

Task complexity and L2 narrative oral production

TESI DOCTORAL

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Abstract

This study explores the impact of manipulating Task Complexity simultaneously along both pre-task planning time and the degree of displaced, past time reference on L2 narrative oral production. By drawing on consolidated psycholinguistic models of language production, the study first explores the similarities and differences between L1 and L2 oral production and examines how language processing for comprehension, production, and learning are mediated by the cognitive processes of attention and memory. Secondly, a definition of task is provided, and the concept of Task Complexity is presented and developed as born from a need to design and sequence tasks in a syllabus in a principled way. Thirdly, a review of options in syllabus design as a consequence of different conceptions about language teaching and learning is provided. The main characteristics of a number of synthetic and analytic syllabi are considered, and this is followed by a review of research into task features. In the fourth place, the specific literature related to planning time and the degree of displaced, past time reference is reviewed, and the questions and four hypotheses of the experiment advanced. The first hypothesis states that providing pre-task planning time will positively affect learners' fluency and structural complexity with no impact on lexical complexity or accuracy. The second hypothesis predicts that increasing Task Complexity along the +/- Here-and-Now variable will have positive consequences for learners' complexity and accuracy but will have detrimental effects on fluency. The third hypothesis foresees a greater impact of planning time in more complex There-and-Then versions of tasks. Finally, the fourth hypothesis predicts that the effects of increasing Task Complexity along the +/- Here-and-Now variable will be enhanced under planned conditions. From a methodological point of view, a repeated measures design is used to obtain production data from 48 subjects with a lower-intermediate level of English, and four levels of Task Complexity which combine the two variables are established. Each learner narrates each of 4 comic strips under a different condition, the sequence of which is controlled by means of a Latin square design. Measures include unpruned Speech Rate A and pruned Speech Rate B for fluency; the percentage of lexical words, the ratio of lexical to function words, and the Guiraud's Index of lexical richness for lexical complexity; the number of S-nodes per T-unit for structural complexity; and the percentage of error-free T-units, the target-like use of articles, the percentage of self-initiated self-repairs, and the ratio of repaired to unrepaired errors for accuracy. Finally, learners' perception of Task Complexity is also analyzed by means of an affective variables questionnaire, in which they are asked about their perception of difficulty, stress, confidence, interest, and motivation. The questionnaire is validated by means of protocol analysis. Results of repeated measures ANOVAs show that planning time generates higher fluency and lexical complexity with no effects for structural complexity or accuracy. Increasing complexity along the +/- Here-and-Now variable has positive

effects on accuracy with no significant differences for lexical or structural complexity, and with detrimental effects for fluency. No significant differences are found between the impact of planning time of simple Here-and-Now and complex There-and-Then versions of tasks. The effects of increasing complexity along the There-and-Then variable are enhanced by planning time without reaching statistical significance. Further results show that more complex tasks are perceived as more difficult, stressful, and generate lower levels of confidence without detrimental effects on the perception of interest or motivation. Results are discussed in the light of L1 and L2 production theories as well as competing theories of attention allocation policies during task performance. It is argued that the dimensions of accuracy and complexity can be attended to by learners as long as tasks are kept simple along resource-dispersing dimensions (i.e. planning time) and complex along resource-directing dimensions (i.e. +/- here-and-now). It is finally argued that Task Complexity is an important construct for task design and task sequencing which can be manipulated to obtain specific effects on L2 production and, potentially, learning.

Resum

Aquest treball investiga l'impacte de la manipulació simultània del temps de planificació i el grau de desplaçament en el temps i l'espai sobre la producció narrativa oral en l'L2. En primer lloc, i basant-se en models psicolingüístics consolidats de producció oral, el treball examina les similituds i les diferències entre la producció oral en l'L1 i en l'L2, i analitza com els processos d'atenció i memòria condicionen el processament per a la comprensió, la producció i l'aprenentatge del llenguatge. En segon lloc, es defineix el concepte de tasca i es desenvolupa el concepte de complexitat cognitiva, el qual sorgeix de la necessitat de dissenyar tasques i organitzar-les en un programa de manera raonada. En tercer lloc, es fa una revisió de les opcions de disseny de programes d'ensenyament de llengua que emanen de diferents concepcions sobre l'ensenyament i l'aprenentatge. Es consideren les principals característiques d'una sèrie de programes sintètics i analítics, i es fa una revisió de les investigacions referides a diferents trets de les tasques. En quart lloc, es presenten els estudis que es refereixen específicament a les variables de planificació i +/- aquí-i-ara, i s'avancen les preguntes i les quatre hipòtesis d'aquest estudi. La primera hipòtesi afirma que proporcionar temps de planificació afectarà positivament la fluïdesa i la complexitat estructural de la producció dels parlants, sense tenir cap impacte significatiu sobre la seva complexitat lèxica ni la seva correcció. La segona hipòtesi planteja que augmentar la complexitat cognitiva de la tasca forçant la narració en l'allà-i-llavors tindrà conseqüències positives per a la complexitat

i la correcció, però negatives per a la fluïdesa. La tercera hipòtesi preveu un impacte més gran del temps de planificació sobre la producció en les tasques cognitivament més complexes. La quarta hipòtesi suggereix que l'impacte de l'augment de la complexitat cognitiva sobre la producció serà més gran quan hi ha hagut temps de planificació. Metodològicament, s'utilitza un disseny de mesures repetides per a l'obtenció de les narratives orals de 48 subjectes d'un nivell d'anglès intermig-baix, i s'estableixen 4 nivells de complexitat cognitiva que combinen les dues variables. Cada estudiant narra cada història sota cadascuna de les condicions, les quals es presenten en seqüències diferents mitjançant un disseny de quadres llatins. Les mesures inclouen: per a la fluïdesa, el nombre de síl·labes per minut de la transcripció exacta i el nombre de síl·labes per minut de la transcripció depurada; per a la complexitat lèxica, el percentatge de mots lèxics, la *ratio* de mots lèxics respecte dels funcionals i l'índex de Guiraud de riquesa lèxica; per a la complexitat estructural, el nombre de nodes verbals per cada unitat T; i per a la correcció, el percentatge d'unitats T sense errors, l'ús a nivell nadiu dels articles, el percentatge d'autocorreccions i la *ratio* d'errors corregits respecte dels no corregits. La percepció subjectiva dels estudiants respecte de la complexitat cognitiva de les tasques es mesura amb un qüestionari de variables afectives, el qual demana als estudiants per la seva percepció de la dificultat, l'estrès, la confiança, l'interès i la motivació respecte de cada tasca. El qüestionari es valida mitjançant una anàlisi de protocol que investiga la interpretació de les variables afectives per part dels estudiants. Els resultats dels tests ANOVA de mesures repetides demostren que proporcionar temps de planificació té un impacte positiu sobre la fluïdesa i la complexitat lèxica de la producció dels parlants de l'L2. L'augment de la complexitat cognitiva respecte de la variable +/- aquí-i-ara té efectes positius sobre la correcció lingüística sense produir efectes significatius per a la complexitat estructural ni lèxica, i amb efectes negatius per a la fluïdesa. No es troben diferències significatives de l'efecte de la planificació entre tasques simple en l'aquí-i-ara, i les complexes en l'allà-i-llavors. Els efectes de l'augment de la complexitat cognitiva amb la variable +/- aquí-i-ara s'incrementen sota condicions de planificació sense arribar a nivells significatius. Resultats addicionals demostren que les tasques més complexes cognitivament es perceben com a més difícils, estressants, i generen nivells més baixos de confiança sense afectar la percepció del seu interès o la seva motivació. Els resultats s'expliquen a la llum de teories de producció del llenguatge en l'L1 i l'L2, així com en funció de teories que difereixen en la concepció de com l'atenció funciona durant la producció. S'argumenta que les dimensions de complexitat lingüística i correcció poden ser ateses simultàniament sempre i quan les tasques siguin simples pel que fa a la planificació i complexes pel que fa a complexitat cognitiva (és a dir, en l'allà-i-llavors). Finalment, es defensa que la complexitat cognitiva de les tasques és un constructe empíricament testable i útil per al disseny i la seqüenciació de les tasques en un programa d'ensenyament. La complexitat cognitiva de les tasques pot ser manipulada per tal d'obtenir efectes específics per a la producció i, potencialment, per a l'aprenentatge.

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Preface

Speaking a second or foreign language is, without a doubt, a very common, highly complex, and fascinating human activity. In the last few decades, there has been a growing interest in promoting the active use of the L2¹ in instructional contexts. Be it to practice and internalize a structure; to promote the balanced development of learners' fluency, accuracy, and complexity of language; or to empower and to encourage learners to communicate their own meanings, engaging in language production has gained a central role in many language classrooms. Slow but enormous changes in conceptions about language teaching and pedagogy have emphasized the role of production in such contexts.

This study is an attempt at discovering how narrative oral production is mediated by the cognitive complexity of the task at hand. The dissertation has been divided into eight chapters, which are preceded by an introduction that presents an overall picture of the study. An index, lists of figures and tables, chapter introductions and summaries, as well as numerous summary tables have been provided throughout the dissertation in order to facilitate the reading of the text.

¹ For the remainder of this dissertation, the term "L2" will be used to refer to both 'second language' and 'foreign language', and it will be therefore understood as the language that a speaker is learning other than his or her native language or languages.

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Introduction

When L2 learners speak, the speed of their production, the variety and precision of their words, the complexity of their utterances, and the accuracy of their speech is influenced by a number of factors, such as the anxiety learners may feel as they speak, their proficiency, or the degree of cognitive complexity of the task that learners are trying to perform. Hence, a low proficiency learner who is trying to narrate a complex movie plot from memory during an exam may perform quite differently from the way he or she would perform in class, with a comic strip which is visually present before him or her, and for no other reason than to actively use the language in class. This study is specifically concerned with the design features of oral tasks which contribute to their different degrees of complexity. As far as possible, cognitive complexity is isolated from other factors, and the effects of its manipulation on production measured.

There are two main parts to this dissertation. The first one, comprising the first four chapters, is a theoretical inquiry into how language in general, and L2 speech in particular, is produced. It also lays out some of the cognitive processes that mediate language production, and it focuses on the cognitive demands that tasks impose on learners, with the goal of explaining differences in their L2 oral performance. In order to do so, the study draws on psycholinguistic accounts of L1 and L2 production, as well as on task-based studies which have primarily been concerned with performance and have taken an information-processing perspective,

as well as with output theories of interlanguage development. So it brings together constructs and findings from the areas of psycholinguistics, cognitive psychology, and second language acquisition and pedagogy. The second part of this dissertation, comprising the last four chapters, presents an experiment which attempts to isolate and manipulate the cognitive complexity of tasks in order to test its effects on learners' oral production. It does so by manipulating the time learners have available for planning before task performance as well as by manipulating the degree of displaced, past time reference of the narratives they are to perform.

This introduction is an attempt at conveying the essence of what is later developed in each individual chapter, and is organized around the discussion of eight key issues which provide a general picture of the study. There are references that will be taken for granted here but later provided in each chapter with each specific extended explanation. The intricate differences among different positions, the specific examples and illustrations, as well as the details of models, constructs, methods, and results will be found within the specific chapters.

L2 production can be essentially explained by what we know about L1 production, but not quite.

In the last few decades, a number of models within psycholinguistics have tried to account for how language goes from intentions and concepts to actual sounds. Two of the main challenges of production theories have been to explain

why speech happens so efficiently (i.e. roughly, at a pace of 3 to 5 words per second)¹ and so accurately (i.e. with only one slip of tongue every 1000 words). Based on robust findings from speech errors and pathologies, most models would agree that messages are first generated from intentions, planned and structurally organized in terms of content, and then formulated by accessing word meanings and forms to be articulated into sounds, while the whole process is supervised by the speaker. It is also widely accepted by psycholinguists that for language to be produced at such astonishingly fast rate, the production system must have a series of characteristics, such as a certain degree of specialization of its processes, parallel and incremental processing, and a certain degree of automaticity.

Among other researchers, Levelt (1989, 1993) has suggested that the production system can be broken into a number of distinct components which carry out specific functions such as finding and organizing the concepts of a message or articulating it into sounds. The controversy lies, however, on 'how much' specialization can be attributed to these components, whether they receive information from just one process or more, and whether information only flows forward (e.g. from conceptualization to formulation) or in two directions. Secondly, the speech production system is characterized by parallel processing which needs to take place for speech to flow at an acceptable rate. This means that more than one process can be working at the same time, and so speakers may be simultaneously

¹ Maclay and Osgood (1959) suggest that a speaker with a normal rate of speech processes an average of one word every 400 milliseconds. This rate refers to English, and it may, therefore, be higher or lower depending on the length of words of each particular language (e.g. Spanish uses longer words than English).

processing what to say, finding the words they need to convey their message, and articulating them. Serial processing, which can and occasionally does take place, is too costly and uneconomic, and so parallel processing permits a more efficient use of the system that guarantees fluent speech. Thirdly, and closely related to the previous characteristic, the speech production system can have several processes working simultaneously, but each process works on different parts of the message. Hence, while one process may be working on retrieving the words needed for the first part of an utterance, another process may be finding the concepts needed to express the last part of the utterance, and even another one may be checking if what was already said matches what the speaker wanted to say. Fourthly, some processes of the production system are automatic, and therefore do not require attentional control. Retrieving words from memory that match the concepts that the speaker wishes to express is thought to be an automatic process that requires no conscious effort.

The processes of L2 production can be essentially explained in the same way as the ones of L1 production. However, as Poulisse (1997) has noted, there are some particularities to L2 production that make it different from L1 speech. In the first place, the L2 system is not as complete as the L1 system, and so L2 speakers may find difficulties retrieving the words or structures they need to express certain concepts. This, in turn, has consequences for production, since normally a number of problem-solving mechanisms are applied. As Dörnyei and Kormos (1998) have suggested, learners use mechanisms that compensate for their lack of lexical,

morphological, or phonological knowledge of the L2; other mechanisms try to solve problems with processing time pressure, such as 'uhming' and 'erring' during pauses; and mechanisms that try to correct errors that learners perceive in their own speech. Secondly, automaticity cannot be taken for granted in L2 production. Processes that have been automatized in L1 production need to be serially processed when speaking a second or foreign language. When problems are encountered during production, speakers have to get into a serial mode of processing in order to solve them. The effects of the lack of automaticity in the L2 are particularly obvious when fluency and speech errors are considered. In the third place, traces of the L1 can be present in L2 speech. Whether intentional or not, code-switching is a typical feature of L2 production which is more common with low level speakers and less with higher level ones. These are the main differences that L2 production models have tried to account for.

L1 and L2 production are described in detail in Sections 1.3 and 1.4 of Chapter I. It is argued in this study that considering both the processes of L1 production and the particular features of L2 production helps to provide a more complete explanation of what happens during L2 oral performance. In consonance with this argument, the results of the experiment in this study are discussed in the light of both L1 and L2 production models in the last chapter.

Language processing for comprehension, production, and learning is mediated by attention and memory.

Comprehension, production, and learning are mediated by other cognitive processes such as attention and memory (Daugherty, 2001). In short, memory can be seen as divided into long-term memory (LTM) and working memory (WM). The former can be described as a system for permanently storing, organizing, and retrieving information for later use. The latter, which is also often referred to as short-term memory (STM), is the currently activated part of long-term memory (Cowan, 1993) and it is responsible for processes such as comprehension, reasoning, and learning.

As part of the memory system, the mechanism of attention is responsible for selecting some parts of the enormous amount of information that is perceived by humans. Information-processing models have traditionally been concerned with, among other processes, attentional selection and capacity, that is, with how and when information is selected and with how much information can be processed at once. It is obvious that humans cannot attend to everything they perceive, and so some kind of selection mechanism must exist to make information processing possible. Early models of attention saw selection of information as happening very early in the process, through a single channel, and before it was processed for meaning in WM, whereas more recent models of attention have concluded that selection happens late in the process, once information has reached WM, and it

happens as a consequence of executive control. Regarding capacity, while the metaphor of early models was that of a single volume of attention that 'runs out' of resources when demands are high, more up-to-date, multiple-resource models do not see attention as being 'consumed', but in terms of cross-talk and interference between different tasks, and as a result of attentional control.

The concepts of attentional selection and capacity as well as the architecture of memory that have just been but outlined are particularly relevant in the case of processing for language and second language acquisition and, hence, to this study. Doughty (2001) has suggested that two kinds of memory processes are responsible for language development. The first type of processes, which she refers to as micro-processes, depend on current processing conditions, whereas the second type, which she calls macro-processes, are processes that take place in long-term memory. As far as micro-processes are concerned, one of the crucial concepts within SLA in recent years has been the construct of 'noticing' (Schmidt 1990, 1993, 2001) which states that for learning to take place, learners must 'notice', that is, detect and be aware of a number of features in the surface structure of utterances in the input they receive. Although it has also been argued that learning may take place without awareness (Tomlin & Villa, 1994), the concept of 'noticing' has been operationalized in different studies, and its potential for language learning has been emphasized. Closely associated with noticing is the concept of cognitive comparison. Doughty (2001) argues that in order to compare what is known against what is unknown (i.e. for learning to take place) there must exist enough available memory resources

which are coordinated between working and long-term memory. In the case of macro-processes, although detection by WM must occur, no noticing or awareness are needed for macro-processes to operate. Hence, the internalization of input or 'intake' (Gass & Selinker, 1994; Krashen, 1982, 1985; VanPatten, 1993, 2002) is an unconscious process by which L2 learners hold some new input data in WM for further processing against prior knowledge. 'Mapping' (Slobin, 1985), that is, the cumulative process of associating concepts with grammatical and phonological forms, is also a process that proceeds without awareness. A third macro-process is analysis (Bialystok, 1994), which is the continual and cumulative process of inspection of linguistic and conceptual representations because they become more explicit, structured, and accessible. A fourth macro-process is restructuring (Anderson, Finchman, & Douglass, 1997; DeKeyser, 2001), by which some aspect of the learner's interlanguage abruptly becomes more efficiently represented in the learner's mind.

The concepts of attentional selection and capacity, noticing, the architecture of memory, and micro- and macro-processes of memory for learning and acquisition are thoroughly described and illustrated in Section 1.5 of Chapter I.

Is production a consequence of acquisition or its cause?

Production and development are therefore mediated by the cognitive processes of attention and memory, but what role does production play in second

language acquisition? A great divide has existed between positions that believe that production is a consequence of acquisition and stances that have suggested that engaging in production can actually lead to interlanguage development. Krashen (1982, 1985), for example, has suggested that production is the sign that acquisition has taken place, and so it is the result of acquisition rather than its cause. Researchers like Swain (1985, 1993, 1995, 1998), Skehan (1998, Skehan & Foster, 2001), and Robinson (2001a, 2003a, forthcoming), on the other hand, have given production a much more central role in SLA. Swain's Output Hypothesis has seen output as an opportunity for L2 learners to test their hypotheses about the target language, to control and internalize linguistic knowledge, and to notice gaps in their knowledge which they fill in when further exposure to input occurs. To these functions of output Skehan has added the potential for output to generate negotiation of meanings between speakers, which can potentially lead to interlanguage development (Gass, 1997). In addition to this, using the language actively can lead to the automatization of certain aspects of language processing which will progressively require less attention from L2 speakers. In his Cognition Hypothesis, Robinson has argued that increasing the cognitive demands of L2 language tasks leads to second language development because, first, learners can reproduce the cognitive and conceptual development of L1 learning, which is the driving force of linguistic development (Slobin, 1985); secondly, because increasing the cognitive complexity of tasks provides natural contexts for relating forms to meanings as happened during L1 acquisition.

The potential consequences for development of engaging in language production are specifically discussed in the last Section of Chapter I, that is, in Section 1.6.

Task complexity is born from the need to design and sequence tasks in a syllabus.

Although we have seen that attention and memory are two cognitive processes which mediate information processing, there are other factors that also affect processing, such as the complexity of the task at hand. Chapter II of this study focuses on the discussion of how the cognitive demands of tasks can be manipulated in the context of L2 instruction.

A task in this study is seen as a differentiated, goal-oriented process which has a number of steps, draws on a series of cognitive and communicative procedures, and has a defined outcome. Task Complexity (Brown et al, 1984; Prahbu, 1987; Robinson, 2001a, 2003a, forthcoming; Skehan, 1998) has to do with the cognitive demands that the design of tasks imposes on learners, and this can be manipulated along a continuum. For example, a task in which low proficiency learners are asked on the spot about what they did over the weekend can be a highly demanding task, since they have to improvise a narrative without previous preparation and by referring to events which are displaced in time and space. When this is the case, production can be expected to be affected by such high demands. On the other hand, giving learners time to prepare the narration of a comic strip that they can

look at while they speak would considerably reduce the demands that the task imposes on learners, which would have specific consequences for production.

Different task-based approaches to language learning have proposed criteria for sequencing tasks in a syllabus in a principled way. Skehan (1998; Skehan & Foster, 2001), for instance, has suggested a number of task features that can be manipulated during task design to increase or decrease the demands that tasks impose on learners. These have to do with the complexity of the language of the task (e.g. the grammatical and lexical complexity of the texts in the tasks), its cognitive complexity (e.g. familiarity with the task or the amount and organization of the information in the task), the communicative stress of the situation (e.g. what is at stake), to which learner factors can be added. Despite suggesting that task factors should be considered when designing and sequencing tasks in order to ensure a balanced development in the three areas of production, Skehan's model does not clearly specify which criteria should be used as a reference to sequence tasks in a syllabus. Robinson (2001a, 2003a, forthcoming) has also proposed a number of features for task design which he has organized into complexity factors (e.g. the number of elements in a task or the time allotted to pre-task planning), interactive factors (e.g. whether information mainly flows from one speaker to another or equally between two speakers), and learner factors (e.g. aptitude or proficiency). In Robinson's view, only Task Complexity factors should be used as a reference for making prospective decisions about syllabus design, since they are fixed and invariant features of tasks. Interactive and learner factors, on the other

hand, which in most cases cannot be predicted before course implementation, should inform online decisions about how to arrange learners in groups during instruction.

A key discussion within research into task features is whether attention can be devoted to one, some, or all areas of production. From a limited-capacity conception of attention and memory, Skehan (1998, Skehan & Foster, 2001) has suggested that when task demands are high (e.g. because pre-task planning time is removed), attention can only be allocated to either complexity or accuracy, but not to both simultaneously. Robinson (2001a, 2003a; forthcoming) agrees with Skehan when it comes to resource-dispersing features (e.g. planning time, familiarity, or single/dual performance), since increasing complexity along those variable depletes attention from how the message is being encoded. However, Robinson states that increasing complexity along resource-directing features (e.g. the number of elements, reasoning demands, or the degree of displaced, past time reference) has the potential to direct learners' attention to both complexity and accuracy. This prediction is based on a number of arguments: i) the fact that greater functional complexity tends to generate greater structural complexity (Givon, 1985); ii) increased cognitive and communicative demands force learners to move beyond 'basic learner variety' (Klein & Perdue, 1992; Perdue, 1993); iii) in cognitively more complex contexts the more explicit lexico-grammatical options are used; iv) as tasks are made more complex along resource-directing dimensions learners pay more attention to how certain concepts are grammaticized in the L2 (Talmy, 2000), which is

beneficial for accuracy; v) in addition to this increased attention to grammaticization, under complex conditions, comparison of the overlap and divergence between L1 and L2 form-meaning mappings may take place as long as tasks are kept simple along resource-dispersing dimensions; vi) finally, progressively increasing Task Complexity will lead learners to stretch interlanguage and destabilize fossilized forms.

The issue of attentional allocation policies during performance is of special relevance to the findings in this dissertation, and it is therefore tackled during the discussion of results.

Section 2.2 of Chapter II defines the concept of task, and Section 2.4 explores a number of models that have been advanced to explain differentials in task design. This section also analyzes the predictions of those models with regards to the impact of the cognitive complexity of tasks on production and development.

Conceptions about teaching and learning principles have determined how the L2 gets to be used.

Tasks, however, are neither the only nor the most popular units for language learning and syllabus design in instructional contexts. Historically, different conceptions about teaching and learning have proposed an array of units for syllabus design, and their selection has, in turn, had consequences on how language gets to be taught, used, and, hopefully, learned. Each approach to syllabus design

has explicitly or implicitly attributed a specific role to the learners and has promoted specific methodologies and classroom practices. Synthetic syllabi (Wilkins, 1976), for example, present learners with individual units during instruction, such as structures, words, notions, functions, or skills. Learners are meant to later synthesize those separate units that they have been accumulating during instruction in real world performance. Analytic syllabi, on the other hand, do not divide language into units, but rather, language is used to carry out communicative activities which emulate real life communication. Hence, such syllabi are driven by communicative goals and language is a means to achieve those goals, and they therefore have a more holistic approach to learning which is meant to occur in accordance with learners' developing interlanguage systems. While synthetic syllabi are externally imposed on the learners and are product-oriented (i.e. what counts is the mastery of the language), analytic syllabi focus on the process which leads learners to acquire the language while at the same time accommodating their different learning styles and aptitudes. In terms of production, synthetic syllabi have been characterized by focusing attention on the forms to be learned, normally through controlled practice of a specific unit (e.g. a structure or a function) in more or less communicative activities. Practice of structures, words, skills, notions, or functions has been seen as an opportunity to internalize or consolidate the knowledge which has been presented to students beforehand. In contrast, in analytic syllabi, production is seen as a potential motor of acquisition, in which communication of goals leads learners to develop their interlanguage

systems. Analytic syllabi have differed, however, in their reliance on SLA findings and in their degree of attention to form, which has ranged from almost no attention to form in meaning-focused syllabi to form-focused task-based approaches.

The different conceptions about syllabus design as well as the analysis of different syllabi are provided in Section 3.2 of Chapter III.

Language learning tasks can be manipulated to achieve specific effects on production and, potentially, development.

Within task-based research, investigation of task features has been motivated by two different but complementary research agendas. On the one hand, from an interactionist stance (Long, 1985, 2000a; Gass, 1997), many studies have manipulated the interactive features of tasks in order to check their potential for generating episodes of negotiation of meaning. In this type of study, conversational sequences such as clarification requests, confirmation checks, and comprehension checks have been seen as potentially leading to second language acquisition. From an information-processing position, other studies into task features have been concerned with the cognitive processes underlying task performance. Such studies have focused on how task demands can be manipulated along the cognitive demands they impose on the learners and how these different degrees of complexity have consequences on production and development. Specifically, these studies have

been concerned with how tasks can be manipulated to achieve a balanced development of learners' fluency, complexity, and accuracy.

A number of researchers have speculated that distributing information equally between or among learners so that information flows in two ways can generate more episodes of negotiation of meaning as opposed to tasks in which information only flows one way. However, findings in this area have shown that one-way tasks can also generate negotiation of meaning if they are kept interactive. Tasks in which information must be shared to find a single correct solution or a limited number of correct solutions have been shown to cause more negotiation of meaning and more balanced levels of interaction and participation than tasks like open discussions, in which no single correct solution is expected. In the same way, tasks in which learners work towards a common goal rather than towards divergent goals have also been shown to generate more interaction of the kind that is believed to lead to acquisition. With regard to studies carried out from an information-processing position, a number of task features have been manipulated and their effects on production measured. For example, some studies have manipulated task familiarity (Bygate, 2001; Plough & Gass, 1993) and have found that being familiar with tasks makes learners speak more fluently and accurately. Other studies (Robinson, 2001a) have manipulated complexity along the number of elements, and discovered that making tasks more complex by increasing the number of elements involved in task performance enhances lexical complexity during performance.

Section 3.3 is specifically devoted to the review of research into task features such as the flow of information between or among speakers (i.e. one-way vs. two-way), the 'openness' or 'closedness' of task goals, (i.e. open vs. closed tasks), the convergence or divergence of goals (i.e. convergent vs. divergent tasks), the degree of task familiarity, and the number of elements involved in the tasks.

The manipulation of pre-task planning time and the degree of displaced, past time reference have been shown to have specific consequences for production. But what about their simultaneous manipulation?

Chapter IV reviews the literature of the two task features which are used in the experiment in this study, that is, +/- planning time and +/- Here-and-Now. Planning time studies have been concerned with how varying the degree of pre-task planning time can affect learners' production in the areas of fluency, complexity, and accuracy. Providing learners with pre-task planning time has had consistent positive consequences for learners' fluency and structural complexity, but has triggered more mixed results with regard to lexical complexity and accuracy. +/- Here-and-Now studies have operationalized complexity by asking learners to either narrate stories in the present tense and while looking at a comic strip or by narrating stories in the past tense and without visual support, that is, with a higher degree of displaced past time reference. +/-Here-and-Now studies have found that increasing task complexity along the degree of displaced, past time reference has negative

consequences for fluency but has the potential of drawing learners' attention to accuracy and lexical complexity. And it is at this point that the two main questions of this study arise:

- 1) How does manipulating complexity simultaneously along +/- planning time and +/- Here-and-Now affect production?
- 2) Which of the two variables has the greater impact on production?

The experiment in this dissertation crosses the two variables in order to test the effects of their simultaneous manipulation on the fluency, complexity, and accuracy of L2 speakers. In Hypothesis 1, it is predicted that planning time will positively affect the areas of fluency and structural complexity with no effects on lexical complexity or accuracy whereas, in Hypothesis 2, increasing complexity along the +/- Here-and-Now variable will positively affect structural and lexical complexity, and accuracy. In Hypothesis 3, it is assumed that more complex There-and-Then versions of the task will benefit more from pre-task planning time and, in Hypothesis 4, that the effects of increasing complexity along the +/- Here-and-Now will be enhanced by planning time.

Further questions include how Task Complexity is perceived by learners and whether the sequence in which tasks are carried out can affect production in any way. In these cases, however, no hypotheses are advanced. The specific research questions which have motivated this study are presented at the end of Chapter IV.

How can the two variables be combined? What kind of experimental design will permit testing their effects separately and simultaneously?

In the experiment that illustrates this thesis, 48 lower-intermediate students are presented with 4 wordless comic strips that they must narrate under different processing conditions. Planning time and the +/- Here-and-Now variable are combined to generate four levels of Task Complexity. In Condition 1, the task is kept simple by providing learners with 10 minutes of pre-task planning time and students are asked to narrate the story in the present tense while looking at the comic strip. In Condition 2, learners are asked to proceed in the same way but almost no pre-task planning time is provided so they must narrate the story almost immediately after seeing it. Under Condition 3, learners are provided with planning time again, but they are not allowed to look at the comic strip while narrating and they are prompted to narrate the story in the past. In the most complex of all conditions, Condition 4, learners are asked to narrate the story without pre-task planning time and by using displaced, past time reference. A repeated measures design is used, so all the learners go through the four conditions, but each group of 12 students does so in a different sequence, so some learners proceed in the sequence described above while others may begin by performing the most complex task first. After performing the tasks, two in each of two sessions, students complete an affective variables questionnaire which asks them about their perception of difficulty, stress, confidence, interest, and motivation regarding each story. Protocol

analysis is also used to obtain the learners' interpretations of each affective variable. Two measures of fluency (Speech Rate A and Speech Rate B), three measures of lexical complexity (the percentage of lexical words, the ratio of lexical to function words, and the Guiraud's Index of lexical richness), one measure of structural complexity (the number of S-Nodes per T-unit), and four measures of accuracy (the percentage of error-free T-units, the target-like use of article, the percentage of self-repairs, and the ratio of repaired to unrepaired errors) are used to code the transcribed stories. Finally, results are statistically processed.

Chapter V describes the experimental design, the participants, the elicitation tasks and procedures, the measures for fluency, lexical and structural complexity, and accuracy, as well as the description of the statistical instruments used for the calculation of results.

The rest of the chapters provide an answer to the research questions and analyze and discuss the results related to the hypotheses advanced. Chapter VI presents the results of the analyses concerning the four hypotheses in this study, which are specifically developed in Sections 6.3 and summarized in Tables 27, 32, 35, and 38. Chapter VII is devoted to the results of the affective variables questionnaire and protocol analysis, which shows learners' interpretation of the items in the questionnaire. Chapter VII also includes a consideration of the effects of sequence on production. The conclusions as well as some questions for further research are developed in the final chapter, Chapter VIII.