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ABSTRACT

A notable feature of developing interlanguage grammars is the apparent optionality in those areas of grammar where optionality is not characteristic of stable state grammars. In the Valueless Features Hypothesis, it is proposed that the appearance of apparent optionality in the very early stages of interlanguage development is due to the partial presence of functional categories at the initial state of non-native language development. The study reports on the study of acquisition of verb movement in Zulu by English native speakers. The results indicate non-optionality of verb movement at the initial state, and intermediate stage of interlanguage development wherein optionality sets in as a result of grammar competition and an expert stage in which verb movement has been fully acquired. The paper concludes that, contrary to the claims of the Valueless Features Hypothesis, initial state second language grammars have a full inventory of functional categories transferred from the first language (L1). Subsequent interlanguage development is, therefore, from absolute L1 influence to optionality at intermediate stages and the resolution of optionality at ultimate attainment. (Contains 42 references.) (Author/KFT)

THE NATURE OF THE INITIAL STATE ZULU L2 GRAMMAR AND SUBSEQUENT INTERLANGUAGE DEVELOPMENT

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Abstract

A notable feature of developing interlanguage grammars is the apparent optionality in those areas of grammar where optionality is not characteristic of stable state grammars. In the Valueless Features Hypothesis (Eubank 1993/4, 1994, 1996) it is proposed that the appearance of apparent optionality in the very early stages of interlanguage development is due to the "partial" presence of functional categories at the initial state of non-native language development. This paper reports on a study of the acquisition of verb movement in Zulu by English native speakers. The results indicate non-optionality of verb movement at the initial state, an intermediate stage of interlanguage development wherein optionality sets in as a result of grammar competition and an 'expert' stage in which verb movement has been fully acquired. The paper concludes by suggesting that, contrary to the claims of the Valueless Features Hypothesis, initial state L2 grammars have a full inventory of functional categories transferred from the L1. Subsequent interlanguage development is, therefore, from absolute L1 influence to optionality at intermediate stages and the resolution of optionality at ultimate attainment.

1. Introduction

The acquisition of verb movement has long been a topic of interest in Romance and Germanic languages, amongst others. It has been suggested that verb movement determines the position of the adverb, negator and quantifier in quantifier float in relation to the finite main verb (Pollock 1989). Verb movement, then, is directly related to the surface word order. A minimal assumption made is that movement, whether overt or covert, must be expressed in terms of the features of functional heads. Covert movement is driven by strong features, i.e. features that are visible and potentially illegitimate. On the other hand, overt movement is driven by weak features. With regard to verb movement, it is suggested that for the verb to overtly raise the V features in T must be strong.

In second language (L2) acquisition research, verb movement has been of particular interest as it bears directly on the projection of functional categories together with their feature values and is thus potentially informative on the extent to which the first language (L1)-based functional geometry is represented at L2 "first syntax" (see Paradis & Genesee 1997). The availability of verb-movement or, more aptly, syntactic phenomena that imply verb movement in the early grammar, might be suggestive of the presence of a functional head (i.e. INFL) and its feature values.

In addition, current SLA theories hold that L1-based functional categories are either present in early L2 grammars (Full Transfer/Full Access hypothesis of Schwartz & Sprouse (1994, 1996), absent from them completely (Minimal Trees Hypothesis of Vainikka & Young-Scholten 1994, 1996a, b), or "partially" present (Eubank 1993/4, 1994, 1996). Eubank states that while L1 functional heads and their projections transfer, there are limits to the transferability of the L1-based functional geometry. Eubank proposes that L1-based strength of inflection does not transfer, leading to syntactic optionality in those areas of grammar dependent on strength of inflection. One such area of grammar affected by non-transfer of feature values is syntactic movement. With regard to verb movement, the VFH suggests that movement of the finite main verb to INFL is optional at first. This gives rise to apparently optional syntactic movement which is not permitted in mature state grammars.

Optionality, then, is accounted for in terms of the *partial presence of INFL* at the initial stage of non-native syntactic knowledge.

Within this context, this paper brings up L2 acquisition data that have not been the focus of attention in generative L2 research. The paper examines the L2 acquisition of the placement of adverbs, negators and floating quantifiers in Zulu, an African Language. The article reports on an experimental study investigating the L2 acquisition of verb raising by English speaking learners of Zulu with specific emphasis on the placement of adverbs, negators and floating quantifiers vis-à-vis the finite main verb, given that it is with finite main verbs that the position of adverbs, negators and floating quantifiers differ in the two languages.

Current syntactic approaches maintain that finite main verbs raise overtly in languages like Zulu, but not in English-type languages. The raising of the main verb is attributed to the strength of V features in T. The claim is that the verb raises overtly in languages like Zulu because the V features in T are [+strong] while in English the V remains *in situ* because the V features are [-strong]. In view of the above, the question this paper asks is whether or not English speaking L2 learners of Zulu will have a preference for non-verb raising structures at the early stages of L2 development or, whether they will evidence syntactic optionality as predicted in the Valueless Features Hypothesis. The main research question is: will English speaking beginner learners of Zulu distinguish in acceptability between grammatical verb raising and ungrammatical non-verb raising sentences?

2. Syntactic Background

2.1 Verb movement in Zulu

A significant parametric difference between Zulu and English syntax regarding the placement of adverbs and the negator is verb raising in the former and not in the latter. This is evident in (1a) and (2a) below. The same phenomenon applies in quantifier float, as shown in (3a).

(1a) Abafana ba li shaya ***njalo*** ikati. (SVAO)

Boys AgrS-Agr0-beat ***often*** cat[1]

(* The boys beat ***often*** the cat.)

The boys ***often*** beat the cat.

(1b)* Abafana ***njalo*** ba shaya ikati. (SAVO)

Boys ***often*** AgrS-beat cat

(The boys ***often*** beat the cat)

(2a) Abafana a[2] ba li gibela ***nga*** ihhashi. (SVNegO)

Abafana Neg-AgrS-Agr0[3]- ride ***Neg*** horse

(*The boys ride ***not*** the horse)

(The boys don't ride the horse)

(2b) * Abafana a ***nga*** ba gibela ihhashi. (SNegVO)

(Boys Neg Neg AgrS ride horse)

(The boys ***not*** ride the horse)

(The boys don't ride the horse).

(3a) Abantwana be nkosi ba li dlala ***bodwa***[4] ibhola. (SVQO)

Children of king AgrS-AgrO-play ***alone/all*** football

* The king's children play ***all*** football.

(The king's children ***all*** play football.)

(3b) *Abantwana benkosi ***bodwa*** ba dlala ibhola. (SQVO)

Children of king ***alone/all*** AgrS-play football

(The kings children ***all*** play football)

Following Pollock (1989), the syntactic difference between Zulu and English in the placement of adverbs, negators and floating quantifiers evident in the above examples is a reflex of verb movement. In Pollock's account, the word order variation shown in (1a)-(3a) and (1b)-(3b) can be explained in terms of the richness of verbal morphology of Zulu as opposed to the meagre English verb morphology. In languages like Zulu, rich agreement permits transmission of theta roles to verbal complements leading to overt syntactic raising of the finite main verb whose tense feature must have scope over the VP at LF. In contrast, in English-type languages, lexical main verbs cannot raise because impoverished agreement blocks theta role transmission. These languages resort to *do*-support and I-to-V lowering of inflection, hence the tense feature which must govern VP only raises covertly to INFL at LF.

To derive the word orders SVAO (1a), SVNegO (2a) and SVQO (3a), permitted in Zulu, the V must raise overtly to INFL leaving the adverb as in (1a), the negator as in (2a) and the floating quantifier as in (3a) between the inflected verb and the verbal complement. This explains the ungrammaticality of examples (1b-3b). In these sentences the V has not been raised and the resultant sentences are ungrammatical. However, in English the SAVO, SNegVO and SQVO word orders are permitted because the finite main verb cannot raise to INFL but remains *in situ* following adverbs, negators and floating quantifiers. Thus, Zulu and English have similar base-structures but vary in the type of verb movements they permit. Zulu allows overt raising of lexical verbs while in English the verb can only move covertly.

As already indicated, the notion of syntactic movement is expressed in terms of feature strength (Chomsky 1995). Syntactic movement is obligatory and not optional. Features whose values are [+strong] must be checked off before LF so that the derivation does not crash. Strong features require overt raising of lexical items to satisfy the requirement of morphological feature checking. On the other hand, weak or [-strong] features prohibit overt raising of lexical items. Feature values can either be [+] or [-] strong. They cannot have both values or remain unspecified.

In view of the above, the difference between English and Zulu in so far as the placement of adverbs, negators and floating quantifiers is concerned is a reflection of the variation in strength of inflection in the two languages. The raising of the lexical V in Zulu indicates that the value of the V feature in T is [+strong], hence the finite main verb raises overtly to check off [+strong] V features. In English the V feature in T is [-strong] and there is no overt raising of the lexical V. The raised verb in Zulu leaves behind the adverb, negator and floating quantifier, while in English the adverb, negator and

quantifier remain to the left of the *in situ* verb. The resultant SVAO, SVNegO, and SVQO word orders in Zulu (see 1a-3a) are a function of overt movement which is driven by [+strong] features while the SAVO, SNegVO and SQVO word orders are a function of covert movement or [-strong] V features. In this analysis, verb raising is a syntactic correlate of [+strong] V features in T while the syntactic correlate for [-strong] V features is non-verb raising.

3. Valueless Features Hypothesis

The Valueless Features hypothesis (VFH) argues against the strong view of full transfer of the L1-based functional geometry into the L2 initial state grammar. Eubank suggests that morphological feature values instantiated in the L1 grammar do not transfer. The initial state L2 grammar is characterised by 'valueless' or 'inert' morphological features, i.e. features whose values are unspecified. The claim in the VFH is that these unspecified features lead to syntactic optionality in the early developing interlanguage grammar[5].

Eubank adopts the view that verb-raising depends on the strength values of inflectional features (Pollock 1989, Chomsky 1993). The main thrust of the VFH model is that acquisition of overt verbal morphology of the target language (TL) leads to the determination of TL feature values. Once feature values have been determined, the relevant correlate syntax is instantiated. The syntactic correlate cannot be instantiated consistently before the acquisition of overt morphology of the TL is complete[6]. Thus, features act as a trigger to the correlate syntax. The VFH also predicts that subsequent interlanguage development consists of the resolution of optionality evidenced at the initial state. Optionality is resolved once the inflectional paradigm of the target language has been acquired. Thus intermediate/advanced interlanguage grammars will either have obligatory movement or non-movement depending on what is required by the TL. The resolution of optionality suggests that the grammar of advanced L2 learners will converge with that of native speakers[7].

Eubank's empirical evidence for the VFH comes from verb-movement in the interlanguage data (reported in White 1990/91, 1991, 1992) of native speakers of French learning English as an L2. The early learners use SAVO and SVAO word orders, suggesting optional verb movement in their early interlanguage grammar. Eubank proposes that the word order pattern in evidence in early French-English interlanguage does not resemble that in the learner's L1. Eubank points out that if [+strong] V features in T instantiated in French had transferred, then the syntactic correlate of these features would have been verb raising, giving rise to an obligatory SVAO word order obtainable in their L1. Given that English [-strong] V features in T have not yet been acquired, and [+strong] features of French do not transfer, the initial state grammar is "valueless". The apparent syntactic optionality in the use of SVAO and SAVO is then attributed to a lack of specification of the feature value of the head of the functional projection TP (or IP) dominating VP[8].

Schwartz (1998) suggests that the VFH can be falsified if non-optionality is in evidence in the very early stages of interlanguage development. For instance, if it can be shown that obligatory movement or non-movement operations instantiated in the learner's L1 are also realised as such at early L2 syntax, this would indicate that L1-based feature values transfer. In fact, Dube (1997, 1998) provides damaging counter-evidence to the VFH claims. In Dube's studies, English-speaking L2 learners of Zulu obey subjacency in their acquisition of Zulu base-generated topics. As the topics are base-generated *in situ*, subjacency does not apply and yet English learners impose a subjacency constraint, indicating transfer of [+strong] wh-like features instantiated in their L1. Similarly, Green (1996) reports instances of transfer of [-strong] features from Chinese L1 to early L2 English. Chinese L2 learners of English continually show their L1 base-generated topic structures in English. In the English-Zulu IL data reported in Dube (1997, 1998) obligatory movement in the learners' L1 is in evidence at early L2 syntax while in Green's study it is obligatory non-movement operations in the learners' L1 which are realised as such in the very early stages of L2 development. In both studies there is evidence of non-optionality of syntactic movement suggesting that, contrary to the claims of the VFH, feature values also transfer.

3.1 Hypotheses and Predictions

The aim of this study is to determine the nature of the initial state Zulu L2 grammar with respect to the availability of L1-based feature values. The question addressed is whether or not the L2 initial state grammar is valueless. According to the VFH, L1-based feature values do not transfer, hence initial state grammars have unspecified (i.e. valueless) features. Unspecified features supposedly lead to syntactic optionality in those areas of grammar that require syntactic movement. With respect to English speaking L2 learners of Zulu acquiring verb movement, the prediction the VFH makes is that beginner learners will not distinguish in acceptability between grammatical verb raising from the ungrammatical non-verb raising sentences in Zulu. In other words, the VFH predicts that English beginner learners of Zulu **will** accept verb raising and non-verb raising sentences to the same degree.

Related to the question of the nature of the initial state L2 grammar is that of subsequent interlanguage development and the knowledge representation shown at ultimate attainment. In this regard, the question is whether the type of knowledge representation in evidence at ultimate attainment is: (1) complete/convergent (Birdsong 1992, Ioup et al. 1994, White & Genesee 1996) (i.e. a knowledge representation that approximates that of native speakers of the target language), (2) divergent (i.e. consistently different from both the target language and the L1) (Sorace 1993) or, (3) incomplete (i.e. it lacks certain properties of the target language). The VFH predicts that at subsequent stages English-speaking L2 learners of Zulu will have determinate judgements with a significant preference for the 'correct' (in the target language) verb raising sentences. Put differently, the VFH predicts that development in the interlanguage grammar will be from optionality at the initial state to an 'abrupt' resolution of optionality at subsequent stages.

The null hypothesis in this study is that L1 influence is absolute[9]. It is, therefore, predicted that English speaking beginner learners of Zulu will transfer [-strong] V features instantiated in their L1 to the L2 initial state. Thus, beginner learners will distinguish in acceptability between grammatical verb raising and ungrammatical non-verb raising sentences by showing a significant preference for non-verb raising sentences.

It has been suggested that while L2 learners start with the L1 grammar, change to L2-like structures is triggered by L2 input that cannot be processed on the basis of the initial L1 grammar. Developmental change is only predicted in the interlanguage (IL) grammar if the L1 and the L2 differ (Schwartz 1998; Schwartz & Sprouse 1994, 1996; Montrul 1996, White 1996). As already shown, there is a parametric difference between Zulu and English regarding verb raising. This structural difference will therefore motivate restructuring in the English-Zulu IL grammar with the possibility of a convergent (i.e. complete) competence at ultimate attainment.

It is predicted that subsequent interlanguage development will be from absolute L1 influence to optionality at intermediate stages and the resolution of optionality at ultimate attainment.

4. The Experimental Study

A cross-sectional study of acceptability judgements of English speaking L2 learners of Zulu was conducted using a timed rating measurement scale. The rating scale was used to elicit subjects' absolute judgements with regard to isolated sentences. In the rating task, acceptability judgements were elicited on a 5-point scale with (1) representing the least acceptable sentence while (5) represented the most acceptable sentence. The rationale in using a 5-point scale was that, unlike a binary or dichotomous scale such as a yes/no or either/or answer, it creates possibilities for capturing intermediate judgements. In addition, a 5-point scale allows for a wider scale through which acceptability may be expressed (cf. Russell & Gray 1994). In fact, it has been suggested that scales that include more than 3 points are statistically more reliable and have better resolution (Sorace 1996a).

The sentences for judgement were presented to the subjects using an auditory and a visual stimuli[10]. There was a time limit during which sentences appeared on screen and on the time available for making the judgement. Each sentence appeared on screen for 10 seconds and subjects were allowed a further 5 seconds to make the judgement[11]. The time limit was meant to elicit immediate judgements thereby not giving subjects time to access their metalinguistic knowledge of the relevant structures. By being timed, the task aimed at tapping immediate and spontaneous judgements.

As part of standard experimental control techniques (see Derwing 1979, Schutze 1996), sentences were presented in a random order so that two consecutive sentences testing the same syntactic structure did not succeed each other. Sentences were controlled for length, sentence length ranged from four to six words. To control for vocabulary difficulty, vocabulary booklets which contained all the vocabulary items that were used in the experimental sentences were provided to all potential participants four months prior to the commencement of the research. As a result, even the most elementary group had already used the vocabulary items that were used in the test sentences. However, subjects were not allowed to consult the vocabulary booklet during the experiment.

4.1 Subjects

The experimental subjects were drawn from English speaking learners of Zulu from various backgrounds. One group of native speakers of Zulu were used as controls. There were 38 native speakers who served as controls. The native controls were students of Law and Engineering at the Universities of the Witwatersrand and Natal in Durban.

The experimental subjects were 151 native speakers of English learning Zulu at various stages as well as those who were working in Zulu-oriented jobs. The 151 learners included students studying – and teachers teaching – Zulu at primary and high schools in the Johannesburg and Pietermaritzburg area. The experimental group also consisted of native speakers of English working in Zulu-related jobs such as TV personnel, including news readers, journalists and senior editors.

L2 proficiency was determined on the basis of scores on a cloze test which was administered to all subjects, including the native controls. The reason for using the cloze as an independent test was that there was a lot of variation amongst subjects in terms of the quality and quantity of input they were exposed to, such that the criterion of years or months of exposure to the TL would not have been useful. Some of the subjects had lived in a Zulu speaking environment, while others had private tutors, some had been taught by native speakers while others had always been taught by non-native speakers, thus suggesting that the quality and quantity of input there were exposed to differed greatly.

Based on the scores of the cloze test, the subjects were divided into five proficiency groups (excluding the native controls). The experimental subjects were grouped as follows; group one consisted of the most elementary learners or the beginner group (nns1). Group two is the low intermediate group (nns2) while group three is the high intermediates (nns3). Group four consisted of the advanced non-native group, i.e. the near-natives (nns5). Group six is the native speaker (Ns) control group. After dividing the subjects into groups, the arithmetic mean of the group scores was calculated (see Table 1 in Appendix 2).

4.2 Test Sentences

Three constructions related to verb movement are represented in the design. These are adverb placement, placement of the negator and quantifier float. For each construction, four sentences were constructed, corresponding to two syntactic variants of the basic construction. For example, for adverb placement, there were two sentences with verb raising (i.e. SVAO word order which is grammatical in Zulu) and two sentences without raising (i.e. SAVO word order). There were thus 12 sentences represented in the design. The syntactic variants were constructed by varying a single binary-valued syntactic feature (i.e. +/-strong V). Thus, in the three constructions the syntactic features varied are the presence/absence of verb movement giving rise to either a grammatical verb

raising sentence or an ungrammatical sentence with an *in situ* verb. Two lexical versions of the materials represented in the design were prepared. The sentences used in the design are illustrated in Appendix 1.

4.3 Analysing the Data

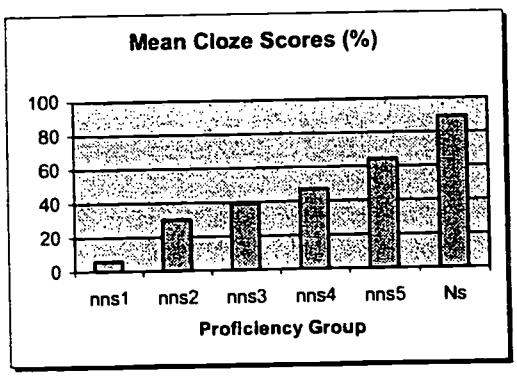
The data was analysed as follows: first descriptive statistics were used to calculate the arithmetic means (see Tables 2, 3 and 4 in Appendix 2). This was followed by a multivariate analysis of variance (MANOVA) with repeated measures in order to determine which of the effects were significant. Where effects (i.e. main as well as interaction) were found to be statistically significant, post hoc Tukey tests were conducted to make pair-wise comparison of means in order to determine which of the means differed significantly.

5. Results

5.1 Cloze data

Figure 1 shows that the mean cloze score increases significantly from one level to the next for all adjacent levels. One way ANOVA with the scores in the cloze test as a dependent variable shows that the mean scores of the six groups differ statistically highly significantly ($F_{(5,189)} = 1682.9186$, $p<0.0001$). In Tukey tests, the results of the pair-wise comparison of means show that all the six groups differ significantly ($p<0.001$) which suggests that the six groups had been drawn from six different proficiency populations.

Figure 1: Group Means of the Cloze Test (%)



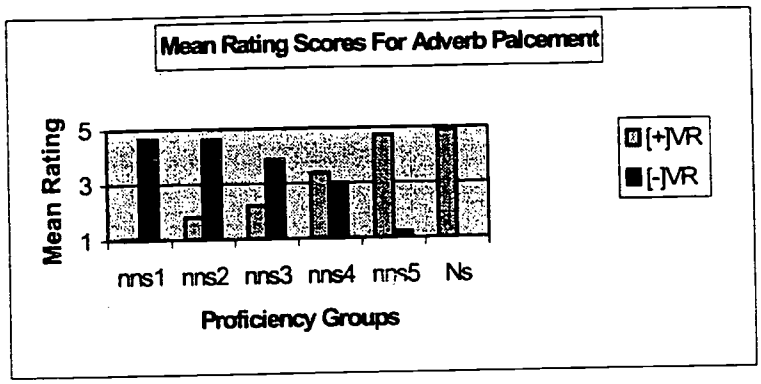
5.2 Judgement Data

Recall that all sentences with verb raising are grammatical in Zulu. The equivalent sentences are all ungrammatical in English. The equivalent non-verb raising sentences are grammatical in English.

5.2.1 Adverb Placement

Figure 2 shows that the majority of learners except the advanced groups reject the grammatical verb raising SVAO word order, preferring the ungrammatical non-verb raising alternative. This preference persists until the high intermediate stage after which it is reversed. This difference in acceptability of the two sentence-types by the different groups is confirmed by a statistical highly significant main effect of level of language development ($F_{(5,187)} = 18.12$, $p<0.0001$). Tukey tests show that the most advanced non-native speaker group differs significantly from all other non-native groups ($p<0.05$). The native speaker group differs significantly only from the least advanced learners, also at $p<0.05$.

Figure 2: Mean Acceptability Rating For [+/-] V-Raising In Adverb Placement



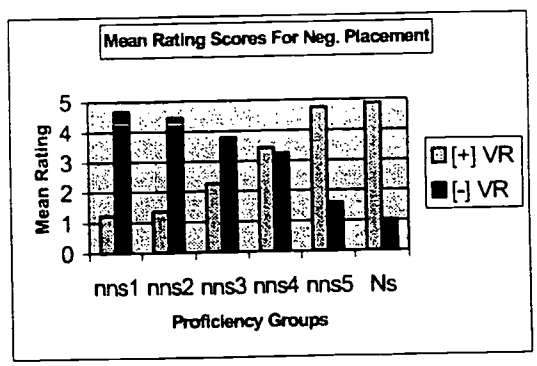
Key: [+] VR -- sentence with raised verb, [-] VR – sentence with verb in situ.

The main effect of raising is also significant ($F_{(1,187)} = 10.36$, $p<0.001$). The interaction between the effects of level of language development and verb raising is statistically highly significant ($F_{(1,5)} = 19.82$, $p<0.0001$). In post hoc Tukey tests, within-group comparison of means indicate that the first three non-native groups have a statistical significant preference for the ungrammatical non-verb raising sentence ($p<0.05$). Although the advanced group has a preference for the grammatical verb raising sentence, this preference is not statistically significant, suggesting that learners at this level do not distinguish in acceptability between the verb raising and the non-verb raising sentence, i.e. their intuitions are indeterminate. The most advanced non-native group, the near-natives and the native control group show a clear, statistical highly significant preference for the grammatical verb-raising sentence ($p<0.05$).

5.2.2 Placement of the Negator

The results of the group judgements of sentences related to the placement of the negator resemble those already observed in the adverb placement sentences. Figure 3 shows that low level learners have a preference for the ungrammatical non-verb raising sentences, i.e. SNegVO word order. This preference is reversed in the advanced groups. The difference in preferences by the groups is confirmed by a statistically significant main effect of level of language development ($F_{(1,187)} = 18.94$, $p<0.0001$). Tukey tests show that the difference is between the low level learners and the most advanced groups ($p<0.05$). Very advanced learners differ significantly from all the other non-native groups while native speakers differ only from the least advanced learners ($p<0.05$).

Figure 3: Mean Acceptability Scores of [+-] V-Raising in Sentences with Negator.



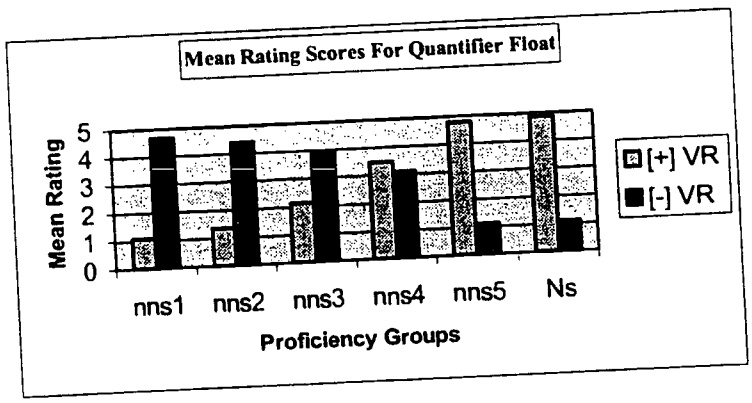
Key: [+] VR—sentence with raised verb; [-] VR—sentence with verb in situ.

The effect of verb-raising is significant ($F_{(1, 187)} = 10.88$, $p<0.0001$). The interaction of the main effects of level of language development and verb raising is statistically highly significant ($F_{(1,5)} = 11.72$, $p<0.0001$).Tukey within-group comparisons show that the first three non-native groups have a significant preference for the ungrammatical non-verb raising sentence. Although the advanced group has a preference for the grammatical verb raising alternative, the preference does not reach significance level. Thus the advanced group's intuitions are indeterminate. The near-natives and the native control groups have a significant preference for the grammatical verb raising sentence ($p<0.05$). The intuitions of the near-natives coincide with those of native speakers. In fact, a similar developmental scenario was observed in the judgements of adverb placement sentences.

5.2.3 Quantifier Float

Figure 4 shows that low level learners judge verb raising in quantifier float to be unacceptable. The preference for the non-verb raising sentence persists until high intermediate level. Very advanced learners show a preference similar to the native control group, i.e. they prefer the grammatical verb-raising sentence over the ungrammatical sentence with an *in situ* verb. The differences in preferences by the different groups is confirmed by a statistical significant main effect of level of language proficiency ($F_{(5,185)} = 18.81$, $p<0.0001$). Tukey tests show that the mean preference scores of the native speaker control group differ significantly from the low, high and advanced non-native speaker groups and between the advanced non-native speaker group and the near-natives.

Figure 4: Mean Acceptability Scores of [+/-] V-Raising in Quantifier Float.



Key: [+] VR—sentence with raised verb, [-] VR—sentence with verb in situ.

The effect of verb raising is significant ($F_{(1, 185)} = 12.90$, $p<0.003$). The interaction between the effects of level of language development and verb-raising is statistically significant ($F_{(1,5)} = 14.60$, $p<0.001$). In post hoc Tukey tests, within-group comparisons of means show that the first three non-native groups have a significant preference for the ungrammatical sentence over the grammatical verb raising sentence. The advanced learners have a preference for the grammatical verb raising sentence but this preference is not significant, indicating indeterminacy in their intuitions. Very advanced non-native speakers show a significant preference for the grammatical verb raising sentence like the native control group. Their intuitions coincide with those of native speakers.

In summarising, the results from the three constructions related to verb movement show that in judgements of the acceptability of sentences in Zulu with raised verbs, English speaking low level proficiency learners prefer the ungrammatical sentences without verb raising to the grammatical sentences with verb raising. This preference persists until a fairly advanced stage after which it is reversed. The advanced learners evidence optionality of verb movement in that they accept both sentence-types (i.e. those with and those without verb raising) to the same degree. The intuitions of advanced learners are indeterminate. This indeterminacy is evident in the three constructions. At the

extreme end of the proficiency scale, the near-natives have exactly the same preferences as the native controls, i.e. they significantly prefer the grammatical sentences with raised verbs to ungrammatical ones without raised verbs. Thus, in the three constructions related to verb movement, verb raising reaches categorical status at the near-native level. We consider the implications of this outcome in light of the claims of the Valueless Features hypothesis.

6. Discussion

The purpose of the present investigation was to establish the extent to which the Valueless Features Hypothesis (VFH) captures the nature of initial state interlanguage grammars with respect to transfer of functional categories instantiated in the learners native language. The aim of the study was to test the prediction made by the VFH concerning non-transfer of feature values and subsequent interlanguage development. In other words, the study set out to establish whether or not the initial state English-Zulu interlanguage grammar had valueless features and if not, whether the specification of the features in evidence at the early stages of interlanguage development coincides with those instantiated in the L1 final state. The study also sought to establish how the interlanguage grammar develops from this initial state to subsequent stages.

Since verb movement is directly related to the surface word order, it was assumed that a systematic and significant preference of one word order type (i.e. raising vs. non-raising) over the other could indicate whether the initial state interlanguage had specified features and if so, whether the specification of those features resembles that in the L1 grammar. By focusing on the acquisition of verb movement by English speaking L2 learners of Zulu, the study hoped to falsify or defend the claims of the VFH by using L2 acquisition data that heretofore have not been the focus of attention in generative L2 research.

In order to answer the question of whether feature values transfer, it was necessary to make an important assumption about the L2 initial state. In this regard, the absolute L1-influence hypothesis, i.e. the Full Transfer/Full Access hypothesis (Schwartz & Sprouse 1994, 1996), which proposes that L2 learners start with their L1 grammar and that exposure to the target language input data forces them to restructure their interlanguage grammar, was adopted. Although the subjects involved in the experimental study were not at the *ab initio* stage, they were, to a very large extent, beginner learners. It is most common for researchers in this area to extrapolate backwards and posit an initial state grammar to be represented by some hypothetical stage 0 (see Schwartz & Sprouse 1994, 1996; Robertson & Sorace 1998). In the present study the initial state grammar is represented by the beginner group. This is based on the observation that most of the learners in the beginner group had been exposed to Zulu, in a formal classroom situation, for a period no longer than three months. It is therefore reasonable to assume this is as initial a state as one could ever get. If L1 effects are found at this 'later' stage of development, it is plausible to assume that the L1 could have been the starting point.

On the basis of the Zulu interlanguage data presented here, the question of whether or not L1-based feature values transfer to L2 first syntax can be answered unequivocally. The results show that all the low proficiency groups systematically and significantly accept a non-verb raising alternative in the three constructions related to verb movement which formed the basis of this inquiry. As non-verb raising is instantiated in English, the subjects' L1, it is reasonable to assume that the non-verb raising analysis used at the Zulu L2 initial state had been transferred from English. Since non-verb raising is a reflex of [-strong] V features in T, the results suggest that the knowledge of the specification of these features must have been transferred from English to the Zulu L2 initial mental representation. The findings on the English-Zulu interlanguage data show that non-movement operations which are obligatory in the learners' L1 are also realised as such at the initial or early stages of L2 development. More importantly, there is no optionality of verb movement at the initial stage of Zulu L2 development. In fact, the significant preference of the ungrammatical non-verb raising sentences by the low proficiency learners indicates non-optionality in the early interlanguage grammar. The results of the present study suggest, in line with Schwartz & Sprouse (1996), that once feature strength has

been instantiated in the native language, it becomes an abstract syntactic property of the L1 which is as much subject to transfer effects as any other property of the L1 grammar. By and large, this outcome is damaging to the claims of the VFH.

6.1 Subsequent Interlanguage Development

On the basis of the experimental evidence reported here it is possible to posit an 'intermediate' stage in the interlanguage development of English learners of Zulu when verb raising and non-verb raising are accepted to the same degree, i.e. when optionality sets in. This stage comes prior to the "expert" stage where non-verb raising is rejected in favour of the 'correct' (i.e. grammatical for Zulu native speakers) verb raising sentences. In the judgements of verb movement constructions advanced learners do not distinguish in acceptability between grammatical and ungrammatical sentences. Instead, subjects at this stage exhibit indeterminate judgements not evident in the early stages or at the most advanced stage of L2 acquisition.

On the assumption that the initial interlanguage grammar is characterised by non-verb raising transferred from the L1, the judgements of the advanced group reflect a watershed or, a transitional phase from a predominantly L1-based grammar (evidenced in the low proficiency groups) to a target-like grammar in evidence at the next developmental stage, the near-native level. Thus, the kind of optionality in evidence at this 'intermediate' stage is developmental. It is, largely, due to grammar competition rather than a lack of specification of feature values. The two competing analyses are non-verb raising transferred from the L1 and the newly acquired Zulu verb raising analysis.

Since the starting point of L2 acquisition has been shown to be the learners' L1, it would seem the kind of developmental optionality evidenced in the Zulu interlanguage grammar is a result of the weakening of the L1 knowledge system in accounting for L2 input data. With more exposure to L2 input, the L1-like initial L2 grammar is restructured and this leads to loss of determinacy in the learners' interlanguage intuitions. At the level of mental representation there is some missing piece of evidence as to which knowledge system is the correct one, hence the learner uses both systems (cf. Henry & Tangney 1996). The old form, i.e. the form based on an L1 analysis (i.e. non-verb raising) is not quickly discarded once the new form (i.e. the Zulu verb raising analysis) enters the grammar. Instead, "the 'new grammar' must gradually win over the old grammar by a system which gradually strengthens or weakens a form according to its occurrence in or absence from the input data" (Henry & Tangney 1996:326). Thus, the intermediate grammar is a kind of 'hybrid grammar' characterised by forms drawn from the L1 and those created on the basis of L2 input.

The results also indicate that optionality is resolved at near-native level. In fact, the judgements of the near-native speakers are consistent and determinate. Near-natives distinguish in acceptability between grammatical verb raising and ungrammatical non-verb raising sentences in the three constructions. The subjects at the near-native level make preferences identical to those of native speakers which might be an indication that their intuitions coincide with those of native speakers. Thus, with respect to verb movement, the mental representation at ultimate attainment is complete (cf. Sorace 1993).

To some extent, the results of the intermediate/advanced group also challenge the predictions of the VFH model. While the VFH predicts that development in the interlanguage grammar is from optionality to an abrupt resolution of optionality at intermediate/advanced stages, the Zulu data suggests otherwise. The Zulu interlanguage data indicates that subsequent interlanguage development is from "absolute" L1 influence to optionality at intermediate stages and the resolution of optionality at ultimate attainment (cf. Montrul 1996).

6.2 L2A of Verb Movement in Zulu: Developmental Stages

On the basis of the experimental evidence on the acquisition of Zulu verb movement, it is possible to identify three discrete stages in the interlanguage grammar corresponding to each stage. Stage 1, the L2 initial state, is the L1 final state. As indicated, the initial state grammar is the L1 final state non-verb raising with [-strong] V features in T. Stage 2 is the intermediate stage which can be characterised as the optionality phase. It is a stage where optionality sets in as a result of grammar change, i.e. the L2 is replacing another (the L1) grammar used at the initial state. Stage 3 is the survival from optionality phase. This stage is the mature state grammar where the L2 parameter-defining values have been reset and optionality has been resolved. The most advanced non-native speakers show the same preferences as the native controls. At least with respect to the acquisition of verb movement, the English-Zulu interlanguage grammar at ultimate attainment closely approximates the target language grammar. This suggests that native speakers of English reset the properties related to Zulu verb movement.

In sum, the findings of the present study provide damaging counter-evidence to some of the claims of the VFH. While the VFH proposes non-transfer of L1-based feature values, the Zulu data shows L1-like feature values at the very early stages of L2 syntactic development. The Zulu interlanguage data shows that the initial state IL grammar is neither valueless nor characterised by optionality of syntactic movement. Optionality sets in at subsequent stages as a result of competition between coexisting grammars. Thus development in the IL grammar is from absolute L1 influence to optionality at the intermediate stage and the resolution of optionality at ultimate attainment.

7. Conclusion

The goal of this paper has been to demonstrate that feature values transfer from the L1 grammar to the L2 initial mental representation. In support of this claim, experimental evidence showing that English speaking L2 learners of Zulu exhibit an early stage of interlanguage development in which feature values instantiated in the native language predominate was presented. The consistent and significant preference of the word order patterns that implicate feature values instantiated in English suggests that transfer of these features occurred in the initial stages of L2 syntactic development. The paper also showed that optionality evident at subsequent 'intermediate' stages cannot be attributed to a lack of specification of feature values but rather, to grammar competition wherein L1-based [-strong] V features in T co-exist with the newly acquired [+strong] V features in T of the target language.

On the basis of the experimental evidence presented here, it is plausible to conclude that the initial state interlanguage grammar has specified features with feature values having been transferred from the L1. Thus, the early L2 grammar does not develop from a grammar with optionality of syntactic movement to a grammar with obligatory movement. Instead, subsequent interlanguage development is from absolute L1 influence to an "intermediate" stage of optionality of verb movement. The third and final stage is the "expert" stage, that is, ultimate attainment when target-like verb raising has been acquired.

Notes

1. The following abbreviations will be used: AgrS for subject-verb-agreement, AgrO–object agreement, Tns–tense, S–subject, O–object, V–verb, Q–floating quantifier, A–adverb, Neg–negator.

2. The negator *a-* in Zulu functions more or less like French *ne*. Following Pollock (1989), Dube (1999) suggests that *a-* is the head of NegP in Zulu, while *nga* is its specifier, i.e. it occupies its Spec position.

3. In general AgrO is not used together with the object in Zulu. It only becomes an obligatory constituent of the inflected verb if the lexical object has been moved from its position adjacent to the verb (cf. Demuth & Harford 1999).

4. In Zulu there are two quantifier stems; the inclusive quantifier ***–nke*** which expresses "the whole of" and the exclusive ***–dwa*** which expresses only/alone/all by oneself. The inclusive quantifier can occupy three positions in a sentence, i.e. it can precede or follow the noun it quantifies, and it can also be in a quantifier float position (after the verb). For example Ibhokisi ***lonke*** liwele emanzini/ ***Lonke*** ibhokisi liwele emanzini/ Ibhokisi liwele ***lonke*** emanzini. (The whole box fell into the water) are all grammatical sentences in Zulu. The exclusive quantifier, on the other hand, can only be in a floating position. It may follow a subject in a sentence but in such cases the noun is used as a copular and the verb of the sentence changes to a relative construction. For example, Abantwana basele ***bodwa*** emzini (The children all remained in the village) would be Ngabantwana ***bodwa*** abasele emzini (It is the children alone who remained in the village).

5. As Schwartz (1998) rightly suggests, it is not clear why syntactic movement should be optional if the features values are inert. It would have been more plausible to assume that inert values lead to 'no movement' at all.

6. Green's study (1996) suggests that optionality is not resolved even after the acquisition of the "morphemic grammatical system" of the target language. If Green's analysis is correct, this could mean that the acquisition of syntax occurs independently of that of overt morphology. In fact, this seems to be the case in L1 acquisition as shown by Verrips & Weissenborn (1992).

7. There is anecdotal evidence that optionality may not be resolvable in the most advanced stages of L2 acquisition. Some researchers have shown that optionality can be a permanent feature in the IL grammar (see Borer 1995, Sorace 1996a, Schwartz & Sprouse 1996).

8. Schwartz & Sprouse (1994) argue that the data captured in these studies does not reflect L2 first syntax. They suggest that the Francophone L2 learners of English were not true beginners hence optionality evident in their grammar is a result of grammar competition in later IL stages.

9. The term 'absolute L1 influence' is used in the same sense in which it is used by Schwartz & Sprouse (1996), i.e. the influence of the abstract properties of the native language is not limited as suggested in the Minimal Trees and the Valueless Features Hypotheses. It is not meant to suggest that the interlanguage grammar is entirely constrained by abstract properties of the L1 grammar.

10. See Cook (1993) for the importance of providing both stimuli.

11. It had been established during the pilot phase of the study that the allocated times were most reasonable for both beginner and most advanced learners.

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APPENDIX 1: List of Test Sentences

Lexical Version 1

(a) ***Adverb Placement***

1. UThoko uzigeza ***njalo*** izingubo zabantwana.
2. *UThoko ***njalo*** uzigeza izingubo zabantwana.
3. UmaMkhize ubugaya ***kahle*** utshwala basekhaya.
4. *UmaMkhize ***kahle*** ubugaya utshwala basekhaya.

(b) ***Neg Placement***

5. Abafana bakwaKhumalo abaligibela ***nga*** ihhashi lami.
6. *Abafana bakwaKhumalo a ***nga*** bagibela ihhashi lami.
7. Isithumywa asiyidla ***nga*** inyama yembuzi ebiscle.
8. *Isithunywa a ***nga*** sidla inyama yembuzi ebisele.

(c) ***Quantifier Float***

9. Abantwana benkosi balidlala ***bodwa*** ibhola.
10. *Abantwana benkosi ***bodwa*** badlala ibhola.
11. USandile uzohamba ***yedwa*** edolobheni ngempela sonto.
12. *USandile ***yedwa*** uzohamba edolobheni ngempela sonto.

Lexical Version 2

(a) ***Adverb Placement***

1. Ugogo uzithuka ***kakhulu*** lezingane zakwaThema.
2. *Ugogo ***kakhulu*** uzithuka lezingane zakwaThema.
3. UThabile ubugaya ***kabi*** utshwala basekhaya.
4. *UThabile ***kabi*** ubugaya utshwala basekhaya.

(b) ***Neg. Placement***

5. Isalukazi asiluphuza ***nga*** ubisi Iwakho.
6. *Isalukazi a ***nga*** siphuza ubisi Iwakho.
7. Amadoda awazithenga ***nga*** izinkomo zakwaButhelezi.
8. *Amadoda a ***nga*** wathenga izinkomo zakwaButhelezi.

(c) ***Quantifier Float***

9. Umkhulu ulitshove ***yedwa*** ibhayisikili likaMenzi.
10. *Umkhulu ***yedwa*** ulitshove ibhayisikili likaMenzi.
11. Izinja ziyikhonkotha ***zodwa*** inkomo KaThema.
12. *Izinja ***zodwa*** ziyikhonkotha inkomo KaThema.

APPENDIX 2

Tables of Means

Table 1: Mean Scores and SDs of the Cloze Test.

Proficiency Group	*N*	*Mean Score*	*SD*
nns1	36	5.6667	4.8580
nns2	23	30.0000	3.5929
nns3	36	38.7222	1.2331
nns4	34	46.9412	4.4650
nns5	22	63.9545	5.5590
Ns	38	89.0000	4.2107
All	189	45.8889	27.9501

Table 2: Mean Rating Scores for Adverb Placement Sentences.

	nns1	*nns2*	*nns3*	*nns4*	*nns5*	*Ns*
+VR	1.0266	1.8136	2.1811	3.3641	4.7222	4.8988
–VR	4.6399	4.6066	3.8666	3.0008	1.2311	1.0011

Table 3: Mean Rating Scores for Neg. Placement Sentences.

	nns1	*nns2*	*nns3*	*nns4*	*nns5*	*Ns*
+VR	1.2344	1.3589	2.2446	3.4111	4.7445	4.8666
–VR	4.6581	4.4333	3.7885	3.2333	1.6026	1.0213

Table 4: Mean Rating Scores for Quantifier Float.

	nns1	*nns2*	*nns3*	*nns4*	*nns5*	*Ns*
+VR	1.0634	1.3344	2.1306	3.4633	4.7888	4.8666
–VR	4.6666	4.3889	3.8879	3.1112	1.1112	1.0812

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