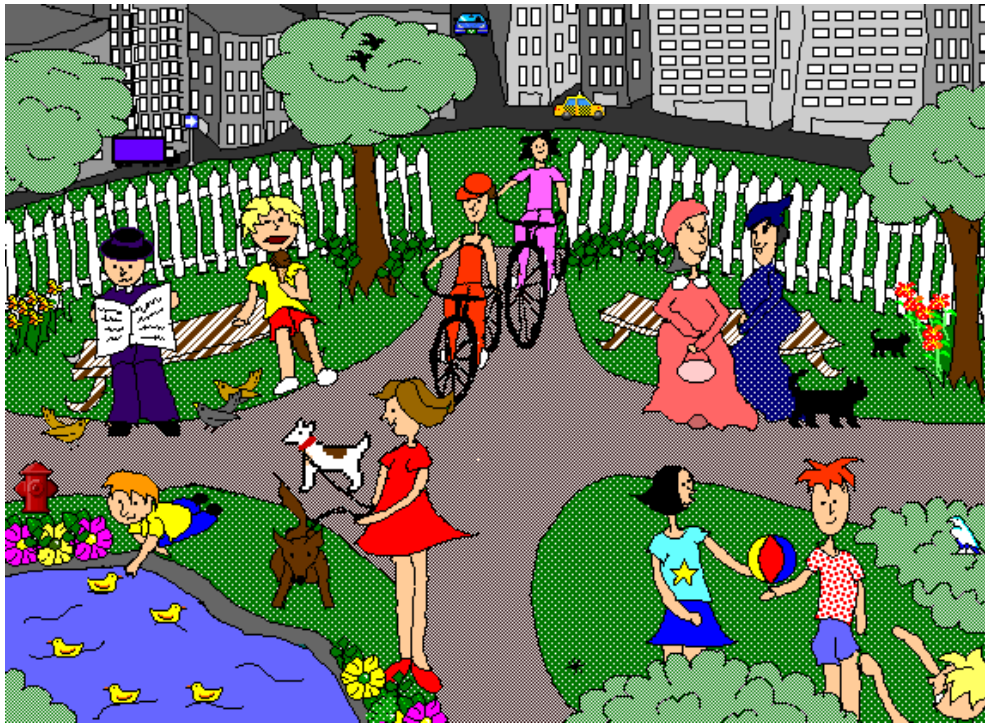
Native Speaker Control = 1

Learners: Beginners = 2

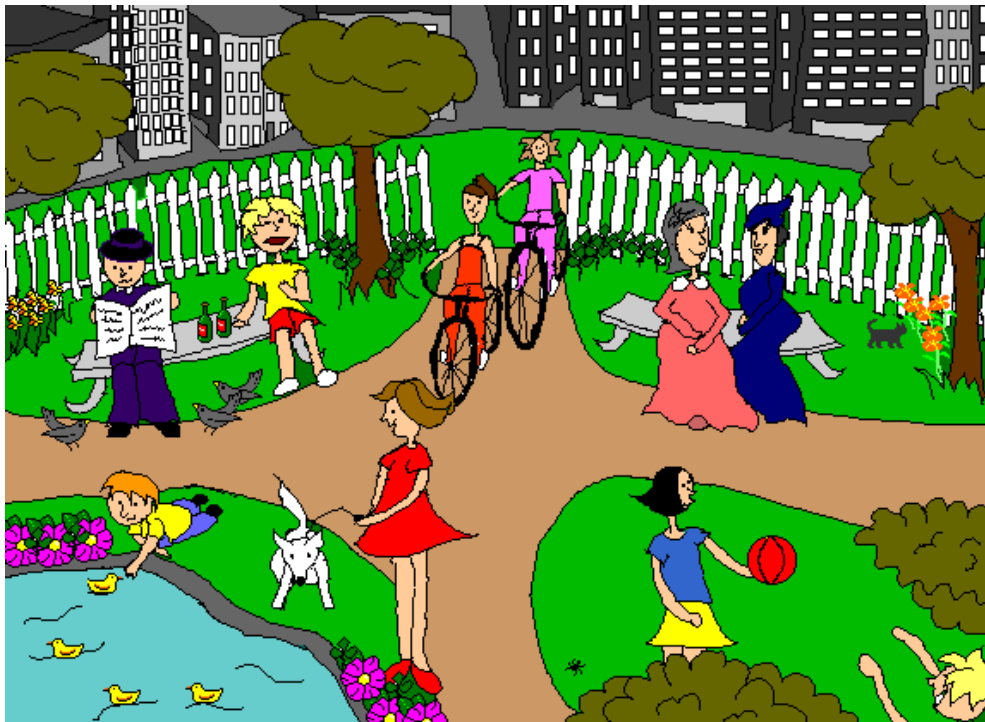
Intermediate = 2

Advanced = 2

Task	Topics	Target structures, probes
1. Oral interview (unrestricted conversation) One-on-one (Researcher and) informant	greetings, studies, languages, Secondary school family, friends, travel, likes and dislikes. Informant's topics (spontaneous)	Formulaic greetings Nominal morphology: gender number Verbal morphology, person, past tense Verb phrases with Aux and Modal verbs [look for other Syntax: SVO; VO; VS (VSO?) VOS]
Picture-based (oral) composition Materials: (a) A picture with a park scene. Ensure there are 'plural' items and different 'actions'. (b) A pack of cards depicting scenes from a well known traditional story.	(a) Picture description (Park scene) (b) Storytelling: Goldilocks and the three bears with a sequence of 11 coloured pictures to help the informant tell the traditional story.	Nominal morphology: especially plurals Art Noun Adjective Agreement (ADJunct) Predicative Adjective Subject verb agreement (with overt Subj) - Pronouns (Subject; Direct Object clitic Aux V-to
{Question and Answer: extension exchanges relating to stimulus}	Specific questions about the pictures and the story, including hypothetical	Aim for structures including DObj; IObj; Loc. and Reflexive Clitic sequences?



Spot the differences task



Supplementary task specifically designed for Italian L2 cross-sectional study:

Animals' dinner game. (The main purpose of this task is to elicit oral production with overt topics co-referential with direct object clitics).

Task	Target structures, (Italian)	Procedure
{ Guided oral composition } (Researcher and informant) Organizing a dinner: Informant has to assign a particular food item to each animal to buy as a contribution to a communal dinner. The pairing of items and animals is random. Materials: Two packs of picture cards, one for food items and the other for animals. Food and animal names should display a variety of* gender and number feature values in order to elicit both default and non-default agreement structures.	Complex utterances with overt (extraposed) Topic, object clitic pronouns and full, postverbal, referential subjects. Optimally the informant may produce: Subject - Verb agreement and Topic-Direct Object Clitic agreement as well as post-verbal Subject Passive structures are also (grammatically) possible. In which case the Informant should produce Subj-Predicative-adjective agreement (as well as Subj-AuxEssere agreement.	First review the food items and the animals, one by one, with the informant. If a name is unknown to the informant the researcher supplies it. Randomly place all the food cards in one pack and the animals in the other. R tells I that the key question is “who should buy what” and asks I to assign each of the items to each animal in the as they appear (uncovered by the researcher). Researcher shows one card at the time: first the food item. Allow time for the informant to name the food item and THEN uncover the animal (that is supposed to buy it or bring it for the dinner). Continue in the same way until the packs are completed.
Part B: Perfective (continuing) Now the animals are back, each with their contribution, but we do not know what they ended up bringing for the dinner. We will discover it - one pair at the time. Researcher shuffles the two packs of cards separately. This will yield a random order again.	Optimally the informant will produce: Subject - (AUX) Verb agreement and Topic-Direct Object Clitic agreement, as well as lexical verb agreement (in Gender and Number) with the Topic and the Clitic pronoun and Post-Verbal agreement.	Except for the first step the procedure is as above: R shows one card at the time from the food pack followed by one card from the animal pack.

Note: See tables below for examples of items actually used.

Food (Theme/Object)

	Singular	Plural (dominant)	
Masc	formaggio (<i>cheese</i>) vino (<i>wine</i>) pollo (<i>roast chicken</i>) pane (<i>bread</i>)	broccoli (<i>broccoli</i>) piselli (<i>green peas</i>) fagiolini (<i>french beans</i>)	pomodori (<i>tomatoes</i>) peperoni (<i>peppers</i>)
Fem	insalata/lattuga (<i>salad, lettuce</i>) torta (<i>cake</i>)	olive (<i>olives</i>)	carote (<i>carrots</i>) patate (<i>potatoes</i>)

Animals (Agent/Subject)

Gender	Animals	
Masculine	cavallo	(horse)
	gatto	(cat)
	asino	(donkey)
	cane	(dog)
	leone	(lion)
	orso	(bear)
Feminine	mucca	(cow)
	gallina	(hen)
	pecora	(sheep =singular)
	capra	(goat)
	scimmia	(monkey)
	tartaruga	(tortoise)

Sample of production range expected at advanced levels

(1) La lattuga la compra il gatto
 theFEMSING lettuce itFEMSING buy3SING theMAS SING cat
 the lettuce, the cat bought it

(2) La lattuga la ha comprata il gatto
 theFEMSING lettuce itFEMSING has3SING boughtFEMSING theMAS SING cat
 the lettuce, the cat has bought it

(3) Il formaggio lo ha comprato il cane theMASC SING chese
 itMASC SING has3SING boughtMASC SING theMASC SING dog
 The cheese, the dog has bought it

(4) I broccoli li ha comprati la scimmia
 theMASC PL broccoli themMASC PL has3SING boughtMASC PL theFEMSING monkey
 The broccoli were bought by the monkey.

(5) Le patate le ha comprate il cavallo
 theFEMPL potatoes themFEMPL has3SING boughtFEMPL theMASC SING Horse
 The potatos were bought by the horse

Appendix B

This appendix contains the full transcript from one of the informants of the cross-sectional study in § 1.3 followed by two tables, the first with biodata details of all informants in the cross-sectional study and the second with a numerical account of the database used for that study.

Data Sample

The speakers are B, the researcher, and the Informant codename Trish, a 1st semester student of Italian at the University of Western Sydney.

The conversation takes place at the end of the semester in session n. 21, using (a) free conversation, (b) a ‘spot the differences’ task and (c) a storytelling task (Goldilocks)

The transcription is by M. Gibin, checked by B. Di Biase.

<i>Session</i>	<i>turn</i>	<i>speaker</i>	<i>text</i>
21	1	B	OK e allora NAME no? ti chiami NAME eh?
21	2	Trish	si’
21	3	B	si’ va bene ah e adesso stai studiando con NAME TUTOR? con NAME TUTOR
21	4	Trish	si’ mh mh
21	5	B	che cosa stai studiando? che cosa studi?
21	6	Trish	uhm .
21	7	B	abbiamo gia’ scritto qua’eh
21	8	Trish	e Italiano
21	9	B	Italiano
21	10	Trish	Uno
21	11	B	Italiano Uno ecco bene ah e adesso siamo quasi alla fine del semestre eh
21	12	Trish	uhm .
21	13	B	quasi finito
21	14	Trish	ah .. ah si’ ye si’
21	15	B	mh mh il semestre e’ quasi finito OK va bene tu hai imparato italiano prima? prima di questa classe?
21	16	Trish	ah
21	17	B	hai fatto italiano prima/
21	18	Trish	no
21	19	B	no
21	20	Trish	no
21	21	B	non hai mai fatto italiano mai studiato?
21	22	Trish	no
21	23	B	OK e sei mai stata in Italia? sei andata in Italia? hai viaggiato in Italia? in viaggio
21	24	Trish	yes si’
21	25	B	si’
21	26	Trish	ye
21	27	B	quando?
21	28	Trish	ah . nineteen ninetyfour ah ah
21	29	B	va bene e dove dove sei stata piu’ o meno dove sei stata in quali citta’ OK per quanto tempo? per quanto tempo sei stata in Italia
21	30	Trish	uhm ..

21 31 B un giorno due giorni una settimana
 21 32 Trish two ah . you lost me
 21 33 B per quanto tempo?
 21 34 Trish per quanto tempo
 21 35 B per quanto tempo sei stata tu in Italia?
 21 36 Trish you've completely lost me
 21 37 B OK I just asked you for. how long you were in Italy
 21 38 Trish oh right OK uhm due o tre weeks
 21 39 B mm settimane OK va bene ah e dove sei stata? dove in Italia
 21 40 Trish ah Venezia
 21 41 B Venezia
 21 42 Trish Venezia . Roma
 21 43 B quanto tempo a Venezia?
 21 44 Trish uuh due giorno Roma
 21 45 B Roma quanto?
 21 46 Trish ah
 21 47 B piu' o meno
 21 48 Trish . uno ah . settimana about a week, I think
 21 49 B e poi?
 21 50 Trish ah . Napoli
 21 51 B Napoli quanto?
 21 52 Trish ah .. cinque giorni
 21 53 B cinque?
 21 54 Trish cinque giorno
 21 55 B OK ah e poi?
 21 56 Trish ah . Capri
 21 57 B ah bello molto bella Capri eh?
 21 58 Trish mhmh ah due giorno uhm Brindisi
 21 59 B a Brindisi anche poi se andata in Grecia
 21 60 Trish yes si'
 21 61 B immaginato sei andata a Brindisi e deve essere andata in Grecia
 OK allora Brindisi quanto tempo a Brindisi?
 21 62 Trish ah uno due uno giorno
 21 63 B ah ah e poi sei andata in Grecia
 21 64 Trish ah in grec ahu . .. due ah settimana
 21 65 B OK benissimo . Capri com'era? Capri
 21 66 Trish Capri mh
 21 67 B com'era era bella ti e' piaciuta
 21 68 Trish bello um ah ah . uhm . bella . .. beach was very rocky
 21 69 B ah molto XXX si' e' vulcanica no un'isola vulcanica
 21 70 Trish ye
 21 71 B mh e' bella sei stata nella grotta? la grotta azzurra? sotto
 nell'acqua?
 21 72 Trish ah no no la acqua uhm .. was ah was too rough
 21 73 B ah molto agitato il mare agitato . agitated
 21 74 Trish yeah
 21 75 B vedi che c'e' molto nell'inglese c'e' molto italiano molto
 italiano solo che sembra inglese
 21 76 Trish si'
 21 77 B ovviamente viene dal latino dal latino dal francese e cosi' via
 no' quindi di base latina . quindi il mare era molto agitato
 21 78 Trish agitato
 21 79 B per questo non potevi andare sotto sotto nella grotta . bene e
 Napoli ti e' piaciuta? era bella Napoli?
 21 80 Trish uhm . il centro uhm . ah .. uhm a ... la citta' . .
 21 81 B cosa nella citta' c'era? molto traffico?
 21 82 Trish crazy ah
 21 83 B un po' matto
 21 84 Trish uhm . .. ah oh . . . iuropa uhm . . . I dont know I've heard for
 ah . the European leaders
 21 85 B ah c'erano i capi di governo eh i capi di governo i primi ministri
 i pm
 21 86 Trish mh mh

21 87 B e dell'Europa
 21 88 Trish yeah
 21 89 B c'era la riunione li' a Napoli anche OK
 21 90 Trish and .. and uhm . Bill Clinton
 21 91 B ah addirittura ah allora hanno fatto una riunione di g seven
 qualcosa del genere eh G Seven
 21 92 Trish yes ah si' g seven yeah
 21 93 B allora c'era molta polizia? eh
 21 94 Trish si' eh eh
 21 95 B eh eh e che cosa faceva?
 21 96 Trish eh sta . . ah simpatica bel bello ah polizi
 21 97 B si'?
 21 98 Trish uhm . uhm and .. I've no. . what's the word for . and the army
 as well ah
 21 99 B l'esercito
 21 100 Trish esercizio
 21 101 B esercito i militari
 21 102 Trish imilitari yeah
 21 103 B c'erano anche loro si'
 21 104 Trish si'
 21 105 B e a Napoli quando eri a Napoli com'era la gente com'e' la gente
 di Napoli? . tu potevi in qualche modo comunicare con loro?
 21 106 Trish uhm
 21 107 B con le persone?
 21 108 Trish .. um . .um
 21 109 B con altre donne non so . con le famiglie
 21 110 Trish uhm uhm . we met a famiglia and that .. looked after us and
 looked after us
 21 111 B oh OK
 21 112 Trish um .. hm .. in a .. abitare in . a . hostel . uhm .. . out outside la
 citta'
 21 113 B ah fuori fuori
 21 114 Trish fuori la citta'
 21 115 B OK OK ah va bene ah ah OK va bene . questo era nel
 millenovecentonovantaquattro .. millenovecentonovantaquattro
 21 116 Trish quattro
 21 117 B eh ninetyfour ah
 21 118 Trish mhm
 21 119 B si' . e dunque sei stata allora in Italia in Francia?
 21 120 Trish si' ehm . tedesco
 21 121 B aha OK
 21 122 Trish uhm . ilen glese . irlandese . uhm I've not gone to Holland that
 was on the list uhm . Luxemburg
 21 123 B ah OK
 21 124 Trish uhm . greco ah .. uhmspagno spa spagna . ah .
 21 125 B beh un sacco di paesi tanti
 21 126 Trish mhm
 21 127 B quanto tempo in tutto? un mese?
 21 128 Trish ah .. ah .. um XX .. just a little aspettare .. uhm .. viaggio uhm
 21 129 B tutto il viaggio
 21 130 Trish viaggio . uhm .. tre ano
 21 131 B tre anni?
 21 132 Trish yeah . tre anni
 21 133 B in Europa?
 21 134 Trish ah . in Europa . Americana
 21 135 B America
 21 136 Trish ah . Cantonese
 21 137 B anche in Cina? Canton?
 21 138 Trish ca yeah can Canada yeah
 21 139 B Canada
 21 140 Trish Canada ah . Australi ah e ah Afri .
 21 141 B Africa?
 21 142 Trish Africa

21	143	B	allora hai viaggiato per tre anni?
21	144	Trish	yeah tri anni
21	145	B	mh mamma mia allora dovevi imparare un sacco di lingue eh tante lingue
21	146	Trish	ah un po'
21	147	B	un po' va bene OK allora dopo il novantaquattro allora hai fatto il novantaquattro novatacinque novantasei viaggiando millenovecentonovantaquattro ninetyfour ninetyfive
21	148	Trish	ninety-six
21	149	B	hai viaggiato
21	150	Trish	si' yea hai viaggiato
21	151	B	hai viaggiato per tre anni
21	152	Trish	yeah
21	153	B	per tre anni . una bella esperienza
21	154	Trish	no
21	155	B	no?
21	156	Trish	noh
21	157	B	non una bella esperienza
21	158	Trish	no
21	159	B	non ti e' piaciuto?
21	160	Trish	uhm . .. ah .. back pack ah back pack
21	161	B	OK con lo zaino
21	162	Trish	ah ah .. sono so sono uhm la strada . ah e il paco
21	163	B	e
21	164	Trish	e il paco . uhm e stazione uhm e .. . treno
21	165	B	mh mh col treno si'
21	166	Trish	mh mh uhm .. eh e ai ragazzi cas casa ehm
21	167	B	youth hostel
21	168	Trish	no uhm .. ragazzi casa
21	169	B	casa
21	170	Trish	cassa friend's houses si'
21	171	B	case di amici
21	172	Trish	di amici
21	173	B	di amici OK bene
21	174	Trish	there was nice people that's what I mean . molto bello
21	175	B	un'esperienza bella
21	176	Trish	uhm .
21	177	B	bella esperienza
21	178	Trish	uhm bella uhm
21	179	B	interessante
21	180	Trish	noh . uh bella ah . .. no no studi a education
21	181	B	mhm
21	182	Trish	uhm . uhm .. bella yeah it's good . nice education
21	183	B	buona esperienza
21	184	Trish	mm
21	185	B	esperienza di vita
21	186	Trish	yeah si'
21	187	B	si'
21	188	Trish	si'
21	189	B	si' benissimo e senti quel nelle poi dopo dopo quel periodo la' non hai fatto altri viaggi altri viaggi no
21	190	Trish	ehm
21	191	B	dopo il novantasei .. poi basta viaggi o hai fatto un'altro viaggio ancora in Europa .. fuori dell'Australia in Asia o lavoro uhm ingh ..
21	192	Trish	in Inghilterra?
21	193	B	yeah ye si'
21	194	Trish	per quanto tempo?
21	195	B	uhm .. vecchio uhm ah uhm .. (long pause) loOK after
21	196	Trish	uhm il vecchio
21	197	B	ah gli anziani
21	198	Trish	yes si' uhm . .. answer telephone
21	199	B	e' una casa . questa e' una casa di cura . per gli anziani

21 200 Trish uhm no . look after the vecchio uhm uno . lavora
 21 201 B ah OK questo e' un'altro un altro lavoro
 21 202 Trish yeah mh mh and si' uhm e' ..
 21 203 B pero' sempre in Inghilterra a Londra
 21 204 Trish uhm .. uhm .. (long pause) I dont know how to put it (laugh)
 21 205 B (laugh) OK
 21 206 Trish uhm . I moved around a lot and had molto lavoro
 21 207 B molto molto lavoro OK bene OK allora per ti ricordi delle
 secondarie i tuoi studi nella scuola secondaria
 21 208 Trish mhm
 21 209 B che materie hai fatto? subjects . che materie hai fatto nelle
 secondarie?
 21 210 Trish uh uhm matematica ah inglese . uhm . .. storio
 21 211 B storia
 21 212 Trish storia mhm .. don't know the words for physics and biology
 21 213 B mhm
 21 214 Trish but not science fisica?
 21 215 B sono tutte parole italiane queste parole sono tutte o italiane o
 che vengono dal greco allora biology biologia
 21 216 Trish biologia
 21 217 B fisica
 21 218 Trish fisica
 21 219 B matematica
 21 220 Trish matematica
 21 221 B queste sono tutte parole cosi' eh italiane queste qui o
 perlomeno
 21 222 Trish sporte
 21 223 B mm
 21 224 Trish sporte
 21 225 B ah va bene certo che sport hai fatto?
 21 226 Trish netball uhm
 21 227 B mhm? eri brava a giocare a netball? eri brava? tu eri brava . una
 brava giocatrice?
 21 228 Trish uhm no (laugh)
 21 229 B no? ah (laugh)
 21 230 Trish uhm .. football?
 21 231 B e di tutte queste materie qua quali quali sono le tue materie
 preferite?
 21 232 Trish sporte
 21 233 B sport
 21 234 Trish storia
 21 235 B storia ma hai detto che non eri brava al netball in che cosa eri
 brava nello sport ti piaceva di piu' il football
 21 236 Trish uhm uhm si' um giocare . giocare uhm . otto anni
 21 237 B ah si'
 21 238 Trish uhm no giocare . uhm .. non giocare no .
 21 239 B adesso?
 21 240 Trish ah gi ah giocare netball e uhm .. (long pause) OK uhm .. XXX
 swimming piscina e swimming pool
 21 241 B ah piscina yes
 21 242 Trish yes swimming pool ah ye ah swimming
 21 243 B nuoto
 21 244 Trish nuoto
 21 245 B mh bene OK e il football che hai giocato che che football e' no
 il foot ball come soccer
 21 246 Trish no uhm
 21 247 B soccer
 21 248 Trish soccer
 21 249 B soccer
 21 250 Trish soccer
 21 251 B ah OK allora tu lo chiami football proprio come . come in
 Europa perche' in Europa il football
 21 252 Trish no uhm .. ah abitare uhm Europa . uh . football soccer

21 253 B si' certo si' va bene e dove dove mi puoi descrivere un po' la tua famiglia o le persone con cui abiti

21 254 Trish due fratelli

21 255 B mhm?

21 256 Trish um . uno so . sorello uhm .. mh ..

21 257 B e che cosa cosa fanno i tuoi fratelli cosa fanno X tua sorella cosa fa?

21 258 Trish uhm cosa fa?

21 259 B che occupazione ha? che lavoro fa'

21 260 Trish uhm .

21 261 B lavora? se lavora

21 262 Trish .. OK I've lost it

21 263 B mh . cioe' tua sorella

21 264 Trish yeah ha una sorella

21 265 B OK che che lavoro fa' che lei lavora?

21 266 Trish uhm

21 267 B studia? lavora? ha famiglia?

21 268 Trish fam . famiglia famiglia

21 269 B ha OK ha bambini?

21 270 Trish uhm . sorella ah tre bambini

21 271 B mhm

21 272 L uhm .

21 273 B e come sono questi bambini?

21 274 Trish uhm .

21 275 B mm .. sono grandi?

21 276 Trish uhm .. ah . un um uno se ani ah e tre ani eh . se months six months

21 277 B mh piccolo piccolo eh? piccolo

21 278 Trish mhm piccolo uno . oh no

21 279 B no? e' grande?

21 280 Trish (laugh) grande bambini grande uhm

21 281 B OK

21 282 Trish fam . famiglia famiglia

21 283 B piccolissimo

21 284 Trish piccolo um

21 285 B va bene e tu? hai bambini?

21 286 Trish no

21 287 B no?

21 288 Trish no

21 289 B niente . OK mm e' gia' una famiglia abbastanza grande perche' tu hai tre fratelli e una sorella

21 290 Trish two fratelli

21 291 B due fratelli

21 292 Trish two fratelli e un sorello

21 293 B hm benissimo e dove dove abitate?

21 294 Trish uhm sorelle? Wattlegrove uhm uno ah fratello Picnic Point ah eh . fratello . La Perouse

21 295 B hm e tu? qua vicino?

21 296 Trish Padstow

21 297 B Padstow? e' qua va bene allora e' facile come fai a venire qua' a piedi? cammini?

21 298 Trish macina macchina

21 299 B macchina ah

21 300 Trish uhm .. macchina uhm . .. macchina . och ogi? lavora lavoro . studio eh uhm . training

21 301 B che cosa il training che cosa?

21 302 Trish ah netball

21 303 B ah per il netball OK

21 304 Trish uhm .. e . then casa

21 305 B eh ma a che ora? perche a che ora quando hai fatto netball?

21 306 Trish uhm

21 307 B il netball sai come si chiama in Italiano? palla a volo

21 308 Trish palla volo

21 309 B palla a volo
 21 310 Trish palla a volo uhm
 21 311 B a che ora
 21 312 Trish uhm se lora
 21 313 B alle sei?
 21 314 Trish sei lora
 21 315 B di mattina?
 21 316 Trish si' si'
 21 317 B e poi il lavoro?
 21 318 Trish uhm . . . tre lavoro
 21 319 B mhm
 21 320 Trish ah un lavoro um Padstow Primary School uhm . ah .. tr ah due
 ah lavoro uhm Padstow piscina uhm tre lavoro uhm (long
 pause)
 21 321 B al supermercato?
 21 322 Trish tutoring inglese
 21 323 B ah OK
 21 324 Trish ah for piccolo
 21 325 B per i piccoli insegna inglese insegna inglese
 21 326 Trish si' inglese yeah
 21 327 B allora brava e' tanto lavoro? e piu' studi e poi vai a casa
 21 328 Trish soldi for for studi
 21 329 B e' importante anche quello OK mi puoi descrivere questa questa
 immagine qua? . ecco guarda um un momento e poi se puoi
 descrivere . ah questo cammina ancora meno male si se puoi
 descrivere cosa vedi in questa figura qua
 21 330 Trish uhm .. il parco il parco uhm . . . i fiore e la labaco auhm
 21 331 B l'albero?
 21 332 Trish yeah OK l'albero uhm camin . gatto un gatto
 21 333 B com'e' il gatto?
 21 334 Trish uhm oh . colour it's just gone out of my head uhm . . .
 21 335 B OK non ti ricordi il colore? il colore nero
 21 336 Trish nero yeah si' . XX
 21 337 B e i capelli di questa ragazza?
 21 338 Trish i cap si' ah m si' ragazza uhm . nero
 21 339 B nero che cosa?
 21 340 Trish neco
 21 341 B sai come si chiama ?
 21 342 Trish mh .. (long pause)
 21 343 B non ti ricordi? . OK
 21 344 Trish I've forgotten I should know it
 21 345 B fa' niente
 21 346 Trish I'm going to fail my exam next week
 21 347 B questo?
 21 348 Trish uh
 21 349 B papera
 21 350 Trish pap papera . papera
 21 351 B quanti quanti quante sono?
 21 352 Trish cinque
 21 353 B son cinque?
 21 354 Trish cinque papera
 21 355 B hm hm e
 21 356 Trish tre fiore
 21 357 Trish hm perfetto e questo signore qua che cosa fa'
 21 358 Trish ah .. studi? uhm .
 21 359 B legge
 21 360 Trish le le
 21 361 B legge il giornale scusa che voglio vedere se c'e' . no c'e'
 ancora due che devono venire ma non so a che ora vengono OK
 . legge il giornale e questo? il bambino?
 21 362 Trish uhm . si' ha bionde ah m . . . mah mangia mangia ah il gelato
 21 363 B mhm mhm
 21 364 Trish uhm . la ragazza ragazzo ah pi piccio piccioletto uhm . ah ..

rossa ros rosse rosse mh ve ah vechio uhm ragazzo . uhm ..
 uhm

21 365 B che cosa fanno? queste due
 21 366 Trish i due?
 21 367 B che cosa fanno? queste
 21 368 Trish uhm .. mh parl hm .. (long pause) parlete
 21 369 B OK
 21 370 Trish parlete
 21 371 B OK e questi?
 21 372 Trish uhm .. iocare mh .. uhm . ..
 21 373 B con la palla?
 21 374 Trish palla
 21 375 B questa e' la palla OK eh questa che cos'e' qua
 21 376 Trish uhm ..
 21 377 B no?
 21 378 Trish no
 21 379 B no? una stella
 21 380 Trish una st
 21 381 B una stella
 21 382 Trish na stella stella
 21 383 B stella OK il nome stella
 21 384 Trish nome stella .. nome stella
 21 385 B e e com'e' questa stella?
 21 386 Trish uhm .. ah rosa stello?
 21 387 B mhm e questo?
 21 388 Trish ah questo? uhm
 21 389 B che cos'e' ?
 21 390 Trish um
 21 391 B ti ricordi come si chiama questo?
 21 392 Trish yeah uhm is it? g?
 21 393 B go gonna
 21 394 Trish gonna
 21 395 B mhm
 21 396 Trish gonna
 21 397 B e com'e' ?
 21 398 Trish giallo
 21 399 B OK
 21 400 Trish giallo
 21 401 B e questo?
 21 402 Trish uhm .. rosa uhm ..
 21 403 B mhm .. cos'ha' ai piedi?
 21 404 Trish piedi yeah
 21 405 B sopra ai piedi cosa c'e' ?
 21 406 Trish you lost me then
 21 407 B scarpe
 21 408 Trish cappe
 21 409 B scarpe come sono le scarpe?
 21 410 Trish scappe
 21 411 B come sono?
 21 412 Trish uhm rosa
 21 413 B good OK ah bene allora questo e' sufficiente eh lo so che vuoi
 fare ancora ma qui c'e' una storia
 21 414 Trish mhm
 21 415 B e' la storia di tre orsi e
 21 416 Trish Goldilocks
 21 417 B XX Goldilocks in Italiano si chiama Ricciolidoro una piccola
 parola facile facile non difficile eh? Riccioli d'oro riccioli
 21 418 Trish ri ccioli d'oro
 21 419 B esatto
 21 420 Trish Riccioli d'oro
 21 421 B Riccioli d'oro
 21 422 Trish Riccioli d'oro
 21 423 B eh d'oro oro sai cos'e' oro?

21	424	Trish	oro?
21	425	B	questo non e' oro questo qua non e' oro e' argento argento oro e' cosi' come il colore dei capelli giallo
21	426	Trish	giallo
21	427	B	l'oro .. questo non e' oro questo e' metallo metallo acciaio
21	428	Trish	acciaio
21	429	B	acciaio oro e' prezioso costa piu' soldi
21	430	Trish	uhm . si'
21	431	B	com'e' se quello e' oro questo e' argento questo e' argento forse questo qua' e' oro no pietra pietra preziosa i tuoi tutto argento argento oro e' giallo argento bianco eh
21	432	Trish	OK
21	433	B	OK allora i capelli come come i capelli tuoi i tuoi sono un po' cosi' non proprio gialli gialli cosi' oro ma allora questa bambina si chiama Ricciolidoro proprio come Goldilocks
21	434	Trish	Goldilocks
21	435	B	c'e' questa piccola mosca eh glodilocks allora e' Ricciolidoro Ricciolidoro
21	436	Trish	ric ri Riccioli d'oro
21	437	B	brava e lo sai dire vedi allora questa e' la storia di Riccioli d'oro e i tre orsi
21	438	Trish	os osti
21	439	B	orso mama' orso papa' orso mamma orso bambino
21	440	Trish	mh mh
21	441	B	si' OK quindi la storia e' la storia di questi loro vanno vanno prima fuori nel bosco a fare una passeggiata eh a camminare cosi' poi Riccioli d'oro entra nella casa vede che non c'e' nessuno
21	442	Trish	mhm
21	443	B	perche' sono tutti fuori nel bosco a fare la passeggiata ecco poi prova le sedie questa e' troppo dura questa e' troppo morbida e questa va bene pero' la rompe e si siede e si rompe la sedia . la minestra del papa' e' troppo calda quella della mamma e' tr
21	444	Trish	OK
21	445	B	ecco tu prova prova a dirla
21	446	Trish	OK uhm uhm mamma papa' bambini uhm (long pause)
21	447	B	vanno nel bosco eh nel bosco
21	448	Trish	nel bosco
21	449	B	eh?
21	450	Trish	uhm .. ah
21	451	B	ti ricordi il nome?
21	452	Trish	yeah
21	453	B	Ricciolidoro?
21	454	Trish	si' riccioli oro uhm .. uhm (long pause)
21	455	B	mhm
21	456	Trish	la casa la casa
21	457	B	OK
21	458	Trish	uhm bear orsette . piccolo orsette . uhm ..
21	459	B	crush
21	460	Trish	crush
21	461	B	si rompe la sedia
21	462	Trish	uhm .. uhm . grande calde uhm
21	463	B	mhm? medio?
21	464	Trish	me dio oh medio ha .. shu uhm . fredo fredo
21	465	B	si'
21	466	Trish	uhm mu bear uhm su tavolo . uhm (long pause) mh (long pause) mangia
21	467	B	mhm?
21	468	Trish	uhm midio .
21	469	B	era buona?era buona la minestra? piccola
21	470	Trish	piccolo
21	471	B	buona?
21	472	Trish	buona . uhm la stanza grand letto . medio le medio letto piccolo

			letto uhm
21	473	B	mhm
21	474	Trish	uhm .. la finestra?
21	475	B	mhm? qual'e' il suo letto preferito?
21	476	Trish	ah . gia giallo uhm e verde (long pause) vaa violet violet
21	477	B	si' . ecco lei lei quale preferisce? quale vuole lei? quale prende?
21	478	Trish	uhm .. piccolo uhm . letto . uhm .. ah solo . solo?
21	479	B	si' solo
21	480	Trish	uhm . loro orologio
21	481	B	mh si'
21	482	Trish	uhm ..
21	483	B	ecco poi a dirlo e guarda un po' questa piccola mosca
21	484	Trish	uhm piccolo uhm ... ah .. piccolo bear . uhm . (long pause) uhm .. piccolo e' mangia . uhm .. uhm (long pause) setto uhm .. no ... setto um no um .. sette non uhm buono
21	485	B	non buono?
21	486	Trish	non buono .. uhm .
21	487	B	OK vedi il papa' che urla
21	488	Trish	papa' uhm .. molto uhm ..
21	489	B	molto?
21	490	Trish	porridge? ah ah e' molto uhm .. uhm . (long pause) bambin bambino uhm (long pause)
21	491	B	contento il bambino? e' contento
21	492	Trish	uhm
21	493	B	ah piange?
21	494	Trish	mh mh
21	495	B	piange eh si' perche'
21	496	Trish	piange
21	497	B	perche' la sedia e' rotta eh poverino
21	498	Trish	ah uhm (long pause) mh .. la stanza e' um e' ... giallo ragazzo .. uhm e giallo ragazza . ah . mama e papa e bambini . uhm (long pause) angry? uhm .
21	499	B	e la bambina?
21	500	Trish	il bambi
21	501	B	lei lei (long pause)?
21	502	Trish	yeah ah . eh i bambini letto
21	503	B	mhm OK
21	504	Trish	uhm .. screams ah m . eh .. eh .. (long pause) uhm molto
21	505	B	mhm . allora corre?
21	506	Trish	ye corre
21	507	B	corre
21	508	Trish	corre
21	509	B	corre via OK corre via
21	510	Trish	corre via uhm .
21	511	B	perche' ha paura eh ha paura she is afraid
21	512	Trish	afraid yeah ha pura
21	513	B	si' si' OK e bene e brava visto? good vedi che esercizio che bisogna fare? eh I think this sort of exercise might help you eh
21	514	Trish	yes
21	515	B	just in time because the tape stop where are you?

The following conversation takes place at the end of semester. It is session n. 221, using the Animal Dinner's Task.

The transcription is by M. Gibin, checked by B. Di Biase.

<i>Session</i>	<i>turn</i>	<i>speaker</i>	<i>text</i>
221	1	B	let's review the animals mucca tartaruga
221	2	Trish	tart tartaruga cavalo
221	3	B	cavallo
221	4	Trish	cavallo . gallina
221	5	B	benissimo
221	6	Trish	asino gatto
221	7	B	questo e' facile
221	8	Trish	maiale . oca . cane
221	9	B	va bene gli animali devono andare a comprare delle cose . le cose sono torta
221	10	Trish	torta uhm
221	11	B	formaggio
221	12	Trish	formaggio
221	13	B	pane
221	14	Trish	pane
221	15	B	pane . non si puo' mangiare senza pane
221	16	B	lo conosci in inglese?
221	17	Trish	broccoli
221	18	B	si' perche' l'inglese usa la stessa parola broccoli come in italiano broccoli e' una parola adottata bene
221	19	Trish	olives
221	20	B	olive
221	21	Trish	olive
221	22	B	benissimo carote
221	23	Trish	carote
221	24	B	quasi come in inglese lattuga
221	25	Trish	lattuga
221	26	B	piselli
221	27	Trish	piselli
221	28	B	questi termini di vegetali sono quasi uguali eh?. patate
221	29	Trish	patate
221	30	B	eh sono facili OK allora adesso si tratta di distribuire le cose da comprare e gli animali . ora tu devi dire delle frasi possibilmente complete per esempio le patate le compra l'oca . poi i piselli li compra l'asino OK?
221	31	Trish	mhm?
221	32	B	allora possiamo anche cominciare . tu prendi l'oggetto che vuoi ecco e mi dici quale animale lo deve comprare OK? . non c'e' nessuna . nessuna (xx) scelta libera OK la torta?
221	33	Trish	la torta uhm la gallina
221	34	B	mhm OK bene perfetto . pero' devi anche cercare di mettere in mezzo quel verbo li' . il verbo e' comprare OK?
221	35	Trish	mhm
221	36	B	allora cerca un'altra cosa
221	37	Trish	carote
221	38	B	mhm
221	39	Trish	cavallo il cavallo
221	40	B	perfetto e poi?
221	41	Trish	piselli
221	42	B	i piselli chi li compra?
221	43	Trish	l'oca
221	44	B	l'oca perfetto
221	45	Trish	olive
221	46	B	le olive
221	47	Trish	la tartuga
221	48	B	la tartaruga e' molto lenta . arrivera' tardi con le olive
221	49	Trish	tartaruga

221	50	B	come in inglese
221	51	Trish	le broccoli
221	52	B	OK chi vuoi?
221	53	Trish	il cane
221	54	B	il cane perfetto
221	55	Trish	xxxx l'asino
221	56	B	l'asino perfetto ecco il formaggio
221	57	Trish	formaggio uhm la mucca
221	58	B	la mucca bene
221	59	Trish	mm
221	60	B	ti ricordi? il pane?
221	61	Trish	il pane il gatto
221	62	B	il gatto va bene la lattuga?
221	63	Trish	lattuga
221	64	B	la compra?
221	65	Trish	maale . maiale
221	66	B	il maiale il maiale perfetto va bene allora adesso sono andati tutti a comprare queste cose pero' .. hanno comprato qualche cosa ma non si ricordavano piu' chi doveva comprare che cosa . OK e quindi hanno mischiato tutto . allora queste sono le cose che hanno comprato . e questi sono gli animali .. perfetto allora . ora sono tornati per la .. preparare il pranzo eh?
221	67	Trish	si'
221	68	B	sono tornati sono andati a comprare queste cose. ora sono tornati qua per darti le cose che hanno comprato OK? allora io ti do l'animale che e' venuto con questa cosa qua
221	69	Trish	i broccoli?
221	70	B	i broccoli? chi li ha comprati?
221	71	Trish	l'asino
221	72	B	perfetto . ma cerca di dirmi anche il verbo cioe' chi ha chi ha comprato uh i broccoli chi ha comprato le patate eccetera allora prendi . prendi un'altra cosa
221	73	Trish	le patate la tarta'ruga
221	74	B	la tartaruga OK la tartaruga invece che cosa doveva comprare? ti ricordi? le olive tu gli avevi dato le olive e invece lei e' tornata con le patate
221	75	Trish	carote . il cane um il cane che comprano comprano uhm il carote
221	76	B	OK e' un cane vegetariano
221	77	Trish	si' . no
221	78	B	non e' un cane vegetariano? al cane piacciono le carote si' va bene poi la lattuga
221	79	Trish	lattuga cavallo
221	80	B	l'ha comprata il cavallo perfetto
221	81	Trish	uhm lo cavallo che compranno il lattuga
221	82	B	perfetto allora adesso
221	83	Trish	olive mucca uhm la mucca che comprare uhm il lo olive
221	84	B	perfetto ti ricordi piselli?
221	85	Trish	piselli piselli
221	86	B	allora i piselli? chi li ha comprati? i piselli
221	87	Trish	i piselli uhm . il gatto che comprano i piselli
221	88	B	piselli OK vedi che hai imparato anche altre parole di italiano
221	89	Trish	il torto
221	90	B	la torta
221	91	Trish	la torte
221	92	B	ovviamente
221	93	Trish	maia . maiale
221	94	B	OK va bene
221	95	Trish	il maiale che compra compra
221	96	B	mhm
221	97	Trish	che compra la torte
221	98	B	la torta perfetto il pane e poi il formaggio
221	99	Trish	formaggio
221	100	B	mhm

221	101	Trish	galina ah la gali . galina che comprano uhm il formaggio
221	102	B	OK perfetto e l'ultima cosa?
221	103	Trish	mucca
221	104	B	il pane
221	105	Trish	il pane uhm l'oca che comprano il pane
221	106	B	perfetto finito
221	107	Trish	finito
221	108	B	va bene? e questo e' tutto quindi grazie

Table B1 Italian L2 Adult Cross Sectional Study § in 1.3: Informants biodata and L2 activities

Informant	L1	Age	Sex	Language Course Level#	Hours of (Tertiary) instruction*	Elicitation Procedures	Notes on L2 experiences
Trish	English	31	F	Beginner semester 1	45	Interview; Picture description; Story reconstruction Q/A, Animals dinner	2 week holiday in Italy 6 yrs before interview
Lois	English	19	F	Beginner semester 1	45	Interview; Picture description; Story reconstruction Q/A Animals dinner	No other language studies
Carrie	English	50	F	Intermediate semester 3	145	Interview; Picture description; Story reconstruction Q/A Animals dinner	No other language studies
Anne	English	20	F	Intermediate semester 3	100	Interview; Picture description; Story reconstruction Q/A Animals dinner	HSC Italian 2UnitsZ (last 2 years of secondary school)
Amy	English	20	F	Advanced semester 5	210	Interview; Picture description; Story reconstruction Q/A Animals dinner	HSC Italian 2Units (five years of secondary school). Studying French (Intermediate) and Spanish (Beginner)
Toni	English	28	F	Advanced semester 5	240	Interview; Picture description; Story reconstruction Q/A Animals dinner	Some German in Secondary School. Intermediate Italian (80 hrs) studies at Siena (Univ. per Stranieri)
Pat	Italian	30	F	NA (Native Control)	NA	Interview; Picture description; Story reconstruction Q/A Animals dinner	Studied English in Australia

§ Level of Italian language course at which informant was enrolled at the time of interview.

* Estimate number of hours of University instruction in Italian at the time of interview

Table B2. Database details for the Italian L2 Cross-sectional Study
in § 1.3: All tasks

Intervi ew/ Inform ant	N of types inform ant	N of tokens inform ant	N of turns inform ant	MLT W# inform ant	Total n of types	Total n of tokens	Total n of turns	MLT W# Resear cher	Resear cher tokens	Resear cher turns
Trish	414	*1204	311	*3.87	885	3290	624	6.66	2086	313
Lois	301	518	277	1.87	651	1649	556	4.05	1131	279
Carrie	464	793	217	3.65	788	1789	436	4.55	996	219
Anne	455	919	242	3.80	868	2121	485	4.95	1202	243
Amy	550	1273	238	5.35	867	2354	478	4.50	1081	240
Toni	549	1462	309	4.73	1036	3058	619	5.15	1596	310
Pat	780	1788	158	11.32	964	2518	318	4.56	730	160
Total					6059	16779	3516			
#MLTW is the mean length of turn in words. * Trish's data contains an unusually high number of <i>English</i> tokens (about 25%), fragments and hesitations for a total of 641 out 1204 tokens (i.e. over 50%). Discounting those her MLTW is 1.83, more like that of Lois at 1.87.										

Appendix C

Analysing the data

This Appendix offers an example of how interlanguage analysis used in some of the papers in this thesis has been carried out.

This example is a full analysis of all verb-like words produced by Trish in the two sessions reproduced in Appendix B. It represents a small case-study of how a beginning student of Italian L2 develops verb-like forms, once she is capable of producing more than one ‘word’ (or single-constituent) utterances, and how these forms participate in what structures.

Form distribution and form/function matching

Each token of a verbal form is tabulated against the variables commonly found in native Italian verbs:

- the *linear structure* in which it participates;
- the type of *subject context* produced: (R)eferential, (P)ronominal or (N)ull, and whether it refers to the speaker, the hearer or a third party,
- the grammatical person: 1, 2 or 3; singular or plural;
- whether or not there is *agreement* of the form with the subject context
- whether the *time* context of the utterance is past or not.

Other variables such as aspect and mood are not considered here.

Not unlike a ‘concordance’, Table 1 presents each token of the verbs in alphabetical order with its context.

Table 1. Production of all Italian L2 verbal forms by Trish, including ‘copulative’ and ‘presentational’ forms)¹.

	Verbal forms in bold <i>Glosses in italics</i>	Structure: 1) linear order 2) lexical categories 3) conceptual roles	Subject context	Subj/form agreem.	Time
•	abitare uhm Europa <i>live/living (in) Europe</i>	V-re [gap] N <V Location>	Null1sg	no (nonfin)	past
•	abitare in . a . hostel <i>live/leaving in a hostel</i>	V-re PrepN <V Location>	Null1sg	no (nonfin)	past
•	just a little aspettare <i>just a little wait/waiting</i>	V-re	Null1sg	no (nonfin)	past
•	il maiale che compra *... compra la torte <i>the pig that buys ... buys the cake</i>	N che V N <Agent che V Theme>	Ref3sg	yes	past
•	lo cavallo che compranno il lattuga <i>the horse that buy lettuce</i>	N che V N <Agent V Theme>	Ref3sg	no	past
•	i piselli uhm . il gatto che comprano i piselli <i>the peas uhm . the cat that buy peas</i>	N [gap] N che V N <Theme _i Agent che V Theme _i >	R3sg (che)	no	past
•	il pane uhm l’oca che comprano il pane <i>bread, .. the goose that buy the bread</i>	N [gap] N che V N <Theme _i Agent che V Theme _i >	R3sg (che)	no	past
•	la gali . galina che comprano uhm il formaggio <i>the hen that buy cheese</i>	N che V [gap] N <Agent V Theme>	R3sg (che)	no	past
•	carote . il cane um il cane che comprano . comprano uhm il carote <i>carrots, the dog . the dog that buy . buy the carrots</i>	N N che V [gap] N <Theme _i Agent che V Theme _i >	R3sg (che)	no	past
•	olive ... la mucca che comprare uhm il lo olive <i>olives ... the cow that buy .. the olives</i>	N [gap] N che V [gap] N <Theme _i Agent che V Theme _i >	R3sg (che)	no (nonfin)	past
•	porridge uh . uh e’ molto uhm .. uhm (long pause) <i>porridge is very</i>	(Eng)N [gap] Cop +Adv [gap] <Theme is-link Adj [gap]>	R3sg	yes	past?
•	si ‘uhm . e’ .. <i>Yes um (it) is (another job)</i>	Cop <is-link> (to context)	Null3s (expletiv e)	yes	past
•	e’ (long pause) giallo ragazzo <i>(in the room there) is yellow youth (ie Goldilocks)</i>	Cop [gap] Adj N <is-link ADJ Theme>	Null3sg (presenta tive?)	yes	past?
•	piccolo e’ mangia . uhm .. . uhm (long pause) <i>little (bear’s porridge) is eat(en) ...</i>	(Adjectival/Nominal) V V [gap] <Theme V >	R3sg	yes	non- past (perf)
•	giocare uhm . otto anni <i>(I did) play (for) 8 years</i>	V-re [gap] num N < V > TimeADJ	Null1sg	no (nonfin)	past
•	giocare netball <i>(I) play netball</i>	V-re N <V Theme>	Null1sg	no (nonfin)	non- past
•	non giocare no <i>(I did) not play, no</i>	neg V-re	Null1sg	no (nonfin)	past
•	iocare mh .. uhm <i>(they) play/are playing</i> [Park task, children]	V-re <Agent V >	Null3pl	no (nonfin)	non- past
•	ha bionde	VAdjectival	Null3sg	yes	non-

	(she) has/(is) blonde (hair) [Goldilock]				past
•	ha .. [shu uhm] . freddo (the porridge?) has (is) cold)	V[gap]Adjectival/Nominal? ?	Null3sg	yes	past?
•	ha una sorella (I) have a sister	V N < V Theme>	Null1sg	no	non-past
•	uno fratello ha bambina one brother has girl	N V N <Agent V Theme>	R3sg	yes	non-past
•	lavoro . (I) work	V	Null1sg	yes	non-past
•	lavoro uhm . Ingh .. (I did) work (in) Eng(land)	V[gap]N <V> ADJ LOC	Null1sg	yes	past
•	mangia (She) eats [Goldilocks]	V	Null3sg	yes	non-past
•	mangia ah il gelato (he) eats an ice-cream [Park task, boy]	V N < V Theme>	Null3sg	yes	non-past
•	parlete (they) speak [Park task, women]	V	Null3pl	no	non-past
•	sono uhm . la strada (at that time I) am (on) the road	V [gap] N <Cop-link Location>	Null1sg	yes	past
•	studi? uhm . (he is) study(ing)? [Park task, man]	V	Null3sg	no	non-past
•	no studi (it was) not 'studi'	negV/N ?	Other 3sg/nonfi n?N? citation	no(?)	past
•	studio (I) study	V	Null1sg	yes	non-past
•	viaggio . uhm .. tre ano (I did) travel (for) three year	V [gap] numNTemp < V > ADJ time	Null1sg	yes	past

Table 2. Distribution of Trish's *lexical* verb-forms over person/number contexts.

Verbal forms/endings	-re	-a	-o	-i	-te	-no
abitare <i>to live (somewhere)</i>	2 (1sg)					
aspettare <i>to wait</i>	1(1sg)					
comprare <i>to buy</i> compra <i>he/she buys</i> comprano <i>they buy</i>	1 (3sg)	1(3sg)				5(3sg)
giocare/iocare <i>play</i>	3 (1sg); 1(3pl)					
ha <i>he/she/it has</i>		3(3sg); 1(1sg)				
lavoro <i>I work</i>			2(1sg)			
mangia <i>he eats</i>		2(3sg)				
parlete* <i>?speak</i>					1(3pl)	
studio <i>I study</i> studi <i>you study</i>			1(1sg)	2(3sg)		
viag(g)io <i>I travel</i>			1(1sg)			

Subject realization in a beginning learner of Italian L2 (Trish)

Null	22	69%
Referential	9	28%
Pronominal	0	0%
Other*	1	3%
Total	32	100%

Distribution of overt and null subjects in first, second and third person contexts in an early learner of Italian L2

Person	Referential	Null	Pronominal	English pronominals
1 st singular	na	12	0	11 (I) 3 (me)**
2 nd singular	na	0	0	3 (you)**
3 rd singular	10	8*	0	6 (it) mostly expletive
1 st plural	na	0	0	1 (we)
2 nd plural	na	/	/	/
3 rd plural	0	2	0	0
Total	10	22	0	24

/ = no context

*include one presentational, one expletive and one other (possibly citation form)

** all three tokens of *you* and *me* occur in three tokens of the expression *you lost me*

Word order structures

SVO	2	
S che VO	3	(Object-first task)
(O) S che V O	4	(Object-first task)
SV	1	
V	11	(includes 2 neg V)
VO / VX	11	
Total clausal contexts	32	

Trish – Total interview 21 and 221 Type/token ratios					
Types/total	Tokens/total		types	tokens	Types/tokens
ratio	ratio	Language	raw n.	raw n	ratio
0.54	0.47	Italian	215	571	0.38
0.29	0.21	English	116	252	0.46
0.04	0.03	discourse routines (pauses)	16	331	0.05
0.13	0.05	fragments	54	58	0.93
		Total	401	1212	0.33

Trish : interview n. 21 and 221 - Lexical Verb forms concordance

Structure	conc line(284ff cl task)	pre-context	lemma+ following context	Subject context	Subj/form agreement	Time context +p/-p
V-reN	136	Trish no ahm .. ah Trish um .. hm .. in	abitare ahm Europa . uh . football soccer abitare in . a . hostel . ahm ...	Null1sg	n nonfin	past
V-re PP	59	a ..	out	Null1sg	n nonfin	past
V-re	69	.. um XX .. just a	aspettare .. ahm .. viaggio ahm	Null1sg	n nonfin	past

		little	21.130			
false start	332	il maiale che compra	compra 221.98. Trish che compra la compra compra 221.98. Trish che	repeat	n/a	n/a
false start che VN (VO) R in previous turn	332	Trish il maiale che	che	repeat	n/a	n/a
NcheVN (ScheVO)	333	221.98. Trish che	compra la torte 221.100. Trish compranno il lattuga 221.84. Trish	R3sg (+che)	y	past
NcheVN (ScheVO)	325	ahm lo cavallo che	comprano ahm il carote 221.78. Trish	R3sg (+che)	n	past
NcheVN (ScheVO)	321	il cane che comprano	comprano ahm il formaggio 221.104	R3sg (+che)	n	past
NcheVN (ScheVO)	335	la gali . galina che	comprano comprano ahm il carote	R3sg (+che)	n	past
false start NcheVN (ScheVO)	321	cane um il cane che	comprano i piselli 221.90. Trish il	repeat	n/a	n/a
NcheVN (ScheVO)	328	ahm . il gatto che	comprano il pane 221.108. Trish finito	R3sg (+che)	n	past
NcheVN (ScheVO)	337	il pane ahm l'oca che	comprare ahm il lo olive 221.86. Trish	R3sg (+che)	n nonfin	past
	326	ahm la mucca che	corre 21.508. Trish corre 21.510. Trish			
echo	277	21.506. Trish ye	corre 21.510. Trish corre via ahm . 21	echo	n/a	n/a
echo	278	corre 21.508. Trish	corre via ahm . 21.512. Trish afraid	echo	n/a	n/a
echo	279	corre 21.510. Trish	finito	echo	n/a	n/a
echo	55	pane 221.108. Trish	giocare netball e ahm .. (long pause) OK	echo	n/a	n/a
V-reN (VO)	129	21.240. Trish ah gi ah	giocare . ahm . . non giocare no . 21.240	Null1sg	n nonfin	pres
false start	128	21.238. Trish ahm no	giocare . giocare ahm . otto anni 21.238	repeat	n/a	n/a
V-re	127	Trish ahm ahm si' um	giocare ahm . otto anni 21.238. Trish	Null1sg	n nonfin	past
false start	127	ahm si' um giocare .	giocare no . 21.240. Trish ah gi ah	repeat	n/a	n/a
nonV-re	128	giocare . ahm . . non	ha bambina la bambina eh .. um . . due	Null1sg	n nonfin	past
NVN (SVO)	152	ahm un uno fratello	ha pura 21.514. Trish yes 22.2. Lois si'	R3sg	y	pres
echo	281	Trish afraid yeah	ha uno sorella 21.266. Trish ahm 21	echo	n/a	n/a
VN (VO)	142	it 21.264. Trish yeah	iocare mh .. ahm . . 21.374. Trish palla	Null1sg	n	pres
V-re	203	21.372. Trish ahm . .	lavora lavoro . studio eh ahm . training	Null3pl	n nonfin	pres
false start	163	. . . macchina . och	lavoro . studio eh ahm . training 21.302	try	n/a	n/a
V	163	och ogi? lavora	lavoro ahm ingh .. 21.194. Trish yeah	Null1sg	y	pres
V	102	ehm 21.192. Trish	mangia ah il gelato 21.364. Trish ahm	Null1sg	y	past
VN (VO)	196	ah m . . . mah mangia	mangia 21.468. Trish ahm midio . 21	Null3sg+Obj	y	pres
V	251	mh (longo pause)	mangia mangia ah il gelato 21.364	Null3sg	y	pres
false start	196	bionde ah m . . . mah	parlete 21.370. Trish parlete 21.372	repeat	y	pres
V	201	parl hm .. (long pause)	parlete 21.372. Trish ahm . . iocare mh	Null3pl	y	pres
false start	202	parlete 21.370. Trish	piange 21.498. Trish ah ahm (long pause	repeat	n/a	n/a
echo	270	mh mh 21.496. Trish	scappe 21.412. Trish ahm rosa 21.414	echo	n/a	n/a
echo	222	cappe 21.410. Trish	studi a education 21.182. Trish ahm	echo	n/a	n/a
noV ? V decl. confirm. request	96	uh bella ah . . . no no	studi? ahm . 21.360. Trish le le 21.362	expletive 3sg/nonfin?	n(?)	past
V	194	21.358. Trish ah ..	studio eh ahm . training 21.302. Trish	Null3sg	n	pres
V	164	ogi? lavora lavoro .	viaggiato 21.152. Trish yeah 21.154	Null1sg	y	pres
echo	81	Trish si' yea hai	viaggio . ahm . . tre ano 21.132. Trish	echo	n/a	n/a
V	71	ahm 21.130. Trish		Null1sg	y	past

Excerpt from Concordance

CROSS SECTIONAL STUDY Informant: Trish interview n. 21 and 221 -

line n.	pre-text	Key word and post-text
24	. settimana about	a week, I think 21.50. Trish ah . Napoli
40	uhm . ah .. uhm	a . . . la citta' . . 21.82. Trish crazy ah
57	uhm uhm . we met	a famiglia and that .. loOKed after us
59	Trish um .. hm .. in	a .. abitare in . a . hostel . uhm
59	.. in a .. abitare in .	a . hostel . uhm .. . out outside la
69	.. ah .. um XX .. just	a little aspettare .. uhm .. viaggio uhm
96	ah . . . no no studi	a education 21.182. Trish uhm . uhm
111	. I moved around	a lot and had molto lavoro 21.208
169	21.310. Trish palla	a volo uhm 21.312. Trish uhm se lora
180	.. i fiore e la labaco	auhm 21.332. Trish yeah OK l' albero
59	um .. hm .. in a ..	abitare in . a . hostel . uhm .. . out
136	Trish no uhm .. ah	abitare uhm Europa . uh . football
24	. uno ah . settimana	about a week, I think 21.50. Trish ah
231	giallo 21.428. Trish	acciaio 21.430. Trish uhm . si' 21.432
36	Trish ah no no la	acqua uhm .. was ah was too rough
280	uhm . 21.512. Trish	afraid yeah ha pura 21.514. Trish yes
76	ah . Australi ah e ah	Afri . 21.142. Trish Africa 21.144
77	Afri . 21.142. Trish	Africa 21.144. Trish yeah tri anni 21
57	and that .. loOKed	after us and loOKed after us 21.112
58	after us and loOKed	after us 21.112. Trish um .. hm .. in a
104	.. (long pause) loOK	after uhm il vecchio 21.198. Trish yes
107	Trish uhm no . loOK	after the vecchio uhm uno . lavora
39	Trish si' 21.78. Trish	agitato 21.80. Trish uhm . il centro
32	Trish ah in grec	ahu . . . due ah settimana 21.66. Trish
89	mh mh uhm .. eh e	ai ragazzi cas casa ehm 21.168. Trish
181	Trish yeah OK l'	albero uhm camin . gatto un gatto
73	Trish ah . in Europa .	Americana 21.136. Trish ah
92	si' 21.172. Trish di	amici 21.174. Trish molto bello 21.176
46	yeah 21.90. Trish	and .. and uhm . Bill Clinton 21.92
46	21.90. Trish and ..	and uhm . Bill Clinton 21.92. Trish yes
50	Trish uhm . uhm	and .. I've no . what's the word for
50	the word for .	and the army as well ah 21.100. Trish

Appendix D

Methodology components for classroom-based research

The materials below appeared as appendices in the original paper appearing in § 3.2. They are:

D.A an excerpt of the schedule used for the 5-10 minute form-focused instruction intervention in the Italian L2 class program in the 3 primary schools involved in the ARC/SPIRT project in §3.1;

D.B The set of operational instructions given to teachers on the project on how to conduct the form-focused intervention and the focus on form feedback in the experimental group and the comparison group;

D.C The observation form with the analytical categories and coding created to analyse the teacher's linguistic behaviour in the lessons;

D.D Examples of various forms of recast, clarification requests, explanation request and explicit corrections and other output enhancement strategies actually used by the class teacher and the children's response to these.

D.E A brief report on Co.As.It.'s education activities contributed by Ms Susanna Schio, the association's Executive Officer.

Appendix D.A Excerpt of form focused instruction schedule

Term 1	Consolidate	FONF structure	Example	Notes (+ tasks)	Supplementary examples
13 March start fonf Experiment group only- (Lexical Level)	Lexicon. Presenting FONF structures using lexical items Ls already know	Singular and Plural of (regular only) Masculine Nouns ending in -o No>Ni (single word)	libro-libri	get learner to use numbers rather than articles If learner says “due libro” you emphasize “due libri”; Use picture/word matching and memory games (first oral then written)	quaderno, gesso, banco; gatto, uccellino/canarino/pappagallino cappello
20 March (Lexical Level)	Lexicon No>Ni (single word)	Singular and Plural of (regular only) Adjectives ending in -o Ao>Ai (single word)	nuovo-nuovi	- teacher shows two black cats, and asks for the colour of the cats: pupil says ‘nero’ or ‘due gatto nero’, teacher emphasises ‘neri’. NB in Exp group reward correct production of fonf structure as well as usual rewards.	rosso-rossi; giallo, bianco, nero, bello, brutto, lungo corto
27 March (Phrasal Level) singular	Lexicon plural form of single N and single A	Agreement of Noun and Adjective in -o Masculine Nouns with regular -o Adjectives Singular only No+Ao	libro nuovo	NB in comparison group reward correct answers as usual Point out common final vowel in any N+A pair ending in -o ignore plurals, ignore articles in recast	gatto nero pappagallo rosso e giallo cappello bianco
3 April (Phrasal Level) plural	Lexicon+ pl o>i	Plural Number Agreement of Noun and Adjective of (regular) Masculine Nouns ending in -o with regular Adjectives ending in -o No + Ao>Ni+Ai	libro nuovo>libri nuovi	Create microsystem which is regular - ignore cases of irregularity even if they do come up. eg learner says pizza buono ignore it due pizza buoni OK- ignore pizza sing. matiti OK just ignore it	libro nero>libri neri, (libro bello, nuovo, vecchio, canarino giallo) gelato buono>gelati buoni tre cioccolatin i buoni, colorati

Appendix D.B. Instructions given to teachers on the project

The schedules constitute a GRADED LIST of the structures to focus on, i.e. **what** to focus on and **when** – they do NOT represent your program as a whole.

THINGS TO KEEP IN MIND

General Procedure

- Please record *all sessions* for *both groups* and label tapes F (Fonf) or C (Comparison)
- Use Italian as the medium of instruction. The teacher needs to speak consistently in Italian for learners to have the necessary input and hence the chance to learn the language. Learners will only NOTICE the focused structures if they previously had the chance to HEAR the structures.
- After hearing, the learner needs to actually PRODUCE. Learner's productions is CRUCIAL for memorisation, over and above her/his 'understanding' of what the teacher says. Encourage learners to communicate *verbally* in Italian, hence to listen and speak, before reading and writing. So, a COMMUNICATIVE approach is essential for the project to succeed.
- REPEATED production is CRUCIAL for automation of lexical retrieval from memory, as well as for rule formation and any other PROCEDURAL component of learning. Repeated production is the only way the learner can build procedural resources (automatic skills) in the L2.
- The research group suggests that with both experimental and comparison class you will need to **regularly devote about 10 min at the start of the lesson** for the structure(s) to be focused following the schedule in the Fonf Program. The syllabus for both groups of learners should be *identical*, the only difference being the *treatment of the focused structure*, for the Fonf group. (Fonf group progress through the syllabus may be slower because focusing will take some more time than recast. However, it is recommended to keep groups moving at a similar pace).

Lesson Procedure

Experimental (fonf) Group

1. Ten minutes at the beginning of each lesson to do communicative tasks requiring known language. This time is for the teacher to introduce the new Fonf structure for the week and to *maximize learner speaking*, rather than teacher speaking.
2. Fonf should be applied to structures specified in the program *only* (including revision of structures previously focused on).
3. Other structures may be recast *without emphasis*.
4. It is important for tasks be *stimulating* and *fast-paced*, rather than requiring all learners to have a turn. It may be therefore necessary to separate learners into groups to give all a chance to participate.
5. Throughout the lesson, application of Fonf should continue on *same* structures but *incidentally*. That is, as you continue with the class program you need to keep your eye (ear) on the chance occurrence of the specific Fonf structure you are focusing on today and pick up (for learners to notice) on such occurrences especially when a problem in communication, comprehension or production arises. Other structures may still be recast, but only implicitly.
6. Application of Fonf should include 'input enhancement', intonational or visual highlighting, but respecting the priorities outlined above 'aural' (listening/speaking) BEFORE 'visual' (reading/writing).

Control Group

Ten minutes at the beginning of each lesson with same tasks as above. Recast may be used **on any structure** without emphasis. Recast may be used throughout the lesson.

No input enhancement of *Fonf structures* should be used at all with the comparison group.

NOTE:

RECAST strategies are among the most effective communicative teaching strategies.

When applying implicit **recast** strategies the teacher simply repeats, using correct forms, what the learner just said. To make recast explicit the teacher may first try to make the learner NOTICE the form he/she actually used and **then** she supplies the correct form. She may also use facial expressions and gestures to enhance the current input. (Do the latter in the experimental group). However **this does not need to involve any Grammatical explanation at all**, but just pointing out and underlining similarities or contrast features in what is being used (e.g. correct vs. incorrect agreement).

Appendix D.C Observation form for Teacher linguistic behaviour

Group:

Date

Start/Finish

Theme (s)

Structure(s) (fonf program)

General Comments from initial viewing

F code	Teacher Fonf behaviour	Total
Q	Asks Question	
NC	No Correction	
+FB	Positive Feedback(+form)	
RR	requests repetition (ch)	
CUE(-)	provides cue (BL) {V/ Parallel(+) } (-miscue)	
FORM+	Provides form (+from fonf program)	
{R	Recast(+stress)	
{RW(+)	Repeat wrong form(+stress)	
{CL	Clarification request (what)	
{EX	Explanation request (why)	
EC(+)	Teach. explicit correction (+form /EXPL) (NOT this but THAT)	
O	Other output enhancement GR	

Time	Fonf code	Linguistic observations

Appendix D.D

Examples of teacher's linguistic behaviour (categories 7-9)

7. Recasts

Simple recast

Ch	due serpenti lungo	
T	due serpenti lunghi	{Recast}
Ch	lunghi	

Partial recast (greater focus?)

Ch	tre sciarpò	
T	tre sciar...?	{Verbal cue}
Ch	...pi?	
T	...pe	{Recast}

8. Negative feedback

{RW(+)} Repeat wrong form(+stress) 15(2+) 2

T repeats the learner's wrong form(s) with question intonation sometimes with stress (louder). This is corrective feedback but still implicit.

RW example1

Ch	un maglietta	
T	un?	{RW}
Ch	un	
T	un?	{RW+}
Ch	una maglietta nera	

RW example2

Ch	una giacca verde e arancione e...	
T	e un poco	{Verbal cue}
Ch	bianco	
T	bianco? una giacca...?	{RW} {Verbal cue}
Ch	bianca	

RW example3

Ch	i pantaloni grigio	
T	grigio? I pantaloni...?	{RW} {Verbal cue}
Ch	grigi	
T	bravo . I pantaloni grigi	{PositiveFB+form}

CL Clarification request (what)

Ch	cinque libri rosso azzurro e giallo	
T	come?	(CL)
Ch	rossi azzurri e giallo	

This CL request happened after a previous correct production by another child

{EX Explanation request (why)}

This teacher did not make use of explanation requests in either group.

11. EC(+)} Teach. explicit correction (+form /EXPL) (NOT this but THAT)

This category groups EXPLICIT corrective feedback, which is apparently the most effective type of feedback.

EC (explicit correction) example 1

T	questo che cos'è?	
Ch	un .. cavalli	
T	no. è uno solo	{EC} {Verbal cue}
Ch	un cavallo bianco e neri	
T	e nero	{Recast}
Ch	e nero	
T	un cavallo bianco e nero	{PositiveFB+form}

EC (explicit correction) example 2

T	questa è una gonna.. e queste?	{Verbal cue} {Q}
Ch	due gonni	
T	due gonni? .. una gonna. due...?	{RW} {Verbal cue}
Ch	gonna	
T	no .. è come una zebra . due zebre .. una gonna ...?	{EC} {Verbal cue}
Ch	due gonni	
T	no .. due... ? chi lo sa?	{EC} {Verbal cue}
Ch 2	due gonne?	
T	sí . due gonne .. una gonna . due gonne	(PositiveFB+form)

9. Other output enhancement

Not used often by this teacher. Only two such events out of 10 sessions.

Ch	tre canguri gialli e... molti gialli	
T	si	{PosFB}
Ch	molti alti	
T	OK . però molto .. molto non cambia .. it can't change . molto .. molto just means very .. molto alti ...allora tre canguri gialli e molto alti .. però molto non cambia.	{PosFB} {O}

Appendix D.E Co.As.It. Education Activities A Brief Report. July 2002.

(by Susanna Schio)

Co.As.It. The History.

Co.As.It., the Italian Association of Assistance, was first established in NSW in 1968, under the auspices of the Italian Government. The initial aim of the voluntary

organisation was to assist the large numbers of Italian migrants who came to Australia in the Post War II era.

Co.As.It. was formed with two distinct aims: to assist migrants through a co-ordinated settlement welfare program, and to preserve and promote an awareness of the Italian language and culture in Australia.

Today Co.As.It. is one of the major and most active ethnic voluntary agencies in NSW, offering a wide range of services and programs focused on community services, educational and cultural activities. Co.As.It. is a registered charity and in 1983 was incorporated under the NSW Companies Code. It is managed by an annually elected Board of Directors which is assisted by appointed Sub-committees.

The Italian Language and Cultural Teaching Program.

Co.As.It's long and practical commitment to language education has helped to ensure that Italian is now one of the most widely taught languages in New South Wales. Italian is one of the 12 priority languages in New South Wales and continues to be supported by the community and by both the Australian and Italian Governments.

Faithful to its initial aim of promoting the Italian language, Co.As.It. offers classes in Italian to 29,000 primary school students in the Insertion and Out of School Hours Program and further supports another 30,000 students from K to Yr. 12.

Co.As.It. offers a professional development program for teachers, the development of resources and activities for teachers and students such as the *Italiano e Scuola* educational journal extensive inservice opportunities for teachers and the Italian Multimedia Resource Centre highlights over the past 3 years include:

- The publication and distribution to every Primary School of the K to Yr. 6 Italian syllabus developed by the NSW Board of Studies and sponsored by Co.As.It.
- The development of the Co.As.It. web site (www.coasit.org.au)
- The creation of the Italian Multimedia Resource Centre inaugurated in March 1997 by the NSW Minister for Education, Hon. John Aquilina. The Centre now houses over 7,000 state of the art teaching and learning resources, including print material, language and culture programs on CD Rom, video cassettes, audio cassettes, posters, multimedia teaching kits, toys and games.

- The development of an Italian CD Rom called “Italian Album” for High Schools which was distributed to every high school in NSW in 2001 where Italian is taught.
- The establishment of the Italian Bilingual School in 2002. The first school in Australia to provide a bilingual education in English and Italian. It provides a bilingual and bicultural education incorporating a European, and more specifically Italian, perspective set to broaden students’ educational experiences and open new horizons.

A unique feature of The Italian Bilingual School is that it has selected and combined elements of both the Australian and the Italian curriculum in order to provide a program of studies which specifically targets the needs of our students and which answers to the requirements of both the Australian and Italian school system. The school is inclusive, co-educational and non-denominational.

Insertion and Out of School Hours Program.

Co.As.It’s involvement in the teaching and learning of Italian in New South Wales is evident in the provision of courses integrated in the primary school curriculum, via its support of the Italian language and culture to all NSW Schools from K to Yr. 12. The study of Italian as a KLA in K-6 via the Insertion Program comprises a minimum of two hours per week study in Years 3 – 6 and 1 ½ hours per week study in K to Year 2 and provides a solid foundation in language learning on to further consolidation in 7 –12 Italian. The Insertion Program is offered in State, Catholic and independent schools in New South Wales.

Co.As.It. also offers those students whose school does not teach Italian the opportunity to learn the language through its Out of School Hours (OSH) classes. OSH classes provide an excellent opportunity for revision and consolidation of language learning for those children wishing to build upon knowledge gained through their integrated classes.