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Gradual Development of L2 Phrase Structure

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I. Introduction

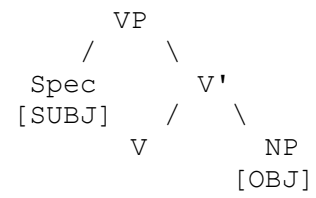
Over the past several years researchers have become increasingly concerned with the nature of the learner's linguistic-cognitive state as s/he commences with the acquisition of a second language. Our claim is that only lexical categories are present at the earliest stage of both first and second language acquisition, and that during acquisition functional projections develop in succession. The production data which support this claim come from the second language acquisition of German by native speakers of Turkish, Korean, Spanish, and Italian. We will also refer to data from children acquiring English, German and Dutch as their first language. Before turning to the L2 data, let us briefly consider the status of functional projections in first language acquisition.

II. Phrase structure in L1 acquisition

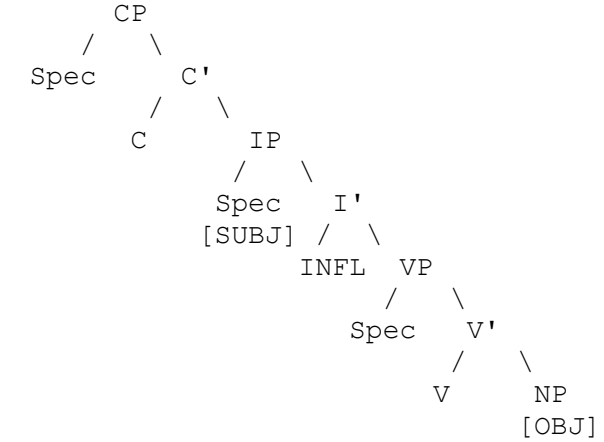
1. L1 acquisition of English

According to Radford's influential proposal (Radford 1988; 1990) , English-speaking children begin syntactic acquisition with lexical projections, such as the bare VP-projection shown in (1a), while functional projections mature later, resulting in the adult English tree in (1b). Similar proposals have been made by others for English and Swedish (e.g. Guilfoyle & Noonan (1988) and Platzack (1990)).

1a) Early L1 English tree (Radford and others):



1b) Adult English tree:

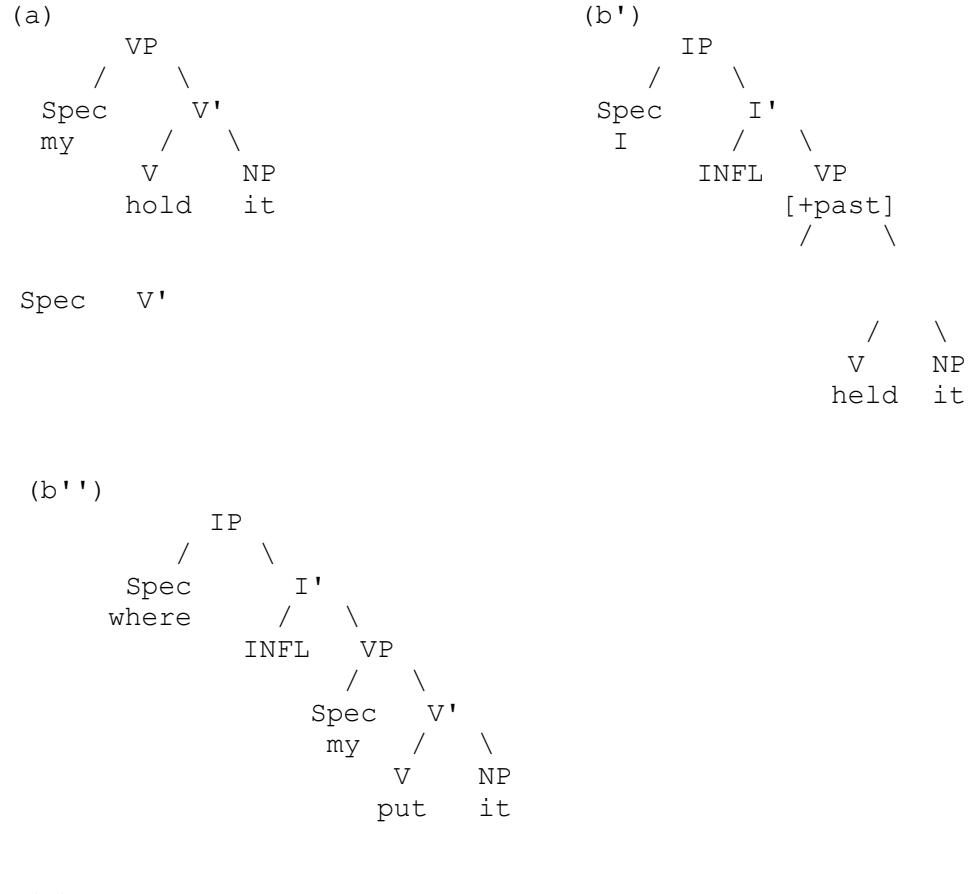


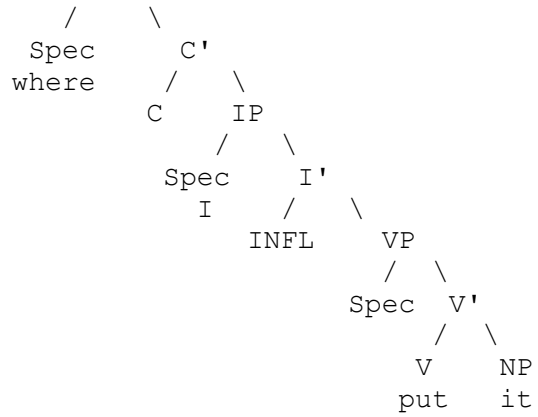
Much energy has been devoted to arguing against the Radford-type bare VP proposal. Specifically, it is widely believed that children begin syntactic acquisition with the full-fledged tree, such as the one in (1b). No maturation of principles of UG or syntactic development is assumed (but see Felix (1984) and Borer & Wexler (1987) for a maturationalist approach). This view has been referred to as the Full Competence Hypothesis, or the Strong Continuity Hypothesis. The proponents of this view typically argue that processes such as WH-question formation and verb raising are present from the beginning of acquisition, and thus the corresponding functional projections must be available.

Recently a variant of Radford's original proposal has emerged according to which functional projections develop one by one, as a result of successive applications of X'-Theory. This view, dubbed the Weak Continuity Hypothesis, is presented for L1 German in Clahsen, Eisenbeiss and Vainikka (1994) (cf. also Clahsen, Vainikka and Young-Scholten 1990) and is further defined and developed for English in Vainikka (1992; 1994).

Based on the case of the subject pronouns, Vainikka (1994) argues for the stages of development shown in (2), for L1 English, where a VP is first acquired, then an IP, and then a CP. Non-nominative subjects occur early on in the Spec(VP) because the nominative Spec(IP) position does not yet exist, as shown in the tree in (2a). At a later point of develop-ment, non-nominative subjects resurface because a WH-phrase in the Spec(IP) position blocks the subject from raising; cf. the tree in (2b'').

2) Stages of Development in Early Child English (Vainikka 1994):



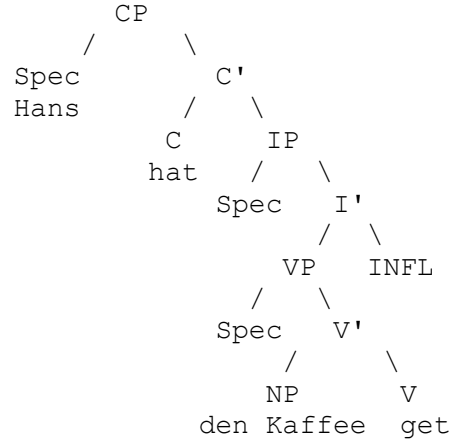


2. L1 acquisition of German

a. German phrase structure and verb raising

Now turning to German: in adult German we have the tree shown in (3) which differs from English in that the VP and IP are held to be head-final (cf. Koster 1975, Safir 1981, den Besten 1983, and Platzack 1986).

(3)



The examples in (4) show the word order patterns that the tree is designed to account for. In a matrix clause the finite verb raises to the left, into the head-initial C-position as in the sentence in (4a). In an embedded clause the finite verb can only raise to the (head-final) I-position because the complementizer fills the C-position, as illustrated by the sentence in (4b).

(4)

a. Hans hat den Kaffee getrunken.
   Hans has the coffee drunk
   'Hans drank the coffee.'

b. Hans zittert, weil er zu viel Kaffee getrunken hat.
   Hans shakes because he too much coffee drunk has
   'Hans is shaking because he drank too much coffee.'

In addition, the finite verb in German is marked for agreement with the subject in person and number by one of the suffixes given in the paradigm in Table 1.

PLACE TABLE ONE ABOUT HERE

b. Early German

While the L1 acquisition data are controversial in terms of their analysis, we maintain that they are consistent only with a model where the VP is projected first, then the IP, and then the CP. The crucial issue is, of course, whether evidence exists for a stage corresponding to a bare VP-projection for the acquisition of German. Until recently, such evidence was not forthcoming. Indeed even data from German children under the age of two (cf. Rohrbacher and Vainikka 1994 contains little evidence of a bare VP Stage. The children produced verb raising structures -- raising the verb from V to a head-initial functional head -- almost half the time; the most common structure, however, could be represented by the bare VP-tree, where the verb occurs in an infinitival form with the suffix -n, and follows the object.

There is, however, recent evidence from a longitudinal study of two children acquiring Dutch for the existence of such a stage (cf. Wijnen 1994). In longitudinal data from two children, Wijnen found that one of them never raised the verb in the earliest data, while the other raised the verb only about 20% of the time in the earliest recordings. Since Dutch is, for all relevant purposes identical to German, these results suggest that the German children studied elsewhere so far are too advanced, and the reason they have verb raising is because they are already at the second stage, which involves a functional projection.

Thus, the German and Dutch data are consistent with the VP-IP-CP succession of phrase structure development.

III. The L2 acquisition of German

We have proposed in several papers (Vainikka and Young Scholten 1994; forthcoming; submitted) that second language learners build up phrase structure in much the same way as children do. That is, for first as well as for second language learners, there is an early stage without functional projections. Whereas children acquiring their first language obviously have no previous knowledge of any language - i.e. their initial state is, roughly speaking, that of the Principles and the open Parameters of Universal Grammar - the knowledge second language learners bring to the task of L2 acquisition is that of their first language. Yet L2 learners use their native language VP to establish a toe-hold in the L2l; however they only make use of their native language to the extent that they transfer their VP. After this point, higher functional projections develop through the interaction of X'-Theory with the input. The initial state in L2 acquisition is thus not equivalent to the learner's entire
knowledge of the L1.

1. Transfer of the VP

Evidence for our claims comes from longitudinal and cross-sectional production data from untutored adult L2 learners of German whose native languages were Korean, Turkish, Italian and Spanish. Table 2 shows that the learners in our study who are at the early VP-Stage produce VPs the headedness of which reflects that of their L1s. At a subsequent point in development, but still at the VP-Stage, the Italian and Spanish learners switch the headedness of their VP from head-initial to head-final, whereby their mean proportion of head-final VPs increases from 19% to

64%. This is indicated by the Roman numeral II in Table 2. Thus the Korean and Turkish speakers manage to posit the head-final German VP from the start, while the Italian and Spanish learners must pass through an additional (sub)stage before arriving at the correct headedness for the German VP. In this respect, our data confirm the earlier proposals by duPlessis et. al. (1987) and Tomaselli and Schwartz (1990) that Romance learners of German initially transfer their L1 VP headedness and subsequently switch to head-final.

PLACE TABLE 2 ABOUT HERE

a. Projection of a bare VP

Our proposal is that the learner transfers ONLY his or her native language VP, and that no functional projections are transferred - neither initially nor subsequently. If, contrary to what we claim, the initial state of L2 acquisition does indeed involve the learner's access to native language syntactic projections, we would expect to find both morphological and syntactic evidence. Yet we find no such evidence forcing us to conclude that these projections are transferred. That our learners project only a bare VP without any functional projections is supported by the marked absence in their data of the five properties listed in (5).

(5) At the VP-Stage we find a lack of:

1. verb raising
2. modals and auxiliaries
3. an agreement paradigm
4. complementizers
5. complex WH-movement

Given the switching of the word order in the VP by the Italian and Spanish speakers, it is impossible to determine based on word order how much verb raising occurs at this stage. However, we find a lack of the remaining four properties in their data.

Table 3 shows that all learners at this stage produce basically no modals or auxiliaries, regardless of whether the VP starts off head-final or starts off head-initial and later becomes head-final. The adoption of a default form by all learners as opposed to use of one of the agreement suffixes shown in Table 1 suggests that these learners have not acquired subject-verb agreement.

PLACE TABLE 3 ABOUT HERE

The default suffix refers to a verb form that is used irrespective of person and number (unlike what is required in German, as illustrated in Table 1). While this is typically the infinitival form ending in -n adopted by German children, for two of the Spanish speakers, the default form of the verb ends in schwa, and for the Italian speakers, the default form is the stem form along with the form ending in -n, as indicated by the figures in parantheses. It is conceivable that Italian, Spanish and Turkish speakers would have some sort of advantage over the Korean speakers in acquiring agreement in German since agreement is marked in much the same manner in these languages. However, there is no observable difference between speakers whose first language does or does not realize

subject-verb agreement, as demonstrated by the high proportion of agreementless forms produced by all speakers at the VP-Stage.

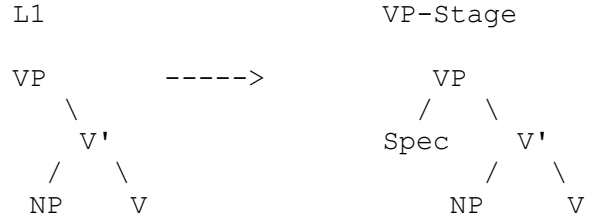
In addition to the morphological evidence pertaining to the bare VP-Stage for the Italian and Spanish speakers, for the Korean and Turkish speakers evidence from word order can reliably be applied. Because the Korean and Turkish speakers' VP is clearly head-final from the start, we take all instances of a verb preceding VP-material to involve verb raising. For the one Korean and two Turkish speakers at the VP-Stage, we find that they only raise main verbs an average of 14% of the time. Our assumption is, of course, that the language learner does not know at the outset which position the verb raises to in German.

In addition to the lack of evidence for the functional projections IP/AgrP in these learners' data, there is also no evidence of a CP projection. None of these learners produce any embedded clauses with overt complementizers, or any WH-questions clearly involving a CP projection. We conclude that they have neither acquired the head-final IP/AgrP nor the head-initial CP of German, nor have they transferred their native language head-initial or head-final IP/AgrP or CP.

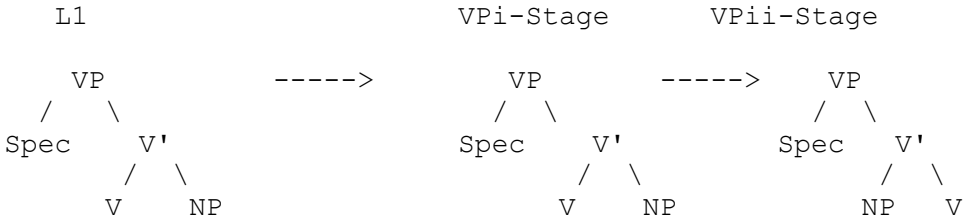
The general absence of the five properties listed in (6) in our data from Korean, Turkish, Italian and Spanish learners of German leads to the conclusion that these learners commence their acquisition of German with a bare VP, as depicted in (6).

(6)

(a) Korean and Turkish speakers' initial German tree



(b) Italian and Spanish speakers' initial German tree



b. Gradual development of functional projections

In showing that the initial state is characterized by the projection of a bare VP, which is initially transferred from the learner's native language, we have naturally not yet ruled out the possibility that the learner's L1 functional projections could be available at subsequent stages of acquisition. If this were the case, the expected scenario is that the Korean and Turkish speakers would produce head-final functional projections in German and Italian and Spanish speakers would produce head-initial ones. In other words, we would not expect learners from these four language backgrounds to behave similarly. However, we find that this scenario is not realized; all our l2 learners acquire functional projections in a manner which is not only similar to each

other, but which is also similar to the manner in which German children acquire functional projections.

2. Learners project a head-initial IP

At the stage following the VP-Stage, learners project an underspecified functional projection, IP, providing a position for a raised verb, as well as a position for modals and auxiliaries. The existence of this functional projection accounts for the emergence of modals, auxiliaries (which might be base-generated in the INFL-position) and verb raising on one hand and for the lack of an agreement paradigm on the other. The non-acquisition of the agreement paradigm at this stage indicates that the learner must still determine which specific features are found in the I-position. The characteristics of the IP-Stage are listed in (7).

(7)
1. optional verb raising
2. some modals and auxiliaries
3. lack of an agreement paradigm
4. lack of complementizers
5. lack of complex WH--movement

Our data for learners at this stage show that verb raising is optional, although this can only be determined reliably in the Korean and Turkish data. For the five Turkish learners out of our 17 Korean and Turkish learners who can be placed at the IP-Stage, we find that they raise the main verb an average of 46% of the time. (Recall that Korean and Turkish learners at the VP-Stage only raise the main verb 14% of the time.)

As shown in Table 4, learners at this stage have started to produce some modals and auxiliaries, but they have clearly not acquired the agreement paradigm yet in that the majority of their main verbs contain a default suffix.

PLACE TABLE 4 ABOUT HERE

As at the VP-stage, learners have not yet projected a CP; no embedded clauses with overt complementizers are produced, and the small number of WH-questions are either formulaic or do not involve a clear CP.

3. Learners project a head-initial AgrP

The following stage of acquisition involves the specification of the features for the head of the functional projection initially projected. While this projection has all the characteristics of an AgrP, it is not the German AgrP, since it is head-initial and the German AgrP is head-final. The grammars of our six most advanced Korean and Turkish speakers display the characteristics listed in (8).

(8)
1. verb raising frequent
2. modals and auxiliaries common
3. agreement paradigm acquired
4. some embedded clauses with complementizers
5. complex WH-questions attested

For the learners at the AgrP-Stage (three Korean and three Turkish speakers) verb raising is frequenty, occurring about three quarters or

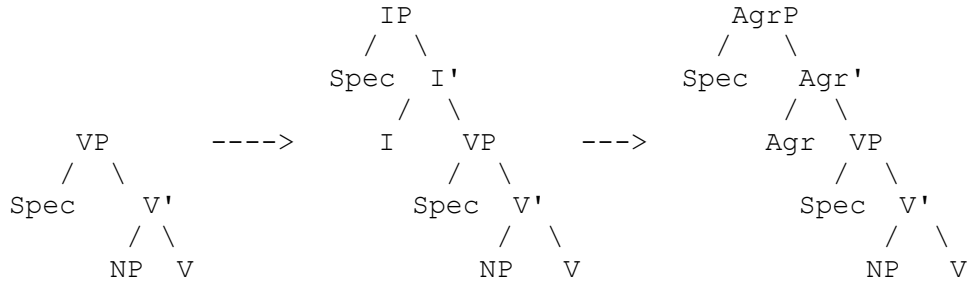
76% of the time. For two of these learners verb raising has become nearly obligatory (84% of the Turkish speaker Harva's verbs are raised and 90% of the Korean speaker Ensook's verbs are raised). At this stage, modals and auxiliaries are frequent, and agreement is correct over 90% of the time.

Based on the data discussed here, our analysis is that the auxiliaries have been identified as the head of the AgrP projection, which results in near obligatory verb raising. At the IP stage, verb raising was clearly optional, perhaps due to the lack of features in the head position of the functional projection. The status of the CP for the speakers at the AgrP-Stage is not clear; they seem to be in the process of acquiring a CP. We find at most two instances of embedded clauses with an overt complementizer per speaker; the word order in these embedded clauses is that of a matrix clause. Some complex WH-questions are found at this stage, suggesting that a (head-initial) CP is emerging, in addition to the head-initial AgrP.

4. Summary: The early development of functional projections

Second language learners begin their acquisition of German by transferring their L1 VP, subsequently switching its headedness if it does not match that of German. Through the interaction of X'-Theory with the German input, these learners then acquire a head-initial underspecified functional projection, in much the same fashion as children learning German as a first language do. As is also the case for German children at this stage, there is very little evidence for a CP projection in the second language learners' grammars. These learners next specify the I node as the head-initial Agr node. Since this holds for Korean and Turkish speakers whose verbal functional projections are head-final, transfer from their L1s hardly seems to be involved. The stages involving functional projections are depicted in (9).

(9) L2 German stages after headedness of VP established:



Before proceeding to look at possible evidence against our approach, we restate our position in (10).

(10)

1. a. L2 learners transfer their lexical projection VP from the L1.
   b. The headedness of the VP is switched if it does not correspond to that of the learner's L1.

2. Functional projections gradually emerge, independently of the learner's L1.

What we would take to constitute supporting evidence is - at the earliest stages of acquisition - a systematic absence of functional elements associated with specific functional projections. This indicates to us that these functional projections are also absent. Likewise, if we find a subsequent systematic increase in the production of such elements, or we observe that emergence of functional elements co-occurs with the acquisition of new syntactic positions, this is an indication that functional projections associated with these elements are emerging.

IV. Data from other L2A studies

There have been a number of recent studies claiming to provide evidence from the L2 acquisition of languages other than German which shows that our approach is not supported. But as we shall see, the evidence presented in these studies turns out to support our approach. Simply because a given study fails to show an early stage without any functional projections does not constitute evidence against our approach, since it may well have been the case that data collection was begun too late to have captured the learner's initial state of acquisition. However, if in those same studies there is evidence for the emergence of functional projections and no evidence that these projections have been transferred from the learner's L1, this is sufficient evidence in support of our approach. We will discuss several of these studies, in turn.

1. Evidence from L2 French

Grondin and White (1993) analyzed longitudinal data collected from two five year old English speaking boys acquiring French. At the start of data collection the children seemed to have both a DP and an IP, thus offering little evidence for an initial bare VP-Stage. However, Grondin and White's study supports our approach in that there is clear evidence for the successive emergence of functional projections based solely on the interaction of X'-Theory and the input. The two children not only show development from IP to CP, but also display scant evidence that either the IP or the CP had transferred from their English (they had, according to the authors, acquired all the basic functional projections in English, including the CP). Unlike in English, in their French these children not only raise main verbs to INFL, but upon producing CPs they never fail to insert a lexical complementizer into COMP even though complementizers are not obligatory English. The authors conclude that their L2 learners "use the functional projections in their grammars in ways that are appropriate to the L2, rather than in ways that are appropriate to the L1." (1993:143). In related work, Grondin (1994) proposes based on the development of object and subject clitics in these children's data that the emergence of the relevant functional projections (say, AccP and NomP; Sportiche 1992) can be observed during L2 development.

While Grondin and White fail to find conclusive evidence for a bare VP-Stage in these two children's data, it is difficult to conclude that these two children had never passed through such a stage, since data collection started some time after the children had received considerable exposure to French, in a bilingual and then immersion setting. Thus even though the children were reported to be incommunicative in French prior to the time at which data collection began, our conclusion is that it is not possible to assert that the first data collection represents these

children's initial state of L2 acquisition. Yet there do seem to be remnants of a bare VP-Stage in Grondin and White's data. For example, while the children from the start of data collection usually produced negation to the right of a finite verb, there were a number of instances in which they produced negation to the left of a non-finite verb,as shown in (11).

(11) non pas jouer (Kenny 5)

In addition, Kenny persists in marking strong pronoun subjects variably with both nominative and accusative for quite some time, and his use of strong subjects rather than clitics occurs nearly exclusively with the non-finite verb. Grondin and White themselves analyze these sentences with non-finite verbs and strong pronoun subjects as bare VPs which occur along with IPs in Kenny's data. This does not pose a problem for our approach. In fact, we have observed in our own data (see section III.1 of this paper) the co-occurence of VP sentences and IP sentences as have L1 acquisition researchers, including those who do not adopt the Weak Continuity approach (cf. e.g. Wexler 1994). This co-occurrence points to the existence of an earlier stage at which only the VP was projected.

2. Evidence from child L2 English

Like Grondin & White (1993), Lakshmanan (1993) and Lakshmanan & Selinker (1994) also argue on the basis of child L2 data that functional projections constitute the initial state of L2 acquisition and offer evidence that IP and CP are present from the start of acquisition. Their data come from a four year old Spanish girl, Marta (Cazden et.al. 1975) and a four year old French girl, Muriel (Gerbault 1978), both acquiring English. As with the Grondin and White study, we cannot be certain that the first recording actually represents the children's initial state; for example, Marta had apparently already attended a monolingual English nursery school for one month before data collection started. However, in our view, the data fail to show that a CP was present from the start of data collection, but instead reveal the emergence of this projection. Moreover, it is clear that the CP is not transferred from the children's L1s, a conclusion stated by the authors.

Lakshmanan (1993) argues that an IP is present from the start of Marta's L2 acquisition process. This conclusion is based on the distribution of the dummy element 'for' (which may be a verb in INFL) and on the distribution of the copula form 'is' in Marta's earliest files. In particular, 'is' typically occurs in obligatory contexts; it precedes negation and undergoes raising in questions. However, Marta's earliest utterances generally lack lexical verbs, suggesting that 'is' might be a main verb in V. It is unclear how strong the evidence from negation and inversion is given the scarcity of relevant examples.

[MARTHA: is the above too strong? ...ANNE: it's not clear what you mean by 'the above' - if you mean the statement that her utterances lack lexical verbs, then this is not too strong; they do lack lexical verbs - which is one of the main observations in the article; if you mean our analysis - that 'is' may be a main verb in V, well... do YOU think that's too strong a claim???]

Moreover, if 'is' occupies the INFL position at this early stage, we might expect to find it being used as an auxiliary verb; in fact, the auxiliary usage of 'is' is not acquired until later.

If we look at evidence for the development of the CP by thetwo children as discussed in Lakshmanan & Selinker (1993), we see that they do not produce any embedded clauses during the first two sessions. Table 5 shows that in the first four or five sessions for both children, they produce far fewer CP-elements than they do in subsequent sessions. (Note that some of these constructions in English might involve only an IP projection.) Moroever, neither child produces any relative clauses until CP is acquired (Marta's first relative clauses is in session seven; Muriel produces three such clauses in sessions 5-8).

PLACE TABLE FIVE ABOUT HERE

What table 5 clearly illustrates is that CP is not present from the start of data collection. Rather, around session five for Muriel and six for Marta, a CP-related projection emerges. This CP has the characteristics of the English CP rather than a transferred French or Spanish CP in that these children do not use the complementizer 'that'. Lakshmanan and Selinker also conclude that transfer must not involved, since in the L1s of both children the tensed complementizer is overt in embedded declaratives. (1994:31). Finally, in our view since neither the embedded clauses nor the relative clauses in L2 English involve an overt complementizer, the rarity of such clauses in the children's early files cannot be due to problems acquiring a lexical item.

3. Evidence from adult L2 English

Epstein, Flynn and Martohardjono (1994) discuss evidence from an elicited imitation task designed to determine whether Japanese learners of English had acquired IP and CP. While their data shows no difference between the children and the adults in their experiment, it does reveal a significant difference between the IP and CP projections. These learners imitated the IP constructions correctly about 70% of the time, but only 50% of the time for the CP constructions. While the authors invoke complexity and distance of movement to explain these results, we do not find this a very straightforward explanation. At any rate, their results do not constitute counter-evidence.

What we take Epstein, Flynn and Martohardjono's results to mean is that, as with Grondin and White's and Lakshmanan and Selinker's studies, the learners have acquired IP but are still in the process of acquiring CP. Moreover, it cannot have been the case that the adult learners in Epstein, Flynn and Martohardjono's study were at the initial stage of second language acquisition since prior to their arrival at a U.S. university, they would have all been exposed to English for the six years typically required of secondary school students in Japan. Thus, as was the case for Grondin and White's study, we find that this study fails to shed light on the learner's initial state.

[ANNE: a new heading here? What about this one?]

4. Morpheme order studies re-examined

[I've added to and rearranged a lot of what follows]

Finally, Zobl and Liceras (1993) review the first and second language morpheme order studies carried out in the 1970s on the acquisition of English to address L1 - L2 differences. The main thrust of Zobl and Liceras' paper is to demonstrate that related functional elements cluster together during development for first language acquisition but not for second language acquisition.

The results from these morpheme order studies continue to have bearing on both the initial availability and transfer of functional projections. Indeed, one of the conclusions based on these studies is not dissimilar from one of our own: namely, that functional projections do not transfer. Twenty years ago Bailey, Madden and Krashen (1974) found no evidence of L1 transfer with respect to the acquisition of grammatical morphemes.

Bailey, Madden and Krashen also noted that the order of acquisition for adult L2 learners was similar to that of L2 children, but dissimilar to that of L1 children. All things being equal, under our approach one would indeed expect the emergence of phrase structure and the order of acquisition of associated functional elements in a second language to parallel that in first language acquisition. But, like Bailey, Madden and Krashen, we do not claim all things are equal. If learners 1.) have access to X'-Theory but 2.) no access to their L1 functional projections, to what might we attribute these L1-L2 differences?

If we look at these morpheme orders in terms of order rather than simply clustering, as illustrated in Table 6, we see that children first acquire those affixes related to DP and IP, while second language learners initially acquire free morphemes related to DP and IP and subsequently the affixes.

In addition, there is one morpheme which is acquired very early by both L1 and L2 learners of English: -ing. Taking V+ing to constitute a non-finite form, (as typically assumed in L1 acquisition, cf. e.g. Radford (1990)) which is in V rather than in I, acquisition of -ing by L2 learners prior to acquisition of other morphemes indicates that the VP projection is available prior to functional projections.

PLACE TABLE SIX ABOUT HERE

Zobl and Liceras interpret the L2 results to mean that functional projections are indeed present from the start of L2 acquisition. While Zobl and Liceras adopt Weak Continuity for L1 acquisition, taking the position that children's functional projections emerge gradually, they argue against such a view for second language acquisition on the basis of the observed differences in the order of emergence of the functional morphemes studied. However, the morpheme order findings also support a view under which L2 functional projections gradually emerge, rather than a view under which they are all present at the start. As shown in Table 6, a reanalysis of the morpheme order studies reveals that L2 English functional projections are first realized as free morphemes, whereas in L1 English affixes tend to be acquired prior to the corresponding free morphemes. Contrary to Zobl & Liceras' conclusion the different order for L2 acquisition does not necessarily show that functional projections are available in early L2 English, while being absent in L1 English.

5. Summary

Having looked closely at studies which purport to bring evidence to bear against our claims, we find that they fail to do so. In fact these studies actually provide further evidence that:

12)

(i) There is no transfer of functional projections from the learner's L1.

(ii) Functional projections emerge gradually, independently of the learner's L1.

Given that it is generally agreed that the learner's VP initially transfers (see section III/1), we conclude that there is little to argue against an approach under which the learner's L1 lexical projections are what constitutes the initial state of L2 acquisition.

V. Further empirical ramifications

Let us now turn to some further empirical ramifications of our approach. Schwartz (forthcoming) discusses some potential problems with our approach to L2 acquisition. These are given under (13). We will consider each point in turn.

(13)

(i) If the functional projection DP is not transferred, what consequences arise for representing argument structure for the purposes of Case Theory?

(ii) Is subcategorization for functional projections such as CP transferred? If so, how can this be incorporated into our system?

(iii) Is movement from lexical to functional projections transferred? If so, how can this be accounted for within our system?

1. Case Theory and Argument Structure

If we claim that the intial stage of acquisition is one at which only lexical projections are present, this excludes the presence of a DP. Based on work done in first language acquisition (Clahsen, Eisenbeiss & Vainikka 1994), we claim that argument structure is represented based on theta roles, independent of the exact syntactic realization of the argument (NP, DP or QP). Since argument structure is not stated in terms of DPs, but rather in terms of theta-roles, a DP need not be present from the earliest stages of acquisition.

Given Vainikka's (1994) case data on L1 English, and to the extent that morphological case reflects Abstract Case, some notion of Case must be present even before the development of the DP; thus, Case would not be tied to a DP either. Note that the standard formulation of Case Theory (Chomsky 1986) assumes that Case is assigned to arguments; since arguments get assigned a theta-role, Case could conceivably be assigned to theta-roles.

2. Subcategorization

Turning now to Schwartz's second point concerning subcategorization for a CP, we claim that all clausal projections are treated as VPs since only lexical projections are transferred. However, given access to UG, the learner should be able to adopt the unmarked form of the clausal complement for any particular matrix verb, once the appropriate functional projections have been acquired.

Suppose UG provides a tensed CP as the unmarked sub-categorization for the complement of want, as in "I want that he comes." The occurrence of such examples would then reflect access to UG rather than transfer from the learner's L1. A true counterexample would involve a clausal complement that is marked in UG, which does not occur in the target language, but occurs in the learner's L1 and is found in the learner's interlanguage.

Conversely, errors in subcategorization which involve complementation differing both from the L1 and the L2 would be evidence for our approach, since such forms would have to arise from UG information on unmarked forms. Epstein, Flynn and Martohardjono (submitted) discuss findings from Spanish speakers learning English that support this scenario, citing comprehension studies in which adult L2 learners interpret subject control verbs as object control verbs at early stages of development (d'Anglejan & Tucker 1975; Cooper, Olstain, Tucker & Waterbury 1979). In addition, L2 learners were found to prefer infinitival complements of control verbs in a production task, regardless of the L1 - and even when producing the L1 pattern would have been similar in the L2, English (Flynn, Foley & Lardiere 1991). Not only is this is a pattern similar to what has been observed in the first language acquisition of control verbs (see Sherman & Lust 1993 for a comprehensive review), it is also exactly what we would expect if CP and the complementation information associated with CP is not transferred from the learner's L1 in second language acquisition.

3. Syntactic movement

Finally, we would not expect movement (or lack of it) to transfer for any type of syntactic movement involving a functional projection. For example, we have not observed transfer from Korean WH-in situ in the data of our Korean speakers. In general, we would predict that A-movement, A'-movement, and head movement develop in L2 acquisition in a fashion similar to L1 acquisition, as the appropriate functional projections become available in the syntax.

Schwartz (forthcoming) argues that data from the acquisition of English by French speakers provide empirical evidence against our approach. According to Schwartz (based on White 1991a, 1991b and 1992) French speakers learning English as an L2 tend to produce sentences in which the main verb seems to have been raised, since the verb precedes an adverb. In French, but not in English, the verb is raised to a functional head (cf. Emonds 1978; Pollock 1989). The errors in L2 English could be explained by assuming that the French speakers have transferred from their L1 the information that verbs raise, contrary to the L2 input. If only a VP were transferred from French to English, as we suggest, how could information about raising to a functional projection be transferred? We propose the following alternative analysis which does not involve transfer of verb raising from the L1.

Recall the conclusion based on Zobl & Liceras' review of the morpheme order studies, as already discussed. We take the results to mean that children acquire the affixes associated with a particular functional head before the free morphemes associated with the same head,

while the reverse holds for L2 acquisition. Assuming that functional elements act as triggers for projecting new structure, we propose that affixes are salient triggers for children, while full words are salient triggers for adults.

Consider now the English input to a second language learner. Based on affix information, the learner would not posit verb raising, since the inflectional paradigm is somehow too weak. For the L2 learner, however, this information may not be readily available. Rather, they would 'pay attention' to the free morpheme functional elements in English, such as auxiliary verbs and modals. Given such an input, it is not at all surprising if the learner posits verb raising, since auxiliaries in English either occupy the INFL position or are raised via subject-AUX inversion to C. Given this approach, we would expect L2 learners of English to tend to assume verb raising, regardless of whether their L1 has verb raising or not.

In sum, as a response to Schwartz's points, we have suggested that Case Theory can deal with a lacking DP at early stages of acquisition, and that existing acquisition data supports the idea that subcategorization for a CP is not transferred. Finally, verb raising in L2 English is proposed to arise from the analysis of auxiliaries and modals, whereas in L1 English verb raising is not posited due to the weakness of the inflectional paradigm.

VI. Conclusion

In this paper we have reviewed our own data involving Turkish, Korean, Spanish and Italian speakers learning German who transfer the VP from their L1, and subsequently posit head-initial functional projections. Further studies were reviewed which showed that a CP was not transferred into L2 French or English by speakers of various languages, but rather a CP emerges at a clearly definable point in development. Finally, we showed how the potentially problematic verb raising data can be accounted for without assuming transfer of a functional projection, using the idea that free morphemes are salient triggers in L2 acquistion, whereas affixes are salient triggers in L1 acquisition.

Why should lexical projections be transferred, and not functional projections? We follow Grimshaw (1991) in taking the VP to be the base of an extended projection, where IP and CP are in some sense higher projections of a VP. Thus, an IP and a CP could not be represented without a VP (any more than a phrase can be represented without a head), but nothing in principle requires the VP to project all the way to CP. Following recent work in theoretical syntax, until functional elements have phonetic content, they cannot be projected; cf. Chomsky's (1988) Economy of Representation, Grimshaw's (1991) Minimal Projection, and in particular Speas' (1994) Economy of Projection. That is, S-Structure trees are minimal well-formed projections of the lexical items they contain.

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. Note that while Radford (1988; 1990) assumes maturation of functional caterogies, his current view (1994) parallels the version of weak continuity detailed below.

. We are certainly not the first to reject what Schwartz and Sprouse (e.g. 1994) term "Absolute L1 Influence". Recall the morpheme order studies carried out by, for example, Dulay and Burt (1974) and Bailey, Madden and Krashen (1974) in which no recourse to the learners' L1s was found with respect to the acquisition of functional elements.

. The figure 64% is conservative, since the Italian and Spanish speakers' acquisition of a head-initial functional projection coincides with their switching of the VPs headedness to head-final.

. A further point, which is not addressed, is that the overall imitation rates for these second language learners were quite low, particularly in light of the fact that the researchers took measures to insure that the test subjects knew all the lexical items in the sentences.

. As pointed out by Lasnik (1992), the present formulation of Case Theory is problematic in that it is not clear why expletives need Case, although they are not arguments. Cf. Vainikka & Maling (submitted) for the suggestion that Case is assigned to syntactic positions, rather than to arguments; again, the presence of a DP is not crucial for Case assignment.

APPENDIX

Table 1: Biographic data

learner	sex	language	age1/length of residence2	data type	number of files3	data source
Jose	m	Spanish	17	longitudinal	23	ZISA
Bongiovanni	m	Italian	18	longitudinal	17	ZISA
Bruno	m	Italian	15	longitudinal	19	ZISA
Lina	f	Italian	33	longitudinal	20	ZISA
Salvatore	m	Italian	35	longitudinal	5	ZISA
Agapita	f	Spanish	42/22	cross-sectional	-	Lexlern
Antonio	m	Spanish	51/18	cross-sectional	-	Lexlern
Maria	f	Spanish	47/25	cross-sectional	-	Lexlern
Natividad	f	Spanish	39/10	cross-sectional	-	Lexlern
Nieves	f	Spanish	53/19	cross-sectional	-	Lexlern
Rosalinda	f	Spanish	40/13	cross-sectional	-	Lexlern
Ahmet	m	Turkish	52/22	cross-sectional	-	Lexlern
Aysel	f	Turkish	43/11	cross-sectional	-	Lexlern
Emine	f	Turkish	28/6	cross-sectional	-	Lexlern
Harva	f	Turkish	36/6	cross-sectional	-	Lexlern
Kadir	m	Turkish	36/11	cross-sectional	-	von Stutt.4
Kemal	m	Turkish	37/11	cross-sectional	-	von Stutt.
Mehmet	m	Turkish	55/24	cross-sectional	-	Lexlern
Memduh	m	Turkish	47/9	cross-sectional	-	von Stutt.
Mine	f	Turkish	42/22	cross-sectional	-	Lexlern
™zg□l	f	Turkish	45/17	cross-sectional	-	Lexlern
Sevinc	m	Turkish	34/9	cross-sectional	-	von Stutt.
Changsu	f	Korean	60/6	cross-sectional	-	Lexlern
Dosik	m	Korean	34/1«	cross-sectional	-	Lexlern
Ensook	f	Korean	41/4	cross-sectional	-	Lexlern

Gabho	m	Korean	38/13	cross-sectional	-	Lexlern
Park	m	Korean	38/13	cross-sectional	-	Lexlern
Samran	f	Korean	35/3	cross-sectional	-	Lexlern

1. Age and length of residence at (initial) data collection
2. Age of arrival vs. length of residence is not relevant for the ZISA learners as data collection commenced with the start of their acquisition,
which was typically shortly after arrival in Germany.
3. Each file represents one interview session.
4. Some of the names of the learners from the von Stutterheim corpus have been changed for ease of presentation.