UNIVERSIDADE FEDERAL DE SANTA CATARINA

PÓS-GRADUAÇÃO EM LETRAS-INGLÊS

PROCESSING INPUT: AN INVESTIGATION INTO BRAZILIAN EFL STUDENTS

por

MARIA INÊZ PROBST LUCENA

Dissertaç submetida à Universidade Federal de Santa Catarina para a obtenção do grau de MESTRE em Letras-Inglês
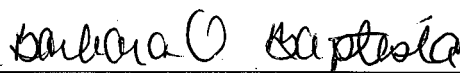
FLORIANÓPOLIS

Dezembro, 1998

Esta Dissertação de Maria Inês Probst Lucena, intitulada *Processing Input: An Investigation Into Brazilian EFL Students*, foi julgada adequada e aprovada em sua forma final, pelo Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, da Universidade Federal de Santa Catarina, para fins de obtenção do grau de

MESTRE EM LETRAS

Área de concentração: Inglês e Literatura Correspondente
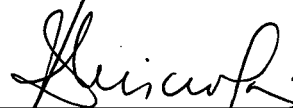Opção Língua Inglesa e Lingüística Aplicada

Profª. Drª. Barbara Oughton Baptista
Coordenadora

BANCA EXAMINADORA:

Profª. Drª. Barbara Oughton Baptista
Orientadora e Presidente

Profª. Drª. Laura Miccoli
Examinadora

Profª. Drª. Loni Grimm-Cabral
Examinadora

Florianópolis, 10 de dezembro de 1998.

To my parents,
Antonio Gil (in memoriam) and Maria Inã
with love and gratitude

To Romeu
with love

III

ACKNOWLEDGEMENTS

Among all those who contributed in one way or another to the fruition of this thesis, I must thank CAPES, for the scholarship and all the team at Colégio de Aplicação (UFSC), where the experiment was carried out.

Thanks go to all the students at the first grade (1997) who served as subjects of this investigation. Whithout their enthusiasm and cooperation this study would never be possible. I am grateful also to Márcia, Arlete, Vera and Josalba, who as English teachers in that school, provided a support for the development of the experiment with their students.

My thanks go also to Mailce for her incentive and precious time in scoring the protocols, to Adriana for lending her voice and near native accent to the recording of the passages and to Ian, a good friend, for his strong support.

My special thanks go to my advisor Barbara who trusted me and incentivated my progress. Her assistance, suggestions, patience and friendship were fundamental to the realization of this thesis. More than an advisor she has been an inspiration for my academic pursuits.

Finally, all my love and gratitude to my family for all their confort, love and encouragement during all the process of my masters. Nobody has taught me more about obstinacy, persistence and willpower than they have.

ABSTRACT

PROCESSING INPUT: AN INVESTIGATION INTO BRAZILIAN EFL STUDENTS

Maria Inêz Probst Lucena

Universidade Federal de Santa Catarina
1998

Supervising Professor: Barbara Oughton Baptista

Much research in second/ foreign language (L2) acquisition field has been carried out on the way learners process input in an attempt to determine how second/ foreign languages are best learned. Based on cognitive psychology and within an input processing perspective, researchers have been seeking to obtain information about the relationship between input and learners' cognitive processes. The main claim within this perspective is that since humans do not have unlimited supplies of attention, it is difficult to attend to everything in the input at the same time. Van Patten (1990) investigated the relationship between learners' attention to the meaning and to the formal features of the language input and found that focusing on meaning competes with focusing on form, and that only when comprehension as a skill is automatized can learners simultaneously attend to form without loss of information. The purpose of the present study was to investigate, through the replication of Van Patten's (1990) study, whether Brazilian EFL students at the secondary school level perform in different ways when they are asked to attend to both form and meaning in listening tasks. The participants in this study were 71 Brazilian secondary school students enrolled in EFL classes at Colégio de Aplicação, a public high-school linked to the Federal University of Santa Catarina. The experiment followed the same general procedures used by Van Patten. Students at three different levels of competence listened to recorded passages. At each level students were divided into four different groups and each group was expected to carry out a slightly different task. Thus, in each task learners were expected to pay attention to different things: In Task I, only to the content; in Task II, to the content and to the key lexical item *Einstein*; in Task III, to the content and to the definite article *the*, and in Task IV, to the content and to the past

verb morpheme -*ed*. Subjects were to demonstrate their attention to target items by placing an X on their papers every time they heard an occurrence. They were asked to write freely, in Portuguese, everything they remembered from the passages and their performance in each task was assessed in terms of the number of idea units recalled. Results provided evidence that attention to content and grammatical forms was more difficult than attention to only content or content plus a lexical item, and only the more advanced learners showed that they could more easily focus on form without affecting comprehension. The results of the present study reinforce Van Patten's claims that learners' attention during input processing is focused first on meaning and that only when comprehension as a skill becomes automatic, learners' are more able to detect grammatical items while detecting infromation without negatively affecting comprehension.

RESUMO

Muitas pesquisas na área de aquisição de língua estrangeira (L2) têm sido desenvolvidas sobre a maneira como os aprendizes processam o *input*, numa tentativa de determinar como a língua estrangeira é efetivamente aprendida. Baseados na psicologia e na perspectiva de processamento de *input*, pesquisadores têm tentado obter informações sobre a relação que existe entre o *input* e os processos cognitivos dos aprendizes. A principal afirmação dentro dessa perspectiva é que, uma vez que o ser humano não tem uma capacidade ilimitada de atenção, é difícil atender a todo o *input* ao mesmo tempo. Van Patten (1990) investigou a divisão da atenção do aprendiz entre conteúdo e aspectos formais da língua e verificou que a atenção ao primeiro compete com a atenção ao segundo e que, somente quando a compreensão é uma habilidade já automatizada, os aprendizes conseguem atender à forma e ao conteúdo simultaneamente sem perda de informação. O presente estudo teve como objetivo investigar, através da replicação do estudo de Van Patten (1990), se alunos brasileiros de inglês como língua estrangeira apresentavam um desempenho diferente do constatado no experimento original. Os participantes desse estudo foram 71alunos brasileiros de inglês como língua estrangeira do Colégio de Aplicação - escola pública de primeiro e segundo graus da Universidade Federal de Santa Catarina. O experimento seguiu, em linhas gerais, os procedimentos usados por Van Patten. Alunos de três níveis diferentes de competência ouviram os textos gravados. Em cada nível, os alunos foram divididos em quatro grupos, sendo que para cada grupo foi designada uma tarefa específica, na qual os alunos tinham que processar a informação contida no texto em diferente condições: na tarefa I, prestando atenção somente ao conteúdo; na tarefa II, prestando atenção ao conteúdo e ao item lexical *Einstein;*na tarefa III, prestando atenção ao conteúdo e a cada ocorrência do artigo definido *the;*e na tarefa IV, prestando atenção ao conteúdo e ao morfema verbal - *ed.* Para que demonstrassem sua atenção às formas, foi pedido aos participantes que marcassem um X em sua folhas cada vez que eles ouvissem os itens em questão. Depois de ouvirem os textos, foi pedido que eles escrevessem livremente em português tudo que lembrassem daquilo que ouviram. O desempenho dos participantes em cada tarefa foi avaliado em relação ao número de *idea units* escritas em seus protocolos. Os resultados

fornecem evidência de que atender ao conteúdo e às formas gramaticais foi mais difícil do que atender somente ao conteúdo ou ao conteúdo e a um item lexical e que somente os alunos em níveis mais avançados puderam atender mais facilmente à forma sem afetar a compreensão do conteúdo. Os resultados do presente estudo reforçam, portanto, as afirmações de Van Patten de que a atenção dos aprendizes durante o processamento do *input* é direcionada primeiro para o conteúdo e que, somente quando a compreensão se torna automática, os aprendizes são mais capazes de detectar itens gramaticais sem afetar negativavemte a compreensão do conteúdo.

TABLE OF CONTENTS

X

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 Second/ Foreign language Acquisition - Different perspectives

Second/foreign language acquisition (L2) research has attempted to explain the complex phenomenon of acquiring a second language from different perspectives. Among these perspectives (e.g behaviorism, contrastive analysis, universal grammar (UG), etc.), information processing theory has its basis in cognitive science and is involved in identifying human cognitive functions which make language acquisition possible.

If we go back to the recent past, we can remember how mental processes were simplified and underestimated. For example, Behaviorist learning theory claimed that external stimuli or events were responsible for changes in a person's behavior. In accord with this theory, conscious mental processes were not accepted concepts for explaining human behavior (Baars, 1988). Scholars of behaviorism believed that learning could be manipulated and learners could be encouraged to behave appropriately according to what was being taught. Similar to conditioning in psychology, the stimulus was closely connected with the response, which was automatically activated every time the stimulus occurred. Thus, concerning L2, during repetitions appropriate responses were reinforced as the learner was encouraged to acquire new habits, described as language development (Ellis, 1990; Lightbown & Spada, 1993).

In contrast to behaviorism, cognitive science is an area involved in seeking information about mental processes which go on in the human mind, such as thinking, conceiving, reasoning, perceiving and learning. Or, as Eysenck & Keane (1996) interestingly put it, "it deals with a bewildering diversity of phenomena constituting the nuts and bolts of an individual's cognition" (p.1). As an interdisciplinary field, cognitive science is an intriguing and interesting area which can contribute to the development of studies in Linguistics, Psycholinguistics, Artificial Intelligence, Computer Science, and Neuroscience. Consequently, cognition has expanded tremendously in the last two decades, becoming a substantial and impressive science. The ultimate objective of research in this field is to reveal how our mind 'works' while processing various kinds of information (Stillings et al., 1987; McLaughlin, 1987).

Rather than attributing all learning to external factors, researchers working from a cognitive perspective have attempted to explain the fusion of new knowledge with the learner's existing cognitive system, investigating what learners do in order to control this knowledge (Eysenck & Keane, 1996).

Concerning L2, one relevant factor that has been proposed by cognitive psychologists is that second language learning is a skill that is learned as any other complex cognitive skill, meaning that learners have to go through controlled processes until these processes become automatized (Stilling et al., 1987). Among the numerous studies with different views that have been carried out in order to explain and clarify this complex phenomenon, those conducted from a cognitive approach have emphasized the role of the learner's control over language structures, through focused mental perception. Language reception and production, thus, need attention and practice and involve the development of internal representations as learners move towards better

performance. Before learners reach the stage of total control over these representations, the latter have to be restructured to account for new input to which the learners are exposed. Hence, questions about what happens in the learner's mind while learning to produce and comprehend a second language may be answered through information processing theory, which has been the basis for a great deal of research in SLA in the last two decades (McLaughlin, 1987; MacLaughlin, Rossman & McLeod, 1983; Leow, 1993; Sharwood Smith, 1986, 1994; Van Patten, 1990;1994;1996, Tomlin & Villa ,1994, to name, but a few).

As Tomlin & Villa point out, it is crucial to analyze cognitive processes in SLA. As they observe, only the issue of bilingualism, which deals with the processing of language already developed, has received major attention within cognitive theory, while research investigating the language in the developing stage has yet to be conducted. That is to say, there is still a need to investigate the development of language during the process of learning (Tomlin & Villa, 1994). Researchers need to know how language is tackled by learners; thus, investigation from the information processing perspective seeks to identify all the processing steps learners take on the way to advanced competence in L2.

1.2 How Input becomes Intake

In the SLA field, in any investigation into how L2 knowledge is acquired, one of the central questions has been to identify the relationship between target language samples presented to learners and the knowledge that is incorporated in their developing system. In other words, one of the central question has been concerned with how input becomes intake.

The most simplistic view concerning this issue is presented by Krashen's influential "Input Hypothesis". Krashen's notion of learners' engagement with input puts learners in a very passive role during the learning process. He claims that all that is needed for language acquisition to take place is comprehensible input and, moreover, only what is subconsciously processed can lead to acquisition. Conscious processes, can lead to learning, but in turn, never lead to accurate performance (Krashen, 1982).

Another strong position is adopted by Schmidt (1990). According to his "Noticing Hypothesis", noticing is a necessary condition for conversion of input to intake. Thus, learners' engagement with input takes place in a more active way. As Schmidt notes, this is an emerging intermediate view in the foreign language teaching community (e.g., Sharwood Smith, 1994; Lightbown & Spada, 1993; Van Patten, 1990, 1993, 1996; Leow, 1993, 1995, 1997; Ellis, 1997; Hulstijn, 1995; Dekeyser & Sokalski, 1996; to name, but a few). According to this view, language learning does not take place in a completely unconscious way. While focus on meaning is considered still essential, it is believed that without adequate focus on language features, complete language accuracy can not be attained. Nevertheless, one of the most intriguing questions is whether learners can attend both form and meaning simultaneously (Van Patten, 1990).

Van Patten (1990) investigated how American adult learners of Spanish divided their attention between form and meaning during a listening comprehension. According to his results, learners had difficulty in attending to the content and to the non-communicative grammatical forms simultaneously. Findings suggested that if meaning is not easily comprehended by learners, it will be very difficult for them to attend simultaneously to form.

1.3 The Present Study

The purpose of the present study was to investigate, through the replication of Van Patten's (1990) study, whether Brazilian EFL students at the secondary school level would perform in different ways from those investigated in the study mentioned above, when asked to attend to form and meaning simultaneously. The students in this study were in the same grade, but separated into different groups for English class according to their English language competence. Although the focus of the investigation is on the learning process, the results may have more concrete implications for instruction in formal settings.

The research questions for the present study will follow closely the hypotheses used by Van Patten in the study mentioned above:

1. Given the difficulty hypothesized by information-processing theorists of directing attention towards content and form simultaneously, will a task involving the identification of forms devoid of referential meaning, negatively affect comprehension of content?

2. In a task requiring attention to important lexical items while processing input for meaning, will comprehension of meaning be affected (or not)?

3. Since learners at a more advanced level are better equipped to process content automatically, will they be more able to direct attention to form without affecting comprehension?

1.4 Value of the Study

The controversy about the role of attention in the processing of input has held a fascination for researchers in SLA in recent years. This investigation was carried out for the purpose of providing insights into the use of conscious processing by Brazilian high school students learning English, in order to contribute further evidence for continuing the discussion concerning the role of attention in EFL learning. This study is significant in the sense that, to my knowledge, no other empirical study has been carried out involving Brazilian students with the specific aim of investigating attention to form and meaning in the processing of input.

Considering the fact that Van Patten carried out his study with American adult students of Spanish, this investigation allowed the verification of the applicability of his conclusions to other EFL students learning in other conditions - in this case, teenage Brazilian EFL students at the secondary school level. The following chapters report on this replication of Van Patten's (1990) study under different conditions, thus adding another account of the role of consciousness in input processing.

1.5 Organization of the Thesis

This thesis is divided into six parts. This introduction was an attempt to contextualize this study within the SLA research field through a brief discussion of two different theories of SLA. In Chapter II, the review of the literature, some important studies and particularly controversial concepts in L2 research on language processing are presented and discussed. In Chapter III, the method used to carry out this research is

presented in details. In Chapter IV, results based on qualitative and quantitative analyses performed on the data are reported. In Chapter V is a discussion of the research questions based on the results reported in chapter IV. Finally, in Chapter VI, the findings are considered and conclusions are drawn. Also, in this last chapter, limitations of the study and some speculative implications for language learning are included .

CHAPTER TWO

REVIEW OF LITERATURE

This chapter is an attempt to provide an overview of how second language learning is currently conceived in the research literature within a cognitive perspective. With respect to an input processing perspective, some important studies and controversial issues will be presented concerning the role of attention and consciousness in L2 input processing.

2.1 Input processing theory

Without doubt, more precise information about learners' every step while learning a second language is needed to lead to more mature pedagogical and theoretical implications. Moreover, we are reminded by Corder (1967/1974), intensive study in SLA is needed in order to know how knowledge about a particular language is constructed. Thus, in an attempt to determine how L2 is best learned, much second language research has been carried out in recent years on the way learners process input (e.g. Faerch & Kasper, 1986; Sharwood Smith, 1986; 1994; Leow, 1993; Gass, 1988; Chaudron, 1985a; Schmidt, 1990, Van Patten, 1990, 1996; Van Patten & Cadierno, 1993; Tomlin &Villa, 1994). To put it in more specific terms, research has addressed the questions: "What do learners attend to in the input and why? What strategies direct how learners make form-meaning connections? What does intake, as opposed to input look like?" (Van Patten, 1996, p.13).

The main claim in input processing theory is that since humans do not have unlimited supplies of attention, it is difficult to attend to everything in the input at the same time. Notwithstanding, Kihlstrom (1984, cited in Schmidt, 1990) suggests that there are people who do not seem to have much difficulty in attending to form and meaning while processing input. For Kiklstrom, these people have acquired a skill that facilitates the division of attention between competing tasks. However, as Faerch & Kasper (1986) explain, there are some low-level rules that are fossilized in developmental stages, when learners are still building up their interlanguage, because these rules are not perceptually salient and do not have high communicative value. In addition, as they explain,

> in verbal interaction with a focus on communication, the limited capacities of the human information-processing system make it unlikely for learners to attend to their interlocutor's message while at the same time consciously perceiving formal characteristics of the input and comparing them to current IL rules (Faerch & Kasper, 1986, 270)

Likewise, Van Patten (1994) argues that since attention is limited, learners at early stages have difficulty in executing more than one mental process in parallel. Van Patten observes that although it is true that learners process referential meaning in communicative exchanges, this does not imply that they can instantaneously attend to many features of grammar during the act of comprehending. However, he reminds us that 'input processing is not a simple question of conscious attention to meaning and subconscious attention to form as some might suggest" (p.32). His principal claim is that the conscious processing of meaning or form requires learners' attentional effort and thus, when learners in the developmental stage of their interlanguage are exposed to

tasks that require simultaneous attention to informational content and form, there will be a degradation of meaning if the conscious effort is directed to form.

Leow (1993, 1995) investigated the construct of intake in two modes: aural and written. He also considered in his research the interaction between different types of linguistic form and different levels of proficiency, finding that learners with less language experience have significantly more difficulty in attending to linguistic items than more experienced learners.

In short, the decline in comprehension occurs because our cognitive capacity to process information is limited. This means that we are not able to process different tasks simultaneously without the automatization of one of these tasks, and learners need to use controlled processes before they reach levels of automaticity. A good example to illustrate this distinction is provided by Stillings et al. (1987, p.49). They point out that all experienced drivers are able to drive and pay attention to a talk show or a baseball game on the radio simultaneously. However, the first time someone drives a car, this is not possible because a great deal of attention is required before driving becomes automatized. In other words, when the information processing system is occupied by one cognitive process which requires focused attention, engaging in other controlled processing activities at the same time is difficult or impossible. Thus, when one task demands attention, the task must be finished before allocating attention to another task. Otherwise, the limited capacity system becomes overloaded, and performance is affected.

Based on this line of reasoning, Van Patten, in his input perspective, attempts to show that since learners have difficulty in processing two tasks simultaneously, when they need to attend to both form and meaning they will first focus on meaning because their primary goal is to understand the message. Thus, he contends that what is necessary

to investigate is "what in the input learners would attend to in order to get meaning;" adding that, "a logical place to begin would be with content words" (Van Patten, 1996, p.18). Van Patten acknowledges that the order of acquisition may be determined by the frequency of a grammatical item, but observes that another possibility is that acquisition may be determined by the communicative value of that item. Depending on the communicative value, one form may be less or more easily detected. That is, learners' attention will be drawn to forms according to the relevance these forms have to the overall meaning.

Acknowledging Van Patten's position about the communicative value of linguistic forms, Bransdorfer (1991) has carried out research on this topic. He reviewed the literature and cites Klein's attempt to determine which aspects of language in the input are processed by the learner. According to Klein's results, only the more advanced learners were able to process items such as auxiliary verbs, articles and verb-final morphemes. Nonetheless, all subjects processed important content words. In addition, Bransdorfer reports some factors noted by Klein that may also influence the processing of input. These factors are frequency of occurrence, position in an utterance, prosodic properties and correspondence to parallel information (Klein, 1986 cited in Bransdorfer, 1991).

In his model of second language input processing, Van Patten's(1996) main claim is that since the goal of learners is to understand the message, they go to content words first. Thus, content words should not interfere with the processing of meaning. Furthermore, the relevance of a lexical item will depend on the context in which it is presented. In his discussion of the role of referential meaning in communicative exchanges, Van Patten (1994) does not seem to consider the role that pragmatics may

play in assigning communicative value to a certain item. The relevance of a certain noun, for instance, may depend on the knowledge learners have of the real world and on the way this noun is understood and interpreted. In other words, it may be the case that the processing of information is facilitated if learners are asked to process a word that is highly significant to them. In this case, content/lexical items, besides not interfering in comprehension, may actually enhance it. Hence, it is important to remember that there are many important issues that should be addressed when input processing is investigated.

To sum up, researchers working within an input processing perspective have been seeking to obtain information about the relationship between input and learners' cognitive processes as well as between learners' attention to meaning and to formal aspects when exposed to L2 language input. As put by Gallaway & Richards (1994), research addressing input processing

> attempts to specify the nature and sequence of events by which certain features of input are experienced as salient by learners through such means as innate universals and expectancies, frequency of occurrence, perceptual salience, learner attention and task demands, thus becoming candidates for further processing and eventual modification of the IL grammar (Gallaway & Richards, 1994, p.246).

According to Van Patten & Cadierno (1993), input processing includes all the strategies and mechanisms responsible for making form-meaning connections during comprehension. Therefore, if there are some features of language that are more easily processed by learners, researchers need to discover which ones. Consequently, input research results may shed light on how language is processed in an effective and productive way for input to become intake.

2.2 Input / Intake

In any discussion of the role of input and intake it is important to point out that several different definitions have been given for these terms. Input may be considered an abstract term in need of a clear definition. Thus, in the following discussion, evidence will be presented to the effect that input has been interpreted in SLA research circles without a consistent meaning.

As early as 1967 Corder had already pointed out that not all language data presented to a learner is used to guide learning. As put by Corder,

> The simple fact of presenting a certain linguistic form to a learner in the classroom does not necessarily qualify it for the status of input, for the reason that input is 'what goes in' and not what is *available* for going in', and we may reasonably suppose that it is the learner who controls input, or more properly his intake (p. 94, original emphasis).

The distinction made by Corder (1967/1974) considering learners in a more active role seems to be widely accepted in SLA circles. However, what appears to be happening is that researchers are seeking to define explicitly something very intangible, which is why even though there seems to be a consensus about what should be considered input, there are lots of different theories and different definitions of the term. As Chaudron (1985a) observes, the distinction made by Corder suggests that input is a "misnomer" (p.2). Likewise, Sharwood Smith (1994) notes that since it is impossible to know exactly what is processed by the learners, input is a "misleading term" (p.8).

In order to provide an overview of the inconsistency in the use of the term input, some definitions are reviewed below. The review attempts to follow a chronological order to show the gradual evolution of thought on input as well as some similarities and contrasts between researchers' ideas.

The most well-known claim about what should be considered input is that of Krashen's (1982) Input Hypothesis. Krashen argues, in this hypothesis, that language presented to learners only causes an effect on the learner's interlanguage when it is understood and a "little beyond" the learner's current competence. To Krashen, the properties of the input and the language environment seem to be more important than learners' mental processes; i.e., it is not clear in his theory how learners process second language data.

Ellis (1985) discusses three different views of input in SLA, taking into account three different theories: behaviorist, nativist and interactionist theories. He points out that within behaviorist theory, input refers to the language that serves as *"stimuli* and also that which occurs as *feedback"* (p.128, italics original). According to nativist theories the role of input is minimized, since it is seen "merely as a trigger which activates the internal mechanisms" (ibid), and under interactionist theory input has a more active role in the sense that "the learner's processing mechanisms both determine and are determined by the nature of the input" (ibid).

Learners are likewise considered to have an active role in dealing with second language data in a hypothesis sustained by Chaudron (1985a). Chaudron states that "the input available to second language learners is the raw data from which they derive both meaning and awareness of the rules and structures of the target language." (p.3).

Sharwood Smith also relates input to both meaning and structures. In his attempt to explain how second language learners interpret the target language, Sharwood Smith (1986) has argued that input should be conceived of in light of the notions of comprehension and acquisition. Comprehension involves decodification of particular messages encoded in linguistic forms, and acquisition, which is related to the creation of

new mental structures, involves grammatical competence. Thus, in Sharwood Smith's interpretation of input, the term has "dual relevance" (p. 239). One form of input involves simply the meaning extracted from the relevant information that is *perceived* by the learner and the other form involves the mechanisms which *create or restructure* grammatical competence. However, as mentioned earlier in this section, Sharwood Smith (1994) argues that input is a misleading term and points out the difficulty of observing what is processed by learners. More recently, in his discussion of the theoretical foundations of second language learning, he uses the term in the sense of *"potentially processible language data made available to the learner."* (p.8, original emphasis).

In more general terms, Gass (1988, p.201) refers to input as "a significant body of second language data". However, she also agrees that learners do not make use of all the data presented, but that only some language passes through to the learner. Similarly to Sharwood Smith (1986), she suggests that "input is potentially multi-staged" (p.204) and thus, part of second language data that is utilized by the learner should be considered in two stages: "apperceived input" and "comprehended input". Hence, Gass equates apperception to noticing and claims that apperceived input is only that part of the language which is noticed by the learner due to particular features. She notes that apperception of a form (an internal cognitive act), only occurs if that form is related to some part of learners' prior knowledge. Apperception, thus, is a kind of device that may guide learners to attend to only what is meaningful to them. On the other hand, the notion of comprehended input presented by Gass involves not only learner's control in analyzing the message semantically but also syntactically while meaning is grasped. The notion of comprehended input is different from that of comprehensible input (in Krashen's sense) because it conceives different levels of comprehension (e.g.

comprehension at the syntactic and semantic level), while the notion of comprehesible input conceives of only whether the input is comprehensible or not.

The notions of apperceived and comprehended input are further developed in Gass and Selinker (1994, cited in Ying, 1995), in a model which represents the conversion of input to output. In his analysis of the model, Ying discusses the three levels: "apperceived input", "comprehended input" and "intake". As he observes, intake and input have been conceived by Gass & Selinker as "two fundamentally different phenomena" (Gass & Selinker, 1994, cited in Ying, 1995, p.182). Arguing against this distinction, Ying conceives of input and intake as being fundamentally related and proposes two different concepts of input, which he believes are essential for input to become intake. Thus, accessible input is the input that is in accord with the "learner's developmental stages of readiness" (p.189). Processed input "draws on internal learner factors as well as the help of external factors" (p.185). In other words, it is what is processed by learners' internal mechanisms, with or without the help of external factors. However, he argues that ultimately "it is the learner who processes and understands the input" (p.188).

Summing up, it seems evident that even though input is sometimes described, as in Lightbown and Spada (1993), as simply "the language which the learner is exposed to (either written or spoken) in the environment" (p.122), it is fundamental to keep in mind that from a psycholinguistic view, what matters is not only the kind of data or the way L2 data are presented to learners, but *how* these L2 data are *processed* by learners. As Van Patten (1996) posits, learners filter input through their internal processors. Thus, learners, in his terms, "possess internal processors that act on the input and only part of

the input makes its way into the developing system at any given time" (Van Patten, 1996, p.7).

All the different definitions listed above deserve attention, but the most important point to focus on here is that since Corder (1967/1974), there has been an awareness of the need to distinguish between the language data to which the learner is exposed and the data the learner actually attends to. In contrast to Corder, who was actually way ahead of his time, Krashen's ideas seem rather primitive today since, according to Krashen's claims, language environment seems to matter more than what goes in learner's mind.

Next, since the inconsistencies in the use of the term input have led to the use of the term intake as something distinct from input, some different considerations about intake are presented.

Intake is defined in Schmidt (1990, p.149) as everything in input that is consciously noticed by learners. The word "noticed" here indicates a cognitive perspective that is not considered by Krashen (1982), for example, who does not seem to include conscious internal mental processes in his concept of intake. Krashen has posited that intake is the amount of input which may lead learners to acquire language. That is, what becomes intake under this view depends on the input presented itself, rather than on the learner. Nevertheless, consistent with Schmidt and in light of a cognitive perspective, many researchers have adhered to the idea that second language learning does not happen like magic, but it needs the learner's engagement (Van Patten, 1990, 1994,1996; Leow, 1993; Chaudron, 1985a, 1985b; Ellis, 1985, 1990, 1997; Gass, 1986; Sharwood Smith, 1994, to name but a few).

Van Patten (1996) observes that input is not all that is needed for successful language acquisition, since input does not enter the brain instantaneously when learners

are exposed to it. Similarly to Schmidt, Van Patten (1990, 1996) considers intake to be that part of input that has been filtered, perceived and processed by the learner. For Ellis (1985), "intake is that part of the L2 which is assimilated and fed into the interlanguage system" (p.159). Or as recently explained by him, intake is that part of input that is attended to by learners and taken into short-term memory (Ellis, 1997).

Sharwood Smith and Ying appear to imply a little more than mere noticing or processing in their definitions of intake. In Sharwood Smith's (1994) terms, only "that part of input which has actually been processed by the learner and *turned into knowledge of some kind* has been called intake" (p.8, italics added). Similarly, Ying (1995), in his analysis of what is essential for input to become intake, defines intake as that part of input "that is *internalized* by the learner through processing and understanding" (p. 188, italics added). In contrast, Leow (1993) advises against attributing too much to intake. Although he agrees that intake refers to everything in the input that second language learners attend to while processing, he emphasizes that this does not mean that intake implies language acquisition. For Leow, intake is "stored linguistic data that *may be used* for immediate recognition" (p.334, italics added).

Somehow differently, Chaudron (1985a) refers to intake as "the mediating process between the target language available to learners as input and the learner's internalized set of rules and strategies for second language development" (p.1). Closely related to Chaudron's definition, Gass (1988) defines intake as "a process of mental activity which mediates between input and grammar formation" (p.206). Thus, while the other researchers reviewed here, consider "intake" to be what is processed, Chaudron and Gass consider it to be a process.

In conclusion, based on the above discussion, in this study, input is defined here as all language samples presented to the learners, which may or may not contribute to the creation, development and restructuring of language knowledge/competence. Intake, in turn, is defined as that part of language samples which are effectively attended to and noticed by learners and which may become part of the acquired language.

2.3 Consciousness in SLA: The Controversy

Whether language data is consciously or subconsciously processed by the learner is another question that has provoked much debate in SLA literature. One of the most important discussions about the role of consciousness in second language learning is found in Schmidt (1995), whose position is that consciousness is necessary to facilitate language learning. While some authors prefer to avoid the term consciousness because of its ambiguity (e.g. McLaughlin, 1990), Schmidt firmly opts for the use of this term and acknowledges the role of consciousness, arguing that noticing is necessary for language learning to take place. Schmidt's (1990) review of the literature about consciousness and learning raises questions concerning what happens during input processing in relation to attention and consciousness. Schmidt does not deny that unconscious processes also play an important role in language comprehension. As he observes, there is no need to process language consciously if one is fluent in that language. He seems to be mainly concerned with the developmental stage, during which learners are still hypothesizing and building up their interlanguage. Under a cognitive perspective, Schmidt classifies consciousness variously as awareness, as intention and as knowledge. Consciousness has been generally equated to awareness, which in turn has three levels: perception, noticing and understanding (Schmidt, 1990; 1995)

Perception, not necessarily conscious, implies mental organization and the ability to create internal representations of external events. Noticing refers to private experiences and can be defined as availability for verbal report. Nonetheless, as he explains, failure in verbal reporting cannot be considered evidence of failure to notice, since there are some conscious experiences that are difficult to describe. Finally, the third level of awareness, understanding, refers to the attempt to understand something or the solution of problems through reflecting and understanding (Schmidt, 1990).

Although it is a fundamental issue in SLA, the problem with consciousness is that questions about it are difficult to answer. Krashen uses the term subconscious and distinguishes, thus, acquisition from learning in the sense that only when learners subconsciously internalize input do they acquire language. For Krashen, conscious processes do not lead to acquisition. Rather, wnen learners focus attention on form they learn language, and the language learned is not natural, thus it does not contribute to communication in real situations, when learners need to use language naturally (Krashen,1982). As a result of Krashen's influence, during the eighties there was an overestimation and misrepresentation of subconscious learning. All the exultation of subconscious processes led to a negation of consciousness in the learning process.

Before Krashen, behaviorists also did not pay attention to internal processes and avoided the issue of consciousness. According to Schmidt (1990), the decline of behaviorism is related to the increased interest in consciousness in psychology and learning research. For Schmidt, conscious processing "is a necessary condition for one step in the language learning process, and it is facilitative for other aspects of learning" (p. 131).

Likewise, Rutherford & Sharwood Smith (1985), in their study about the role of consciousness-raising in a formal setting, consider that conscious learning may facilitate acquisition of linguistic competence. In addition, Carr & Curran (1994) argue that, at present, there is little compelling evidence that leads anyone to believe in a strong form of "unconscious abstraction" (p.207). That is, although a possibility of "the full construction of very abstract rule systems completely outside of awareness" (ibid) still remains, there is compelling evidence that consciousness is needed for L2 learnmg.

The major problem is that the terms are not used consistently when the role of consciousness is the focus of studies. McLaughlin (1990) agrees with Schmidt when he observes that the role of unconscious processes has been exaggerated; however he prefers to avoid the terms conscious and unconscious in SLA theory, since these terms are difficult to define empirically. He argues that the role of theory is to illuminate our understanding and, thus, he makes a claim for theories that are clearly specified and testable. He argues that theories need to be falsifiable and that there is no adequate theory of mind that allows us to decide whether a particular mental state is conscious or unconscious. McLaughlin, Rossman and McLeod (1983), instead of making a distinction between conscious and subconscious, prefer a distinction between controlled and automatic processes, which according to them, may or may not be subject to conscious awareness.

Carr & Curran (1994) have suggested a disassociation between consciousness and attention. While they concede that "the idea that 'consciousness' and 'attention' might be different from one another may seem odd" (p.207), they claim that "asking whether limited-capacity processing and focused attention are involved in structural learning is not the same as asking whether conscious awareness is involved' (p.219).

Some acts of cognition occupy the information processing system exclusively, making it difficult for another processing activity to be carried out at the same time. As Carr & Curran exemplify, limited-capacity processing may be compared with a limited supply of energy, i.e., the same may happen when too many energy-demanding appliances are turned on at the same time and the eletric power is insufficient to run them. Thus, Carr & Curran note that the limited-capacity components of the system must devote attention to the act that demands attention; hence, any other act that demands attention should be avoided until the completion of the first act in order not to exceed the limited capacity, which could cause problems in performance (Carr & Curran, 1994, p.219).

2.4 Controlled and Automatic Processes

In recognition of the fact that attention must be controlled, a distinction has been made between two models of information processing: automatic processing and controlled processing (McLaughlin, 1987). Automatic processing has been associated with tasks that do not require attention and can be carried out in parallel with other tasks. Controlled processing has been associated with tasks that require attention and can not be carried out in parallel. Nevertheless, for McLaughlin, the distinction between controlled and automatic processes does not have to do with the distinction between conscious and unconscious awareness. He observes that both controlled and automatic processes can be conscious or not. What occurs, he notes, is that automatic processes occur with great speed, not allowing conscious perception of the constituent elements. However, some controlled processes may also occur with great speed, not permitting conscious experience either. In other words, attention is required in controlled processes, although this does not mean that they are always available to conscious perception. On

the other hand, automatic processes can also be the focus of attention, although they are generally not available to conscious perception. Thus, the distinction between controlled and automatic processes refers to "the degree to which the skills in questions have been routinized and established in long-term memory" (McLaughlin, 1990, p.621). Automatic processes are associated with long-term memory while controlled processes are more likely to be between short and long-term memory. For controlled procedures, our capacity is limited since conscious attention is essential. Automatic procedures do not demand mental effort; hence, we have attention left to allocate to other controlled processing activities (McLaughlin, 1987; Stillings et al.,1987).

Tomlin and Villa (1994) find the difference between automatic and controlled processes supported by Posner and Snyder (1975) overly simplistic. Posner and Snyder explain that "although the human mind has processing limitations, it can run two tasks concurrently, if at least one is automatic, but it has problems running two attention-demanding tasks at the same time." (Posner and Snyder, 1975, cited in Tomlin and Villa, 1994, p.188). Tomlin & Villa note that "it turns out that a simple distinction between automatic and controlled processes is still too coarse because it is sometimes possible for one to process simultaneously two attention-demanding tasks if the tasks are somehow compatible" (p.189).

Tomlin & Villa also note some weaknesses in the efforts to explain the role of attention in SLA, such as Schmidt's conclusions about his observations in a diary (Schmidt & Frota, 1986, cited in Tomlin & Villa, 1994), which do not constitute good supporting evidence for his Noticing Hypothesis since they do not "permit one to see how attention or noticing operate during the time course of a learner processing L2

input" (p.185). They argue that the key issue Schmidt addresses in his diary study "is how certain portions of the general input encountered by the learners are selected as intake for acquisition" (p.185). Moreover, they emphasize that attention in SLA needs to be examined through a 'finer grained look' in order to understand its role.

2.5 Attention in SLA

The concept of attention has been defined with caution in cognitive psychology as too vague a concept. Indeed, Eysenck & Keane (1995) note that there is a danger that rather than explaining everything, this concept may explain nothing. The most common use of attention is as a reference to selectivity of processing. This use of the term was primarily emphasized in the late 19th century by William James who argued that

> Everyone knows what attention is. It is the taking possession of the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalisation, concentration, of consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with others (William James, 1890, cited in Eysenck & Keane, 1995, p. 95)

In SLA theory, the concept of attention has been used to explain how L2 information is selected in order to be processed and how it is divided when learners try to perform two tasks at the same time. Adult second language learners are considered limited capacity processors of information with regards to what they can attend to at a given point in time. The amount of attention released to L2 language data will depend on the cognitive effort required for information processing. Thus, when learners are asked to perform tasks that are difficult for them, a great amount of cognitive effort is needed

and attention will be focused only on certain items of input. However, if the task is easy, some attention can be released to other items since less cognitive effort is required (Leow, 1997).

Bialystok (1994) proposes a framework in which a cognitive account of how language proficiency develops and improves over time. Among other issues (e.g., variability, similarity of L1 and L2 learning) that arise from the framework, Bialystok observes that "consciousness is the issue that refuses to die" (p.163). Notwithstanding, she prefers to interpret the problem of consciousness as the problem of awareness. The key to awareness, she argues, is attention because attention is what brings something to awareness, and awareness is the result of the interaction between analysis and control. These two cognitive processing components are used by Bialystok to elucidate the information-processing theory and are defined as follows:

> Analysis is the process by which mental representations that were loosely organized around meanings (knowledge of the world) become rearranged into explicit representations that are organized around formal structures (p.159).
> Control is the process of selective attention that is carried out in real time. Because cognition originates in mental representations, then there must be a means of focusing attention on the specific representation) relevant to a particular purpose (p.160).

According to Bialystok (1994), learners' attention is selective. [Before having automatized all the components of a task, learners need to select what they can attend to in real time.] Tomlin & Villa (1994) acknowledge that Bialystok's concept of control is a more precise concept about how attention is allocated than the concepts of limited capacity and automatic/controlled processing, but it is still "vague and contradictory" (p.190). Going further and searching for a fine-grained analysis of attention, Tomlin and

Villa refer to Posner and Petersen's description of the human attention system and refer to the functions of alertness, orientation and detection (Posner and Petersen, 1990 cited in Tomlin and Villa, 1994).

Alertness, as Tomlin & Villa explain, "represents an overall, general readiness to deal with incoming stimuli or data" (p190). Orientation "concerns the outcome of specific allocation of attention resources" (p.191), and detection "is the process that selects, or engages, a particular and specific bit of information" (p.193). Thus, attention is a limited-capacity system which has three principal components: alertness, orientation, and detection. Moreover, admitting that research on attention, consciousness, and awareness has theoretical and methodological difficulties, Tomlin & Villa suggest that consciousness should be left with multiple meanings. Nevertheless, they argue that the term *awareness* needs to be limited "to the subjective experience of any cognitive content or external stimulus" (p.194). Finally, they emphasize that although awareness requires attention, attention does not require awareness (Tomlin & Villa, 1994, p.194)

Accoding to Bialystok (1994), our attention should be balanced between form and meaning. However, only when learners attain a higher level of control can they direct their intentions with less attention to their performance. At this point, attentional control becomes more selective (p. 162). Schmidt (1990) agrees with Bialystok and points out that research needs to assess what learners notice and think while they learn second languages. He makes claims for a theory that identifies the mechanisms whereby, and the point at which, selective attention occurs. As Schimdt observes, although the natural order and acquisition sequence needs to be considered and taken into account there is still the possibility of selective and voluntary attention.

How attention is selected and allocated during input processing has been investigated and discussed by Van Patten (1990, 1994, 1996). According to him, the issue of consciousness has to do with how learners attend to input data, i.e., how attention is allocated during input processing and what the role of consciousness is when attention is allocated. Van Patten (1990) explains that what we need to know is what does and what does not get attended to in the input; thus, research on attention needs to serve to illuminate how attention is allocated during on-line processing.

In an attempt to clarify how attention is allocated by language learners, Van Patten (1990) investigated 202 American students of Spanish at the university level and explored the question of whether or not learners can attend to both form and meaning when processing input. Learners from three different levels were exposed to spoken input under four different conditions, i.e., four different tasks were assigned. In Task I, learners had to pay attention only to the content; in Task II, they were expected to attend to the content and the key lexical item, *inflación*; in Task III, learners had to pay attention to the content and the definite article *la;*and in Task IV, they were to listen for the content and note the verb morpheme *-n*. He observed that, when engaged in one mental process, learners are unable to allocate attention to other processes without a cognitive overload. Nevertheless, he argues that, while beginning and intermediate learners have difficulty in paying attention to form when processing input for meaning, advanced learners are able to process form and meaning simultaneously because the message can be easily and automatically comprehended by them, leaving attention available to process form.

Conscious attention does not suggest explicit or declarative knowledge, because learners can attend to the input but they may not be able to verbalize, and consciousness

should not be equated with explicit knowledge, because learners may pay attention

without needing to come up with a conscious rule. Therefore, it is important to

emphasize that attention and explicit rule knowledge "do not necessarily go hand in

hand" (p.34), since there is a tendency to confuse explicit knowledge with conscious

attention. In addition, Van Patten reminds us that attention is not the same as

explanation. "Attention is what the learner does in her brain when processing input, not

what the instructor puts in front of her as facts and exercises" (Van Patten, 1994, p.28).

Through Tomlin &Villa's (1994) "finer grained look", this notion of attention to

form articulated by Van Patten has to do more with the notion of orientation.

Nevertheless for Schmidt (1995), "the best known attempts to apply models of attention

and the divided attention paradigm to foreign language learning have been those of Van

Patten" (p.16).

Leow (1997), in his recent research about the role of awareness in relation to

Schmidt's "Noticing Hypothesis", notes that Van Patten's study about the competition

between form and meaning is one of the studies that have supported Schmidt's argument

for the role of consciousness in the sense of awareness at the level of noticing. However,

according to him, SLA studies addressing the role of consciousness have limitations and

can not explain the role of attention and awareness. Furthermore, he argues that these

studies can only provide evidence for the noticing hypothesis. Leow notes that all the

terminological and theoretical confusion related to attention in SLA is being reflected in

the empirical studies and reminds us that many researchers have preferred to omit the

role of consciousness, arguing for a dissociation between learning and awareness.

Tomlin & Villa (1994) explain that during second language learners' interaction

with input, mental representation is created through the process of sentence/discourse

comprehension. Linguistic forms and meaning can be computed automatically by the native speaker without attention in accord with a functionalist point of view. However, the same does not occur with the L2 learner. As the learner still does not know the specific mapping relations that exist between mental representations and syntactic information, L2 learners will have to struggle with this problem to form their interlanguage:

> The attention system must detect that the subject of the clause is linked to its referent being the current topic of the utterance. Such detection by no means requires that the utterance must have been understood already, even though its further processing may require linkage between what has been comprehended and what was heard. Only after the functional association has been detected can the information detected be subjected to further processing (Tomlin & Villa, 1994, 196).

The lack of a precise definition and the difficulty in operationalizing or measuring awareness has resulted in no conclusive evidence for the effects of the role of awareness in language learning. Thus, in order to address the levels of awareness, Leow (1997) adapted methodological criteria from previous research by asking learners to show behavioral or cognitive change due to experience and asking them for a report of being aware of the experience or some form of metalinguistic description. His findings provided evidence that learners use different types of processing while noticing a linguistic form in the input. And, since learners demonstrated differences even performing the same task, findings indicated that learners use different individual processes or strategies to perform the same task (Leow, 1997, p. 492). As Leow suggests, his findings indicate that the level of awareness helps to determine what L2 learners take in as data for further processing. His study revealed that learners who demonstrated higher levels of awareness performed better than learners who did not.

Hence, his study corroborates Schmidt's claim concerning the facilitative role of awareness, and it also provides empirical support for Robinson's (1995) argument that conscious attention or awareness is crucial in L2 development.

In Robinson's proposal of a complementary model to Schmidt's noticing hypothesis, he reviewed recent theories that emphasize the learner's control and the attention demands of tasks. Following Kahneman, "divided attention does not necessarily lead to decrements in performance, given sufficient arousal and given that demands of the tasks performed concurrently are not excessive" (Kahneman, 1973 cited in Robinson, 1995, p.290). Following Wickens, "the attentional demands of tasks, and so their relative difficulty will be increased when concurrently performed tasks draw simultaneously on the same pool of resources." (Wickens, 1989, cited in Robinson, 1995, p.290).

Robinson noted that learners' performance will depend on the quality of the attention released to both activities. When tasks draw on completely different pools of resources, or when one of the tasks is automatized, then successful time-sharing and dual-ask performance are possible. Thus, in SLA theory, there is a need to conceptually describe whether or not changes in task demands may make information processing easier or more difficult. Finally, Robinson posits that noticing is a consequence of encoding in short-term memory and that awareness is crucial for noticing since it distinguishes noticing from simple detection. Thus, he agrees with Schmidt that there is no learning without attention (Robinson, 1995).

Finally, it is important to recall what Schmidt (1995), and Van Patten (1994; 1996), have claimed, i.e., the role of consciousness in learning should not be interpreted as a reactionary attempt to return to the most traditional language teaching methods.

Attention to form does not mean traditional explanation plus boring and tiresome drills. On the contrary, learners should pay attention to some linguistic aspects of language in a communicative situation.

In conclusion, it seems clear that despite being controversial, discussion about attention is crucial for SLA. Findings from research about this issue from a cognitive perspective may reveal important aspects of the process rather than product. In addition, they may help us to discover which language forms are processed during processing of information for meaning and under what conditions this is possible.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

The purpose of this study was to investigate, through the replication of Van Patten's (1990) study, whether Brazilian EFL students at the secondary school level would perform in different ways when they were asked to attend to form and meaning simultaneously. The experiment was carried out to investigate learners' performance during input processing and followed the same general procedures used by Van Patten. Students at three different levels of competence listened to recorded passages. At each level students were divided into four different groups and each group was expected to carry out a slightly different task. In this manner, it was possible to test differences in performance of the four tasks according to the differences in EFL development. In each task learners were expected to pay attention to different things: In Task I, only to the content; in Task II, to the content and to the key lexical item *Einstein*; in Task III, to the content and to every occurrence of the definite article *the*, and in Task IV, to the content and to the past verb morpheme *-ed*. Students were to demonstrate their attention to target items by placing an X on a blank sheet of paper every time they heard an occurrence of the target items. After listening to the recording, they were asked to write freely in their native language, i.e., Portuguese, everything they remembered from the passages (recall protocols). An analysis of their recall protocols in terms of the number of idea units recalled made it possible to assess the subjects' performance in each task.

3.1 Subjects

The participants in this study were 71 Brazilian secondary school students

enrolled in EFL classes at Colégio de Aplicação, a public high-school linked to the

Federal University of Santa Catarina, in Florianópolis. All subjects were in their first year

of high school and grouped in different levels according to their EFL competence. The

issue of EFL competence was of pressing concern in this replication. As Polio and Gass

(1997) remind us, researchers do not report information precisely about what the levels

they are referring to are like. In addition, Polio and Gass argue that even if measures of

proficiency are mentioned, e.g. TOEFL, they lack precision because subjects may vary in

their sorts of knowledge. Thus, given the difficulty of determining language knowledge

with precision, this research was developed based on the division of levels proposed by

the school at which these students study. This division is made every year by the English

teachers, who follow the criteria established in the EFL program developed at the school.

Thus, these levels are distinguished as: level one (high), students who understand both

the written and spoken language with ease and can express themselves in both these

modes; level two (middle), students who understand the written and spoken language

with minimal difficulty but have great difficulty in speaking and writing; and level three

(low), students with little skill in reading and listening and extreme difficulty with writing

and speaking.

All students were native Portuguese speakers, and were enrolled in a

communicative approach program attending 90 minutes of English classes per week,.

They were informed of their participation in this study by their English teachers and by

the researcher, who one month before carrying out the experiment had the opportunity to

observe students' behavior in their regular English classes and their willingness to take

part in the study. In addition, before participating in the study, students were asked to answer a questionnaire in order to help the researcher get to know a little more about their attentiveness, their ability to follow teachers' instructions, the length of time they had been studying English, their personal feelings towards learning English as a foreign language and about[any possible auditory problems](see questionnaire in Appendix A). Since no formal criteria were adopted to identify students as effective or ineffective listeners (O'Malley, Chamot and Kupper,1989),[1] it was decided that the questionnaire and the class observation had provided enough information to decide that no student needed to be excluded from the study. Hence, during data collection all students were tested.

In order to divide students in each level into subgroups, it would have been ideal to use listening comprehension scores; however scores on this specific skill were not available at this school, and the teacher's tight semester timetable did not leave time available for a pre-test. Simple random sampling into subgroups with such small numbers of subjects did not promise a reasonable degree of precision in forming groups of equal linguistic competence. Even stratified random sampling, in which the population is randomly divided into subgroups on the basis of a variable chosen by the researcher (McMillan & Schmacher, 1984), could not guarantee reasonably equivalent groups because (1) the number of subjects at each level was small and (2), the variable in question -first semester grades- would have had to be classified into arbitrary range of values, in order to distribute the subjects of each grade range away the four tasks. Thus, it was decided to construct reasonably homogeneous groups in a stratified but not

---

[1] According to O'Malley, Chamot and Kupper, criteria for being an effective listener consist of "attentiveness in class, ability to follow directions without asking for clarification, ability and willingness to comprehend the general meaning of a difficult listening passage, ability to respond appropriately in a conversation, and ability and willingness to guess the meaning of unfamiliar words and phrases". p.425

random manner on the basis of one variable -their first semester grades in English. Within each level the students were distributed among the four tasks as follows: First a list was made of the students and their grades in decreasing order, then the first four names were distributed from the top of the list among tasks I, II, III and IV, then the next four among tasks IV, III, II, I and so forth. In this manner, the groups were made as homogeneous as possible regarding their previous grade averages, as shown by the mean grades in Table 3.1. Then the groups rather than individual subjects were randomly assigned to each condition.

Table 3.1. Mean of each group of subjects by Task and Level

	Task I	Task II	Task III	Task IV
Level I	8.40	8.34	8.30	7.78
Level II	7.06	7.08	7.04	6.68
Level III	6.68	6.66	6.65	6.67

3.2 Instrument: The Texts

There was no pre-defined criterion to choose the topic of the texts, although the age of the subjects was taken into account in order to avoid topics that could bore them. Nevertheless, it was necessary to find texts with sufficient occurrences of the items they would be asked to attend to when completing the tasks. After searching through many books used in secondary schools, it was decided to use the following texts: "Television" from *Fact and Fancy* (Kenan,1979) and "Are They Crazy or Am I?" from *Third*

Dimension (O'Nell and Mugglestone,1989) which had its title changed to "Einstein". (See appendices B and C for tapescript of the texts passage).

The experiment was pilot tested in a different setting and with different subjects in order to predict possible problems in the task, the degree of difficulty of the texts, or the instructions. The subjects were 20 Brazilian EFL learners between 17 and 35 years of age, enrolled in an extra curricular English course offered by the Foreign Language Department at UFSC. All had had about 2 years of formal EFL in private courses. Subjects were assigned to one of four tasks according to their grades in an attempt to mix more competent and less competent English learners within any one group. In spite of the differences in setting and subjects, the pilot study followed the same procedures that would be followed in the experiment itself. Instructions were given in Portuguese and students did not demonstrate difficulty in following them. However, when they asked for any explanation, answers were given promptly and appropriately.

Texts were previously adapted in order to provide enough occurrences of the linguistic items. In the pilot, the warm-up text "Television" contained 266 words with eleven occurrences of the key lexical item *television*, eleven occurrences of the definite article *the* and seven occurrences of the past verb morpheme *-ed*; the target text, "Einstein", was presented with 306 words with fourteen occurrences of the key lexical item *Einstein*, fifteen occurrences of the definite article *the* and fifteen occurrences of the past verb morpheme *-ed*. The warm-up text lasted 3 minutes with an average speed of 87 wpm; the target text lasted 3 minutes, with an average speed of 102 wpm.

Students complained about both the length and the complexity of the texts, even though they had been adapted for the experiment previously. They also commented on their difficulty in following the sequence of the texts when they attempted to translate

isolated words. Furthermore, some of them mentioned that the second text, which was about Einsten's life, was easier because they already knew some facts about the topic. However, they also said they mixed what they already knew about Einstein with the new information presented in the text. Only four students among the twenty students taking part in the pilot affirmed they had written only what they had heard.

O'Malley, Chamot and Kupper (1989) also observed these factors in their study and noted the length of the listening task as being one factor affecting students' attention. Since attention is limited, when individuals try to attend to and direct their attention to the oral text, they will probably have difficulty retaining some parts of the passage. This was the case of the subjects in their study who reported that they thought about and tried to translate the first part of the text and thus lost the next part. In addition, these researchers explain that complex texts may cause an overload on short-term memory because second language students need to combine parsed segments and simultaneously need to deal with uncoded elements. Many times when the text reminds students of something they know well, they may lose what is in the text because they become too involved in recalling what they already know about the topic. One last factor observed in the pilot, and also discussed by O'Malley, Chamot and Kupper, is the problem of fatigue. Some students in the pilot complained that as the texts were given in the evening, they were too tired to keep paying attention to the texts at that time of the day.

As a result of the students' feedback in the pilot, and considering O'Malley, Chamot and Kupper's position about the the influence of the factors referred to above on the mental processes that second language learners use in listening comprehension, it was decided to reduce the length of the texts as well their complexity. The experiment would

be performed by teenagers, which reinforced the decision that applying simple and short passages rather than complex texts could favor the completion of the tasks.

The warm-up text was reduced to 127 words with five occurrences of the definite article *the*, seven occurrences of the past verb morpheme *-ed* and nine occurrences of the key lexical item *television;* the target text was reduced to 213 words with 11 occurrences of the definite article *the*, 12 occurrences of the past verb morpheme *-ed* and 11 occurrences of the key lexical item *Einstein*.

According to Rivers (cited in Richards, 1983, p. 225), the pace of speech is considered fast when the rate of delivery is above 220 wpm; moderately fast when it is about 190-220 wpm; average at 160-220 wpm; moderately slow at 130-160 wpm and slow when it is below 130 wpm. Similarly, Blau (1990) considers 170 wpm as being the normal speed of speech and 145 wpm as being 85% of normal speed (p.74). Thus, according to these figures, the texts in this study were recorded at a slow speed: the warm-up text lasted 1 minute and 15 seconds with an average speed of 102 wpm and the target text lasted 1 minute and 55 seconds with an average speed of 111 wpm. In Van Patten's study, the passage which was used as the source of data was a 3 minute segment with 274 words with an average speed of 91 wpm. Although it had first been decided that the passages in this study should also last 3 minutes, the pilot showed that it would be better to reduce them, since even the adult students had complained about the length of the passages. Thus, considering the fact that in the final experiment the subjects were teenagers, who are generally more impatient than adults, it was expected that using simpler and shorter passages would favor their attentiveness and willingness to attend to the aural text as well as to enhance their willingness to complete the tasks while listening to the passages.

With regard to the topic, it was assumed that there was no need to change it, despite the student's account of recalling what they already knew about Einstein's life, since in the final experiment, teenagers would not be expected to become too involved in recalling previous knowledge about Einstein.

3.3 Procedures

This study took place during the second semester of 1997. All the students from the three different levels were grouped together in the school auditorium. Two days before the experiment, the researcher and the subjects had one brief contact, about 10 minutes of their regular class period, when subjects were assigned to one of four tasks and were asked to fill out a questionnaire, which was collected by their EFL teachers at the end of that class.

In the auditorium students were seated for the experiment according to the number of the task each had been assigned. Task I and II students were grouped on the left side of the auditorium, separated by one line of empty chairs. Likewise Tasks III and IV students were seated on the right side of the auditorium. As the experiment had to follow students' regular class schedule, the time allowed was 45 minutes. In order to avoid delays in correctly accommodating them, students were released 10 minutes earlier from their previous (regular) classes.

At their seats, students found the sheets of paper (see appendix D for an example of this material) where they were expected to place the Xs and write the recalls in Portuguese (see appendix E for recall protocols). Before starting the experiment, each group of subjects received instructions about the task they were assigned to complete while listening to the passages (see appendix F for instructions). First, before listening to

each passage, subjects were informed about the topic of the text, allowing them to activate previous knowledge. Thus, before the warm-up they were told they would listen to a passage about the effects of television on people's lives and before listening to the target text they were told the text was about some curiosities and details of Einstein's life. Immediately after listening to each text, they were asked to write everything they could remember, in Portuguese, in their recall protocols. The students were encouraged to write as much as possible within the 45 minute class period.

Task I, the control task, consisted of listening only to the content; Task II consisted of listening to the content and noting down an X on a blank piece of paper to indicate all the occurrence of the lexical item in question, i.e., *television* in the warm-up and *Einstein* in the target text; Task III consisted of listening to the content and to every occurrence of the definite article *the;* and Task IV consisted of listening to the content and noting all the occurrences of the past verb morpheme-*ed.* The subjects were reminded there were three different ways to pronounce the past tense -*ed.* The different forms to be noted were then shown one at a time with examples provided orally and with cards where different examples were written. Likewise, cards were used to show students the lexical item in Task II and the article *the* in Task III.

As in Van Patten's study, to minimize interference with processing, students were told to make their Xs anywhere on the paper. Students were informed that they would be evaluated both on their comprehension and on their performance on whichever task they were assigned; nevertheless, they were reminded they would not be given a grade.

All subjects listened to the first passage and completed the tasks, and then listened to the target passage and completed the tasks similarly. Students did not know the first passage was just a warm-up. Both passages were recorded by a near-native

speaker and the tape was played on a Philips stereo cassette recorder. The sound was amplified through 8 small loudspeakers which distributed the sound throughout the auditorium. Although texts were not recorded at a normal rate and breath marks and brief pauses were made at clause boundaries, no item was emphasized in the passages. During the experiment, students were carefully monitored by researcher and her assistants (four English teachers at the school), in order to ensure that students were not trying to see when their classmates were placing Xs during the tasks.

3.4 Scoring

The assessment of learners' performance in the texts was made in accordance with strictly applied procedures. Task scores were obtained assessing subjects' comprehension by the number of idea units recalled in their recall protocols. Three different analyses were carried out: a strict and a lenient analysis of the target text and a very lenient analysis of the warm-up text.

In Van Patten's (1990) study, only subjects with a sufficient number of check marks (at least 8) were considered to be in the pool. Those with an insufficient number of check marks were assumed not to have attended to form. In this study, the strict analysis of the target text followed closely Van Patten's scoring procedures: those subjects who did not note down at least 8 Xs on their papers while listening to the text were eliminated and their recall protocols were not considered. The recall protocols were analyzed by counting the total number of correct idea units recalled.

In the lenient analysis of the target text, subjects who noted down at least 5 Xs also had their protocols scored. It was decided that credit would be given to these recall protocols due to the fact that the participants in this study were teenagers. Even though

they were extremely cooperative during the experiment, paying attention and concentrating seemed to be somewhat of a problem, judging from the small number of Xs on most of the papers. However, the scoring procedure for idea units was the same as in the strict analysis, i.e., only correct idea units recalled from the text were counted.

In the extremely lenient analysis of the warm-up text, all subjects' protocols were scored. This time the number of Xs was not counted, due to the few occurrences of each item in the text. All protocols were scored and the number of idea units was counted following the same criteria used in previous analyses.

The analysis of the idea units was carried out in Van Patten's (1990) study in accord with Carrell's (1985) and Lee's (1986) concept of idea unit. Lee (1986, p.205) cites Brandsford and Johnson (1973), who consider idea units to "correspond either to individual sentences, basic semantic proposition, or phrases". In Carrell's study

> each unit consisted of a single clause (main or subordinate, including adverbial and relative clauses). Each infinitival construction, gerundive, nominalized verb phrase, and conjunct was also identified as a separate idea unit. In addition, optional and/or heavy prepositional phrases were also designated as separate idea units (p.737).

In a discussion about the focus of consciousness, Chafe (1980) uses Kroll's concept of idea units and establishes some criteria which could help the identification of idea units in speech. He cites three factors - intonation, hesitation and syntactic - as being signals that could represent the boundary of an idea unit. Thus, most of the time when clauses are marked with commas or with a period, this punctuation could be signaling the boundary of an idea unit. According to Chafe, idea units are generally separated by a brief pause. In his expository interpretation of idea units, Chafe claims that although in a narrative it is not always possible to identify idea units through intonational, syntactic

and hesitational criteria, the identification of idea units is not a difficult task, and that even though some problems may occur, they are generally few in number. Chafe suggests that "these idea units, these spurts of language, are linguistic expressions of consciousness" (1980, p.15).

Other researchers have employed and expanded the concept of idea units in their studies (Johns, 1985; Johns & Mayes, 1990). These researchers cite Kroll's definition of the term, which limits it to some structures such as main clauses, full relative and adverbial clauses, phrases (except transitional), reduced clauses, post-nominal -ing phrases, the second verb of a clause with compound verbs, absolutes and appositives.

In their investigation about summary processes and products, Johns & Mayes (1990), used a category called *distortions*, under which different types of idea units should be considered. For example, clauses with deleted or added information, subjects' personal comments about the text and even clauses in which original meaning had been altered should be counted as one type of idea unit.

This expanded system which considers *distortions* , although possibly appropriate to account for the data of previous studies with different objectives, did not seem adequate for the concerns of this study. The analysis showed that those clauses considered as distortions, on some occasions, seemed to be created from one single word understood by the subjects. Also, much of the content that would be analyzed as distortions revealed that subjects sometimes *overrelied* on their prior knowledge. That is to say, many times, rather than writing the information presented in the text, subjects wrote in their recalls any relevant information they already had about the topic. Therefore, in order to avoid counting data that had not been processed during the listening task, it was decided not to include distortions in this study.

Contrary to Chafe's claim that identification of idea units is not difficult, it did not seem, by any means, an easy task to identify and determine boundaries between them and further to establish whether the propositions indicated an exact comprehension of what was heard or not.

To help prevent problems in the interpretation of the data, all the concepts and discussions about idea units mentioned in this section were thoroughly reviewed and, in turn, served as a basis for achieving clear and supportive criteria for determining what should be considered an idea unit. With this problem in mind, a sequence of steps was established and served as a basis for the researcher to write the criteria (see appendix G) which guided the three raters (the researcher, a professor with a doctor degree in Applied Linguistics and a doctoral student) who divided the target text into idea units.

Texts divided into idea units in previous studies (Lee, 1986; Carrell, 1985; Van Patten, 1990), were used as examples. They were reanalyzed to investigate why they had been separated in such a manner. Thus, every clause, every phrase and basic grammar concepts were re-examined in order to solve doubts about the division of the texts into idea units.

After having independently divided the target text, the three raters met, modified the criteria referring to phrases and came to an agreement. A hundred percent agreement was reached between the three raters. Hence, based on previous studies, for concerns of this investigation *every main,subordinate,relative and adverbial clause,conjunct, infinitival construction, preposition and -ing phrase,and all adverbial and prepositional phrases, either in the beginning or/and separated by commas* should be counted as idea units. The target text was thus divided into 47 idea units (see appendix H). The warm-up text was analyzed by two raters independently. Again, the two raters subsequently came

to a hundred percent agreement about the number of idea units in this text: 25 idea units. (see appendix I). Sample recall protocols representative of idea unit analysis are presented below (idea units scored are bracketed):

Recall for Antonio Roberto

{Einstein foi um dos maiores cientistas que a humanidade já teve}. {Ele era uma pessoa muito inteligente} e já demonstrava isso em sua adolescência. Ele estudou muito {e não ouvia ninguém}, ou seja, era um cientista que provava suas afirmações com base nos estudos, e não se convencia com as apresentadas de outros cientistas. {Foi responsável pela "teoria da relatividade"} e provou esta teoria com base em suas pesquisas.

Recall for Bruno

{Einstein era um grande cientista} porém um mau aluno, {era indisciplinado}, {mais tarde} {se tornou famoso pela teoria da relatividade}.

Recall for Daniela

{Einstein foi um grande cientista.} Quando era pequeno não era nenhum geniozinho, pelo contrário, ia mal no colégio e não respeitava muito os professores. {Mais tarde} {passou a estudar física} {e matemática} em uma universidade. {Um problema seu era que} {ele não ouvia muito os outros}. No início Einstein poderia não ter sido um cara muito inteligente, mas hoje suas teorias, conhecimentos e experiEncias são usados em várias ciências.

In the strict analysis, each of the recall protocols written by the subjects who put 8 or more Xs on their papers was scored by two independent raters, who coded and counted the number of idea units which correspond to those in the original passage. The raters followed the criteria for analyzing idea units and agreed 91.54% of the time in their scoring. When they disagreed, the number of idea units scored by each of them was added and divided by two.

In the lenient analysis, the protocols written by the subjects who had marked at least 5 Xs were also considered. This time raters came to 90.80 % agreement and, as in the previous analysis, an average of the two was used in cases of disagreement.

The last, very lenient analysis was carried out on the recall protocols regarding the warm-up text. Since the text was very small and the occurrence of the target forms was very few in number, it was decided that the number of Xs would not be counted. It was believed that independently of the number of Xs marked on their papers, subjects had somehow divided their attention between form and meaning to some extent. Thus, all protocols were analyzed. In this analysis, however, protocols were analyzed by the researcher only.

CHAPTER FOUR

RESULTS

In this section, results are reported of both the qualitative and quantitative analyses that were performed on the data. Comparisons are made of the results of the recall protocols of students at different levels of proficiency and of groups performing different tasks.

The results of three different analyses are reported, as follows: (1) Strict analysis of the target text, considering only the protocols of subjects who marked 8Xs or more; (2) lenient analysis of the target text, considering the protocols of subjects who marked at least 5 Xs; (3) very lenient analysis of the warm-up text, considering all subjects. This last analysis was carried out in order to check whether the results in previous analyses had been influenced by the use of a proper noun chosen as the lexical item in Task II.

Although this study is an attempt to replicate that of Van Patten (1990), it was impossible to submit the data to the same statistical tests used by Van Patten because of the small number of subjects in each cell, especially in Tasks III and IV, where many subjects were eliminated due to an insufficient number of Xs. Nevertheless, a careful quantitative analysis of the recall protocols reveals apparent differences in participants' ability to pay simultaneous attention to form and meaning.

4.1 Target Text: Strict Analysis

4.1.1 Number of subjects eliminated by level and task

Table 4.1.1 displays, by task and level, the total number of subjects taking part in the study, and the total number of subjects with a sufficient number of Xs to be considered in this first analysis.

Table 4.1.1. Target text/ Strict analysis: Total n° of subjects per task and level and n° with 8 or more Xs.

		Task I	Task II	Task III	Task IV	Total
Level	All Ss	5	5	5	5	20
I	Ss (8x)	5	5	2	2	14
Level	All Ss	5	5	5	4	19
II	Ss (8x)	5	5	2	2	14
Level	All Ss	8	7	8	9	32
III	Ss (8x)	8	5	2	4	19
Total	All Ss	18	17	18	18	71
	Ss (8x)	18	15	6	8	47

Note. Ss (8x) = Subjects with 8 or more Xs.

The large number of subjects eliminated in Tasks III and IV, in which they were expected to attend to less communicative forms while attending to meaning, suggests that these tasks caused much more difficulty than Task II, in which subjects were asked to pay simultaneous attention to a lexical item and to content. Table 4.1.1 shows that a total of 24 subjects were eliminated from the pool due to the insufficient number of Xs they had placed on their papers, i.e., fewer than 8. Of these subjects, only two were from the Task II group, which were required to note down all the occurrences of the lexical item *Einstein;* whereas 12 were from the Task III group, which were required to note

down all the occurrences of the definite article *the* and 10 were from Task IV group, which were required to note down all the occurrences of the past morpheme *-ed*. Thus, fewer than half the students who carried out Tasks III and IV were able to mark the minimum number of Xs, due to the difficulty of attending to meaning and less or non-communicative morphology simultaneously. This difficulty in marking a sufficient number of Xs in Tasks III and IV is apparent not only in the total scores, but in the scores for each level.

When performance by level is considered, the number of subjects eliminated in Levels I and II was almost the same, 6 out of 20, or 30%, in Level I and 5 out of 19, or 26%, in Level II. This suggests that the subjects performed similarly in those levels when asked to attend to both form and meaning. In Level III, 13 out of 32 were eliminated, or 40%. This higher percentage in Level III suggests that subjects considered to have a lower level of proficiency, had more difficulty in marking a sufficient number of Xs when asked to attend to form and meaning. The overall average of subjects eliminated was 34%.

When compared to those of Van Patten, these primary results show a considerable difference, since in his study, apparently no subject was eliminated due to an insufficient number of check marks. At least he does not make it clear if some subject's data were not included in the pool.

4.1.2 Mean recall scores by task and level

The number of idea units recalled and the mean recall scores by task and level are summarized in Table 4.1.2 and presented graphically in Figure 1.

Table 4.1.2. Target text/ Strict Analysis: Total and mean recall scores by task and level

		Task I Content Only	Task II Content + Lexical item	Task III Content + *the*	Task IV Content + *-ed*	Total
Level I	Nº Ss	5	5	2	2	14
	Nº Recall	17.50	55.50	4.00	9.50	86.50
	Mean Recall	**3.50**	**11.10**	**2.00**	**4.75**	**6.18**
Level II	Nº Ss	5	5	2	2	14
	Nº Recall	19.00	3.00	4.00	0.00	26.00
	Mean Recall	**3.80**	**0.60**	**2.00**	**0.00**	**1.86**
Level III	Nº Ss	8	5	2	4	19
	Nº Recall	10.00	13.50	0.00	2.50	26.00
	Mean Recall	**1.25**	**2.75**	**0.00**	**0.62**	**1.37**
Total	Nº Ss	18	15	6	8	47
	Nº Recall	46.50	72.00	8.00	12.00	138.50
	Mean Recall	**2.58**	**4.80**	**1.33**	**1.50**	**2.95**
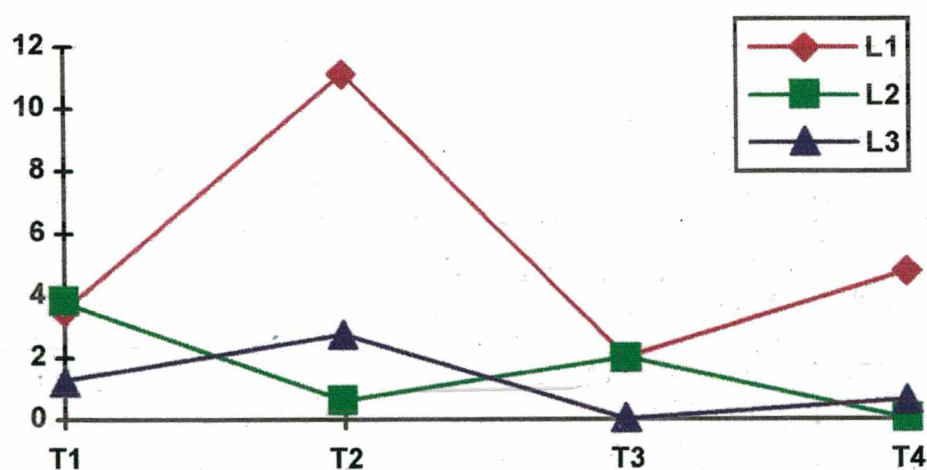
Figure 1. Target text/ Strict analysis - Mean recall scores by task and level

It should be recalled from Table 4.1.1 that almost the same proportion of subjects were eliminated in Levels I and II for not attending sufficiently to form. However, when mean recall scores were compared, a considerable difference was revealed between the scores of Level I (6.17) and those of Levels II and III (1.85, 1.36 respectively). Nevertheless, the difference between the overall means of Level II and III is very small. Thus, although the performance of subjects in Level I and II was similar regarding the number of Xs marked, it was quite different in the processing of information, i.e., the number of idea units recalled by Level I subjects is considerably higher than that of Level II and Level III.

In addition to these differences across levels, the recall protocols revealed differences in the ability of participants to recall idea units depending on the tasks. Table 4.1.2 demonstrates a clear general pattern in the results, which is similar to but not totally consistent with Van Patten's. While Van Patten's results decrease from Task I to Task IV, in this study results decrease from Task II⇨ I⇨ IV⇨ III, with little difference between Tasks IV and III. Thus, in the current study, mean recall of idea units with focus on communicative form was considerably higher than mean recall with no focus on form.

With regard to the recall scores differentiated by level, Van Patten's results show a high level of consistency: except for Level II, in which subjects performed better in Task IV than in Task III, each level followed the overall pattern, with recall scores decreasing from Task I to IV.

Contrary to expectations and to Van Patten's results, the findings of the current study present a different sequence for each level. Level I subjects' scores decrease in the following sequence: Task II (11.10), followed by Task IV (4.75), and Task I (3..50) and Task III (2. 00). Level II subjects' scores decrease from Task I (3. 80), followed by Task

III (2. 00), then Task II (0. 60) and finally Task IV (0. 00). At last, the sequence of Level III subjects' means scores is: first, Task II (2. 75), then Task I (1. 25), next Task IV (0.62) and at last Task III (0.00). Thus, only Level III subjects followed the overall general pattern, i.e., Task II to Task I to Task IV to Task III.

The most probable reason for the different patterns obtained for Levels I and II is the small number of subjects per cell, especially for Tasks III and IV. Therefore, the overall means can be considered to be more valid than the means for each level, especially those of Tasks I and II, which were drawn from groups of 18 and 15 subjects respectively. One way of increasing the n° of subjects per cell at each level is to collapse Task I with Task II and Task III with Task IV, as in Table 4.1.3.

Table 4.1.3. Target text/ strict analysis: Mean recall scores - Tasks I/II vs. Tasks III/IV

		Tasks I/ II	Tasks III/ IV
Level	N° Ss	10	4
I	N° Recall	73.00	13.50
	Mean Recall	**7.30**	**3.38**
Level	N° Ss	10	4
II	N° Recall	22.00	4.00
	Mean Recall	**2.20**	**1.00**
Level	N° Ss	13	6
III	N° Recall	23.50	2.50
	Mean Recall	**1.80**	**0.42**
Total	N° Ss	33	14
	N° Recall	118.50	20.00
	Mean Recall	**3.59**	**1.43**

When Tasks I and II were collapsed, subjects' mean recall scores decrease from Tasks I/II to III/IV at all levels. In Level I, scores decrease from 7.30 in Tasks I/II to 4.50 in Tasks III/IV; in Level II they decrease from 2.20 in Tasks I/II to 1.00 in Tasks

III/IV, and in Level III, they decrease from 1.80 in Tasks I/II to 0.42 in Tasks III/IV. The total mean recall scores of groups in Tasks I and II was 3.59 while the total mean recall scores in groups III and IV was 1.43. In sum, differences the collapsed recall scores show that, as in Van Patten's study, subjects who were expected to attend to content only or to content plus a lexical item performed better than the ones who were expected to focus attention on content plus a grammatical item.

It should be recalled that in this strict analysis of the data, 24 out of the original 71 participants were eliminated due to an insufficient number of Xs marked on their papers. As already pointed out, only subjects who marked at least 8 Xs while listening to the passage were considered in the pool in this analysis. As a consequence of the small number of subjects who had their recall protocols analyzed, it was decided to carry out another analysis with five as the minimum number of Xs to consider that the students had focused their attention on the given items. This was justified by the fact that this study dealt with adolescents while Van Patten dealt with adults, and adolescents can be expected to have more difficulty with attention.

4.2 Target text/ Recall Lenient - Subjects who marked at least 5Xs

4.2.1. Number of subjects eliminated by task and level

The number of subjects (out of the total) per task by level who marked at least 5Xs is presented in Table 4.2.1.

Table 4.2.1. Target text/ lenient analysis: Total n° of subjects per task by level and n° with 5 or more Xs

		Task I	Task II	Task III	Task IV	Total
Level	All Ss	5	5	5	5	20
I	Ss (5x)	5	5	4	4	18
Level	All Ss	5	5	5	4	19
II	Ss (5x)	5	5	3	2	15
Level	All Ss	8	7	8	9	32
III	Ss (5x)	8	7	3	8	26
Total	All Ss	18	17	18	18	71
	Ss (5x)	18	17	10	14	59

Note. Ss (5x) = Subjects with 5 or more 5X.

In this analysis, 2 out of 20 subjects (10%) were eliminated in Level I, 4 out of 19 (21%) in Level II and 6 out of 32 (18%) in Level III. At all levels there were fewer elimination than in the strict analysis. The overall average of subjects eliminated was 17%.

Regarding tasks, the same pattern obtained in the strict analysis is found. This time, a total of 12 subjects were eliminated from the pool due to an insufficient number of Xs. Among subjects in Task II, none were eliminated, whereas 8 were eliminated in Task III and 4 in Task IV. Thus, as in the strict analysis, results show a greater difficulty in detecting non-communicative grammatical items while attending to content than in detecting items with a high communicative value.

4.2.2 Mean recall scores by task and level

The total number of idea units recalled and the mean recall scores of each group are presented in Table 4.2.2 and in Figure 2.

Table 4.2.2. Target text/ lenient analysis: Total and mean recall scores by task and level

		Task I Content Only	Task II Content + Lexical item	Task III Content + *the*	Task IV Content + *-ed*	Total
Level I	N° Ss	5	5	4	4	18
	N° Recall	17.50	55.50	14.00	24.50	111.50
	Mean Recall	**3.50**	**11.10**	**3.50**	**6.12**	**6.19**
Level II	N° Ss	5	5	3	2	15
	N° Recall	19.00	3.00	6.00	0.00	28.00
	Mean Recall	**3.80**	**0.60**	**2.00**	**0.00**	**1.87**
Level III	N° Ss	8	7	3	8	26
	N° Recall	10.00	13.50	1.00	6.00	30.50
	Mean Recall	**1.25**	**1.93**	**0.33**	**0.75**	**1.17**
Total	N° Ss	18	17	10	14	59
	N° Recall	46.50	72.00	21.00	30.50	169.00
	Mean Recall	**2.58**	**4.23**	**2.10**	**2.17**	**2.86**

The comparison of means by level does not change much with the lenient analysis. As in the strict analysis, the overall mean score for Level I is much higher than those of Levels II and III, which, as in the strict analysis, are quite similar. Concerning tasks, the total mean recall scores in this lenient analysis are also similar to those of the strict analysis. That is, Task II scored better than Task I, which scored better than Task IV and Task III, the latter two again being very close.
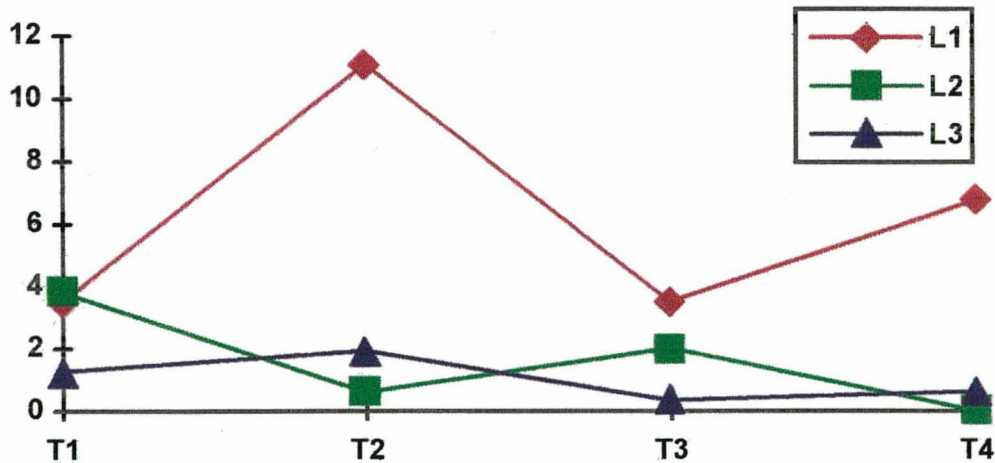
Figure 2. Target text/ Lenient analysis - Mean recall scores by task and level

While the overall means for Tasks III and IV were slightly higher than in the strict analysis, the mean for Task II was somewhat lower. The latter result was caused by the fact that although two more subjects were included in the pool for Task II, these subjects did not produce any idea units in their recall protocols.

The results of the mean recall scores for each task by level are also similar to the previous analysis. At Level I, however, another slight difference from the strict analysis was found: While Task I scored higher than Task III at this level in the strict analysis, in the lenient analysis there is no difference between these two tasks. Thus, Level I subjects' scores decrease in the following sequence: Task II (11.10) to Task IV (6. 75) to Tasks I (3.50) and III (3.50).

Level II and Level III subjects' scores decrease in exactly the same order reported as in the strict analysis. Level II mean scores are highest for Task I (3. 80), followed by Task III (2.00), Task II (0.60) and finally Task IV (0.00). Level III subjects' mean scores decrease from Task II (1. 93) to Task I (1. 25) to Task IV (0. 75) to Task III (0. 33).

This lenient analysis reveals, as in the previous analysis, a considerable difference between the results obtained in the first two processing conditions (content/ content plus lexical item) and the two other processing conditions (content plus *the* / content plus -*ed*). The number of idea units recalled and the collapsed mean recall scores of Tasks I/II and Tasks III/IV by level are summarized in Table 4. 2.3.

Table 4.2.3. Target text/ lenient analysis: Mean recall scores - Tasks I/II vs. Tasks III/IV

		Tasks I/ II	Tasks III/ IV
Level	N° Ss	10	8
I	N° Recall	73.00	38.50
	Mean Recall	**7.30**	**4.81**
Level	N° Ss	10	5
II	N° Recall	22.00	6.00
	Mean Recall	**2.20**	**1.20**
Level	N° Ss	15	11
III	N° Recall	23.50	7.00
	Mean Recall	**1.56**	**0.63**
Total	N° Ss	35	24
	N° Recall	118.50	51.50
	Mean Recall	**3.39**	**2.14**

When Tasks I and II were collapsed in the lenient analysis, subjects' mean recall scores decrease from Tasks I/II to III/IV. In Level I, scores decrease from 7.30 in Tasks I/II to 4.81 in Tasks III/IV; in Level II they decrease from 2.20 in Tasks I/II to 1.20 in Tasks III/IV at all levels, and in Level III, they decrease from 1.56 in Tasks I/II to 0.63 in Tasks III/IV. The total mean recall scores of groups in Tasks I and II was 3.39 while the total mean recall scores in groups III and IV was 2.14.

Finally, in a last attempt to check the tendency suggested by the results so far and also to check whether subjects' superior performance in Task II was due to the fact that the lexical item was a proper noun[1], it was decided to analyze subjects' recall protocols from the warm-up exercise. In this text the lexical item was *Television.*

4.3 Recall from the warm-up text

In this analysis, no subject was eliminated from the pool, since the text was smaller than the source text and the occurrences of the given items were fewer in number. However, they were told to mark Xs, just as they were for the target text. Thus, although the number of Xs marked by the subjects was not taken into account, it was assumed that the groups carrying out Tasks II, III, and IV were struggling to notice the specific forms in each task. In other words, they had to divide their attention between form and meaning, just as they did for the target text.

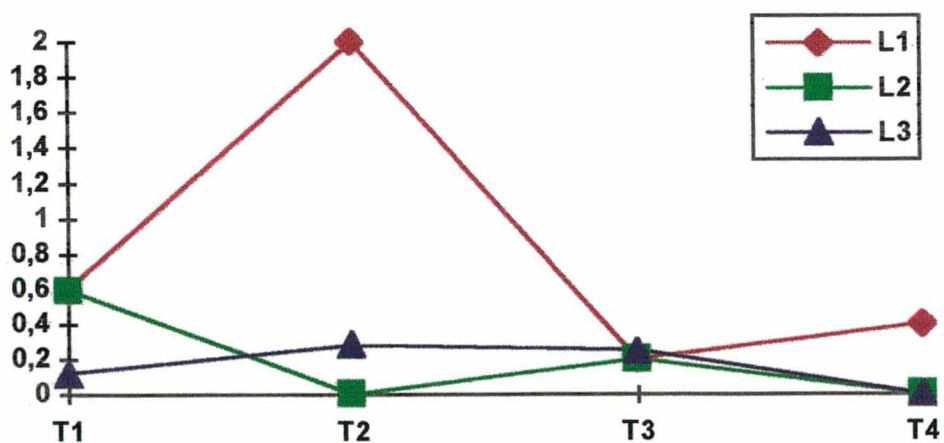## 4.3.1 Mean recall scores by task and level

The results of the analysis of the data from the warm-up text are given in Table 4.3.1 and presented graphically in Figure 3.

---

[1] The choice of a proper noun as the lexical item used in Task II was criticized by Maria Antonieta Alba Celani (personal communication, April 23, 1998). She argued that results were likely to have been influenced by the use of this noun.

Table 4.3.1: Warm-up - Total and mean recall scores by task and level

		Task I	Task II	Task III	Task IV	Total
		Content only	Content + Lexical item	Content + *the*	Content + *-ed*	
Level	Nº Ss	5	5	5	5	20
I	Nº Recall	3.00	10.00	1.00	2.00	16.00
	Mean Recall	**0.60**	**2.00**	**0.20**	**0.40**	**0.80**
Level	Nº Ss	5	5	5	4	19
II	Nº Recall	3	0.00	1.00	0.00	4.00
	Mean Recall	**0.60**	**0.00**	**0.20**	**0.00**	**0.21**
Level	Nº Ss	8	7	8	9	32
III	Nº Recall	1.00	2.00	2.00	0.00	5.00
	Mean Recall	**0.12**	**0.28**	**0.25**	**0.00**	**0.15**
Total	Nº Ss	18	17	18	18	71
	Nº Recall	7.00	12.00	4.00	2.00	25.00
	Mean Recall	**0.38**	**0.75**	**0.22**	**0.11**	**0.35**

Figure 3. Warm-up - Mean recall scores by task and level

As in the source text, Level I subjects performed better than Level II and Level III subjects. The results show almost the same general pattern as in the results of the data from the target text. That is, again Task II obtained the highest scores (0. 50), followed Task I (0.38), then Task III (0.21), and Task IV obtained the lowest scores (0.11). However, when compared to the overall general pattern of recall scores by tasks in the previous analysis, it should be noticed that a difference is found between Tasks III and IV. Task III was lower than Task IV in both target/strict analysis and target/lenient analysis. In this analysis, higher recall scores were obtained in Task III than in Task IV.

The results of the mean recall scores for each task at each level also present some differences from the previous analyses. Level I subjects' mean scores decrease from Task II to Task I to Task IV to Task III. Level II and Level III subjects' mean scores decrease also in a different order from those presented in Tables 4.1.2 and 4.2.2. Level II subjects' mean scores decrease from Task I followed by Task III, then Task II and IV, which present the same result; i.e., zero scores. Therefore, Level II subjects performed in the same way in Tasks II and IV. In both conditions they did not produce any idea units.

Nevertheless, although the sequence of scores by level do not follow those of the previous analyses, the results of this last analysis indicate the same general overall pattern, since they also show a split between Tasks I and II versus Tasks III and IV (see Table 4.3.1). That is, the results of the latter two tasks, where grammatical items were to be detected, were always inferior to those of the former two. As with the two previous analyses, the best overall performance was of the subjects who carried out Task II (content plus lexical item). These results can be observed in Table 4.3.1.

Table 4.3.2. Warm-up: Mean recall scores - Tasks I/II vs. Tasks III/IV

		Tasks I/ II	Tasks III/ IV
Level	N° Ss	10	10
I	N° Recall	13.00	3.00
	Mean Recall	**1.30**	**0.30**
Level	N° Ss	10	9
II	N° Recall	3.00	1.00
	Mean Recall	**0.30**	**0.11**
Level	N° Ss	15	17
III	N° Recall	3.00	2.00
	Mean Recall	**0.20**	**0.11**
Total	N° Ss	35	36
	N° Recall	19.00	6.00
	Mean Recall	**0.54**	**0.16**

When Tasks I and II were collapsed in the warm-up analysis, subjects' mean recall scores decrease from Tasks I/II to III/IV at all levels. The total mean recall scores of groups in Tasks I and II was 0.54 while the total mean recall scores in groups III and IV was 0.16.

In sum, all three analyses showed a considerable difference across tasks as well as across levels. The tendency of the results suggests that there is a degradation in comprehension when attention is focused on grammatical form and meaning simultaneously and that this drop in comprehension increases when subjects' level of competence is lower. More specifically, these results suggest a tendency to support Van Patten's conclusions that low communicative items demand more attention in order to be processed, and thus, they require much more proficiency and automaticity in processing language in order to be attended to without negatively affecting comprehension. The implication of these results will be discussed in greater detail in the next chapter.

CHAPTER FIVE

DISCUSSION

Van Patten (1990) investigated what is and what is not attended to by learners when processing input. His results showed that when attending to content and linguistic forms in the input, students tend to do poorly in their comprehension of content. However, when learners attended to an important lexical item, this did not interfere in comprehension. In addition, his findings suggest that simultaneous attention to form and content may become possible as learners' competence improves. In other words, if meaning is easily comprehended by learners, it will be much easier for them to attend simultaneously to form.

This replication study was undertaken to investigate whether Brazilian adolescent EFL students would perform differently from Van Patten's adult American as second language students when asked to attend to form and meaning simultaneously.

Following Van Patten's hypotheses closely, the following research questions were addressed: (1) Will comprehension of meaning be affected in a task that involves simultaneous attention to non-communicative grammatical forms? (2) Will comprehension of meaning be affected in a task that involves simultaneous attention to an important lexical item? (3) Will learners at a more advanced level be more able to direct attention to lexical and/or grammatical forms during comprehension than those at a beginners' level? The following discussion will address each of these questions in accord with the results reported in the previous chapter.

The primary research question of the current study involved checking if attention focused on non-communicative grammatical forms would negatively affect comprehension of content. It should be recalled here that for the current study the given non-communicative grammatical items were the definite article *the* and the verb morpheme *-ed*. According to Van Patten's discussion on the relative communicative value of grammatical forms, these items meet the criteria for low communicative value. As Van Patten notes,

> communicative value refers to the relative contribution a form makes to the referential meaning of an utterance and is based on the presence or absence of two features: inherent semantic value and redundancy within the sentence-utterance (1996, p.24).

Forms such as *the,* which have a mere grammatical function within a sentence, or forms which are redundant (e.g., forms which often have the same meaning expressed by temporal adverbs in the discourse) are to be considered as having low communicative value. On the other hand, content words with inherent meaning, such as the lexical item *Einstein* of Task II, are considered as having high communicative value.

In Van Patten's (1990) study, significant differences were obtained between tasks in which subjects had to process meaning and the low communicative items *la* (feminine singular direct article) and *n* (present tense third person plural verb morpheme), and tasks in which they had to process meaning and the lexical item *inflación,* considered to have high communicative value. Subjects in his study recalled significantly more idea units when processing meaning and the item *inflación* than when processing meaning and the items *la* and *-n.*

Overall, the results of the present study with regard to this primary question support Van Patten's findings, i.e., a task that involves simultaneous attention to non-

communicative grammatical forms affects comprehension of meaning. It was noted that subjects had difficulty in detecting non-communicative forms since a vast majority of subjects were eliminated from the pool in Tasks III and IV due to an insufficient number of Xs. Furthermore, overall recall scores of all three analyses - target/strict, target/lenient and warm-up - show that subjects recalled considerably more idea units in Task II than in Tasks III and IV.

Recall scores by level alone also generally support Van Patten's findings, but however with the following exceptions: (1) in both the target/strict analysis and in the target/lenient analysis, Level I subjects recalled more idea units in Task IV than in Task I. In the warm-up analysis, Level III subjects' scores were higher in Task III than in Task I. These exceptions probably occurred as a result of the small number of subjects in each cell, which did not allow for generalizations to be made regarding these unexpected results. Only overall scores which were based on a sufficient number of subjects allow some generalizations. Thus, based on the overall scores and on most of the scores by level, focal attention directed to the non-communicative grammatical forms *the* and *-ed* negatively affected comprehension.

In the comparison of the results for Tasks III and IV in the current study, findings do not match Van Patten's results exactly. In his investigation, beginners and intermediate students performed almost the same in Tasks III and IV, whereas advanced students performed significantly better in Task III. His explanation for this is that the definite article was easily detected because of its resemblance to a lexical item; i.e., it stands alone, it has meaning in itself and it can be found in any dictionary as an independent word. Bound morphemes, on the other hand, cannot be treated as individual or independent words. Nevertheless, as Van Patten explains, early stage learners do not

have the resemblance to words available in their language processors. He argues that for more advanced students, word boundaries become more salient. For early stage learners, roots of known words and cognates are what help them most to understand meaning (Van Patten, 1990, 1996).

In this study, the overall general pattern shows *very little* difference in subjects' performance in Tasks III and IV. And, when differences occurred, they were always in favor of Task IV. The number of subjects eliminated in these two tasks, in both strict and lenient analyses, shows that the morpheme *-ed* seems to have been more easily detected than the definite article *the*. Likewise, when recall strict and recall lenient are compared, it can be noticed that in both analyses there is a small difference between Task III and Task IV, in favor of Task IV. The only exception was Level II subjects, who performed a little better in Task III. In the warm-up analysis, few differences were also found between these two tasks. However, this time the differences were in favor of Task III.

Thus, regarding the results in the strict/target and lenient analyses, what might have happened, in the present study, is that although Level I subjects were to be considered advanced, they were probably not as advanced as Van Patten's subjects. It is possible that none of the learners in this group have reached a sufficient degree of proficiency to detect the definite article *the* as an isolated word. Instead, in the current study, the verb morpheme *-ed* was a little better detected than the free morpheme *the*. This could be due to the fact that in spite of being a bound morpheme, *-ed* was also a part of verbs which carried information about the lexical item Einstein. All actions and facts narrated in the past were related to the lexical item Einstein. Thus, it can be speculated that in order to process information and save attentional resources, subjects focused on the stems of verbs which were more relevant for comprehension. Thus, the

attention to -ed brought attention to the verb, which in turn helped in the comprehension of the general meaning.

With regard to the results of the warm-up text, although very small differences were obtained in Tasks III and IV between the previous analyses and this last analysis, these differences may possible be attributed to the fact that the processing condition IV (content plus -ed) regarding the warm -up text, may be considered more difficult for the learners than the processing condition IV regarding the target text.

As already noted, Van Patten (1990, 1996) has attempted to explain the detection of linguistic forms according to their relative communicative value. Following Van Patten's position, Bransdorfer agrees with and posits, for example that the Spanish preposition *de* is high in a scale of communicative value because it indicates possession and, on the other hand, the definite article *la*, if absent in a sentence, does not interfere with comprehension, i.e., it will not negatively affect comprehension (Bransdorfer, 1990 cited in Bransdorfer, 1991).

Similarly, the definite article *the* in English is syllabic and occurs in the same syntactic position as in Spanish. Hence, it can be suggested that the target form in Task III in the present study has a very low communicative value. Why *very low*? Because in the current study, the lexical item which should be the most important item to push learners to understand meaning was a proper noun. Syntactically, in English, a proper noun does not accept an article before it. Thus, it can be speculated that the definite article might have be more easily detected than -ed if it had appeared before the target lexical item, as it did in Van Patten's study. In conclusion, as in this study the form with the highest communicative value was a proper noun, the presence of the article *the* was

not very relevant to the learners. Its irrelevance may have led subjects to detect forms which carried more meaning and thus did not consume so much processing resources. As Van Patten explains:

> Processing capacity limits what a learner can attend to and detect when engaged in the ongoing and split second process of deriving meaning from input. The internal processor seeks to carry out efficiently the task of getting information, and in the early and intermediate stages of acquisition, the result is a tendency not to process or hold in working memory those items that do not contribute to meaning (Van Patten, 1996, p.27).

Furthermore, for beginners and intermediate learners, detecting acoustically the boundaries between one word and another is a very hard task (Van Patten, 1990). Thus, it can be concluded that it was much more difficult in this investigation for subjects to detect the boundaries between any other word that was not the most important lexical item and the definite article *the*, which at the sentence level is almost blended with other words when it is pronounced. The results of this study suggest that the article *the* and the morpheme *-ed* were not easy forms to detect.

All in all, although outside of the scope of the present study, it can be speculate that the communicative value of the forms varies according to *the way they are presented* and according to *the type of the text in which they are inserted*. Moreover, findings reinforce the idea that in order to be noticed, grammatical forms need to appear relevant for learners.

The second research question addressed Van Patten's findings that focusing attention on important lexical items did not affect comprehension of content. In Van Patten's study, subjects performed about the same in Task I (content only) and Task II

(content plus lexical item); nevertheless the difference was always in favor of Task I. Interesting enough and diverging somewhat from Van Patten's results, the overall pattern of this current study reveals that subjects actually obtained higher recall scores in Task II than in Task I. This tendency was found in all three analyses carried out. However, when recall scores by level are compared, there is one exception, i.e., this result was not the obtained for Level II subjects, who performed differently in these two tasks. Results of all three different analyses revealed that Level II subjects performed better in Task I than in Task II. Again, however, given the small number of subjects in each cell, only overall scores based on sufficient number should be considered.

It should be recalled at this point that, in the case of the present research, learners' attention was somewhat manipulated before asking students to perform the tasks during on-line processing of input. Input was enhanced by the presentation of cards with the written form of the different target items that subjects were expected to attend to in each task. The purpose of the enhancement was to make subjects aware and familiar with the target items, since it was necessary to make sure that they would have no problems attending to the target items merely because misinterpretation of the pronunciation of these forms. Hence, besides showing the cards, forms were clearly and previously pronounced to all subjects in an attempt to avoid such a misinterpretation. One could argue that this manipulation may have biased the detection of the target items. Nevertheless, it should be recalled that all the given items were shown equally on identical cards. That is, one form was not heightened more than another. The difference in results, therefore should not be attributed to the enhancement factor.

The choice of a proper noun as the lexical item to be attended to in Task II was questioned and criticized by M. A. A. Celani (personal communication, April 23, 1998).

In the original study Van Patten did not use a proper noun and it was suggested that the use of a proper noun could have biased the results in Task II. Although it can not be denied that the lexical item *Einstein* may have influenced the results, evidence against this criticism is that the word *television*, used as the target lexical item in the warm-up text, appears to have produced the same effects, since the results show the same overall pattern. Moreover, it is important to remember that the proper noun *Einstein* encodes some kind of meaning as *Einstein* is a household name known throughout the world. The fact that the pronunciation of the proper noun *Einstein* is almost exactly the same in Portuguese as in English should not have helped learners, since they were instructed to recall not only the item, but also the information about this item. Thus, this item has the same function of any lexical item with inherent semantic value - it carries the most important information to lead learners to activate relevant knowledge that they already possess. Certainly after hearing this name, subjects were able to activate relevant prior knowledge as well as they did when they heard the word *television*. Attention to any content word with inherent meaning seems to be more likely to help than to hinder comprehension negatively.

One possible objection to this study is that some students may have relied too much on old information. That is, instead of processing new information, they used only background knowledge in their recall protocols. However, only sentences syntactically and semantically similar to the listening passages were counted as idea units, in order to avoid confusing prior knowledge with comprehended information.

Another possible objection to this study is that the lexical item is always the topic of the sentence and the rest of the sentence is the main information about the topic. It could be argued that this may have helped learners to process form meaning in Task II.

However, although the text in the current study was simplified regarding syntactic complexity since subjects were teenagers attending to English classes in a state school, the listening passage used by Van Patten does not seem to be much more difficult. In fact the pace of speech in which the texts were recorded in this study was faster than in Van Patten's.

All in all, when the effects of attending to content and non-communicative grammatical forms are compared, the results of this investigation tend to support Van Patten's general claims. Subjects showed difficulty in noting down the occurrences of non-communicative morphology while detecting meaning. On the other hand, subjects did not present difficulty in noting down the occurrences of the lexical item while attending to the content. As noted before, the great majority of subjects who were eliminated from the pool due to insufficient number of Xs, in both strict and lenient analyses, were eliminated in Tasks III and IV. Furthermore, even though Level II subjects obtained higher recall scores in Task III than in Task II, this is not the overall pattern. The overall scores, regardless of levels, show that subjects' performance was much better in Task II than in Tasks III and IV.

When Tasks I and II are compared to Tasks III and IV for target/strict, target/lenient and warm-up analyses, there are no exceptions. Subjects' overall recall scores are always higher in Tasks I and II than in Tasks III and IV, at all levels. In short, learners' performance decreased when they were asked to attend to content and non-communicative forms simultaneously. That is, attention to content and non-communicative grammatical forms is more difficult than attention to only content or content plus a meaningful lexical item. Thus, these results provide further evidence that learners' amount of conscious attention at a given moment is finite because human

cognitive capacity to process information is limited. This implies that different tasks can not be processed simultaneously without the automatization of one of these tasks (Van Patten, 1990, 1994,1996).

The third research question involved differences in performance regarding different levels of competence. Results of this study show a tendency to support Van Patten's findings that more advanced level learners perform better when asked to attend to form and meaning. That is, as with Van Patten, the more advanced learners showed that they could more easily focus on form without affecting comprehension.

Regarding Level II, results are unsystematic, but all three analyses results are contrary to expectations. They surpassed Level I in marking a sufficient number of Xs, for example, in the target/strict analysis, but not in the target/lenient analysis. Concerning recall analyses, Level II scored very close to Level III, and even worse than Level III in Tasks II and IV in both strict and lenient analyses. In the warm-up analysis they also recalled fewer idea units than Level III. These results, as the other exceptions mentioned above, suggest that Level II may have been a more heterogeneous group and their data may be less valid for some reason. It was also pointed out by Laura Miccoli (personal communication, December 10, 1998), that the protocols of Level II consisted mostly of lists of words what may indicate that they did not understand the instructions, i.e., maybe they did not understand they had to tell a story. On the other hand, they may have understood what to do but they have had a great difficulty in writing whole sentences.

It is important to recall that input was facilitated by the simplification of the listening passage. As Van Patten reminds us "if attention to form needs to be conscious at some point, then the input must be easily comprehended" (Van Patten, 1990, p. 295).

Nevertheless, even having the text simplified, several subjects in this study complained about task demands in their personal comments, written on their papers:

"Não consigo prestar atenção em duas coisas ao mesmo tempo". (subject in task II - level III)

"Não compreendi, já que prestei mais atenção na terminação -ed" (subject in task IV - level II)

"Não prestei muita atenção no texto só no *the*" (subject in task III - level I)

It is worth noting that students' comments were spontaneous. They were not asked to write about their processing behaviors. Therefore, it seems evident from their comments that the tasks demanded a large amount of cognitive effort and that they were really struggling to understand meaning. That is, they were alert and ready to deal with incoming data (see Tomlin & Villa, 1994). Contrary to expectations, mainly because the subjects were all teenagers, they were surprisingly engaged and curious, showing involvement with the experiment.

Nevertheless, although participants in this study showed readiness and interest, it is important to remember that learners were exposed to aural input, and as Leow (1993) explains, listeners are more cognitively constrained than readers. When exposed to aural input, second language learners' processing of information demands effort, since they have to struggle against the time factor, which plays a crucial role in processing information. It was probably a very hard task for subjects to process information in real time, independent of the task.

Available storage resources may differ from one individual to another (Robinson, 1995b). Thus, not only the task characteristics, text difficulty and time constraints may

have determined how attention was allocated, but also subjects' individual differences. For example, considering the small number of subjects in each cell, the smaller average number of idea units recalled by level II subjects in Task II may have been due to individual differences in the attentional resources or processing too shallow for the task at hand (Hulstin, 1989 cited in Alanen, 1995, p.288).

Considering the high overall number of idea units produced in Task II, regardless of level, it can be suggested that in the current study, attending to the content and to one important lexical item did not seem to require so much effort and attending to the lexical item did not affect comprehension negatively. On the contrary, results of the present study indicate that at least for these learners, focusing attention on a meaningful lexical item may even have enhanced comprehension and resulted in a better understanding of the general content.

These results reinforce Van Patten's (1990, 1994, 1996) claims that learners' attention during input processing is focused first on meaning and it seems that for comprehension of that meaning, learners go first for content words rather than non-communicative grammatical forms. Finally, results show that learners' performance depended on the linguistic knowledge and proficiency in L2 that these learners had. Thus, the subjects with a higher proficiency level were able to process form and meaning more efficiently.

CHAPTER SIX

FINAL REMARKS

6.1 Conclusions

The present study aimed to replicate Van Patten's (1990) experiment, in which he

investigated how learners attend to input data. The crucial question raised by Van Patten

was whether learners could attend to both form and meaning simultaneously. His results

offer evidence that focusing on meaning competes with focusing on form, and thus he

claims that only when comprehension as a skill is automatized can learners

simultaneously attend to form without loss of information.

Van Patten's (1990) results reinforce what has been claimed by other researchers

concerned with the psycholinguistic aspects of input in SLA circles (e.g. McLaughlin,

Rossman & McLeod, 1983; Tomlin & Villa, 1994, Leow, 1993, 1995, 1997; Carr &

Curran, 1994, Chaudron, 1985a, 1985b), who have argued that human beings are limited

processors of information. That is, when engaged in one activity that demands cognitive

effort, people are not able to deal with another demanding activities effectively.

However, when one of these activities becomes routinized, attentional resources are

freed and thus it is possible to perform other activities simultaneously.

As with the study carried out by Van Patten, the results of the current study offer

additional experimental evidence that learners cannot attend to all the data presented to

them. Learners select what they can attend to at a given point in time, in order to avoid

an overload in their processing system. Results demonstrated that focusing on content

and grammatical forms posed a problem for the majority of them. As revealed by the

assessment of their recall protocols, subjects' performance decreased considerably when they were asked to attend to both form and meaning. On the other hand, when attention was focused on an important lexical item, subjects' performance was actually somewhat better than when attention was focused on content only. Thus, it seems reasonable to conclude that when attention is focused on informational content, there is little opportunity for learners to attend to formal features of language. The primary goal of learners is to comprehend the message and in order to achieve this, they use all their attentional resources. Therefore, following Van Patten's line of thought, it can be suggested that some linguistic features may never be noticed by learners if they are not guided to notice them, and these features may take much longer to become part of a learners' developing system. Being limited-capacity processors, learners use their attentional resources to grasp meaning first and only when meaning is easily comprehended, is some attention released to form.

Most participants in this study showed great difficulty in attending to meaning and non-communicative forms (i.e., the article *the* and the verb morpheme *-ed*); however, comprehension did not drop when attention was focused on content plus a lexical item (the proper noun *Einstein*). Therefore, these findings provide support for previous research which showed that when attending to meaning, focal attention directed at an item of high communicative value does not affect comprehension (Van Patten, 1990; Bransdorfer, 1991).

As a matter of fact, although findings should be interpreted as only suggestive rather than definitive, results seem to indicate that when attention was focused on an item of high communicative value (e.g. a widely used noun), detection of this item even enhanced the comprehension of content. What is being suggested is that in the early and

intermediate stages of acquisition, learners seem to choose first and more readily to hold in working memory those items which were more meaningful to them. Thus, it is reasonable to conclude that items of high communicative value in input will lessen the demands on attentional resources. In short, those meaningful items which decrease demands on attentional resources may help learners to activate their prior knowledge (i.e. relevant schemata). Nevertheless, this assumption is only speculative and no general claim is being made here that drawing learners' attention to any particular noun is a sufficient condition for processing L2 input.

In addition, as observed in Van Patten's study, there is also evidence here that when comprehension[1] as a skill becomes automatic, learners are more able to detect items of low communicative value without negatively affecting the processing of information. That is, participants of this study who were at a more advanced stage seemed to have already reached a degree that allowed them to analyze and retrieve non-communicative forms without a very dramatic loss of general information.

6.2 Pedagogical Implications

Given the small number of participants, it is difficult to draw firm and final conclusions based on the results obtained in this study. Nevertheless, the present findings provide some evidence concerning the issue of focusing attention on form while processing input for meaning. Thus, this research is valuable for reflection on the practice of language teaching, and could be used to alert those teachers dealing with advanced students that it may not be necessary to make isolated presentations of grammatical

---

[1] Given this type of study replicated here, it might be questioned what level of comprehension was actually tested. It might be remembered that in Level II many words were included in the recall protocols making it difficult to determine what was actually comprehended.

forms in order to direct more proficient learners to attend to and detect linguistic features in input. On the other hand, it seems likely that learners, especially beginners and intermediate students, are not able to divide their attention between both form and meaning simultaneously. In this case, it can be said that teachers could play an important role in guiding these students to detect and notice linguistic forms through input enhancement (i.e., eliciting forms in a communicative context) in a context whose meaning is easily comprehended. One way to do this (suggested in a lecture at UFSC by Martin Bygate) is to repeat the task - the first time for meaning, the second time for accuracy or focus on form. However, for more effective insights on language teaching, considerably more investigation based on an input processing perspective is needed in order to find out specifically which forms can be more easily detected and processed from input.

Hence, it may be possible to point out and select more appropriate material for language programs when learners' cognitive processes are taken into consideration. That is, research that seeks to investigate what L2 learners attend to in the classroom may help with the selection of appropriate material to be used for teaching a foreign language. As Leow notes, "too often instructional approaches 'predict' what learners take in from the input without any empirical evidence to support this prediction" (Leow, 1995, p.86).

It seems evident that focus on form may play an important role in the language classroom and therefore deserves serious consideration. However, it is important to point out that attention to form should be encouraged in a communicative context. Making students aware of forms in a classroom does not mean presenting learners with long and boring lists of structural drills. On the other hand, drawing learners' attention to linguistic elements which are meaningful and relevant to them will be likely to make these

elements easier to process. As Schmidt (1990) observes, in the early stages, learners seem to want to know about what they are learning because they want to be in control of their learning experience. Thus, if it is necessary for learners to know about the target language in order to feel more confident, there seems to be no "sin" in calling students' attention to some linguistic features of the language.

As results indicate that learners fail to comprehend content when asked to process form and meaning simultaneously, what may happen in pure meaning programs is that learners will have difficulties in acquiring accurate forms. However, some features that are not so easy to notice may become part of their interlanguage if they are guided to process them. However, as Van Patten (1994) points out, researchers and teachers should not take the idea of focusing on form as a reactionary position in favor of the return of the most traditional methods.

In addition to this, it is important to emphasize that the results of this and others studies indicate that learners do not seem to focus on linguistic elements unless input is easily comprehended. Some features in input seem be easier to notice than others. Nevertheless, much more investigation is needed in order to identify which forms are easier for learners to detect and to process.

Taking into account learners' cognitive processes when selecting material for language programs and remembering that "only so much incoming data can be attended to at a given time" (Van Patten, 1996, p.16), should lead to better results in foreign language learning.

Nevertheless, different learners may tackle the L2 using different strategies. As McLaughlin, Rossman & McLeod (1983) observe, the success of these strategies "depends on the characteristics of the situation and on individual styles" (p.153), and the

results of research on information-processing in the L2 therefore may provide evidence about "whether individuals or groups are processing languages in different ways." (ibid, p.154).

Finally, as Bialystok (1994) notes, although dependent on the learners internal processes, language acquisition may be accelerated through appropriate instruction. Thus, even though specific formulas should not be prescribed for second language instruction, if we have some insights about how individuals process language, we will have a greater chance of finding the right path for formal instruction in formal settings.

6.3 Limitations of the Study and Suggestions for Further Research

This study replicated Van Patten's (1990) study about the role of attention in input processing. However, even though all efforts were made to follow the same procedures used by Van Patten, it was not possible to carry out exact replication, since much more information about the original study was needed. Thus, the present study was actually a conceptual replication; i.e., claims of the previous research were considered and investigated in another situation (Gass and Polio, 1997). In this new context in which the study took place, some factors may have influenced the outcomes of this investigation and thus caution is needed when results are interpreted.

First, given the small number of subjects and the resulting impossibility of random sampling and statistical analyses, results should not be generalized to a larger population. Although in this study, quantitative and qualitative analyses provided reasonably credible results, a larger population might have allowed more significant and thus generalizable results. Further research should also include a pretest of students' proficiency in each SL skill to aid in forming groups of approximately equal language competence. Nonetheless,

validity of the results of the present study, regarding this school population, is limited only by the fact that scores used for grouping were not specific to the listening comprehension skill and that the researcher has no information on the reliability of those scores.

Another point that should be made is that, since attention is such a subjective experience, more detailed questionnaires, careful interviews after testing, or think aloud techniques while subjects were carrying out the tasks could reveal much more about how subjects experienced the tasks and instructions. As a result, the extent to which subjects actually performed the assigned treatment tasks could be more easily assessed.

In addition, in future research of this kind, instructions should specify that the protocols should be written in complete sentences. Moreover, some other sort of semantic analysis might be used to assess the data. It might also be worth exploring whether the analysis of distortions would lead to different results from the ones obtained here.

To conclude, given the difficulty of observing "on-line" processing, results should not be generalized to the population of Brazilian high school students as a whole. No doubt, much more research using different methods is recommended in order to understand how Brazilian learners' process second/foreign language input

BIBLIOGRAPHY

Alanen, R. (1995). Input enhancement and rule representation. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 259-299). Honolulu: university of Hawai Press.

Baars, J. B . (1988) *A cognitive theory of consciousness*. Cambridge: Cambridge University Press.

Bialystok, E. (1994). Analysis and control in the development of second language proficiency. *Studies in Second Language Acquisition, 16,* 157-168.

Blau, E. K. (1990). The effect of syntax, speed, and pauses on listening comprehension. *TESOL Quarterly, 24,* 746- 753.

Bransdorfer, R. (1991). *Communicative value and linguistic knowledge in second language oral input processing*. Unpublished doctoral dissertation, The University of Illinois at Urbana-Champaign.

Carr, T. H. & Curran, T.(1994). Cognitive factors in learning about structured sequences: applications to syntax. *Studies in Second Language Acquisition, 16,*205-230.

Carrell. P. L. (1985). Facilitating ESL reading by teaching text structure. *Tesol Quartely, 19,*727-752.

Chafe, W. L. (1980) . *The pear stories:Cognitive, cultural, and linguistic aspects of narrative production*. Norwood, New Jersey: Ablex Publishing Corporation.

Chaudron, G. (1985a). Intake: On models and methods for discovering learner's processing of input. *Studies in Second Language Acquisition. 7,* 1-14.

Chaudron, G. (1985b). Comprehension, comprehensibility, and learning in the second language classroom. *Studies in Second Language Acquisition. 7*, 216 - 232.

Corder, S. P. (1974). The significance of learner's errors. In J. H. Shumann & N. Stenson, (Eds), *New Frontiers in Second Language Learning* (pp. 90 - 99) . MA: Newbury House Publishers. (Original work published 1967)

DeKeyser, R. M., & Sokalski, K. J. (1996) The differential role of comprehension and production practice. *Language Learning, 46*: 4, 613-642.

Ellis, R. (1985). *Understanding Second Language Acquisition.* Oxford: Blackwell.

Ellis, R. (1990). *Instructed second language acquisition: Learning in the classroom.* Oxford: Blackwell.

Ellis, R. (1997). *Second Language Acquisition.* Oxford: Oxford University Press.

Eysenck, M..W. & Keane, M.T (1995). *Cognitive Psychology.* Exeter: Psychology Press.

Faerch, C. & Kasper, G. (1986). The role of comprehension in Second- language learning. *Applied Linguistics. 7*, 257- 273.

Gallaway, C. & Richards, B. J. (1994). *Input and Interaction in Language Acquisition.* Cambridge: Cambridge University Press.

Gass, S. M. (1988). Integrating research areas: A framework for second language studies. *Applied Linguistics, 9*, 198-217.

Hulstijn, J. (1995). Not all grammar rules are equal: giving grammar instruction its proper place in foreign language teaching. In Schmidt, R. W. (Ed.) *Attention and awareness in foreign language learning* (pp. 359-385). Honolulu: University of Hawai Press.

Johns, A. M. & Mayes, P. (1990). An analysis of summary protocols of university ESL students. *Applied linguistics,11*, 253- 271.

Johns, A. M. (1985). Summary protocols of 'under-prepared' and 'adept' university students: Replications and distortions of the original. *Language learning,35*, 497-517.

Kenan, L. R. (1970). *Fact and Fancy.*New York, N.Y: Harcourt.

Krashen, S. (1982). *Principles and practice in second language acquisition.* New York, New york: Pergamon.

Lee, J. F. (1986). On the use of the recall task to measure L2 reading comprehension. *Studies in Second Language Acquisition, 8,* 201-212.

Lee, J. F., Cadierno, T., Glass, W. R. & Van Patten, B. (1997). The effects of lexical grammatical cues on the processing past temporal reference in second language input. *Applied Language Learning,* 8, 1- 23.

Leow, R. P. (1993). To simplify or not to simplify. *Studies in Second Language Acquisition, 15,* 333-355.

Leow, R. P. (1995). Modality and intake in second language acquisition. *Studies in Second Language Acquisition,17,*79-89.

Leow, R. P. (1997). Attention, awareness, and foreign language behavior. *Language Learning,47,* 467- 505.

Lightbown, P. M. & Spada, N. (1993). *How languages are learned.* Oxford: Oxford University Press .

McLaughlin, B., Rossman, T., McLeod, B. (1983). Second language learning: An information- processing perspective. *Language Learning,33,* 135- 157.

McLaughlin, B. & McLeod, B. (1986) . Restructuring or automaticity? Reading in a

second language. *Language Learning, 36*, 109-123.

McLaughlin, B. (1987). *Theories of second language learning.* London: Edward

Arnold.

McLaughlin, B. (1990). "Conscious" versus "unconscious" learning. *Tesol Quartely, 24*,

617-633.

McLaughlin, B. (1990). Restructuring. *Applied Linguistics, 11*, 113-128.

McMillan, J. H. & Schumacher, S. (1984). *Research in education- A conceptual

introduction.*Boston: Little, Brown and Company.

O'Malley J. M., Chamot, A. U., and Küpper, L. (1989). Listening comprehension

strategies in second language acquisition. *Applied Linguistics, 10* , 419- 437.

O'Nell, R. and Mugglestone, P. (1989). *Third Dimension.* London: Longman.

Polio, C. & S. Gass (1997). Replication and reporting. *Studies in Second Language

Acquisition,19*, 499-507.

Richards, J. C. (1993). Listening comprehension: Approach, design, procedure. *TESOL

Quarterly,17*, 219- 39.

Robinson, P. (1995). Attention, Memory, and the "noticing" hypothesis. *Language

Learning. 45*, 283- 331.

Robinson, P. (1995b). Aptitude, awareness, and the fundamental similarity of implicit

and explicit second language learning. In R. Schmidt (Ed.), *Attention and awareness

in foreign language learning* (pp.303-357). Honolulu: University of Hawai Press.

Rutherford, W. E. & Sharwood Smith, M. (1985). Consciousness- raising and universal

grammar. *Applied Linguistics, 6*, 275- 281.

Schmidt, R. W. (1990). The role of consciousness in second language learning. *Applied Linguistics,!!,* 129-158.

Schmidt, R. W. (1995). Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In Schmidt, R. W (Ed.). *Attention and awareness in foreign language learning* (pp. 1- 63). Honolulu: University of Hawai Press.

Sharwood Smith, M. (1986). Comprehension versus acquisition: Two ways of processing input. *Applied Linguistics, 7,* 239- 254.

Sharwood Smith, M. (1994). *Second language learning: Theoretical foundations.* London: Longman.

Stillings, N., Feinstein, M., Garfield.L., Rissland, E., Rosembaum, D., Weisler, S., & Baker-Ward, L. (1987). *Cognitive science:An introduction.* Cambridge, MA: The MIT Press.

Tomlin, R. S. & Villa, V. (1994). Attention in cognitive science and second language acquisition. *Studies in Second Language Acquisition, 16,* 183-203.

Van Patten, B (1994). Evaluating the role of consciousness in second language acquisition: Terms, linguistic features & research methodology. *AILA Review,* 11, 27-36.

Van Patten, B .(1990). Attending to form and input: An experiment in consciousness. *Studies in Second Language Acquisition,12,* 287-301.

Van Patten, B. & Cadierno, T.(1993). Input processing and second language acquisition: A role for instruction. *The Modern Language Journal, 77,* 45-57.

Van Patten, B. (1996). *Input Processing and Grammar Instruction: Theory and Research.* Norwood, NJ: Ablex Publishing Corporation.

Ying, H. (1995). What sort of input is needed for intake? *IRAL*, *33*, 175- 194.

Appendix A

Preliminary Questionnaire

Name:_____

Responda:

1. Você tem algum problema de audição ou alguma dificuldade de ouvir ou acompanhar o que seus professores falam em sala de aula?

_____

2. Você utiliza outro idioma, além do português, em casa com seus pais, irmãos ou outros parentes?

_____

3. Em caso de afirmativa a resposta acima, qual o idioma que predomina ou que é mais usado na sua casa?

_____

4. Você já morou fora do Brasil?

Onde?_____

Quanto tempo?_____

5. Você está estudando ( ) ou já estudou ( ) inglês fora do colégio?

Onde? _____

Quantas horas semanais?_____

Durante quanto tempo?_____

6. Você acha que o inglês é :

( ) muito importante;

( ) pouco importante;

( ) não é importante.

7. Quantos anos você tem? _____

Appendix B

Tapescript of the warm-up passage

Television

Many parents ask why television was invented. They even think television should be abolished. However, other people believe television has improved our lives. For example, television has opened windows in everybody's life. Television has reached many people and has shown clearly what is happening right now in their country and everywhere else. Television has transformed information; it gives the news instantly and it also shows it in pictures, which are more powerful than words.

Television has brought reality to the public. Millions of people now have seen the effects of wars, floods, fire, crimes, and other disasters. And the result is a general revolt against war, and perhaps more interest in helping the victims of disasters.

Finally, today people are better informed about politics because of television.

Appendix C

Tapescript of the target text:

Einstein

Einstein was one of the greatest scientists in history. However, Einstein was not considered very intelligent when he was a child. When Einstein was nine years old, his father worried about him because he thought his son was 'a bit stupid'. The teachers complained because he had no discipline.

When Einsten was fifteen, he was expelled from school, but a few years later he was permitted to study mathematics and physics at the university. However, even at the university, Einstein was not 'a good student'. Einstein did not attend the lectures, and he constantly argued with the professors. One of the professors told him 'You're intelligent, extremely intelligent. But you have one real fault, you never listen to anyone!'

When Einstein graduated from the university, he couldn't get a job, because the professors would not recommend him.

In the end, Einstein became very famous for the Theory of Relativity, which concerns time and gravity and how things change when they travel at very high speeds. However, all his life Einstein lived very simply and was totally uninterested in money, power or fame. Einstein never understood why so many people admired him and wanted to meet him. He knew that many people didn't understand his ideas. 'Are they crazy, or am I?' he asked.

Appendix D
Sample of set of material used in each task condition

TASK III

Name _____

Recall protocol

*Name*_____

Appendix E

Subjects' recall protocols for the target text

** All idea units scored are bracketed. Idea units, scored by the researcher only, are represented in italics. Idea units scored by the other rater only, are represented in bold. Agreements are represented in both italics and bold.

TASK I (content only)

LEVEL I

Mirela
Einstein (title)
{*Einstein foi um brilhante cientista.*}
Foi para a universidade de Física. Era um ótimo aluno. {*Teve uma vida simples,*} era bastante humilde.
Se formou em física. Seu pai o apoiou.

Antonio Roberto
{*Einstein foi um dos maiores cientistas que a humanidade já teve.*} {*Ele era uma pessoa muito inteligente*} e já demonstrava isso em sua adolescência. Ele estudou muito {*e não ouvia ninguém,*} ou seja, era um cientista que provava suas afirmações com base nos estudos, e não se convencia com as apresentadas de outros cientistas.{*Foi responsável pela "teoria da relatividade"*} e provou esta teoria com base em suas pesquisas.

Valéria
Einstein foi o primeiro estudante de física e matemática. (universidade)

Tobias
{*Einstein foi um dos principais cientistas da história mundial.*} Desde criança até seus 15 anos, {*era considerado uma pessoa não inteligente.*} {*Na faculdade,*} {*um professor disse*} {**que ele não era inteligente**} {*pois não aceitava a opinião das outras pessoas,*} no entanto, alguns anos depois, Einstein se tornou o grande cientista reconhecido internacionalmente.

Daniela
{*Einstein foi um grande cientista.*}
Quando era pequeno não era nenhum geniozinho, pelo contrário, ia mal no colégio e não respeitava muito os professores.
{*Mais tarde*} {*passou a estudar física*} {*e matemática em uma universidade.*}
{*Um problema seu era*} {*que ele não ouvia muito os outros.*}
No início Einstein poderia não ter sido um cara muito inteligente, mas hoje suas teorias, conhecimentos e experiEncias são usados em várias ciências.

LEVEL II

Mariana
{Einstein era muito inteligente.}
{Foi um grande cientista.}
Foi o primeiro estudante de física e matemática na Universidade.
{Seu pai estava preocupado} com seu baixo rendimento na época da escola, *{pois ele era indisciplinado.}*

Stella
Einstein (title)
universidade
{Einstein era muito inteligente.}
{toda sua vida}
escola
nove anos seu pai
vinte anos
matemática
{física}
cientista
professores
bom aluno
simples
trabalho
estúpido
foi
estudou

Gabriela
{Einstein foi um grande cientista,} *{muito famoso.}*
Suas descobertas foram muito importantes para o mundo, todas as pessoas acreditam em suas descobertas, que até hoje são ainda válidas.
Suas experiências valem muito dinheiro.
As pessoas de sua época achavam que Einstein era um cientista maluco, por suas teorias, mas agora todo mundo sabe que não.
Ele era muito famoso por sua inteligência.
{Quando criança} já era um bom aluno.

Júlia
Einstein (title)
{Ele foi um cientista muito inteligente.}
Ele foi o primeiro estudante em matemática e física na universidade.
Na época do colégio *{ele não era muito inteligente,}* *{seu pai estava preocupado}* com o baixo rendimento. *{Ele era muito indisciplinado.}*
{ Ele sempre discutia com os professores,} *{e não se preocupava com grana (dinheiro). }*

Gabriel
Einstein (title)
{Einstein era inteligente} *{durante toda a sua vida}*
universidade
· escola
{física}
vinte anos
cientista
bom aluno
matemática
trabalho
estúpido
foi

LEVEL III

Camila
{Einstein é muito inteligente.}
{Cursou a Universidade de Matemática} *{e Física}* e outras também.
Sempre foi um bom aluno.
Muitas pessoas acham ele maluco.
Ele ficou muito famoso por sua inteligência.

Fernanda
Palavras:
inteligente
vida
dinheiro
pessoas
Einstein
artigos (o,ou,os,as)

Talisy
inteligente
quinze
estudante
porque
muito
produtivo
viagem
interessante
pessoas
idéias

Bernard

A história einstein

{*Einstein era um cientista muito inteligente,*} {*seus professores dizem*} que ele não era um bom aluno {*e que não era disciplinado,*} ele descobriu a teoria da relatividade.

Vinícius

Einstein (title)

Einstein era filósofo e físico.

Universidade

vinte anos

cientista

Ana Paula

Muitas pessoas gastam dinheiro.

Pessoas velhas. Uma pessoa (ele ou ela) ficou famoso por ser inteligente.

Daniel

Einstein (title)

{*Einstein era um grande cientista.*}

Foi o primeiro estudante de Matemática e Física da Universidade.

Felipe

Einstein (title)

{*Aisten era uma pessoa muito inteligente.*} Foi o 1° estudante de física e MTM na universidade. {*O pai dele está preocupado*} com seu baixo rendimento, {*pois ele era muito indisciplinado*} antes de entrar na universidade.

TASK II (content plus lexical item)

LEVEL I

Fabiana - 10 Xs

{*Einstein, quando era criança*} {*não era inteligente.*} {*Seu pai até ficou preocupado*} {*com sua estupidez.*} Entretanto, quando ficou mais velho, {*ingressou na faculdade*} {*de Física*} {*e Matemática.*} {*Algumas pessoas não entendiam as idéias dele.*} {*Ele não entendia,*} {*porque tantas pessoas queriam conhecê-lo.*} {*Hoje ele é considerado um dos maiores cientistas*} de sua época. {Seus professores diziam} {*que ele era muito,*} {*muito inteligente.*} {*Ele não ouvia as idéias de ninguém*} e as ignorava.

Rita - 11 Xs

{*Einstein foi um cientista brilhante,*} apesar de nunca ter sido bom aluno na escola. Aos 15 anos reprovou em matemática.

Na Universidade também não teve muito êxito. {*Um professor chegou a dizer*} {*que ele era inteligentíssimo.*} {*Seu único problema era*} {*que não dava importância ao que se dizia.*}

{Mais tarde,} {se tornou famoso, com a "Teoria da relatividade",} apesar de ter sido muito contestado. *{Também não entendia}* o porquê da euforia das pessoas a cada nova descoberta sua.
{Não conseguiu emprego de imediato,} {pois não foi recomendado pela universidade.}

Bruno - 10 Xs
{Einstein era um grande cientista} porém um mau aluno, *{era indisciplinado,} {mais tarde} {se tornou famoso pela teoria da relatividade.}*

Karina - 11 Xs
{Ele era um cientista.} Não era muito inteligente na escola. *{O pai dele estava preocupado}* com seu baixo rendimento. *{Ele era muito indisciplinado.}*
Foi o 1º estudante em mtm e física na universidade. *{Todos os profº não recomendavam ele p/ ninguém} {pois sempre discutia com os prof's.}*
{Não se preocupava muito com o dinheiro.}

Daniela - 12 Xs
{Einstein foi um dos maiores cientistas de toda a história.}
{Einstein não era disciplinado.}
{O pai de Einstein se preocupava com ele} {pois achava} {que ele era um pouco burro.}
{Aos 15 anos} {Einstein foi expulso do colégio.}
Einstein era considerado um burro.
Depois de ser expulso *{ele foi estudar na universidade,} {física} {e matemática.}*
{Um de seus professores disse a Einstein} {que ele era muito inteligente,} {mas ele não escutava ninguém.}
{Einstein não entendia} {porque todo mundo queria conhecer} e conversar com ele.
{Einstein é o grande responsável pela teoria da Relatividade} {que envolve o tempo e a velocidade.}
{Einstein vivia muito simples,} ele era um homem simples.
{Einstein dizia:} {eu estou louco} {ou eles estão loucos.}

LEVEL II

Luciano - 9 Xs
estúpido - *a*instein - louco - cinquenta - anos - universidade - pessoas - muitas pessoas, o, gosta, *{física,}* amigo.

Pablo - 10 Xs
* any word was written

Leandro - 10 Xs
Einstein, *{Física,}* Universidade, amigos, idade, estúpido, louco, 50, muitas, o, gosta.

Caroline - 10 Xs
Einstein

estudou
matemática
física}
cientista
foi
universidade

Charlene - 10 Xs
muito
professor
e
Einstein (10 vezes)

LEVEL III

Márlon - 9 Xs
Falava sobre alguns fatos (anos) importantes na vida do Einstein, *{estudava física,}* viajava para um lugar, foi acusado de ser louço, alguma coisa relacionada com um avião.

Gustavo - 11 Xs
{Einstein foi um grande cientista.} *{Aos nove anos}* fez alguma coisa (não me lembro), aos não sei quantos anos, foi p/ escola e os professores diziam que não era muito inteligente, ao sair da escola *{foi p/ universidade}* onde cursou *{matemática}* *{e física.}* Com não sei quantos anos, ele fez outra coisa, que também não me lembro.
Einstein
Einstein
Einstein
Einstein
etc. etc. etc..

Felipe - 10Xs
{Einstein foi um grande cientista da hiastória atual.}
{Einstein era muito inteligente} em física e matemática.
Foi Universidade e escola...
(mais ou menos isso!)
{... cursou o curso de física} *{e matemática}* *{na universidade... }*

Doriellen - 9 Xs
{Einstein foi um cientista... } que era muito inteligente.
Einstein foi a primeira pessoa a estudar matemática e física na universidade.
{ ...ele era muito inteligente. }
...era uma pessoa que se preocupava...

Andreza - 10 Xs
{Einstein foi um grande cientista.}

Eliete - 7 Xs
Pessoa. um

dinheiro meu
não
estudante
nunca
Einstein

Gabriela - 7 Xs
Mundo
Einstein

TASK III (content + article *the*)

LEVEL I

Gabriela - ll Xs
{*Einstein foi um famoso cientista*} que fez várias descobertas. Mas teve muitas dificuldades até chegar a este mérito. {*Quando criança,*} {*aos nove anos,*} estudava e era muito inteligente. {*Aos 15 anos*} {*foi para a universidade.*} Era considerado, pelos professores, um tanto quanto, "maluquinho" e apressado para a época, um louco , melhor dizendo. Hoje suas teorias são muito aceitas e muito importantes para a nossa sociedade (?)

Mário - 11Xs
Einstein
professors
teachers
most
intelligent
fifteen
university

Gislene - 5 Xs
{*Einstein foi um grande cientista,*} já na sua infância era dono de uma inteligência nata e na adolescência (15 anos) {*estudou física*} e isto lhe interessava muito.
Os professores o elogiavam muito pela sua inteligência, descobria sozinho as soluções de grandes cálculos, inventou muitas teorias e devido a isto se tornou um dos melhores, ou até, o melhor cientista, mesmo sendo considerado por uns como sendo um louco.

Luciana - 5 Xs
{*Einstein foi um dos mais importantes cientistas da história.*}
{*Quando ele tinha nove anos*} seu pai...
Na escola ele era considerado mau aluno
{*Ele foi pra universidade*} quando ele tinha 19 anos. Se formou em {*física*} {*e matemática*} {*na universidade também não era considerado bom aluno.*} {*Quando se formou*} {*não conseguiu emprego*} porque os professores diziam que ele era ruim. {*Einstein teve uma vida simples,*} e não foi famoso na época.

Donaldo - 2Xs
Fala do Einstein

LEVEL II

Gustavo - 8 Xs
{*Einstein era muito inteligente*} mas não se dava muito bem com os professores na escola
15 anos ___ muito bom em física
{*ingressou na universidade*}
Teoria da relatividade

Simone - 8 Xs
{*Einstein estudou física*} em uma universidade.
{*Era muito inteligente,*} tinha muitas idéias.
Era (ou não era) "I don't no!" acostumado a conviver com a fama, dinheiro, e idéias!
Morreu velhinho e hoje em diante é lembrado como um físico muito importante para a humanidade e suas teorias são muito conceituadas, sendo que ele era considerado maluco naquela época.

Roberta - 2 Xs
Einstein
pessoas
muito
jovem
inteligente
gostavam dele
cientista

Aline - 4 Xs
Einstein - foi um excelente físico, professor e no final de sua vida ficou maluco.   Entrou com 15 anos na universidade.

Marcela - 7 Xs
Einstein tinha 50 anos.
{*Einstein fez física na universidade*}
{*muito inteligente*}
era considerado um louco.

LEVEL III

Marcelo - 9 Xs
O texto fala da vida de Einstein

Thiago - 1 X
Einstein
Universidade
15

Douglas - 3 Xs
Este texto falou sobre a vida de *Ainststein* explicou o que fazia e outras. Falou que foi um cientista muito importante

Malison - 3 Xs
Einstein é muito inteligente
Com 15 anos foi estudar na Universidade da América
virou professor
Apesar disto tudo não era um bom estudante
houve um professor que já disse a ele que ele era inteligente, mas não deu importancia

Rodrigo - 20 Xs
Einstein

Juliano - 3 Xs
Einstein era muito inteligente.
Com 15 anos foi estudar na universidade da América.
Morreu professor.
Apesar disto não era um bom estudante.

Sávio - 5 Xs
{Einstein é muito inteligente}
    "   não foi estudante.
    "   ele gosta ...
Muitas pessoas consideram EINSTEIN como gênio

Amanda - 1 X
Einstein era muito inteligente.
Desde criança.
Cursou física na universidade
As pessoas acreditava, nas suas idéias.

TASK IV (Content + final morphemé *-ed*)

LEVEL I

Luiz - 5 Xs
{Einstein não era um bom estudante}
{Uma vez um professor falou} {que ele era inteligente} {porém não escutava ninguém.}
{No final} {ele se tornou famoso} {e todas as pessoas queriam conhecê- lo.}
{As 15 anos} ele começou a estudar *{física} {e matemática,}* porém não se dava bem.
    {Ele se perguntava: }
{Eles são loucos} {ou eu que sou o louco.}
{Sempre foi uma pessoa simples,} mesmo depois do seu sucesso.

Débora - 7 Xs
{Einstein, um dos maiores cientistas da história.}
{Aos 15 anos...} *{estudou matemática}* *{e física.}*

Fernanda - 10 Xs
quinze anos
nove (ou) dez anos.
história
Einstein
professores
disciplina
muito
trabalho
conhecer
célebro
maluco
pessoas

Marcelo - 3 Xs
Einstein - era um jovem estudante que era muito inteligente mas haviam pessoas que não gostavam dele, por causa de alguns professores ele não pode estudar isto é não conseguiu uma vaga na universidade, um dia Einstein ouviu um professor que disse:
- você é muito inteligente, não vá atrás destas pessoas que lhe querem prejudicar.
Einstein era um cientista com um cérebro desenvolvido mais que nós e não se importava com a fama o dinheiro e não principalmente vendia sua inteligência, era um homem umilde e sempre viveu em condições que lhe dava para o gasto.
Obs: He lived one year in the USA.

Letícia - 15 Xs
Einstein,*{quando criança,}* seu pai não acreditava no potencial de seu filho.
Einstein foi no colégio, seus professores não gostavam do Einstein, pois ele era muito inteligente e os professores não gostavam daquilo. *{Einstein estudou Matemática}* *{e Física.}*
{Quando se formou} *{não conseguia emprego,}* *{pois os professores não o recomendava.}*
Einstein virou cientista e *{se tornou mais tarde muito famoso}* pelas suas descobertas.
Ele não era uma pessoa esnobe, *{não se interessava}* *{pela fama,}* *{era uma pessoa simples}* com uma inteligência incomum, que ninguém tinha igual.

LEVEL II

Mariana - 4 Xs
O texto fala sobre Einstein
E curiosidades da vida dele
Ele era muito inteligente e bagunceiro.
Maluco
Professores
Pessoas

Camila - 10 Xs
história
muito inteligente
estúpido
quinze anos
universidade
estudantes
nunca
trabalho
dinheiro
pessoas
muitas
maluco
dez anos
Einstein
conhecer
disciplina

Marcos - 3 Xs
EINSTEIN: estudou física e matemática
quando saiu da escola arrumou um emprego onde lecionava aulas de física.
Com o tempo e com suas experiências ficou famoso em quase todo mundo.

Carlos Eduardo - 12 Xs
EINSTEIN
estudante
P.S. Não compreendi, já que prestei mais atenção na terminação "ed".

LEVEL III

Tathiana - 8 Xs
{*Einstein era uma pessoa muito inteligente* }
dinheiro
a
Fez muitas invenções.
sim.
vida
Thaiz - 8 Xs
Einstein era doido por alguma coisa e ele dedicava seus dias para esses estudos, ele
discutia com as pessoas o que ele pensava, etc...
Falou que ele começou a se preocupar com a ciência, {*quando ele tinha 15 anos.*}

Mônica - 5 Xs
Este texto fala sobre a vida Einstein.
Fala também algumas curiosidades da vida dele, fala que {*ele era muito inteligente*} e
bagunceiro
Contou aonde ele estudou falou das universidades que fez.

Luciana - 5 Xs
Fala sobre a vida de Einstein fala de que quando ele tinha 15 anos ele já superava seus professores, fala que {*ele era uma pessoa muito inteligente*} e que foi mandado para uma universidade mais cedo do que a idade certa, por causa da sua inteligencia.

Cibele - 3 Xs
pessoas
dinheiro
Einstein
foi um grande
inventor
muito

Rogério - 8 Xs
Einstein.
the.

Gisiele - 5 Xs
pessoas
Einstein
dinheiro
muito
estudantes
maluco
professores

Fernanda - 5 Xs
O *A*instein é um fisico
muitas pessoa
Estudou
dinheiro

Jian - 9 Xs
{*com 15 anos*}
dinheiro
poder
louco
uma vida simples.
um grande cientista
por toda uma vida
estudou, estudantes
Universidade

Subjects' recall protocols for the warm-up text

*** Idea units scored are bracketed and in italics. In this analysis, idea units were scored by the researcher only.

TASK I (content only)

LEVEL I

Mirela
A televisão é muito importante na vida das pessoas. A televisão traz muita felicidade para as pessoas.
Muitas pessoas possuem televisão.
Na televisão passam desenhos, jornais.
As pessoas chegam a brigar por causa da televisão.

Antonio
O texto fala sobre a televisão, sobre suas influencias no meio onde vivemos. Fala também , que a televisão manipula como quer tudo o que deseja. Ao mesmo tempo, ela nos mantém informados de tudo o que se passa; ela nos mostra notícias sobre a política, esporte, nos mostra acidentes, {*desastres,*} enfim, a televisão é como uma janela, que nos mostra tudo que desejamos ver.

Valéria
A televisão serve como um meio de comunicação, que nos mantém informados dos acontecimentos.

Tobias
A televisão serve como um meio de comunicação, que nos mantém informado de tudo o que acontece no mundo. Trata de assuntos como: política, {*desastres*} e outros.

Daniela
A televisão é um meio de comunicação que chega aos mais diversos lugares e mantém a todos informados sobre os mais variados assuntos.
A televisão nos informa sobre vários acontecimentos como catástrofes, tragédias, acontecimentos políticos, {*desastres,*} e outros.
Enfim, a T.V. interfere na vida das pessoas.

LEVEL II

Mariana
A televisão serve como um meio de comunicação, que nos mantém informados dos acontecimentos.
Stella
A televisão (title)

pessoas
desastre
mundo
trabalho

Gabriela
A televisão é importante na comunicação.

Júlia
A televisão serve como meio de comunicação.
" é um objeto que hoje em dia todos tem. Através dela nos informamos sbre os acontecimentos mundiais, {*desastres,*} guerras etc...

Gabriel
{*A televisão abre muitas janelas.*}
A televisão procura atingir todas as pessoas
{*desastre*}
mundo
trabalho

LEVEL III

Camila
Televisão
Televisão dá uma imagem aos olhos.
Muitas pessoas veem televisão.
Eu entendi que o texto é um documentário sobre o significado da palavra televisão e o que ela nos proporciona.

Fernanda
Palavras:
televisão.
porque.
pessoa.
artigos (os,as,o,a).

Talisy
1º TEXTO:
televisão
pessoas
família
pinturas e ou desenho
ajuda
dia

Bernard
A televisão é um veículo de comunicação, com efeitos.
Está em todo lugar e é assistida por várias pessoas.

Vinícius
Televisão (title)
Televisão é muito importante para nos manter informado e também para passar o tempo.

Ana Paula
A televisão - Muitas pessoas assistem televisão.

Daniel
A televisão (title)
A televisão é uma fonte de informação
A televisão serve como um meio de comunicação.

Felipe
A televisão serve como um meio de comunicação, que nos mantém informados dos acontecimentos do mundo, {*dos desastres.*}

<div align="center">

TASK II (content plus lexical item)

LEVEL I

</div>

Fabiana - 9 Xs
{*Muitas pessoas perguntam porque a televisão foi inventada.*} {*A televisão já abriu as portas da vida de muitas pessoas.*} {*Hoje em dia, as pessoas são bem informadas sobre política.*} As pessoas podem ficar informadas sobre o que está acontecendo no mundo todo {*como desastres*} e tragédias.

Rita - 9 Xs
A televisão é, hoje em dia, de grande influência na vida das pessoas, quer dizer, está cada vez mais presente no seu dia-a-dia.
Através dela as pessoas ficam sabendo tudo o que se passa (crimes, política, esportes...), além de ser um meio de entretenimento, com filmes, desenhos animados, etc.

Bruno - 9Xs
{*As pessoas estão cada vez mais bem informada sobre política*} {*por causa da televisão.*}

Karina - 9 Xs
A televisão (title)
A televisão é um objeto em que hoje em dia as pessoas tem.
Ela serve como meio de comunicação p/ falar sobre guerras, etc... Resumindo, de todos os acontecimentos do mundo.
A maioria das pessoas assistem a televisão.

Daniela - 9 Xs
{*Por causa da televisão*} {*as pessoas se revoltam contra as guerras.*}
Muitas pessoas possuem televisão
A televisão é uma grande fonte de informação

Através da televisão as pessoas conseguem assistir, ou melhor, saber sobre as {*guerras,*} {*crimes,*} políticas.

A televisão é muito poderosa pois as pessoas conseguem ver as coisas, ver as imagens com seus próprios olhos.

LEVEL II

Luciano - 9 Xs
televisão - televisão- televisão- televisão - televisão
televisão - televisão - televisão - televisão - família
pessoas - mundo- comercial-

Pablo - (no X was marked)
Televisão

Leandro - 9 Xs
Televisão x 9, família, comercial, pessoas, mundo

Caroline - 9 Xs
televisão
pessoas
mundo
A família
o

Charlene - 9 Xs
por exemplo
televisão (9 vezes)
pessoas
aberto
mundo
a/o
família

LEVEL III

Márlon - 9 Xs
Só prestei atenção na palavra "televisão".

Gustavo - 9 Xs
A televisão está em nossa vida mostrando vários acontecimentos como catástrofes, {*desastres*} entre outras coisas...

Felipe - 9 Xs
A televisão está em nossa vida, ... mostrando...desastre...

Doriellen - 9 Xs
A televisão é um meio de comunicação entre os homens
A televisão...
Televisão...
A televisão tem...

Andreza - 9 Xs
A televisão tem
A televisão tem grande influência na vida das pessoas.

Eliete - 9 Xs
a televisão
quatro
trabalho

Gabriela - 9 Xs
Televisão 9 vezes
o/a
mundo
família
pessoas

TASK III (content + article *the*)

LEVEL I

Gabriela - 3 Xs
O texto falou sobre a influência da televisão na vida das pessoas. Como é transmitido as informações de guerra, e etc. " A televisão é importante", diz o texto. Muitas pessoas a tem, ou melhor todas as pessoas, desde a televisão menor à maior.

Mário - 5 Xs
Televisão é um meio de comunicação.

Gislene - 2 Xs
A televisão é um meio de comunicação que nos transmite importantes informações, leva até nossas casas programas e shows para o nosso lazer e diversão, alguns programas são novidades e outros se repetem.
Por exemplo: FILMES.

Luciana - 3 Xs
Países
Muitas pessoas se informam sobre crimes, acidentes, política.
{*A televisão abre as janelas de muitas pessoas para o mundo.*}
A televisão é melhor para as pessoas saberem e se integrarem com o mundo.
Televisão
As pessoas se informam sobre...

Donaldo- 2 Xs
Fala sobre os programas de T.V. Tipos de programa que passa.

LEVEL II

Gustavo - 3 Xs
Televisão poder da comunicação do mundo
liga o mundo

Simone - 5 Xs
A televisão é muito importante para as pessoas, pois ela nos passa informações diversas, como por exemplo jornal, entre outros. Ela está presente em nossas vidas.

Roberta - 2 Xs
Telvisão
Agora
povo (pessoas)
Fonte de informações
dia

Aline - 2 Xs
A televisão é usada em todo o mundo.
A televisão mostra guerras, {*crimes*}
é assistida por toda família

Marcela -5 Xs
A televisão

LEVEL III

Marcelo - 8 Xs
Televisão é um meio de comunicação muito usado hoje em dia.

Thiago - 2 Xs
Televisão {*crimes*} guerra {*desastres*}

Douglas - 4 Xs
Este texto falou sobre televisão, citou várias frases sobre televisão. Não entendi quase nada ou nada.

Malison - 6 Xs
A televisão é muito, mais muito é muito importante para vida humana.
A televisão é um meio de comunicação.
A televisão é o caminho que abriu as portas para o mundo.

Rodrigo - 7 Xs
Televisão

Juliano - 6 Xs
A televisão é muito importante.
A " " um meio de comunicação.
" " " o caminho de comunicação mais usado.

Sávio - 6 Xs
Televisão, *blababá*, janela
" " trabalho
Eu sei que o texto fala sobre televisão.

Amanda - 3 Xs
Television
Muitas pessoas não sei o quê...

TASK IV (content + -ed)

LEVEL I

Luís - 5 Xs
A televisão abriu as portas do mundo
{Alguns pais se perguntam} se a televisão

Débora - 3 Xs
Televisão
por exemplo
vida
mundo
trabalho
tragédias, *{desastres}*

Fernanda - 5 Xs
milhões de pessoas
televisão
mundo
família

Marcelo - 3 Xs
A televisão é uma fonte de informação que leva as pessoas os fatos que acontecem no dia a dia.
A televisão nos passa informações do mundo.

Letícia - 14 Xs
Estava falando da televisão.

LEVEL II

Mariana - 3 Xs
A televisão.
A fita fala sobre a televisão.
Televisão como meio de comunicação.

Camila - 5 Xs
milhões de pessoas
televisão
mundo
família
televisão é boa
pessoas

Marcos - 1 Xs
Televisão é um importante meio de comunicação entre as pessoas.
Ela nos transmite muitas informações.
Ás vezes fala de crimes que aconteceram no país ou em sua cidade.
Ás vezes fala em política.

Carlos Eduardo - 5 Xs
televisão
é
pessoas
mundo
tem
o
a

LEVEL III

Tathiana - 3 Xs
Pessoas
televisão
a
fechar (atelevisão)
gostar
a televisão é um meio de comunicação entre as pessoas.
vida.

Thaiz - 2 Xs
televisão
pessoas
quadro
Mostra na televisão pessoas mostrando seus quadros

Monica - 3 Xs
Este texto fala sobre um meio de comunicação que é a televisão.

Luciana - 2 Xs
Fala sobre a televisão, vida das pessoas.

Cibele - 3 Xs
A televisão,
houve,
A televisão é um modo de comunicação
Televisão é muito usada pelo mundo inteiro
Agora
povo,
mundo.
pessoas

Rogério - 6 Xs
Televisão é legal.
Assisto televisão quando estou trabalhando.

Gisiele - 4 Xs
agora
televisão
mundo
povo
é um meio muito importante de comunicação.

Fernanda - 3 Xs
televisão
pessoas
vida
mundo
agora
televisão é um meio importante de comunicação.

Jian - 4 Xs
televisão, mundo, agora, família, milhões de pessoas
Pessoas

Appendix F

Instructions

Todos vocês vão ouvir dois textos em inglês. Todos vão ouvir os mesmos textos, mas lembrem-se que as tarefas são diferentes. Portanto, lembrem-se que cada um de vocês foi designado para uma destas tarefas. Para que não haja dúvida, eu vou ler a relação dos nomes dos alunos que foram designados para realizar cada tarefa.

(Warm-up text) Primeiro vocês vão ouvir um texto que fala sobre alguns efeitos da televisão na vida das pessoas. Todos vocês devem ouvir o texto com atenção, pois logo depois todos deverão escrever em português tudo aquilo que lembrarem sobre o texto. Tentem lembrar e escrever o máximo possível.

Antes, porém, da compreensão escrita, que todos farão, vocês devem realizar sua tarefa enquanto estiverem ouvindo o texto gravado.

Atenção então para cada tarefa:

Alunos que foram designados para a tarefa I (Task I):
Ouçam com atenção o texto gravado. Procurem entender e prestem atenção somente ao conteúdo. Ao final, vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa II (Task II):
Prestem atenção ao conteúdo do texto e, enquanto ouvem, anotem na folha em branco (recall protocol) com X, todas as ocorrências da palavra *Television,* que está sendo mostrada neste cartaz. Portanto, cada vez que vocês ouvirem a palavra *Television,* deverão fazer um X na folha em que está escrito Task II. Ao final, vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa III (Task III):
Ouçam o texto com atenção e anotem um X em suas folhas em branco sempre que vocês ouvirem o artigo definido THE, que está sendo mostrado neste cartaz. Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa IV (Task IV):
Prestem atenção ao conteúdo do texto gravado e ao mesmo tempo anotem, marcando um X na suas folhas em branco, cada vez que vocês ouvirem a terminação verbal *-ed.* Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível. Lembrem-se, há diferentes modos de pronunciar o *-ed* final do passado em inglês. Há três formas diferentes. Eu mostrarei a vocês uma de cada vez. Aqui estão:

worked (workt)

Kissed (Kisst)

Opened (opend)

Called (calld)

wanted (wantid)

Decided (decidid)

Target text - Agora vocês vão ouvir um texto que fala sobre o Einstein e algumas curiosidades e detalhes sobre sua vida. Como no texto anterior, vocês devem ouvir com atenção, pois logo após todos deverão escrever em português tudo aquilo que lembrarem. Vocês devem tentar lembrar o máximo possível. E, novamente, antes da compreensão escrita, vocês deverão realizar sua tarefa enquanto ouvem ao texto gravado.

Atenção novamente para cada tarefa:

Alunos que foram designados para a tarefa I (Task I):
Ouçam com atenção ao texto gravado. Procurem entender e prestem atenção somente ao conteúdo. Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa II (Task II):
Prestem atenção ao conteúdo do texto e, enquanto ouvem , anotem com Xs na folha em branco todas a ocorrências do nome *Einstein,* que está sendo mostrado neste cartaz. Portanto, cada vez que vocês ouvirem o nome *Einstein,* deverão fazer um X na folha em que está escrito Task II. Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa III (Task III):
Ouçam o texto com atenção e anotem um X em suas folhas em branco sempre que vocês ouvirem o artigo definido THE, que está sendo mostrado neste cartaz. Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o máximo possível.

Alunos que foram designados para a tarefa IV (Task IV):
Prestem atenção ao conteúdo do texto gravado e ao mesmo tempo anotem, marcando um X na suas folhas em branco, cada vez que vocês ouvirem a terminação verbal *-ed.* Ao final vocês deverão escrever em português *tudo* o que vocês lembrarem. Procurem escrever o quanto mais possível.

Lembrem-se das três formas diferentes de pronunciar o *-ed* final do passado em inglês. Aqui estão:

worked (work**t**)

Kissed (Kiss**t**)

Opened (open**d**)

Called (call**d**)

wanted (wnt**id**)

Decided (decid**id**)

Appendix G

Criteria for analyzing "Idea Units"

1. Every main clause with or without a complement should be considered one idea unit.

2. Every dependent or subordinate clause linked to independent clauses should be defined as one separate idea unit.

3. Every relative and adverbial clause should be counted as one idea unit.

4. When the verb has the -*ing* and functions as an argument of a predicate or is used in a sentence like a noun, the phrase should be counted as one separate idea unit.

5. Every conjunct should be considered as one idea unit.

6. Every infinitival construction should be identified as one idea unit.

7. Prepositional phrases should not be separated as one idea unit when they are part of a noun or when separation would leave the verb incomplete as in "put in" .

8. All adverbial and prepositional phrases which either come at beginning of main clause and/or are separated by commas will be counted as separate idea units. All other phrases, including adjectives, will be considered part of the main clause.

Appendix H

Idea units analysis of the target text: Einstein

1. Einstein was one of the greatest scientist in history. (main clause)

2. However, Einstein was not considered very intelligent (main clause)

3. when he was a child. (adverbial clause)

4. When Einstein was nine years old, (subordinate clause)

5. his father worried about him (main clause)

6. because he thought (subordinate clause)

7. his son was a 'bit stupid'. (subordinate clause)

8. The teachers complained (main clause)

9. because he had no discipline. (subordinate clause)

10. When Einstein was fifteen, (subordinate clause)

11. he was expelled from school, (main clause)

12. but a few years later (adverbial phrase)

13. he was permitted... at the university (main clause)

14. to study mathematics (infinitival construction)

15. and physics (conjunct)

16. However, even at the university, (prep. phrase at the beginning w/ commas)

17. Einstein was not 'a good student'. (main clause)

18. Einstein did not attend the lectures, (main clause)

19. and he constantly argued with the professors. (main clause)

20. One of the professors told him (main clause)

21. ' You're intelligent, (main clause)

22. extremely intelligent. (conjunct)

23. but you have one real fault, (main clause)

24.you never listen to anyone!' (main clause)

25.When Einstein graduated from the university, (subordinate clause)

26.he couldn't get a job, (main clause)

27.because the professors would not recommend him (subordinate clause)

28.In the end, (adverbial phrase at beginning set off by commas.)

29.Einstein became very famous for the Theory of Relativity, (main clause)

30.which concerns time (relative clause)

31.and gravity (conjunct)

32.and how things change (conjunct)

33.when they travel at very high speeds. (subordinate clause)

34.However, all his life (adverbial phrase at beginning)

35.Einstein lived very simply (main clause)

36.and was totally uninterested (conjunct)

37.in money (conjunct)

38.power (conjunct)

39.or fame (conjunct)

40.Einstein never understood (main clause)

41.why so many people admired him (relative clause)

42.and wanted to meet him. (conjunct)

43.He knew (main clause)

44.that many people didn't understand his ideas. (relative clause)

45.'Are they crazy, (main clause)

46.or am I?' (conjunct + main clause)

47.he asked. (main clause)

Appendix I

Idea units analysis of the warm-up text - Television

1. Many parents ask (main clause)

2. why television was invented. (subordinate clause)

3. They even think (main clause)

4. television should be abolished. (subordinate clause)

5. However, other people believe (main clause)

6. television has improved our lives. (subordinate clauses)

7. For example, television has opened windows in everybody's life. (main clause)

8. Television has reached many people (main clause)

9. and has shown clearly (conjunct)

10. what is happening right now in their country (subordinate clause)

11. and everywhere else. (conjunct)

12. Television has transformed information; (main clause)

13. it gives the news instantly (main clause)

14. and it also shows in pictures (conjunct)

15. which are more powerful than words. (subordinate clause)

16. Television has brought reality to the public. (main clause)

17. Millions of people now have seen the effects of war, (main clause)

18. floods, (conjunct)

19. fire, (conjunct)

20. crimes, (conjunct)

21. and other disasters. (conjunct)

22. And the result is a general revolt against war, (main clause)

23. and perhaps more interest in helping the victims of disasters. (conjunct)

24. Finally, today people are better informed about politics (main clause)

25. because of television. (subordinate clause)