Processing Dutch

A study on the acquisition of Dutch as a second language using Processability Theory as a framework

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Abstract

An ongoing debate within the field of Second Language Acquisition (SLA) discusses the possibility of universal developmental stages in the interlanguage of second language learners. Processability Theory (PT) is one of the theories that enhances this way of thinking about second language acquisition. The belief is that learners go through the same stages of development when learning a new language. An ongoing process in PT is the construction of these developmental stages for individual languages, but today there is still much work needed in this area. The purpose of this thesis is to construct the developmental stages for Dutch, based on an error analysis of second language learners’ interlanguage. The data was collected from Swedish students learning Dutch on a university level. The students were interviewed once per month, and three times in total, so that no developments in their interlanguage could be missed. The data is processed according to the emergence criterion, resulting in developmental tables of the learners’ progress. The result of these interviews provides for the outline on how one acquires Dutch, and together with a grammatical analysis of Dutch word order procedures and morphology, a developmental hierarchy for the acquisition of Dutch according to PT is constructed.

Keywords: Processability Theory, second language acquisition, Dutch, transfer, emergence criterion
Sammanfattning


Nyckelord: Processbarhetsteori, andraspråksinlärning, nederländska, transfer, emergence criterion
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1. Introduction

In today’s multilingual society, the acquisition of a new language becomes of more and more importance. Therefore, the teaching methods should be adapted to how one actually learns a language. Today there is no consensus on how one actually learns a language. Within the field of SLA (second language acquisition) the idea that language acquisition follows a certain developmental path is widely discussed. One of the theories advocating for these specific paths for language acquisition is the Processability Theory (PT).

Based on the outcomes of the ZISA-project (1983), Pienemann (1998, 2005, 2011) proposes universal processing procedures, applicable to all languages. The ZISA-project showed that learners with different language backgrounds made the same errors when learning a new language. This could prove that language learning is not so dependent of previously acquired languages as was assumed before. This finding lead to the Multidimensional Model (Pienemann 1988), a theory which has as a goal to explain the development of English as a second language (ESL). This theory lies at the basis of what we today know as the Processability Theory.

PT assumes, as mentioned earlier, that there are universal processing procedures that are to be followed by every language learner. These processing procedures are based on two main theories: Levelt’s theory on language production (1989) and Lexical Functional Grammar (Bresnan 2001). Based on the construction of the language processor and the principles of feature unification, developmental hierarchies are constructed. These hierarchies give an overview of the gradual construction of the mental grammar where each developmental stage is built on previously acquired stages. Several previous studies on PT, for example, on Swedish, English, and German (Glahn et al. 2001; Pienemann 1998, Clahsen, Meisel & Pienemann 1983), have already confirmed the existence of these universal developmental stages, based in both morphology and syntax.

In the context of PT, transfer is also one of the aspects which should be taken into consideration. Certain structures produced in a learner's interlanguage might be the result of transfer, either from the first language or a previously acquired second language. PT assumes that transfer only plays a minor role in language acquisition. Independent of their mother tongue, all learners go through the same stages of development. However, learners with a typologically closer language seem to learn several aspects of the target language faster than others. PT deals with this phenomenon, by using the Developmentally Moderated Transfer Hypothesis (Håkansson, Pienemann & Sayehli 2002), assuming that, when developmentally ready, learners of typologically related languages will go through the similar structures more easily, while also negative transfer might occur when this can be processed by the learner.

Very little has been written on Dutch second language acquisition within the framework of PT. Some studies have been done on Dutch learners acquiring a typologically similar language (see for example Baten 2013), but Dutch second language acquisition from a PT perspective has only been the focus in a very few number of studies (for example Riyanto 2013; Arends 2007).
Moreover, there is no formal hierarchy until today to be used when investigating Dutch second language acquisition.

This particular study has as aim to provide for the processing hierarchy for Dutch as a second language. Based on grammatical knowledge, a theoretical developmental hierarchy will be provided. The theoretical framework as proposed in this study will also be tested with a longitudinal research project, based on tests performed by Swedish university students learning Dutch as a foreign language. From these results, conclusions about the validity of this developmental hierarchy and more in general about PT can be drawn. In this study possible influences from the L1 or L2 of the learners will also be discussed, and the use of measuring criteria will be considered. Finally, general conclusions on the validity of the proposed model are drawn.

In chapter two an overview will be provided of the most important theories on which PT is based. Also, the point of view on transfer within PT will be discussed here. As a last part of the literary study, an overview of previous studies on PT and Dutch will be given. In the third chapter Dutch syntax and morphology will be discussed, and the processing hierarchy is constructed. Chapter four contains more information about the methodology used to execute this research project. In the fifth chapter, the results are represented, which will be discussed in chapter six. The last section contains an overview of the discussed topics, and provides a general conclusion.

2. Literary Study

2.1 Processability Theory

Learners develop their own dynamic linguistic system, creating an *interlanguage*. However, studies show that these newly created language systems are quite similar in all learners of the same language (Pienemann & Kessler 2011: 3). The basis of the idea that lies behind the processability theory is that all learners go through universal developmental stages when acquiring a new language. Our learning process is restricted by processing procedures. Therefore, there are certain limitations in what a learner can process and produce at certain periods of time. Pienemann describes this process in the following manner:

“…, the task of acquiring a language includes the acquisition of the *procedural skills* needed for the processing of the language. It follows from this that the sequence in which the target language (TL) unfolds in the learner is determined by the sequence in which processing routines develop which are needed to handle the TL’s components.”

(Pienemann 2005: 2)

Language acquisition consists of acquiring certain procedural skills. These are learned in a defined sequence. In what manner the target language (TL) will develop, depends thus on this sequence of processing routines. PT provides for these developmental sequences and processing procedures.
According to Pienemann (2003: 686), the basic idea of PT is that “… at any stage of development learner can produce (and comprehend) only those L2 linguistic forms which the current state of their language processor can manage.” To account for this idea, PT is based on two models, accounting for language generation and linguistic knowledge. Levelt’s model of language production (1989) is used to explain the procedural skills needed to acquire a language. Furthermore, Bresnan’s (2001) Lexical Functional Grammar (LFG) is used to account for linguistic knowledge.

In this section both LFG and Levelt’s model on language production will be discussed in their relation to PT. Adaptations by PT will be taken into consideration under the same chapter as the original theories.

### 2.1.1 Levelt’s model of language production

PT’s interpretation of language processing is mainly based on Levelt’s model of language production (1989). As Pienemann and Kessler (2011: 28) described this, Levelt’s model is based on the assumption that “the intended message is created in the Formulator and that bits of the message are sent to the Grammatical Encoder which constructs grammatical structures in connection with the Lexicon.” Four key assumptions from Levelt’s theory are taken into consideration by PT:

1. Processing components are relatively autonomous specialists which operate largely automatically;
2. Processing is incremental;
3. The output of the processor is linear, while it may not be mapped onto the underlying meaning in a linear way
4. Grammatical processing has access to a grammatical memory store.

(Pienemann & Kessler 2011: 28)

The goal with the first proposition is that it can account for the speed with which language is processed. When one would assume a non-automatized process, all language would have to be handled by a central language system, where everything would be processed in a linear way. This leads to a slow functioning mechanism, unable to keep up with the language input. A process like the latter would be reflected in the language production by pauses and hesitations (Levelt 1989: 259). Also, this might lead to the assumption that language generation might be a very conscious process, which has been refuted by several studies (Pienemann 2005: 4). The cognitive cost of a non-automatized system would be too high.

Secondly, Levelt assumes that language processing is incremental. Different processes follow each other, without the need for the first process to be finished when the next one is started. Levelt (1989: 24) states that “[…] the next processor can start working on the still-incomplete output of the current processor […]” This implies that a message’s grammatical and lexical form is constructed gradually while conceptualizing that message (Pienemann & Kessler 2011: 29). From this follows that a certain storage of information is needed to be able to cope with this non-linear way of processing.
Non-linearity is visible in both grammar and actual expressions. We are able to communicate in a non-linear way, and to express actions in another order than the natural order in which they actually occurred. Pienemann (2005: 5) gives the following example: “Before the man rode off, he mounted his horse.” Thanks to the possibility to process things in a non-linear way, we do understand that the second part of the expression took place before the first one. The first proposition is stored in our memory, so that we can process the second part, and draw conclusions on the natural order of the actions. This also applies to grammatical problems, such as subject-verb agreement (Pienemann & Kessler 2011: 39). The necessary information needed for conjugating a verb in the correct manner is found in the subject. Therefore, the grammatical information from the subject needs to be stored until it is needed by the system.

The last premises suggests that there is a special storage in our memory for grammatical information. Our working memory, which is responsible for processes such as conceptualizing and monitoring, is highly limited in the amount of information it can store (Pienemann & Kessler 2011: 30). If grammatical information would be stored there, this would slow down the language production process. Therefore, it is assumed that a grammatical memory storage manages the grammatical information which is needed when processing language. This part of the memory is highly specific and serves as a point of information for specialized grammatical processors.

### 2.1.1.1 Incremental language generation

It is noted by Pienemann and Kessler (2011) that, just as language processing, language production is incremental. In his model for language production, Levelt (1989) distinguishes between four different processes, the conceptualizer, the formulator, the articulator and the lexicon. The inner workings of this system are illustrated in figure 1.

![Figure 1 Incremental language generation according to Levelt (1989: 9)](image-url)
The general idea behind Levelt’s model is the following: a message is formed in the conceptualizer. Once the message is generated, the information is passed on to the formulator, where grammatical and phonological coding will take place. This step is the most important for PT. Here, the correct (or incorrect) morfo-syntactical features are assigned to the utterance (Pienemann 1998: 54). As a last step the message is uttered by the articulator.

In figure 2, Pienemann and Kessler (2011) illustrate how the process of incremental language generation works, based on Levelt’s (1989) theory, and the ideas of Kempen and Hoenkamp (1987) on incremental procedural grammar. The example given by Pienemann (2011: 31) is the following:

“A child gives a cat to the mother.”

Figure 2 Incremental language generation according to PT (Pienemann 1998: 68)

First of all, a lemma is selected from the lexicon. This lemma contains the feature “category information N”. This calls for the activation of the categorical procedure NP, from which noun phrases can be constructed. The activated procedure inspects the processed information for specifiers and adds possible diacritic features (Pienemann & Kessler 2011: 31). The singular article is selected on the basis of this information. Once this phrase is formed, a link needs to be established between this phrase and the other parts of the utterance. Therefore, a grammatical function needs to be assigned to this phrase (Pienemann & Kessler 2011: 31). By selecting this
grammatical function, the S-procedure (sentence procedure) is activated, and the NP is now the subject of that sentence. Since this is an ongoing process which follows the premises previously discussed, while this process was taking place, the next conceptual fragment was already activated and is processed at the same time (Pienemann & Kessler 2011: 32). The output from these processes is then sent from the Formulator to the Articulator.

The order in which the processes take place, can be summarized as follows:

I. the lemma,
II. the category procedure (lexical category of the lemma),
III. the phrasal procedure (instigated by the category of the head),
IV. the S-procedure and the target language word order rules,
V. the subordinate clause procedure- if applicable.

(Pienemann & Kessler 2011: 33)

2.1.1.2 Implicational hierarchy according to PT

The procedure as discussed by Levelt (1989) is, however, only found in advanced speakers, and not in language learners (Pienemann & Kessler 2011: 33). Even though language learners have the same cognitive abilities as native speakers, they have to learn some language specific procedures. Pienemann (2011: 33) identifies the following procedures to be the minimum of what is needed to be able to process an L2:

- Word order rules
- Syntactic procedures and their specific stores
- Diacritic features in the lexicon
- The lexical category of lemmata

A beginner learner has no annotated lexicon in the L2, and a possible transfer from the L1 annotations does not contain the specific features for the target language (TL) (Pienemann & Kessler 2011: 34). Since it is impossible for L2 learners to know all these specific features from the L2 from the very beginning of their language acquisition process, Pienemann (2011: 34) assumes “[...] that initially the learner is unable to produce any structures which rely on the exchange of specific grammatical information between constituents.” Since this grammatical information is obtained gradually, the processes a learner is able to handle also develop gradually. At the beginning of the acquisition process, there are too many constraints on the exchange between grammatical information and syntactic structures.

The amount of grammatical information which is needed to form a certain structure decides when a learner can process that structure. A hierarchy of L2 structures can be formed based on this information. The source and the destination of information change determine the hierarchy (Pienemann & Kessler 2011: 34). Pienemann (2011: 34-35) illustrates this by comparing three types of processes in morphology. As is illustrated in figure 3, in all three cases, morphemes are added to the lemma. In the case of ‘talk-ed’, no grammatical information is needed from another part of the sentence. There is no interaction between phrases. In the phrase ‘two kid-s’, there is interaction within the phrase, between the numeral and the noun. The noun needs to be adapted
according to the numeral. Finally, in the case of ‘he talk-s’, exchange of grammatical information is needed between two phrases. These three processes ask for a different amount of exchange of grammatical information, and are therefore processable at a different stage in the developmental process.

To make processing of the TL possible, the language-specific processing resources need to be acquired (Pienemann & Kessler 2011: 35). It needs to be pointed out that these processing resources are utilized one after the other, and that the information derived from lower ranged processes is an absolute need for higher processes to be able to develop (Pienemann & Kessler 2011: 35). The acquisition of the processing devices will occur in the same sequence as the production processes occur. Since these production processes themselves form an implicational hierarchy, it would be impossible for the processing devices to be obtained in any other way (Pienemann & Kessler 2011: 36). One missing process means that higher levels cannot be reached. From then on, only direct mapping of the conceptual structures onto the surface form will occur (Pienemann & Kessler 2011: 36).

<table>
<thead>
<tr>
<th>Procedure</th>
<th>t₁</th>
<th>t₂</th>
<th>t₃</th>
<th>t₄</th>
<th>t₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>S'-procedure (EmbeddedS)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>S-procedure</td>
<td>-</td>
<td>simplified</td>
<td>simplified</td>
<td>inter-phrasal information exchange</td>
<td>inter-phrasal information exchange</td>
</tr>
<tr>
<td>Phrasal procedure (head)</td>
<td>-</td>
<td>-</td>
<td>phrasal information exchange</td>
<td>phrasal information exchange</td>
<td>phrasal information exchange</td>
</tr>
<tr>
<td>Category procedure (lex. categ.)</td>
<td>-</td>
<td>lexical morphemes</td>
<td>lexical morphemes</td>
<td>lexical morphemes</td>
<td>lexical morphemes</td>
</tr>
<tr>
<td>Word/lemma</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Figure 3 Hypothetical hierarchy of processing procedures (Pienemann & Kessler 2011: 37)

Figure 3 gives an idea of what a hierarchy of processing procedures would look like. This table has then to be adapted to the specific features of the researched language. In this study, this table will later on be adapted to Dutch grammar.

2.1.2 Lexical Functional Grammar

To account for linguistic knowledge, PT builds its frame around Bresnan’s (2001) theory on Lexical Functional Grammar (LFG). The notion of procedural memory in Levelt’s model can be explained by using LFG (Pienemann & Kessler 2011: 37). LFG encodes syntactical features in the lexicon, which makes it an ideal linguistic theory for PT (Pienemann 2005: 204). Through mechanisms such as feature unification and lexical mapping theory, the developmental patterns
in a learner’s language can easily be identified (Pienemann 2005: 205). These particular structures will be discussed in the coming sections.

According to LFG, there are three parallel levels of representation: the argument structure or a-structure, the functional structure or f-structure and the constituent structure or the c-structure (Pienemann & Kessler 2011: 38). The a-structure is connected to the lexicon, and provides for the predicates and their argument. The f-structure handles the grammatical functions of the constituents. The c-structure is responsible for the internal structure of a sentence. The mapping of these three structures together gives us the structure of the sentence, as shown in figure 4.

Let us have a closer look at the different components. Although visually the c-structure shares some resemblance with Chomsky’s (1965) phrase-structure component, there are some differences to be observed. LFG assumes no transformations taking place while construing the c-structure. The predicate-argument structure is mapped directly by phrase-structure rules onto surface forms (Pienemann 1998: 93). Figure 5 shows the c-structure of the sentence ‘Peter owns a dog’, and provides the annotated phrase structure rules (Pienemann & Kessler 2011: 39).
A second part of LFG concerns the lexicon. These lexical entries “contain syntactic and other information relevant to the generation of sentences” (Pienemann 1998: 93). By assigning certain values to certain features, lexical entries define both syntactic and other properties of lexical items (Pienemann & Kessler 2011: 40). This results in equations like the following: ‘NUM = SG’ (Pienemann & Kessler 2011: 40). These equations “may also demand certain values elsewhere in the functional description of a sentence” (Pienemann & Kessler 2011: 40). An example of these lexical entries is provided in Figure 6.

The argument structure consists of a semantic and a syntactic aspect. It “contains the lexical information about type and number of arguments that allows it to be mapped onto syntactic structure” (Pienemann 2005: 212). It “consists of a predicator and it’s argument roles” (Pienemann 2005: 213).

The f-structure of the sentence ‘Peter owns a dog’ is presented in Figure 7. Certain lexical entries are needed to understand the semantics of the sentence. These are represented by the f-structure. It is the interaction between the lexical entries and the c-structure (Pienemann 1998: 95). In this case, “[t]he predicate entry [PRED “own” (SUBJ OBJ)] is taken from the lexical entry for the
verb” (Pienemann & Kessler 2011: 40). The arguments of the predicate, the verb “own”, are listed to the right. In this case, this means the subject and the object. This shows the relation between the different constituents and the players in the sentence. According to Pienemann (2011: 40), “[t]his forms the link between the syntactic form and its underlying predicate-argument relations.”

![Figure 7 Functional structure (Pienemann & Kessler 2011: 40)](image)

**2.1.2.1 Feature unification**

The question is then how all of the information of the separate structures is unified into one utterance. This is done through feature unification. In the example ‘Peter owns a dog’, the suffix –s in ‘owns’ depends on the grammatical features of the subject. Therefore, the grammatical features of this subject, PERS=3 and NUM=SG, need to be stored until they can be applied to the right constituent. This shows “the non-linearity of morphological processes” (Pienemann & Kessler 2011: 41). This process also reminds of the premises of non-linearity on language production Levelt shows in his theory.

On the basis of this notion of feature unification, combined with Levelt’s theory on language production, the following hierarchy can be constructed:

a) No exchange of grammatical information (= no unification of features),
b) Exchange of grammatical information within the phrase,
c) Exchange of grammatical information within the sentence.

(Pienemann & Kessler 2011: 41)

Applied to some of the Dutch grammatical features to be discussed in this paper, a following developmental hierarchy could be construed:

1. diminutives (huis-je, small house)
2. attributive adjective agreement (het groen-e gras, the green grass)
3. third person –t in verbs (hij zoek-t, he searches)

**2.1.2.2 Lexical Mapping**

Feature unification alone is not enough. There is also a need for a mechanism that links arguments and constituents to grammatical functions. As shown earlier, the three main structures within LFG need to be linked to each other to form correct utterances. This process is discussed in the Lexical Mapping Theory (LMT) (cf. Bresnan 2001), and is called *lexical mapping*
(Pienemann & Kessler 2011: 42). The idea is that different grammatical functions can be used to express specific semantic roles. Pienemann (2011: 42) considers the following two sentences:

(a) Peter sees a dog

\[
\text{see} \quad \text{<experiencer, theme>}
\]

SUBJ OBJ

(b) A dog is seen by Peter

\[
\text{seen} \quad \text{<experiencer, theme>}
\]

Ø SUBJ (ADJ)

Both sentences describe the same event, but with another focus. This causes the grammatical subject (SUBJ) from (a) to be the adjunct (ADJ) in (b), while the object (OBJ) from sentence (a) is realized as the subject (SUBJ) in (b).

Lexical mapping is based on the idea that all languages have some common principles in order “to map the thematic roles onto grammatical functions” (Pienemann & Kessler 2011: 43). A combination of a limited set of thematic roles, some language universal grammatical functions, a classification of grammatical function, “language-specific predicates with their arguments and the roles they can assume”, form the basis for these principles (Pienemann & Kessler 2011: 43). Therefore, lexical mapping serves as an explanation for “the relationship between the argument structure and functional structure in different languages” (Pienemann & Kessler 2011: 43). A second mapping mechanism assumes a link between the constituent structure and grammatical function, to be able to ascertain “which phrase serves which grammatical” function (Pienemann & Kessler 2011: 43).

According to Pienemann, Di Biase and Kawaguchi (in Pienemann 2005), the mapping of the a-, f-, and c-structure follows a certain hierarchy, corresponding to the hierarchy based on feature unification. The starting point of this hierarchy is a complete linear way of mapping the structures (Pienemann & Kessler 2011: 44). This is called unmarked alignment. It gives the learner the opportunity to construct sentences beyond the uttering of words, but it constrains the types of sentences that can be formed. LMT focuses on the mapping of the a- to the f-structure (Pienemann & Kessler 2011: 47). Non-default verbs cause non-linearity, which might be the case in causative or passive constructions. The arguments are then linked to grammatical functions in which they would not appear in default sentences. Pienemann (2011: 47) gives the following examples:

a) The invitation was given to the woman. (passive)

b) My boss made me work harder. (causative)

In the first sentence, the SUBJ is ‘invitation’, and it’s argument role is theme, which are not usually combined with each other (Pienemann & Kessler 2011: 47). In the second example, the agent is ‘me’ while it has the grammatical function OBJ, which is unusual in active sentences (Pienemann & Kessler 2011: 47).
Figure 8 illustrates how a- to f-structure mapping is acquired. It is clear that the processing of non-default structures might take more time than simple mapping of the a-structure on the f-structure. These ask for complex mapping principles which might not be available for the learner from the beginning of the learning process.

### 2.1.2.3 Topic Hypothesis

PT also assumes another mapping problem for second language learners, namely non-default mapping of the c-structure onto the f-structure. In this case, adjuncts are added to the canonical structures, and discourse functions are assigned to dislocated elements in the c-structure, which leads to non-linearity, and therefore makes the sentence more complex (Pienemann 2005: 223).

We speak of unmarked alignment in this case when the SUBJECT is linked with the first NP in the sentence. However, in many languages, such as Dutch, it is possible to place other constituents than the SUBJECT, and other phrases than noun phrases, in first sentence position (Pienemann & Kesseler 2011: 45). Discourse functions are also a part of the constituents. In the case of unmarked alignment, the SUBJECT also is the TOPIC. As said before, this is not a requirement. Discourse functions are not linked to, for instance, the argument of a verb. This leads to problems for the learner.

In languages such as English and Dutch, the non-argument functions, TOPIC, FOCUS, and ADJUNCT often appear in first sentence position. Since this is not necessarily the SUBJECT, it will cause problems for the learner. Therefore, during the first period of acquisition, canonical word order will be overrepresented (Pienemann 2005: 227), since this is direct mapping from the c-structure onto the f-structure. The problems arise when another constituent (XP) than the SUBJ is placed in first sentence position. In languages with, for instance, inversion, such as Dutch, word order needs to be changed in this case. This is not done by the learners. They apply direct mapping, which leads to faulty constructions (Pienemann 2005: 233). (Note that this is not considered to be wrong in the interlanguage. PT describes language acquisition from a learner’s perspective, not from the point of view of the target language.) This stage of the TOPIC-hypothesis is described by Pienemann as follows:

![Table](image)

**Figure 8 Lexical Mapping Theory (Pienemann 2005: 240)**
“In second language acquisition learners will initially not differentiate between SUBJ and TOP. The addition of an XP to a canonical string will trigger a differentiation of TOP and SUBJ which first extends to non-arguments and successively to non-arguments thus causing further structural consequences.”

(Pienemann 2005: 239)

Only at a later stage, learners will be able to change their word order accordingly. The more information that needs to be exchanged between these non-argument functions and the grammatical functions, the harder it will be for the learners to process the construction, and the later it will be acquired.

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

Figure 9 Topic Hypothesis (Pienemann 2005: 239)

Figure 9 shows us how mapping from the c-structure to the f-structure is acquired by second language learners. To summarize: in the initial state, TOPIC and SUBJECT are not differentiated, and canonical SVO word order is used. Then the TOPIC is an ADJUNCT. Therefore the TOPIC is now differentiated from the subject. In the last stage, other core argument, such as the OBJECT can be topicalized.

2.2 PT and transfer

An important question within the field of SLA is whether there can be transfer from the L1, or any other previously acquired language, when learning a new language. In what amount do the learners transfer previous linguistic knowledge to the new language? Today there is no consensus on this topic within SLA. Some theories assume complete transfer from the mother tongue’s linguistic system to that from the new language, such as the Full Transfer, Full Access Theory by Schwartz and Sprouz (1996). Others postulate that a previously acquired second language might cause the problems in the interlanguage of the learners (see Bohnacker 2006).

The influence of transfer will be considered in this study. Since Swedish shares some syntactical features with Dutch, the question is to what extent the production of certain
syntactical and morphological features are due to transfer from the L1. Furthermore, all of the informants have acquired at least one L2, and all of them have acquired English, raising the question whether this could be of importance for their acquisition processes. In the following section the point of view of PT on transfer, both from L1 and L2, will be discussed.

2.2.1 Developmentally Moderated Transfer Hypothesis

PT used to be considered as a no transfer theory, since it is assumed that all learners go through the same stages, and make roughly the same mistakes, independent of the mother tongue. However, it was unclear whether this no transfer policy was really adopted by PT. In 2002 Håkansson, Pienemann and Sayehli brought some clarity to the case by introducing the Developmentally Moderated Transfer Hypothesis (DMTH). Their assumption was that if learners would fully transfer structures from their L1 to their L2, this would show up at the very beginning of the acquisition process. If it would not be the case, this would prove that the learner is not ready to process this information at that point of acquisition. Already in 1983, this was proposed by Kellerman. He pointed out that certain structures from the L1 were only transferred to the L2 at a later stage in the acquisition process, when certain other structures had been acquired.

In their project, Håkansson, Pienemann and Sayehli (2002) researched possible transfer in Swedish learners studying German. They based their study on the acquisition of inversion, since this structure is used in similar ways in both languages. If transfer would be the case, than inversion should show up in the early interlanguage of the learners. This would be proof against PT, since the theory assumes the acquisition process to be the following: SVO \(\rightarrow\) *XP SVO \(\rightarrow\) XP VSO. The study showed no direct transfer of inversion in the students’ early interlanguage. They produce the incorrect (in the TL) construction *XP SVO first, before being able to apply inversion rules.

However, DMTH does not exclude transfer from the acquisition process. The assumption is that transfer is possible when the *formulator* can process this structure, as is illustrated by figure 10. This could, in the case of inversion, lead to a quicker acquisition of the structure, once this structure can be processed, but it might also cause negative transfer when this can be processed.

“Summing up, PT implies the hypothesis that the L1 Formulator will not be ‘bulk-transferred’, because the processing of syntax is lexically driven and the processor relies on highly language specific lexical features. Instead, the learner will reconstruct the Formulator of the L2. This would not exclude the possibility that in the course of this process L1 procedures will be utilized. However, it is hypothesized that such cases of L1 transfer occur as part of the overall reconstruction process. This means that L1 transfer is developmentally moderated and will occur when the structure to be transferred is processable within the developing L2 system.”

(Håkansson et al. 2002: 269)
The question in today’s multilingual society is then whether the results of the study by Håkansson, Pienemann & Sayehli (2002) could be the consequence of the previous acquisition of another language. In her study, Bohnacker (2006) points out that most of the learners in the study probably already had acquired English, a language in which XP SVO is normal. In her response to Håkansson, Pienemann & Sayehli (2002), Bohnacker shows the result of her own study, comparing two groups of learners, both acquiring German. One of the groups had not studied another language before, the other group acquired English before studying German. Her results show that the non-target like structure V3 (which is normal in English) occurs more often in the second group, suggesting that there is transfer from the L2 to the L3. At the same time, this structure does not appear in the data of the first group, suggesting transfer from the L1 to the L2. Bohnacker concludes as follows:

“I have interpreted these results as robust evidence for L1-syntax transfer of the V2 property from Swedish to German, including modest evidence for L1-transfer of a small group of constructions that are exceptions to the V2 requirement, and as evidence for partial L2-syntax transfer from English to L3 interlanguage German.”

(Bohnacker 2006: 277-78)

Pienemann and Håkansson (2007) contest the conclusions drawn by Bohnacker, since these seem to be based on the misconception that PT does not allow transfer. They reinterpreted the results from Bohnacker’s study, using the emergence criterion and implicational scaling. These results show that the informants had already reached stage 4 in their acquisition process, and were therefore too advanced in their learning process to draw conclusions about their early acquisition. They point out that according to DMTH, these structures might have been transferred from the L1 to the L2, but not before the learner could process this structure. In this case, the
learner might have transferred inversion from the L1 to the L2, since inversion is present in the data, but at an earlier point in time, there would have been evidence of *XP SVO as well.

“Contrary to Bohnacker’s reading, the DMTH does not assume that ‘[t]he syntactic property of V2 never transfers’ (p. 443). Instead, it assumes that V2 is not transferred at the initial state, and it may be transferred when the interlanguage (IL) system can process it.”

(Pienemann and Håkansson 2007: 486)

2.2.2 Transfer from L2 to Dutch and Swedish

In their study on syntactic transfer from the L2 to the L3 of a learner, Bardel and Falk (2007) explored the possible transfer from different L2’s to Swedish and Dutch. They investigated the language acquisition for two main groups: one group acquiring Swedish as L3, and one with informants learning (mainly) Dutch as L3. Since this thesis is focused on the acquisition of Dutch, the second part of the study is the most interesting. However, the results discussed here are based on both of the studies. The conducted study was focused on the acquisition of negation.

For the research concerning Dutch as L3, three informants were selected at Stockholm University. One other informant was selected at the European Parliament, and had Swedish as L3. None of the informants had previous knowledge of the L3. Two of them had Swedish as L1 and English as L2, while the third informant had Albanian as his L1 and German as L2. The fourth informant in the study had Italian as his L1, German and Dutch as L2 and Swedish as L3. They were each given a private lecture during 45 minutes. The data was elicited by asking the learners a series of questions which demanded a negative response (Bardel & Falk 2007: 472).

The results show that the two learners with English as their L2 mostly produce post-verbal negation with non-thematic verbs, while the group with Dutch or German as their L2 combines both non-thematic and thematic verbs with post-verbal negation. This suggests transfer from the L2 to the L3, since the structures produced by the learners can be found in their previously acquired L2 (Bardel & Falk 2007: 478).

Pienemann et al. (2013) bring some problems with this study to the attention. First of all, the data set for the first part of the interview (Swedish as L3) is considered to be too small to draw any conclusions from it. Even then, both groups (with Germanic and non-Germanic languages as L2) produce both preverbal and post-verbal negations. This would argue against transfer from the L2 (Pienemann et al. 2013: 151).

The second part of the study has two flaws according to Pienemann et al. (2013: 151). The first problem concerns the L2 of the learners. In the second part of the study, it is not mentioned how the learners’ strongest L2 was identified, since it is more than plausible that some of the learners had learned more than one L2 previous to the study. The question that needs to be asked then is why only structures from this L2 would be transferred? The same counts for the informants in the first study, where the informants had to identify their strongest L2. There is no theoretical background in Bardel and Falk’s research on how to qualify the strongest L2, and why this would be the only language influencing the L3 (Pienemann et al. 2013: 152). Secondly, the
question can be raised how many of the structures uttered by the informants are formulae, repeated almost exactly after the interviewer? According to Pienemann et al. (2013: 153), it is unclear whether the utterances in the data set show a systematic use of the structure.

Pienemann et al. (2013) constructed a research design to test the second problem mentioned in the previous study. Their aim with the study was to differentiate between formulae, based on the teachers input, and creative L2 productions (Pienemann et al. 2013: 153). All informants had German as L1 and had acquired several L2’s. English was the first L2 learned by all of the informants. Two groups of informants were created, separating the informants that learned several Romance languages after English from the ones that had acquired at least one V2-language. The students all followed one one-on-one lesson in Swedish, followed by a session with four communicative tasks. They were tested once more two weeks after the lesson.

The informants practiced a dialogue with the lecturer in which daily activities were described. The main goal was to give the informants the contexts needed to repeat utterances, and thus formulaic speech could be elicited. In this manner it can be tested if the learners are able to repeat advanced L2-structures, even if they cannot produce them in free speech (Pienemann et al. 2013: 155). The communicative tests were not exactly the same as the dialogues that were practiced, therefore also requiring creative L2-constructions.

The results of the study are shown in figure 11:

<table>
<thead>
<tr>
<th>Informant</th>
<th>SVO</th>
<th>*adv SVO</th>
<th>V2</th>
<th>L2 = V2?</th>
<th>Swedish before?</th>
<th>Initiation of V2</th>
</tr>
</thead>
<tbody>
<tr>
<td>C03</td>
<td>+</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>C05</td>
<td>+</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>C07</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>C04</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>C01</td>
<td>+</td>
<td>30</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>30</td>
</tr>
<tr>
<td>C02</td>
<td>+</td>
<td>15</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>15</td>
</tr>
<tr>
<td>C06</td>
<td>+</td>
<td>13</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>9</td>
</tr>
</tbody>
</table>

Figure 11 Swedish word order in the PALU-study (Pienemann et al. 2013: 155)

The study shows that creative productions of SVO are made by all informants. Also, most of them make use of the interlanguage structure *XP SVO. However, no informant is able to apply inversion correctly in creative productions. They are nonetheless successful in imitating this structure.

Also, the informants’ use of negation was analyzed. The data, as illustrated in figure 12, shows no clear sign of transfer from the L2 to the L3. Except for one student, all students show signs of ‘neg V’ (incorrect in the TL), and some of them can also produce ‘V neg’ (correct in the TL). This provides evidence for DMTH. Also, no DO-insertion (requirement in English) is ascertained, raising the question why this would not be transferred, if full transfer from the L2 to the L3 would be the case.
These results provide evidence for DMTH, showing that transfer will only be possible if it can be processed by the informant. It shows that bulk transfer from the L2 seems unlikely, and that there is no real theoretical ground for the so called English-illness. Pienemann et al. conclude as follows:

“The study focused on the restrictive effects of processability on transfer. In this context, the DMTH might be misconstrued as a non-transfer approach. This would be incorrect. As pointed out in the first section of the chapter, the DMTH defines constraints on transfer. This implies that restrictive and productive effects of the L1 will materialize at predictable points of development. […] Also, the DMTH does not exclude the possibility that L2 features may be transferred to the L3. However, as shown above, for any L2 transfer hypothesis to make a genuine contribution to the theory of SLA it needs to be fully operationalized and theoretically motivated.”

(Pienemann et al. 2013: 159)

2.3 Previous studies

Little has been written on Dutch as target language within the frame of PT. In this section, an overview will be given of two articles on the acquisition of Dutch as a second language. They will be discussed in detail, and some remarks will be made. In the conclusion, some general remarks are made concerning both of the studies, pointing out possible problems with the studies.

2.3.1 Riyanto (2013)

Riyanto’s study focuses on Indonesian learners acquiring Dutch as a second language. The students all studied Dutch at the University of Indonesia, where they took the exam *het Certificaat Nederlands als Vreemde Taal* (CnaVT, certificate Dutch as a foreign language). Based on their test results, ten students from three different levels were selected to take part in the study. Their oral data from the test serves as the research data in this paper. In this study, the main point of focus is the acquisition of word order, although some minor remarks are also made on the acquisition of Dutch morphology. However, these will not be taken into account in this discussion.

Riyanto distinguishes five different levels of acquisition: canonical construction, ADV-construction, SEP-construction, INV-construction and V-end-construction. All of the learners
have acquired the canonical construction at the data point. In this structure, the subject takes the first sentence position, followed by the verb. This is a clear case of unmarked alignment, and is placed low on the developmental hierarchy. In the next phase, adjuncts are placed in the first sentence position. As discussed previously, this leads to problems with word order. Also in Riyanto’s study, the learners produce ungrammatical structures (from a TL point of view) constructing their sentences as follows: XP-SVO. The next structure discussed, SEP, concerns the separation of the finite verb and other verbs in the predicate. In most cases, such separation of verbs is needed in Dutch. According to Riyanto (2013: 5), the students made mistakes against this construction. However, he does not prove this with the correct examples. Both examples can be considered to be correct TL-structures. Next, the INV-construction is discussed. Since this structure is found at level 4 of the PT hierarchy, it is not unusual that Riyanto (2013: 5) noticed faults in the use of this structure. Note that a fault in this structure results in a ‘positive’ XP-SVO structure. The last word order structure to be considered is the V-end construction, which is found in subordinate clauses. Also here, Riyanto (2013: 6) discovered some difficulties with the structure.

The implicational hierarchy based on the results of the learners from the lowest selected level is illustrated in figure 13.

![Figure 13 Implication scale PTIT (Riyanto 2013: 6)](image_url)

All students seem to manage both canonical and ADV-constructions. Most of them can construct the SEP-structure, while four of the informants can correctly produce inversion. None of the informants seems to be able to use the V-end construction correctly. The other two groups did slightly better, producing more inversion and SEP-constructions. Within the last groups, there was one informant who could process V-end.

Riyanto (2013: 8) concludes that his results prove the validity of PT. The students seem to follow the implicational hierarchy as proposed by PT, mastering the structures in the order as previously discussed. However, he proposes a more rigid measuring tool for advanced learners. He considers the point of acquisition (70% is used in this article) to be too low, so that too many learners seem to have acquired the structures. He considers (correctly) that PT is a theory that fits the early development, more than advanced learners.
Although Riyanto’s study seems to confirm the existence of the PT hierarchy, some remarks can be made about this study. First of all, as discussed earlier, the example sentences used are not always good examples. Some of them are not incorrect in the target language. Therefore, it is hard to see if the informants did or did not acquire a certain structure. Secondly, in several instances in the paper, Riyanto attributes some syntactical errors to transfer from Indonesian and English (see for instance Riyanto 2013: 4). This goes against the assumption within PT that any kind of transfer is strictly limited. Therefore, ascribing ADV-constructions as being a result of transfer from the L1 or L2 is not necessarily in line with the theory. The ADV-construction is a level shared by all learners, independent of their previously learned languages. As a last remark, it has to be pointed out that Riyanto makes use of percentages to make sure if a learner has acquired a certain structure. This 70% marker does not seem to measure acquisition, but mostly proficiency. According to Riyanto (2013: 8), this marker should even be put at 90% for advanced learners, showing that it is indeed proficiency which is measured here. It would be interesting to see how the use of the emergence criterion, which is considered as the ‘measuring tool’ within PT, would influence the implicational hierarchy as shown in table 7. As we take into consideration that the ‘weakest’ student could make use of the 3 last structures (Sep, Inv and V-end) to almost 20%, we might conclude that some of these structures (because there is no way of knowing the separate percentages) might already have been considered to be acquired according to PT. To be able to get a clearer and more accurate view on how Dutch syntax is acquired, more research is needed.

2.3.2 Arends (2007)

The study done by Arends (2007) is focusing on three different aspects of Dutch grammar and morphology. In her study, Arends investigates the acquisition of adjective agreement (stage 3), subject-verb agreement (stage 4) and word order in subordinate clauses (stage 5). The paper is based on data of 32 informants, all taking part in the same beginner course at the University of Leiden. The data has been collected after six weeks of instruction. The informants were given three tests. Each test contained a series of pictures, combined with a question, designed in a way that the wanted structures would be used by the informants.

The data was analyzed by scoring correct answers (+1) and giving no points for wrong answers or missing structures. When scoring the results, only the targeted structure per test was taken into account. The amount of points per informant was then put into percentages. In this paper, Arends used three different percentages as criterion: 30%, 50% and 80%. In her opinion, 30% is the lowest possible figure to be able to say that a structure has been used systematically. The result is shown in figure 14.
This analysis shows some interesting results. Several informants have not acquired adjective agreement, while subject-verb agreement and even subordinate clause procedure is used correctly by some of them. This holds for all percentages. These figures conflict with PT’s assumption on implicational hierarchies. According to the theory, adjective agreement should be acquired first, followed by subject-verb agreement and subordinate clause procedure.

Furthermore, Arends investigated the influence of the mother tongue on the acquisition process. According to PT, this is of little importance, since transfer is only possible in very restricted cases. However, Arends did find some differences within the groups of informants. According to these results, influence of the mother tongue is real.
Based on both the results of the implicational scales and the results shown in figure 15, according to the mother tongue of the learner, Arends (2007: 10) concludes that PT does not stand for the Dutch acquisition process, and that mother tongue does seem to play a greater role than is assumed by PT.

The results obtained in this study are very interesting. It seems that PT is not able to explain the Dutch acquisition process. However, some remarks could be made. First of all, Arends (2007: 7) counts missing structures as false. PT does not include missing structures in the data, because a missing structure is not proof that a structure has or has not been acquired. Therefore, it would have been more correct to count the percentage of right structures compared to the overall instances where the structure should have been used minus the instances where no sign (wrong or right) of the structure appears. This would have given us a more accurate image on whether the structure has been acquired or not.

The next remark concerns the percentages used. The use of several percentages is a good way to measure both acquisition and accuracy. The method used by Arends is based on the method used by Glahn et al. (2001) for research on the acquisition of Scandinavian languages within the frame of PT. Glahn et al. did use 50% and 80%, but also the emergence criterion. Using 30% might already be counted as measuring accuracy, and not acquisition. The percentage seems low and fair, but is also misleading. If an informant would have used adjective agreement in for instance 5 cases, this could have been counted as acquired by PT (restricted by the definition of ‘systematic use’ as will be discussed later). Then considering the fact that several stages might develop at different speeds, the adjective agreement could already have been acquired, but might develop slower than the other two constructions.

Finally, the following question can be raised: is it correct to compare morphological and syntactical stages with each other? Earlier morphological stages need to be acquired before the next one can be processed, and that the same counts for syntactical stages. Word order develops gradually, and so does morphology, but the question is whether this is enough evidence for the different processes to develop simultaneously. Pienemann (1998:115) assumes no such rigid connection between both hierarchies. Comparing the acquisition of adjective agreement and subordinate clause procedure with each other is thus not valid.

Arends’ paper shows some really interesting results concerning the validity of PT in the Dutch acquisition process. In this study, the aim is to clarify some of the questions posed here, both concerning transfer and the implicational hierarchy.
2.3.3 Conclusion

The articles both focus on the acquisition of Dutch as a second language. While Riyanto (2013) focuses on word order, Arends’ study (2007) is based on three different levels of the implicational hierarchy, focusing both on syntax and morphology.

Both of the studies seem to struggle with applying the emergence criterion. Riyanto applies a very high percentage to the data, only counting a structure as acquired when it is used correctly in 70% of the cases. Even though Arends makes use of three different measuring points, also she measures accuracy more than the real point at which a structure can be processed for the first time.

Also, both of the studies take transfer into account. Arends provides evidence for a possible role of L1 transfer with a table of averages per mother tongue. These results seem legitimate, and should be taken into account when considering anomalies in the data. The assumptions made by Riyanto, on the other hand, fit well within the theory.

Finally, it should be brought to the attention that both of these studies are cross-sectional in their nature. In both cases, the informants are interviewed only once. Therefore, we do not get an overview of individual acquisition processes, but rather a comparison between different informants. In the case of Arends’ study, all of the informants had the same amount of Dutch lectures, while Riyanto’s informants had different study levels. Since PT is a theory built to explain individual learners’ acquisition process, a longitudinal study would maybe have given us some different results.

These articles serve as the ideal starting point on which to base assumptions on what the implicational hierarchy of Dutch second language acquisition might look like. In this thesis, the goal is to provide an answer on the questions posed by these two articles, and to solve some possible problems with the theory. The outcome is then an implicational hierarchy which can serve as a starting point for further research.

3. Dutch syntax and morphology within the PT frame

In the next section Dutch syntax within the PT frame will be discussed. Based on theoretical knowledge, the implicational hierarchy is constructed, which is assumed to be the basis for learning Dutch as a second language. This hierarchy forms the theoretical tool for the analysis of the learners’ interlanguage in the following project. The two models discussed in this thesis are based on the acquisition of morphology and syntax. More specific, the syntactical hierarchy only concerns the placement of the verb and subject, so negation or other word order rules are not taken into account.
3.1 Morphology

3.1.1 Category procedure
On the level of the category procedure in morphology, lexical morphemes are categorized. For the production of these morphemes, no information is needed from other parts of the sentence or phrase. In Dutch, amongst others the following lexical morphemes can be identified:

- Plural marking in nouns (-s, -en)
- Diminutives (-je, -tje, -kje, -pje)

These morphemes need no exchange of information from other phrases, but such information might be present anyway. The need for the diminutive marker might be evoked by the use of the adjective ‘klein’ (small), but diminutives can also be formed without this addition, without a shift of meaning. The same is true for plural marking in nouns. The plural morpheme might be induced by an adjective, a numeral or even the article, but it is not necessary.

The different lexical morphemes can be illustrated by the following examples:

- **Plural marking**
  a. Hond-en
     *dog-s*
  b. Veel hond-en
     *many dog-s*

- **Diminutives**
  a. Hond-je
     *little dog*
  b. Het klein-e hond-je
     *the little dog*

3.1.2 Phrasal procedure
The phrasal procedure is characterized by the exchange of information between different constituents within the same phrase. As mentioned before, both diminutives and plural marking could be considered to belong in this category. However, since they can be constructed without phrasal information, these morphemes are categorized as lexical morphemes in this thesis.

For this study, only the noun phrase procedure to be found at this level is considered. The noun phrase procedure to be found at this level is the following:

- Attributive adjective agreement (-e, -ø)

Attributive adjectives are inflected according to gender, number and definiteness. An –e is added at the end of the adjective. However, in one specific case, no morpheme is added to the adjective. This occurs when the noun has neuter gender, and the article used is indefinite.
Consider the following examples:

- **Attributive agreement**
  - a. een klein-e hond
    
    *a little dog*
  - b. de klein-e hond
    
    *the little dog*
  - c. de klein-e honden
    
    *the little dogs*
  - d. het klein-e hond-je
    
    *the little dog* (diminutive: always neuter)
  - e. een klein-ø hond-je
    
    *a little dog*

Note that it is not possible to see by the indefinite article whether a word has masculine, feminine or neuter gender. This makes it harder to judge whether a learner actually knows the rule, and can apply it, or whether it is just ‘a lucky guess’.

### 3.1.3 Interphrasal procedure

In the interphrasal procedure, we find structures that are in need for exchange of information between different phrases. These morphemes “rely on the unification of diacritic features between phrases” (Pienemann 1998: 115). In Dutch, this is required for subject-verb agreement, both in present and past tense. There are different verbal morphemes depending on the intended subject and on number.

- First person singular: -ø (present); -te, -de (past)
- Second person singular: -t or -ø (present); -te, -de (past)
- Third person singular: -t (present); -te, -d (past)
- First, second and third person plural: -en (present); -ten, -den (past)

The reader will note that there are two options for present tense in the second person singular. The choice of the option depends on the placement of the verb in the sentence. If the subject occurs before the verb, then the –t is added. In case of inversion, so when the verb comes before the subject, there is no morpheme added. The choice between –te(n) and –de(n) in past tense depends on the consonant preceding the inflection. Verbs of which the basis ends on a voiced consonant ask for –de(n), voiceless consonants evoke –te(n).

Dutch also has quite some irregular verbs, which need to be learned individually by the learner, since these do not follow the regular inflection rules. Also, there is a difference to be made between ‘weak’ and ‘strong’ verbs. In the first category, the basis for the inflection of the verbs changes in past tense (ex. wij lopen (*we run*), wij liepen (*we ran*)). However, they are inflected regularly.
3.2 Syntax
As mentioned before, only word order concerning the placement of the subject and verbs will be considered in this section. The placements of other sentence components will not be taken into account here.

3.2.1 Category procedure
At the level of the category procedure, we find canonical word order. There are some discussions on whether Dutch is an SVO or SOV language. In declarative sentences without auxiliary, the verb comes in second position, right after the subject. However, in case of a compound verb phrase containing an auxiliary, the main verb is placed at the end of the sentence, while the auxiliary takes the second sentence position. Some scholars (a.o. Koster 1974) argue therefore for SOV as being the canonical word order in Dutch.

However, in this study SVO word order is considered to be the canonical word order, since at least one verb (auxiliary or main) has to take the second sentence position in regular declarative sentences. This view seems to be adopted by PT with the introduction of the SEP-rule, a structure which will be discussed later in this paper. A sentence constructed according to SVO word order is represented as follows:

\[(R1) \; S' \rightarrow NP_{subj} \; V \; (NP_{obj1}) \; (NP_{obj2}).\]

An example of a simple Dutch declarative sentence looks as follows:

\[(1) \; \text{Hij wast zijn auto.} \]
\[\text{He washes his car.}\]

3.2.2 Phrasal procedure
At the phrasal procedural level, ADV-fronting is introduced in the learners language. After having acquired SVO word order, learners begin placing other constituents that the subject in first sentence position. As mentioned earlier, this is part of the Topic Hypothesis. In Dutch, placing another constituent in first sentence position should evoke inversion. However, at this point in their acquisition process, learners are not able to use this structure. Therefore, the main word order is retained.

\[(R2) \; S' \rightarrow (XP) \; S \]
\[\quad \left\{ \begin{array}{l}
\text{Wh} = c+ \\
\text{Adv} = c+ \\
\text{NP} = c+ \\
\text{PP} = c+
\end{array} \right.\]

The following sentence is an example of what can be processed by the learner:

\[(2) \; \text{*Soms hij gaat naar school.} \]
\[\text{Sometimes he goes to school}\]
Note that inversion is also required in V1-structures. These are questions constructed by putting the verb in first sentence position. The subject immediately follows the verb. However, these are not counted as proof for the acquisition of inversion in this paper, since this does not require the ability to front adverbs and other constituents.

3.2.3 Interphrasal procedure
At the interphrasal level, we find two different structures which need to be acquired by the learners. At first, SEP word order is introduced. Later on in the acquisition process, inversion will also be acquired.

The first structure introduced at this stage in a learner’s acquisition process, is the SEP-structure. In Dutch, auxiliary and main verb should be separated in some word order structures. This is for instance the case in declarative sentences. In terms of syntax, the verb phrase is now introduced as being a constituent. Also, the rules on verb placement are changed.

(R3)  
S -> NP

VP -> \{ \(NP_{obj1}\) (NP_{obj2}) \}

V-COMP -> (NP_{obj1}) (NP_{obj2}) V

These rules account for the separation between the main verb and the auxiliary. Pienemann (1998: 100) also assumes that the main verb and the auxiliary are treated as two separate entries. The auxiliary is treated as main verbs, taking VP complements.

Consider the following example:

(3) Hij heeft bier gedronken.

He drank some beer.

A particular morphological form of the main verb should be used together with the auxiliary in order to express a grammatical function (Pienemann 1998: 101). In figure 16, both lexical entries are annotated with the feature ‘PAST’, in the PARTICIPLE and the V-COMP

<table>
<thead>
<tr>
<th>V</th>
<th>PRED = ‘drinken (SUBJ) (OBJ)’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PARTICIPLE = PAST</td>
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<tr>
<td></td>
<td>INF = ge</td>
</tr>
<tr>
<td></td>
<td>AUX= -</td>
</tr>
<tr>
<td>V-COMP</td>
<td>PRED = ‘hebben, V-COMP (SUBJ)’</td>
</tr>
<tr>
<td></td>
<td>TENSE = PAST</td>
</tr>
<tr>
<td></td>
<td>AUX = +</td>
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<td></td>
<td>NUM = SG</td>
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<tr>
<td></td>
<td>PERSON = 3RD</td>
</tr>
<tr>
<td></td>
<td>V-COMP PARTICIPLE = PAST</td>
</tr>
<tr>
<td></td>
<td>V-COMP INF = ge</td>
</tr>
</tbody>
</table>

Figure 16 Lexical entries for sentence (3)
PARTICIPLE. The feature PARTICIPLE also ensures that the verbs are separated from each other, and that the auxiliary cannot take the last sentence position (Pienemann 1998:102). The predicates of both verbs contain SUBJ, and thus asks for a unification of this feature. ‘Drinken’ asks for both SUBJ and OBJ, while ‘heeft’ only needs a SUBJ. Since only lexical verbs can be placed in final sentence position, ‘heeft’ cannot take that position. The combination of these two features, the unification of the feature PARTICIPLE, leads to the split verb construction (Pienemann 1998: 101-102). Pienemann (1998: 102) assumes that learners will apply this construction unsystematically, only when using particular verbs. This structure can be considered as salient, since the only non-canonical adaptation in this structure is clearly visible in the form of the lexical verb appearing in last sentence position.

The second structure at the interphrasal level in inversion. Dutch is a V2-language. As mentioned in the previous sections, this means that the verb should come in second position, independent of the fronted constituent. In Dutch, quite a number of constituents can be placed in first sentence position. Therefore, including these constituents in the rule is necessary. According to Pinker (1984 in Pienemann 1998: 102), inversion rules can be written as follows:

(R4) S’ -> (V) S
     \{ROOT = c+ \\
     SENT MOOD = cInv \}

To make sure that the rule is only applied to matrix clauses, the feature ROOT is included. Embedded clauses are thereby excluded from the rule. SENT MOOD accounts for the change of verb position, making sure that inversion word order is applied. By adding this feature to the rule (R2), inversion is constrained lexically in elements which can appear in first sentence position (Pienemann 1998: 102).

Pienemann argues that the feature ROOT is not present in the interlanguage of a learner, since learners apply inversion rules in both main and subordinate clauses during their acquisition process. Both types of clauses are therefore generated in a syntactically similar way, until the specific rules for subordinate clauses have been acquired (Pienemann 1998: 104).

Incorrect word order (from a TL point of view) in the interlanguage has therefore several causes. First of all, the elements which can be topicalized need to be lexically marked for this structure. If the learner has not connected this feature to the element, no inversion rules will be applied. Also, the learner needs to acquire the classes which can be topicalized and cause inversion. Since this is assumed to be acquired gradually, this is reflected in the development of the interlanguage. The last cause is the possible lacking of feature SENT MOOD in the learners’ language. If this is not present, the fronting of another constituent than the subject will not cause inversion, therefore leading to the previously named structure: *XP SVO.

This structure is considered to be non-salient, and is therefore placed after SEP in the developmental hierarchy.
3.2.4 S-procedure

In subordinate clauses, the verb comes in final sentence position. Since this word order differs from both the main word order, and inversion, a new rule needs to be introduced. In this rule, the word order is introduced for non-ROOT sentences.

\[
R5: S \rightarrow (COMP)_{\text{ROOT}=\text{NP}_{\text{subj}} (\text{NP}_{\text{obj1}}) (\text{NP}_{\text{obj2}})} (\text{ADJ}) (V)_{\text{INF}= (V)_{\text{INF}=+}}
\]

The learner has to acquire the value for the feature ROOT for each complementiser, which is assumed to happen gradually (Pienemann 1998: 109). Therefore, the use of the structure will develop gradually, so that inversion or canonical word order in subordinate clauses and subordinate clause structure might occur at the same time in a learner’s interlanguage.

(4) Ik heb hem gezegd dat ik gisteren niet naar de training kon komen.

\[
S \quad V \quad \text{NP}_{\text{obj1}} \quad V-\text{COMP} \quad \text{COMP} \quad S \quad \text{ADV} \quad \text{ADV} \quad V_{\text{INF}=} \quad V_{\text{INF}=+}
\]

*I told him that I couldn’t go to the training yesterday*

3.2.5 Conclusion

Learners start out learning the canonical word order, which is SVO for Dutch. Since there is no feature unification needed to account for this structure, this structure corresponds to level 2 of the developmental hierarchy (Pienemann 1998: 110). When they are developmentally ready, the learners will place other constituents than the subject in first sentence position. This structure demands the application of inversion rules, which cannot be processed by the learners at this point in time. Therefore, (R2) accounts for the changes to the main word order, allowing other constituents in first sentence position, while the rest of the sentence is formed according to SVO word order, thus not changing the placement on the c-structure. Since there is no need for the exchange of grammatical information, this structure can be found at stage 3 (Pienemann 1998: 110). Also, the rule SEP is introduced in the learners’ grammar, leading to separation of verbs in main clauses. In order to achieve this, the value PARTICIPLE needs to be acquired for both the main verb and the auxiliary’s V-COMP (Pienemann 1998: 110). Since this occurs across constituent boundaries, this structure can be found at stage 4 in the hierarchy. With the introduction of SENT MOOD, inversion will gradually be acquired. The structure is placed at stage 5. At last, the word order for subordinate clauses can be processed, which depends on the value of the feature ROOT. This is the last stage of the hierarchy.

The different rules which need to be acquired by the learners are the following:

\[
R1: S' \rightarrow \text{NP}_{\text{subj}} V \text{ (NP}_{\text{obj1}}) \text{ (NP}_{\text{obj2}}).
\]

\[
R2: S' \rightarrow (XP) S \\
\{ Wh = _c+ \\
\text{Adv} = _c+ \\
\text{NP} = _c+ \\
\text{PP} = _c+
\}
\]
3.3 Dutch processing hierarchy

In figure 17, a proposed processing hierarchy for Dutch is illustrated. This is the hierarchy which will serve as a guideline for the analysis of the results, and is based on theoretical background. It will be tested later in this paper, to see whether this is the developmental schedule which is actually followed by the learners.

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Exchange of information</th>
<th>Morphology</th>
<th>Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Subordinate</td>
<td>Main and subordinate clause</td>
<td>V-end</td>
<td></td>
</tr>
<tr>
<td>5 S-procedure or word-order rules</td>
<td>Interphrasal, no saliency</td>
<td>INV</td>
<td></td>
</tr>
<tr>
<td>4 Phrasal procedure</td>
<td>Interphrasal, saliency</td>
<td>S-V Agr.</td>
<td>SEP</td>
</tr>
<tr>
<td>3 Category procedure</td>
<td>Phrasal information</td>
<td>NP Agr.</td>
<td>ADV</td>
</tr>
<tr>
<td>2 Word or lemma access</td>
<td>Lexical morphemes</td>
<td>pl., dim.</td>
<td>SVO</td>
</tr>
<tr>
<td>1</td>
<td>Words</td>
<td>invariant forms</td>
<td>single constit.</td>
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</tbody>
</table>

Figure 17 Proposed Dutch hierarchy of processing procedures

4. Methodology

4.1 Participants

PT argues that a learner’s L1 does not influence the acquisition process. Still, for the purpose of this thesis, only participants with Swedish as their mother tongue were selected. The participants were all students at Stockholm University, where they studied Dutch for beginners. Seven participants completed all three interviews. All of the participants studied at least one other language than Swedish and Dutch, mostly during secondary school.

All of the students either worked, or studied as their main occupation. They learned Dutch out of an interest for the language, and did not generally use it in their everyday lives, or for any
linguistic purposes. Therefore, the participants’ backgrounds were very different. The names of the participants have been changed to be able to assure their anonymity. One of the informants (Bengt) had lived in the Netherlands for half a year, and had learned some Dutch in an informal way. Two of the informants (Frida and Julia) worked in a linguistic environment, and had studied other languages at university level. Patrik, Julia, Frida and Hilda started the courses without any previous knowledge of Dutch.

At Stockholm University, one can take two semesters in Dutch. The participants came from both groups. Bengt, Julia, Frida, Hilda and Patrik took part in the first course, while Lisa and Amanda had already reached the second level. However, in this study, no difference is made between the two groups of students. Rather, the participants’ language acquisition patterns are considered individually, independent from their level of study. This because of the great interpersonal differences, depending on more variables than only the level of studies.

4.2 Interviews

The interviews had a duration of approximately 10 to 15 minutes, depending on how much the participants would and could utter. All participants were interviewed three times within a period of two to three months. Instructions were given in Swedish, in order to make sure that the participants fully understood what was being asked of them, but a shorter version of the instructions in Dutch was also shown on the screen.

The vocabulary necessary to complete these tasks was considered to be relatively easy, since the tasks contained situations from everyday life. However, the participants were allowed to ask for words which they did not know. Also, some Swedish was allowed, as long as the main part of the sentence was uttered in Dutch. All of the participants made a great effort in avoiding the use of Swedish, and therefore, little Swedish occurs in the data. Some foreign words do also occur, mostly taken from German and English.

4.2.1 Task description

A first task which the participants were given, was to describe some everyday life situations, taken from the participant’s own life. During the first and second interview, the participants were asked to describe their activities during the previous weekend and week. The last interview began with asking them to report in detail what they would do on a regular day. The goal with these tasks was to see if the participants were able to conjugate the verbs correctly according to first person subject-verb agreement rules. Also, the idea was that participants might be prone to using inversion, describing series of actions. The results show that task was well designed for eliciting first person conjugations. However, the elicitation of inversion in this task was not always successful.

The second task consisted of describing a picture. The participants were given a drawing in which some everyday activities took place. With this task, the aim was to evoke third person singular and plural expressions. They were asked to specify what other people were doing in this drawing, which demands the use of third person. Since there were always several people in the
picture, the participants could choose to talk about every single person, or about the group. Most of the students combined these two options, leading to the use of both singular and plural expressions. Previous studies (Pienemann & Mackey 1993) show that the description of habitual actions evokes the use of third person.

The third task was designed to elicit subordinate clauses. The participants were given four times two pictures, and were asked to choose between them. They were requested to specify in words what picture they would choose and what it represented, and what reason they might have to pick that particular one. The prognosis was that mainly relative clauses would be used. However, the students used a range of possible subordinate clauses, or simply avoided the use of the subordinate clause structures.

With the last task, the goal was to evoke inversion. The participants were asked to tell a story using a series of pictures that they were given. Describing a series of actions usually leads to fronting other parts of the sentence than the subject, and would thus require inversion rules to be applied. They were encouraged to tell a story, rather than just to describe what was happening in every single picture.

During the first interview, the participants were asked to talk about their favorite movie or book. The objective with this task was again to elicit third person conjugations and inversion. This task took a great deal of effort for all the participants, and little data was collected with this question. The participants seemed to be able to communicate more, or at least more coherent, when given a clear context, such as the pictures they were asked to describe. Therefore, this task was not included in the last two interviews.

4.2.2 Modifications to the interviews

The analysis of the first interview lead to some modifications to the next interviews. First of all, one of the tasks was abandoned, as mentioned above. Secondly, it was clear that the first interview generated enough data on word order and subject verb agreement, but that adjective agreement was underrepresented. Therefore, some new tasks were introduced in the second interview. Since the second interview lead to more representative results concerning adjective agreement, the new tasks were maintained during the third data point.

One of the newly introduced tasks was a comparison task. The participants were handed two versions of the same picture, and were asked to describe the differences between them. The variation in the two pictures consisted of colour changes. The underlying idea was that the participants would use attributive adjectives to describe the drawings, which would lead to sentences like the following:

(1) Dit meisje draagt een witte muts.

This girl wears a white hat.

The task partially elicited the desired structure. However, the informants showed a substantial preference for using predicative adjectives instead of attributive ones.
The second task that was introduced during the second interview was a memory task. The participants were requested to look at a picture for some moments. Then the picture was taken away. The participants had to try and describe in detail what they had just seen. They were specifically asked to focus on colours. The picture was kept simple, so that more details could be recalled. Also here the goal was to encourage the use of attributive adjectives. Likewise as in the previous tasks, attributive adjectives were used, but a clear preference for predicative adjectives was noticeable.

4.2.3 Elicitation techniques

Ideally, a study like this would be done on the basis of samples of free speech. Sampling free speech is, however, not easy to accomplish. First of all are the participants in this study were at the very beginning of their acquisition process. They might feel insecure about speaking the language, and thus not produce enough data. Furthermore, studies (ao. Hyltenstam 1977: 385-386) show that participants tend to avoid using structures if they do not control the rules completely. Therefore, some structures need to be elicited using specifically designed tests to make sure that there is at least a context to use the desired structures in. The elicitation tasks used in this study are in accordance with what Ellis and Barkhuizen (2005: 23) describe as ‘clinically elicited samples’. This means that the general tasks are designed to elicit certain structures, but that the informants have some freedom in how to complete the tasks.

The tasks used during these interviews could all be described as ‘communicative tasks’. As Pienemann and Kessler (2011:89) point out, the goal of this type of tasks is not to test the ability of the participants to use a certain structure, but more to give them the opportunity to use the structures, and create communicative contexts in which the structure should be used. From previous data, Pienemann and Kessler (2011:90) conclude that “(1) communicative tasks are far more successful in eliciting the targeted structures than in an informal interview, and (2) it is possible to target specific linguistic structures in tasks that are designed appropriately.”

4.3 Data analysis

When analyzing and transcribing spoken material, it is important to think of what you are actually looking for in the material, and which transcription manner would benefit your results the most. In this study, the focus is on syntactic structures and morphology. Therefore, details about, for instance, intonation or pitch can be left out. For the purpose of this study, the aim when transcribing the data was to make sure that all morpho-syntactical elements were transcribed.

4.3.1 Implicational scales

Once written down, all of the utterances of the participants were inserted in spreadsheet. The use of a spreadsheet allowed for easy analysis of the utterances according to the PT framework. Specific morpho-syntactic elements were identified, categorized and judged.

On the basis of these spreadsheets, distributional scales were formed. An example of this type of scaling is given in figure 18. The scales should be read as follows: the first column shows us the different PT-stages which could be identified by means of the data. The following columns
show the progress made by the informants during the different data points. The numbers in the figure correspond with the correct uses of a structure, and the number of obligatory contexts for that particular structure.

<table>
<thead>
<tr>
<th></th>
<th>Interview 1</th>
<th>Interview 2</th>
<th>Interview 3</th>
</tr>
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<tbody>
<tr>
<td>Subordinate clause procedure</td>
<td>0/0</td>
<td>0/0</td>
<td>0/4</td>
</tr>
<tr>
<td>S-procedure or word-order rules</td>
<td>0/0</td>
<td>0/6</td>
<td>3/10</td>
</tr>
<tr>
<td>Phrasal procedure</td>
<td>0/3</td>
<td>1/9</td>
<td>7/11</td>
</tr>
<tr>
<td>Category procedure</td>
<td>2/10</td>
<td>3/7</td>
<td>7/9</td>
</tr>
<tr>
<td>Word or lemma access</td>
<td>4/10</td>
<td>8/10</td>
<td>10/10</td>
</tr>
</tbody>
</table>

Figure 18 Example distributional scale

As a last step, implicational scales, of which an example is given in figure 19, are made depending on the data from the distributional analysis. These will show us whether learners who show evidence of the acquisition of a higher structure also acquired the lower structures. Correctly acquired structures are marked with a ‘+’, unacquired structures with a ‘-’. When certain contexts for specific structures did not occur during an interview, a ‘/’ is used to mark its absence. This does not prove, as Pienemann and Kessler (2011: 94) point out, that the participant can or cannot process a certain structure. It simply shows that no contexts were created by the learner in which this structure should be used. Also, when it was decided that there were not enough instances for a certain instances, a ‘/’ was used. PT uses the emergence criterion to decide on whether a certain structure can be considered acquired or not. This criterion will be discussed in the next section. The outcome of these scales will be the basis on which conclusions can be drawn on the correctness of the theory hypothesized by PT.

<table>
<thead>
<tr>
<th></th>
<th>Interview 1</th>
<th>Interview 2</th>
<th>Interview 3</th>
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<tbody>
<tr>
<td>Subordinate clause procedure</td>
<td>/</td>
<td>/</td>
<td>-</td>
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<tr>
<td>S-procedure or word-order rules</td>
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<tr>
<td>Phrasal procedure</td>
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<tr>
<td>Category procedure</td>
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<tr>
<td>Word or lemma access</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Figure 19 Example implicational hierarchy

### 4.3.2 Emergence criterion

An important discussion within the field of SLA is when a structure can be considered as being acquired. Which are the acquisition criteria which we have to take into account when judging a
participants interlanguage? Today, there is no consensus in this field. Quite a number of SLA theories today decide on whether a certain structure is acquired on the basis of percentages. When a certain percentage is reached, the structure is considered as acquired.

There are some problems with using percentages as a measurement for acquisition (Palotti 2007: 362). First of all, there is no consensus on which percentage should be used. Often there are no objective arguments on why a certain percentage is used within a certain framework or study. This could indicate that the researchers are not interested in just the acquisition of a structure, but more in when a structure is known to a certain degree. Secondly, the percentages used are often 60% or higher. This is quite a high number, indicating that proficiency is measured, rather than acquisition. Also, the accumulation of percentages does not lead to a linear pattern, since the actual percentages might fluctuate during the different data collection point (Pienemann and Kessler 2011: 94).

The main reason why the emergence criterion is considered to be valuable within the PT framework, is the separation between development and variation. PT argues that the very first emergence of a structure is the only point where development and variation are separated (Pienemann and Kessler 2011: 94). Different structures develop at different rates, in which case accuracy figures might give the wrong perspective on the acquisition of the learner’s interlanguage, where variation and development usually coincide (Pienemann 1998: 137). Therefore a structure with the highest accuracy rate is not necessarily the one that could be processed first by the learner.

The emergence criterion was first developed by Meisel, Clahsen and Pienemann (1981) as a part of their study on the acquisition of German as a foreign language. The emergence criterion is based on the very first systematic use of a specific structure. Pienemann explains the criterion as follows:

“From a speech processing point of view, emergence can be understood as the point in time at which certain skills have, in principle, been attained or at which certain operations can, in principle, be carried out. From a descriptive viewpoint one can say that this is the beginning of an acquisition process, and focusing on the start of this process will allow the researcher to reveal more about the rest of the process.”

(Pienemann 1998: 138)

Some notes should be made about what to consider as the first systematic use of a structure. Since only systematic use is taken into account, coincidental occurrences or formulaic use of a structure are not considered as evidence for the acquisition of a structure (Palotti 2007:363–364). On the other hand, the absence of a structure is not always counterevidence. As is mentioned before, there has to be a context in which this structure is used incorrectly to be able to draw conclusions on the acquisition of a structure. Just the absence of the structure is not enough.

Pienemann and Kessler (2011: 95) realize that the application of the criterion might be challenging in some cases. They point out that syntactic formulae should be rather clear in the data, leading to the overusing of certain strings of constituent structures. On a morphological
level, application is considered to be harder. They believe that both lexical and morphological variation needs to be present in order to decide whether a structure has been acquired.

Since this study is focused on the L2 acquisition pattern of the participants, the emergence criterion will be used to determine whether a structure has been acquired. Proficiency will be visible in the distributional scales, but will not be taken into consideration for the final results.

5. Results

In this section the results from the interviews are presented. Each informant’s results will be displayed individually, in order to give a complete overview of their development over time. Since learners use different strategies when acquiring languages, a more general overview might cloud these results. From these individual reports, a more general overview will be given in order to be able to make statements about the validity of PT.

The results are displayed by the use of implicational scales. Morphology and syntax will be presented in separate scales, which will give a clearer image of the acquisition process of the learners. An acquired structure is marked with a ‘+’, while a structure which is considered to be not acquired is represented by a ‘-‘. If there is not enough evidence on whether a structure is acquired or not, a ‘/’ will be used to mark this in the scales.

5.1 Lisa

Lisa’s data contained some plural nouns during the first interview. All of them were inflected correctly. The same yields for attributive adjectives. There were only very few occurrences for these structures, but when it was used by the informant, it was done so correctly. Also subject-verb agreement seemed to have been acquired by the informant. Lisa mainly utilized canonical SVO word order. However, she showed command of INV and subordinate clauses. There were not enough instances of SEP to rule on the acquisition of this structure. This allows for the conclusion that Lisa had acquired the highest stage for both morphology and word order rules.

During the second interview Lisa showed better command of all the structures. However, since she had already acquired all structures during the first interview, progress could only be seen when using an approach that measures proficiency. This will be discussed later in this thesis.

The same remarks apply to the third interview. Lisa showed even better command of the already acquired structures, and continued to develop the variety in word order use. It is remarkable that also in this interview, as in the two previous ones, no SEP was present in the data, but there are no indications that the informant had not acquired the structure either.

In conclusion, the implicational scales for Lisa’s development in word order and morphology are the same through all three interviews, as can be seen in figure 20. She was an advanced learner, so the use of the emergence criterion does not show her progress over time.
5.2 Bengt

Bengt utilized quite some plural nouns during the first interview, all of them inflected correctly. Predictions on the acquisition of attributive adjective agreement cannot be made, since there was only one context for this feature in Bengt’s data. Subject-verb agreement rules had already been obtained at this point of the informant’s acquisition process. In terms of word order, Bengt had acquired all possible structures investigated in this study. He used SVO, INV and subordinate clauses quite freely, and also SEP did not seem to cause any problems.

During the second interview, Bengt used more attributive adjectives, now giving enough positive evidence of the use of this structure to conclude that the structure could be considered to have been acquired. As in the previous interview, there were no problems with plural nouns, diminutives or subject-verb agreement. Word order acquisition remained the same. All structures had already been acquired during the previous interview.

The third interview showed the same results as the previous two. Bengt could be placed at the highest level of both hierarchies, having acquired all the necessary structures. This is illustrated in figure 21.
5.3 Frida

During the first interview, Frida used quite some plural nouns. Although some of the words were recurring, there was enough evidence for the acquisition of the structure. Adjective agreement seemed to have been acquired. She had quite some problems with subject verb agreement when using another person than 1st person singular. Since 1st person singular is the root form to which morphemes are added, it is argued here that the necessary morphology for subject-verb agreement had not yet been acquired. In conclusion, Frida could be placed at stage 3 in the morphological acquisition process. Frida showed a strong preference towards SVO word order. Nevertheless, she also used INV and subordinate clauses. Both of the structures were considered as acquired at this stage. SEP rules were also applied correctly. This suggests that Frida was at level 6 in the word order acquisition process.

The data of the second interview showed that all morphological markers had been acquired. There still appeared some problems with attributive adjective agreement and subject-verb agreement, but the structure could be considered to have been acquired according to the emergence criterion. Although SVO was still the most used word order, more variety in word order was be noticed during the second interview. All structures (except for ADV) were used at the second data point, and were mostly correct. These findings placed Frida at level 5 and 6 of the implicational scales.
Frida continued on the same path during the third interview. The morphological markers are all present, and all of the word order structures seem to have been acquired. This leads to the implicational scale as is shown in figure 22.

<table>
<thead>
<tr>
<th>Morphology</th>
<th>Datapoint 1</th>
<th>Datapoint 2</th>
<th>Datapoint 3</th>
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<tbody>
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Figure 22 Implicational scales Frida

5.4 Amanda

The data of the first interview showed that Amanda had acquired all morphological markers. She used many plurals and diminutives, almost always inflecting them correctly. Also, attributive adjective agreement was used correctly in quite some cases. There seemed to be no problems with subject-verb agreement. Therefore, Amanda was placed at stage 5 of the morphological processing hierarchy at this point. In the case of word order, she mainly used SVO word order. SEP was clearly visible in the learner’s data. Two clear instances of inversion did occur, but this was too little to decide whether this structure could be processed correctly. Concerning subordinate clauses, there was some evidence that this structure could have been acquired, although it was not always clear in the data. In an example as the following (1), there is only a subject and a verb in the subordinate clauses, so the verb automatically comes at the end (supposing that the learner would not use inversion word order in subordinate clauses). However, the structure was considered as acquired, and the informant was placed at stage 6 of the syntactical hierarchy.

(1) *En ik weet niet wat hij teken.
COMP S V  And I don’t know what he draw.
There was no difference in the data from the second interview concerning the morphological markers. These seemed to have been acquired to a very high extent. The most used word order was still the canonical word order. There were some instances of ADV and INV (2, and 3). This again gave us very little information on whether INV had been acquired or not. SEP had been acquired. Subordinate clauses also occurred in this dataset. It is remarkable that Amanda did seem to have acquired subordinate clause procedure, but when she neglected to use the subjunction in relative clauses, she made mistakes.

(2) *Nee, ik denk ik neem de rode.
\[\emptyset \text{ S V OBJ}\]
No, I think I take the red one

However, the structure seemed to have been acquired, since there were quite some instances where the structure was used correctly. Therefore, Amanda stayed at level 6 syntactically and level 5 morphologically.

During the third interview, the status of the acquisition of morphemes remained status quo. There were some mistakes to be noticed in adjective agreement, but there were enough correct instances to show that the structure had been acquired. There was more variety to be noticed in the word order used by the informant. It was now possible to see that INV had been acquired. On the contrary, there was only one context for SEP. The previously named problem with subordinate clauses was retained, namely incorrect word order when the subjunction was (wrongly) omitted. However, also in this case, there were enough instances to decide on the positive acquisition of the subordinate clause structure.

Her acquisition process is illustrated in figure 23.

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Figure 23 Implicational scales Amanda

40
5.5 Julia

Already during the first interview Julia had learned to inflect plural nouns. She did not use diminutives. There were not enough attributive adjectives to decide on whether this structure had been acquired or not. In terms of subject-verb agreement, the first person singular and the plural forms seemed to have been acquired. There were some problems with third person singular, but all in all this structure was considered to have been acquired. SVO word order was the main order used by the informant. The acquisition of INV was an ongoing process, since both INV and ADV appeared in the data. There were not enough subordinate clauses or instances of SEP to decide on the acquisition of these structures.

In terms of morphology, there were no changes in Julia’s acquisition process during data point 2. She still preferred predicative adjectives over attributive adjectives, giving too few instances to rule on the acquisition of the structure. The problems the informant had with 3rd person singular subject-verb agreement seemed to have been solved. The canonical word order was still the post represented in the data. However, INV had evolved in the time between the interviews, showing no more evidence for the incorrect (from TL point of view) structure ADV. Subordinate clauses were underrepresented. In all of the obligatory contexts the structure was incorrect, but the number of instances was considered to be too low. SEP was also underrepresented in the data.

During the third interview Julia started using more attributive adjectives, both inflected correctly and incorrectly. She showed partial command of the structure in different contexts and with different words, thus showing that she had acquired the structure. There were no problems with plural nouns, diminutives and subject-verb agreement. In terms of word order, ADV showed up again in the data. This showed that the acquisition of INV was still an ongoing process, since correct structures also appeared in the data. There was no evidence of SEP in the data. Julia used more subordinate clauses during this interview, now giving the possibility to make some statements about this structure. She used the structure both correctly and incorrectly. She could apply the rules in most cases, but when using ‘ik denk’ (I think) as main clause, the word order in the subordinate clause was always incorrect. Like other informants, she left out the subjunction necessary for the correctness of the sentence.

(3) * Ik denk het zijn dezelfde als het beeld in de tuin.

\[ \emptyset \quad \text{S} \quad \text{V} \quad \text{OBJ} \]

*I think they are the same as the image in the garden.*

Julia’s results are summarized in figure 24.
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Figure 24 Implicational scales Julia

5.6 Patrik

During the first interview, Patrik was not able to answer the questions from the interview. Both his vocabulary and syntax were very limited. He was thus asked to form as many Dutch sentences as possible, in order to be able to make some statements about his very early acquisition. This resulted in SVO word order for all the sentences, and no use of morphology. Therefore, he was placed at stage 1 for morphology, and stage 2 for syntax.

During the second interview, the informant was now able to complete the tasks. He started using plural forms, and inflected them correctly most of the time. Also, adjective agreement seemed to develop, and subject-verb agreement was present more clearly. However, in this analysis, Patrik was placed at stage 1 for morphology, since there was no evidence that all of these morphological markers could be used systematically by the learner. There was no variability in the words used by the informant, and it was therefore unclear whether he would be able to apply the rules to other words. Concerning word order, there was very little change in the structures used by the informant. He used mainly SVO word order, but there were also two attempts to place other constituents in first sentence position, and there was an attempt to form a subordinate clause. However, since this only occurred in very few instances (2 ADV, 1 Sub. Clause), there was once again no proof that these structures could be used systematically. Patrik was still at stage 2 in the word order hierarchy.

In the data from the last interview, there were some definite changes to be noticed. First of all, Patrik started using diminutives and plurals regularly. He inflected most of them correctly. There were three instances of attributive adjective agreement. Since only so few adjective occurred, there is no certainty on whether this structure had been acquired. Whether subject-verb agreement had been acquired was also difficult to decide. Many of the morphology markers were correct. However, the same verb was used in most of the instances, and only 1st and 3rd person
singular seemed to have been acquired. Plural subject-verb agreement was always incorrect, but there were too little instances of the structure in the data to decide on the acquisition of the structure.

The word order patterns in the last interview had also changed to a certain extent. There was some positive evidence that the ADV construction had been acquired, which provided negative evidence for INV. INV was used correctly in two instances, but since the construction of the sentence was exactly the same in both instances, this is not considered to be positive evidence for INV, since this seemed to be a chunk which had been acquired. Also, SEP was introduced in this interview, but the informants did not seem to have acquired the structure yet. Even though there were two incorrect instances of subordinate clauses, no conclusion could be drawn about the acquisition of subordinate clause procedure.

An overview of Patrik’ acquisition process is illustrated in figure 25.

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Figure 25 Implicational scales Patrik

5.7 Hilda

Hilda used quite some plural nouns and diminutives during her first interview. The use of diminutives was remarkable, since there was no specific test to elicit these and the other informants did not use diminutives this often. She showed command of attributive adjectives, although there still appeared some mistakes in some cases. Also subject-verb agreement seemed to have been acquired. In terms of word order Hilda attempted to vary her use. ADV was present in the data, which also gave negative evidence for INV. Subordinate clauses did appear, both correct and incorrect. The correct structure could not be structured differently because of the absence of adverbs or objects, so they were not taken into consideration in this analysis.
Therefore, it could be concluded that the subordinate clause word order had not yet been acquired. There was not enough evidence for the acquisition of SEP. In sum, this means that Hilda was placed at level 5 for morphology and level 3 for syntax.

During the second interview there were no problems with plural nouns and diminutives. Attributive agreement seemed to have been acquired, although one almost constant mistake was made. In cases where the morpheme that marks attributive agreement should be left out (indefinite article in ‘het’ words), it was almost always present. This shows that Hilda had learned that she has to add a morpheme when an adjective is used attributively, but that she had not yet acquired the exceptions. However, this structure was considered as acquired. Hilda had little problems with subject-verb agreement. In terms of word order, she had now acquired INV. Subordinate clauses were still problematic, and were considered not acquired. Again, there were not enough contexts for SEP. Hilda had already reached the final acquisition stage for morphology, but now she moved up to stage 5 in terms of syntax.

The acquisition of morphology remained status quo. The acquisition of attributive adjective agreement and subject-verb agreement was an ongoing process, but this can only be made clear by measuring proficiency. By using the emergency criterion, these structures were already considered as acquired during the first interview, and there was no change in that. Hilda’s use of different word orders developed continuously. Although there were still some signs of ADV, INV had clearly been acquired. By the time the third interview took place, Hilda could now also process subordinate clauses. Still, there was no sign of SEP in the data. This means that Hilda could now process the highest PT level of both hierarchies, as can be seen in figure 26.

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Figure 26 Implicational scales Hilda
5.8 Summary of the results

These results are combined in figure 27 per data point and per hierarchy in order to provide an image of the acquisition processes across learners. They give the opportunity to compare and contrast between different learners, and provide a clearer overview from which more general conclusions can be drawn.

**Emergence criterion**

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**Figure 27 Combined implicational scales**

5.9 Measuring proficiency

Since the results showed that some of the informants had reached the final stages in the acquisition process already during the first interview, it might be interesting to see how their proficiency changes over time. It can show the developmental path a learner goes through when learning a new language, without detracting from the conclusions already done on the positive
evidence for the PT hierarchy. In this paper it was decided to adopt the two highest percentages used by the studies of Glahn et al. (2007) and Arends (2007): 50% and 80%.

From figure 28, it is clear that the 50% mark does not change much on the implicational scales, even though a 50% marker was not adopted here to decide whether a structure could be acquired or not. This only shows that, during the interviews, the informants almost always used half of the structures (or more) correctly, if they used them.

The 80% marker shows us the real variability in development. We can see that the implicational scales are not always followed anymore. Anomalous results are marked with a grey zone. More difficult structures are sometimes acquired to a greater extent than earlier ones. Also, scoring above 80% at one data point for one structure does not necessarily mean that the informant will score as high the next time. Figure 29 clearly shows that development is a variable path, and that acquisition cannot (solely) be measured by proficiency.
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Figure 28 Measuring proficiency: 50%
Figure 29 Measuring proficiency: 80%
6. Discussion

In this section the results obtained in this study will be compared to the theoretical model previously discussed. Also possible questions which have risen during the analysis will be reviewed. The role of transfer in this data will be taken into account, and the difference between emergence and proficiency will be debated.

6.1 Analysis of the results

6.1.1 Morphology

Let us first consider the results of the morphological acquisition process. Four different morphological structures were selected on three different levels in order to get a clear view on how morphemes are acquired. The results showed that all of the students except for one had already acquired the category procedure level (plural nouns and diminutives) at the time of the first interview. For all except two, there even was evidence that they had learned attributive agreement rules. The same counts for subject-verb agreement. During the second interview, all but one informant had reached the final stage of the proposed morphological hierarchy. The last interview mainly showed some improvements by the one informant who had yet not reached the final stage.

This analysis shows us that Dutch morphology had been acquired quite quickly by almost all of the informants. Even if we only consider the informants who had no previous knowledge of Dutch before starting the course, and were thus at the very beginning of their learning process when the interviews took place, we see that two of them had reached the final stage by the end of the research period.

Since the learning process of most of the informants was very rapid, there is no very strong evidence for the proposed hierarchies. The weakest informant serves as evidence for the beginning stages of the hierarchy, while the more advanced informants prove the highest levels of processability to be true. They show no irregular learning patterns in the form of negative evidence for an earlier structure while a later structure already has been acquired. This evidence gives us the impression that the proposed hierarchies are correct, but further research is needed to be able to make some stronger claims.

Apart from this conclusion, there is another interesting remark to be made. The same observations about adjective agreement and subject-verb agreement as made by in Arends (2007) could be noticed here. The informants seemed to have more trouble producing attributive morphemes than applying subject-verb agreement rules. When we look at the proficiency measurements, we will see that some informants show excellent command of subject-verb agreement, while still having trouble with attributive adjective agreement. How can this be explained? First of all, Pienemann (2011: 70) points out that accuracy and development are two different things.
“[…] learners develop grammatical accuracy at different rates and along different gradients for different grammatical structures. […] Depending on the gradient of accuracy, development of the sequence can change in any way. In other words, accuracy is not a valid measurement for development.” (Pienemann & Kessler 2011: 70-71)

Since there is no evidence for the actual later acquisition of attributive adjective agreement, this point of view is also adopted here. How the structure later on develops in the interlanguage is another question than when the structure first has been acquired.

However, the question remains why this particular problem is so apparent both in this and Arends’ (2007) study. It is argued here that while subject-verb agreement mainly depends on the acquisition of syntactical features, attributive agreement also depends on the acquisition of lexical features. In order to be able to inflect the adjective correctly, one has to know the gender of the noun with which the adjective is combined. Today, the rules which decide the gender of a noun are vague. It is a non-conceptual feature that has to be acquired for each individual word, rather than following general rules. In the study on the acquisition of Scandinavian languages performed by Glahn et al. (2007), one of the research questions was how number and gender in nouns where acquired, and how this was reflected in the acquisition process of attributive and predicative adjectives. This study showed that in both cases number is acquired before gender (Glahn et al. 2007: 413-414). The assumption is that number is something conceptual, and can therefore be more easily processed. The theory here is that the same counts for the acquisition of Dutch. The informants had no problems with using the right morpheme in case of plural nouns; problems occurred in singular nouns. Also, the fact that there is only one specific instance where the morpheme ‘-e’ should be omitted, might account for the overuse of the morpheme at the beginning stages of the acquisition process.

Another problem, situated at the level of subject-verb agreement, occurred when some of the informants used an expletive subject to start the sentence with. An expletive subject fulfills a syntactic role in the sentence, but bares no actual meaning. In Dutch, this is the case with ‘er is/er zijn’ (there is/there are). In Dutch the verb needs to agree with the constituent to which the expletive subject is referring.

(1) *Er is twee kinderen die in de zonnen zitten.
There are two children who are sitting in the sun.

In the case of this example, the correct form would have been ‘er zijn’ (there are), since it refers to a plural constituent: ‘twee kinderen’ (two children). The informants overuse the singular form, therefore showing that they still needed to acquire this special case of subject-verb agreement. Since this structure asks for a more advanced feature unification than ‘simple’ subject-verb agreement, this can be considered as a normal development pattern.

Overall we can conclude that the data in this study gives us evidence to assume that the PT hierarchy as proposed earlier in this study is followed by the students. It could nevertheless be useful to investigate the acquisition of adjective agreement to a further extent in order to be able
to explain why this structure is developed at a slower rate than certain others. Also, to get an even clearer view of the acquisition process, more learners at the very beginning stages of their acquisition process should be followed.

6.1.2 Word order

In the case of the acquisition of word order, there is a tendency to follow the developmental path as described earlier. SVO had already been acquired by all of the informants during the first interview. Four of the informants had reached the final stage of the scale. The acquisition patterns of the other three informants developed gradually, resulting in two informants moving from stage 3 and 5 to stage 6. The last informant could produce ADV sentences during the third interview, therefore ending at stage 3. There was no evidence contradicting the hierarchy. Lower structures have been acquired by the informants before they went over to the use of more complicated word order use.

The acquisition process is the clearest in Patrik’s data. During the first interview, he only used SVO word order. One could argue that these sentences might even be chunks learned during the first lectures, since they were very common sentences that are often learned during the first lectures when learning a new language. He did not create any contexts for other word order structures. During the second interview, the sentences formed could no longer be seen as chunks. He had now fully acquired SVO word order. However, he still did not show enough evidence for the use of other structures. The last interview contained enough data on other word order to draw further conclusions. Patrik had now acquired the ADV structure. In the data there was also negative evidence for the acquisition of SEP and INV. This showed us that he was developing these structures, but that he had not yet acquired them. Only subordinate clauses remained absent in his speech. This data, together with that obtained from the other informants, does indeed show us that the acquisition of word order occurs as predicted earlier.

During the analysis of the interview, some interesting problems appeared in the interlanguage of the learners. First of all, we could again observe the gradual development of certain features within word order structures. When acquiring subordinate clause procedure, it was clear that some subjunctions are marked with the feature ROOT, while for others this was not yet included in the lexical entry.

(2) * Ik hou heel veel van de stad omdat ik vind heel goed dat alles zo dichtbij is.

\[
S_{main} V_{main} \quad \text{subjunct. } S_{sc1} V_{sc1} \quad \text{subjunct. } S_{sc2} \quad \text{ADV } V_{sc2}
\]

\[
I \text{ really love the city because I think it’s very good that everything is nearby.}
\]

This sentence (2) from one of the informants shows this very clearly. The informant used SVO word order after the subjunction ‘omdat’ (and did so in other sentences during the same interview as well), while the relative clause (another type of subordinate clause) was formed correctly.
Another phenomenon seen in the data of several informants is the absence of subjunctions when needed, followed by canonical word order. All of them occurred when starting with the sentence ‘ik denk’ (I think).

(3) * Ja, ik denk ik kies Petsson.
   S_{main} V_{main} S_{sc} V_{sc}
   Yes, I think I choose Petsson.

(4) * Ik denk dat ik kies de het klein huis.
   S_{main} V_{main} subjunct. S_{sc} V_{sc} OBJ_{sc}
   I think that I choose the little house.

In example (4) the subjunction initiating the relative clause is present, but still the informant utilized SVO word order instead of subordinate clause procedure. There is no clear answer to why this was a recurring pattern in several of the informant’s data. It is a possibility that the subjunction ‘dat’ had not yet been assigned the feature ROOT. However, this would not explain why the absence of the (obligatory) subjunction leads to the same mistakes. It could therefore be concluded that relative clauses in general had maybe not been acquired yet, with or without subjunction.

Another interesting problem is found in the combination word order and subject verb agreement. The word order seemed to influence subject-verb agreement in some of the informants. When mistakes against subject-verb agreement (which had been considered acquired for these informants) were made, this often occurred in a more syntactical difficult processing procedure, such as INV and subordinate clause procedure.

(5) Na dat maak ik eten klaar voordat ik naar de universiteit gaan voor mijn Nederlandse lesjes.
   Subjunct. S_{sc} ADV V_{sc}
   After that I prepare food before I go to university for my Dutch lectures.

In the subordinate clause the informant used a subject in the first person singular ‘ik’ (I), while the verb was conjugated as if the subject would be plural. This occurred in several instances in the data of several informants. This shows us the demands of the processor when two structures of a higher level have to be completed at the same time. It is clear that the informants were still struggling to process both structures. This shows the development of the processor. While both structures might have been acquired separately, the combination of the two might still lead to problems.

A last remark is to be made on the absence of SEP in the data of several informants. This structure was not specifically elicited by any tests. The evidence for or against the acquisition of this procedure was thus obtained through the other tests. This means that there were no possible contexts for SEP in some of the informants’ data. A specifically generated test might have
reinforced the conclusions drawn in this thesis, although it could be argued that there is enough evidence to conclude that this structure is placed correctly along the developmental path.

These remarks show us what the development of the separate structures might look like, and how they could influence proficiency measurements. Nevertheless they follow in the general acquisition pattern as proposed by PT.

### 6.2 Transfer

The question on the role of transfer in the acquisition process will be discussed here. As mentioned earlier, PT assumes that partial transfer is possible only when the transferred structure can be processed by the learner. This means that transfer will not occur when the informant is at an earlier stage in the acquisition process. The data from this study can provide for some more insights in the role of transfer in second language acquisition. Both transfer from the L1 and L2 will be discussed here.

#### 6.2.1 Transfer from L1 and L2

Transfer from the L1 would mean that the informants should have no problems with INV in the target language, since Swedish and Dutch are both V2-languages, and thus have this word order in common. The results in this study showed this assumption to be false. Two of the informants only used ADV at a certain point in their acquisition process where INV is the correct word order, while other informants used both structures at the same data point. This would mean that transfer from the L1 is not present, or at least not until it can be processed.

On the other hand, the question rises why only positive transfer would occur. One big difference between Dutch and Swedish exists in subject-verb agreement. In Swedish, there is no such structure. However, in the data we can see that all but two of the informants have acquired the structure by the time that the first interview took place, and all but one by the time the second interview was held. This also counts for the informants with no previous knowledge of Dutch.

The same counts for attributive adjective agreement: since this is a very important structure in Swedish grammar, it is hard to explain why the informants have so much trouble with the acquisition of this structure. Even though most students had acquired the structure according to the emergence criterion, one would expect them to be even more proficient if the L1 would influence the TL in such a great manner.

In this study, the results showed that learners indeed acquire the structure ADV first, before acquiring the target structure INV. Since all of the students had the primary and secondary education in Sweden, they all learned English as a second language in school. According to L2 transfer supporting theories, this could explain the informants’ acquisition pattern. However, all of the informants had not only learned English as a second language, but had also acquired several other languages, German being one of those languages for most of the students. German, just as Dutch and Swedish, is a V2-language. This means that inversion is required if another constituent than the subject is fronted. If transfer from the L2 would occur, this would mean that
this structure could easily be transferred from German to Dutch, thus leading to the correct word order in the target language.

6.2.2 DMTH

In this paper, DMTH is adopted to explain the possible transfer found in this data. DMTH advocates a more rigid interpretation of the transfer process. Transfer can only occur when the informant can process the structure. This means that possible transfer follows the developmental hierarchy as proposed by PT. According to DMTH, both L1 and L2 transfer are available to the learner, and both positive and negative transfer could occur.

Let us first of all consider word order. The acquisition of ADV (an L2 structure for all the learners) in favor of INV (L1 structure) is highly discussed in the literature as it would prove that L2 transfer is to be favored. DMTH can account for the occurrence of this structure in the interlanguage of the learners. After having acquired the canonical word order, the processor is structurally ready to process new procedures. ADV is the logical next step in the processing procedure, since no difficult mapping structures are needed. Since the learners have already acquired a language where this structure is normal, it is not strange that they easily transfer this structure to their interlanguage. This makes it easier for them to process the structure, which helps them go over to the acquisition of the next structure more rapidly.

The next structure in the hierarchy is INV. This is also a known structure by the informants, since it also occurs in their L1. We can see that the acquisition of this structure also occurs quite rapidly, reinforcing the idea that the positive transfer of this structure accounts for a quick acquisition of the structure. Nevertheless, the implicational scales of the informants show that the acquisition of ADV was a necessary step in their process before being able to process this previously known structure. From the moment the informants’ processor could handle the structure, it was rapidly transferred from the L1.

Another interesting problem occurred in two of the more advanced informants’ data. They both inflected predicative adjectives.

(1) * En ook de verval op de zijn ook verschillend-e.
    And also the colours on the are different.
(2) * De een kat is zwart en de andere is bruin-e of oranje.
    The one cat is black and the other is brown or orange.

This is not a valid procedure in Dutch, since only attributive adjectives can be inflected. In Swedish, the learners’ L1, predicative adjective agreement is obligatory. In the PT hierarchy, it is placed at the highest morphological rank, the interphrasal procedure. Since DMTH assumes that positive as well as negative transfer is possible at the time when a structure can be processed, these occurrences could account for this problem in the data. These two learners were far advanced in their acquisition process, and had already reached the final stage in their acquisition process by the time the first interview took place. At this time, they were able to exchange information between phrases, and could thus also exchange information between the predicative
adjective and the noun phrase. There are only two of these instances in the whole data set, so it is too early to draw final conclusions from these examples, but they do, however, give us an idea about what negative transfer might look like within the PT hierarchy.

This paper thus argues for DMTH. The learners seem to transfer both L1 and L2 structures, which speeds up certain learning processes. The data shows signs of positive as well as negative transfer. However, the informants do not seem to transfer any structures which do not fit in the PT hierarchy. They only produce structures which can be processed, thus showing that the possible transfer is indeed developmentally moderated.

6.3 Emergence versus proficiency
The developmental hierarchy as is it seen by PT is based on the emergence criterion. The first emergence of a structure is considered to be proof for the acquisition of a structure or procedure. This point of view has been widely discussed in literature, since it is more common to use certain percentage margins on data. PT argues that this could be used for measuring proficiency, but not acquisition.

To be able to show the difference between the emergence criterion and the use of percentages, an analysis of the data according to both principles was made here. In this paper, implicational scales are given based on the emergence criterion, a 50% margin, and an 80% margin. As discussed earlier, the 50% margin does not change that much to the implicational scales compared to the emergence criterion. Apparently, the informants applied correct rules to the structures quite often once they acquired the structure. Since this is probably research specific, other results could be expected from other data.

The 80% margin on the other hand showed some discrepancies in the implicational scales. Easier structures were now considered as being not acquired, while the informants scored high on more complicated structures. For the researchers believing in percentages as a way of measuring acquisition, this argues against PT. However, as discussed earlier, when using percentages, one measures proficiency, not early acquisition.

The use of percentages can give us some interesting insights in the developmental path a learner goes through when acquiring a new language. As we can see, most of the ‘problematic’ results can be found in the morphology tables. Most of the informants struggled with adjective agreement (stage 3), while subject-verb agreement (stage 4) had been acquired by all of them. This is a very good example of the variety in learning speed Pienemann (2011: 70-71) points out. A structure can have been acquired according to the emergence criterion, while it might take some time for the learner to use the structure at a high proficiency. The order in which one learns to process a new structure is not necessarily the same order in which one becomes proficient in those structures. In the case of this example here, the earlier mentioned problem with the lexical part of adjective agreement comes in. The learners can process the structure, and know there should be some morphological changes, but since these morphological changes depend on non-conceptual features of the noun, the learner are not able to apply the rules. These need to be
learned word for word, which might explain the delay in full proficiency in this structure, and therefore the gap in the hierarchy.

However, these results do not affect the fact that the structures can be considered as acquired. The informants are able to process the structure systematically, and are from then on able to apply the necessary rules to the procedures. This will not always be done perfectly, but since PT is out the measure very early language acquisition, there is no need for more proof.

6.4 Problems
In these sections problems encountered during this research project will be discussed. First of all, it is clear from the data that the informants had already reached quite a high level in their language acquisition process. All but one informant have reached the final stage of both the morphological and syntactical hierarchies as proposed in this paper. In terms of morphology, all of the informants reached the last stage already during the second interview. Therefore, the implicational scales reveal less information than what was expected. The combination of some of the informants’ data gives us the wanted results, but a more gradual acquisition process of all of the informants would have lead to even clearer results. However, as said before, the needed information can be found in the data.

Another problem with the data is the absence of certain structures. As mentioned before, there was no specific test designed to elicit SEP. Therefore, some of the informants did not use this structure. Nevertheless, the use of the structure by other informants reinforced the expected results. The use of attributive adjectives was an issue as well. All of the informants showed a clear preference to use predicative instead of attributive adjectives. For one of the informants in none of the interviews there were enough occurrences of the structure to decide on the acquisition. The tests were adjusted after the first interview, in order to deal with this absence of structures, but the results showed that there was only a minor augmentation in the number of attributive adjectives used. For further research the tests should therefore be reconsidered in order to elicit only the wanted type of adjectives.

During the analysis the question arose when a structure should be considered as acquired. Using the emergence criterion, a structure is acquired from the first systematic use of it. Although this shows to be the best way to follow the real path of acquisition of a structure, and not just proficiency, it is hard to tell when a structure is first used systematically. To decide this, a structure has to be used several times in different situations in order to be sure that the use of it was not just a coincidence. In this paper, the structure was considered to be acquired if it was used correctly in several words for morphology, and in several structures for word order, so that learned chunks could be avoided.

But the question whether some structure has been acquired or not also counts for other problems. In the case of subject-verb agreement, there are different agreement rules for different subjects. Is it possible to decide that subject-verb agreement has been acquired when in only one of the agreement rules are applied correctly? According to PT, this should be the case. For both morphological markers the same exchange of information is needed. The fact that one marker is
acquired after the other has to do with the development of that particular stage. Even though there is no reason to believe that different markers for the same phenomenon would be placed at different stages, it feels strange to consider something as acquired when only one part or one particular form of the structure has been acquired.

The last problem to be discussed here is the very quick development of Frida and Julia. Both of these informants were complete beginners when they started the Dutch course at university. Even though the first interview was completed only three weeks after the first lecture, Frida had reached the second last stage of the morphology hierarchy, and the last word order stage, while Julia had acquired all morphology rules, and all but one syntactical procedures. Compared to Patrik, the only other complete beginner, they improved at an immense speed. How can this be explained? Profession could play a role here. Both informants were linguists, working as an interpreter and a translator, which gives them a more than average language awareness. We could assume that their metalinguistic knowledge, acquired over the years learning several other languages, helps them when analyzing this new language. However, in order to make any valid statements on what role previously learned languages and possible professions might play, further research is needed.

7. Conclusion

This study focused on the acquisition pattern of Swedish learners acquiring Dutch as a foreign language. The theory used in this study is the Processability Theory, a theory which is focused on early second language acquisition patterns. The idea behind the theory is that learners follow a universal path, which is moderated by what a learner can process at certain points in time.

Today, Processability Theory has been applied to quite some languages, Swedish and English amongst others. The data collected for these languages has been assembled in developmental hierarchies, thus giving an overview on how a specific language is acquired. Hopefully, the theory can then be put into practice, by adapting learning material to these hierarchies. For that to be possible, more languages need to be analyzed.

Dutch is one of the many languages which has not been discussed that often in literature concerning PT. In this paper, two previous studies are reviewed. They give some valuable insight in the acquisition process of different learners acquiring Dutch, but the studies are not without problems. The biggest problem is that both studies seem to measure proficiency instead of early acquisition, which lead to misinterpretations of the data. Also, both of the studies are cross-sectional in their nature, thus not giving an overview of the individuals’ learning processes.

This study aimed to give an overview of the acquisition of Dutch syntax and morphology according to the PT frame. In the case of syntax, the focus was put specifically on word order patterns. First a proposed developmental hierarchy was constructed, based on grammatical features. Based on this information, data obtained from interviews with informants was analyzed and structured.
During the study, the informants were interviewed at three different points in time, in order to be able to compare the obtained results individually. The informants were all students at Stockholm University, and had all Swedish as their mother tongue. They were selected from different study levels, in order to get a complete overview of the possible acquisition processes. Whether a structure was considered to be acquired or not was based on the principle of emergence. From the moment a structure was used in a systematic way, this was counted as evidence for the acquisition of a structure. The data was then inserted in implicational scales, giving an overview on the acquisition processes of the learners.

The results show that Dutch word order and morphology is indeed acquired in the order predicted by the developmental hierarchy. Students were able process easier structures before they could make use of more advanced processing procedures. This yields for both morphology and word order.

However, the use of other measuring tools than the emergence criterion proved to provide for some useful insights in developmental paths of a learner. It showed the variety and relative speed at which a language is learner. It was argued here that the use of percentages could help to learn more about the acquisition of proficiency, but that the emergence criterion is the only plausible way to account for very early language acquisition, and is therefore the only tool here used to prove the validity of processing hierarchy as proposed by PT.

Further the possible effects of transfer were discussed, comparing different views on the occurrence of transfer. The conclusion of this paper is that a partial transfer policy is the most probable one. DMTH can account for transfer from both L1 and L2, when the informant can process this transferred structure. In this data, instances of transfer from both L1 and L2 were found in the data, but only at the appropriate hierarchical level. There was no transfer of structures that were too complicated to process for the informants.

The results of this study do not proof completely that the learners actually follow the suggested path of acquisition. The learners developed too rapidly, giving us little usable data to draw conclusions from. However, the combination of several learners’ acquisition path and the absence of counterevidence makes it possible to draw some conclusions from this data. This data suggest that Dutch is indeed acquired as is proposed in this thesis. However, more research is needed to make these conclusions more sound.

However, there is still room for further research. First of all, as mentioned in the discussion section, the study should be conducted focusing on even more learners at the very beginning stage of their acquisition process. If this is done over a longer time, this could provide for even clearer individual processing schemes. Also, the study should be carried out with informants with different language backgrounds, thus providing evidence that this hierarchy in fact counts for all learner groups. Also, it could be interesting to see how advanced metalinguistic knowledge could speed up or influence the learning process.

This study already gives some valuable insights in the Dutch acquisition process. It shows the developmental path a learner follows when acquiring Dutch as a foreign language. However, if this developmental hierarchy is to be put into practice, more research is needed.
References


