# A REVIEW OF L2 COMPLEMENTATION PRODUCTION STUDIES[1]

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## *Introduction*

Early work in L2 grammar acquisition focused on morphemes and was modelled after L1 studies. It was found in general that although the order of acquisition/accuracy order was different from that of L1 learners, the same order was maintained across linguistically heterogeneous groups and across adults and children (Dulay and Burt 1974a, 1974b; Bailey, Madden and Krashen 1974).

In the past few years, the work on grammatical acquisition has included studies on "higher order" structures. Several have focused on the production of English sentential complements by ESL learners from disparate language backgrounds. The purpose of this paper is to review the research on complementation production in order to identify commonalities in their findings. Although it is premature to say that these commonalities represent universals in the language learning process, they do provide further insight into it. Also examined are possible determinants for the similarities in their findings, as well as explanations for some of the more notable differences. The paper concludes with a critique of the research methodologies used and recommendations for further research in this area.

## *English sentential complementation*

This section presents a brief description of sentential complementation in English. It is based on a generative transformational analysis of grammar (Chomsky 1965, Rosenbaum 1967, Lakoff 1968).

[1] This paper is a revised version of a paper presented at the Iowa Academy of the Sciences Meeting, April 1984. I would like to thank Janet Anderson for reading earlier drafts of this paper.

Complementation is a process whereby sentences are embedded inside other sentences. There are three types of complementizing processes, resulting in three types of complement structures. In traditional terms, they are the clausal (e.g., John thinks (*that*) *Mary will win*), the infinitive (e.g., Mary wants *to win*), and the gerund (e.g., John enjoys *studying*). Complements may be embedded in the noun phrase (e.g., *To err* is human) or verb phrase (e.g., John wants *to go*).

Restriction on the type of complementizing processes allowed in a sentence depends upon the matrix verb. Complement distribution is not random. Some verbs allow only one type of complement. For example, 'think' can occur only with the clausal, 'want' with the infinitive, and 'enjoy' with the gerund. Other verbs allow more than one. Examples include 'expect', which may occur with either the clausal or infinitive, 'hear', which may occur with either the infinitive or gerund, and 'admit', which may occur with either the clausal or gerund. In learning the different complementizing processess, ESL learners need to know not only their form but also their distribution.

The nontensed complements (i.e., infinitives and gerunds) may or may not appear with a surface structure subject. When the subject of the embedded verb is coreferential with that of the matrix verb, it does not appear in the surface structure (e.g. John wants to go). Deletion of the embedded subject is called 'equi-noun-deletion'. When the subjects are not coreferential, both are present in the surface structure (e.g., John wants *Mary* to go). With gerunds, the embedded noncoreferential subject appears in the possessive form (e.g., I regret *Tom's/his* leaving). With certain verbs, the infinitive may appear without the 'to' (e.g., I saw the tree fall).

Appendix A presents examples of the various types of complement structures and forms discussed here.

## *Description of the complementation studies*

In this section, the various ESL complementation studies reported in the literature to date are described. Although there were a few early investigations into complementation production (Scott and Tucker 1974, Hart and Schachter 1976), of interest here are five later studies which attempted to establish accuracy orders for the three types of complement structures in post-verbal position. Alike in approach (i.e., data were elicited using written tests consisting of controlled production tasks), they differ considerably in format and method of analysis. The purpose of this discussion is to call attention to their marked differences. The accuracy orders established in each study are presented in Appendix B. Commonalities in their findings are discussed in the next section.

Anderson (1978) was the first to attempt establishment of an invariant



accuracy order for complement structures. Her subjects were 180 young Spanish-speaking adults learning English in Puerto Rico. In addition to the mastery of the three complement-types, she also investigated the use of the gerund after a preposition, tense sequencing in clausal and infinitive complements, and the obligatory use of a surface structure subject. Her written test consisted of translation tasks and multiple choice items. Anderson analyzed her data using the Bart and Krus (1973) Ordering-Theoretic Method, which establishes implicational relationships among categories. An advantage of this method is that it takes into account individual accuracy rankings. In a linear scaling, differences are averaged so that it is not readily apparent whether most of the subjects had about the same amount of difficulty with a structure. In the Ordering-Theoretic Method, such individual differences are not obscured because the rankings are based on the number of subjects having sequential orderings between the various categories.[2]

Schwarte (1982) replicated Anderson's 1978 study with forty-three Finnish subjects studying English at the University of Jyväskylä, Finland. Schwarte's study differed from Anderson's in two ways. First, she attempted to establish an ordering for a wider range of complement-types. Whereas Anderson focused on verbs which allow only one complement, Schwarte included verbs which allow two (e.g., Mary promised to go/Mary promised that she would go).

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[2] Data are analyzed as follows in the Bart and Krus Ordering-Theoretic Method. For each subject the percentage of correct test for each complement structure is calculated. Then each subject receives a binary score of 1 or 0 for each structure, based on the correctness percentages. A '1' is assigned to a structure if more than 80% of the test items for that structure are correct; if the percentage is less than 80%, a '0' is assigned. For eahc pair of complement structures (e.g., Infin-END/Infin-NP: Infin-NP/Infin-END; Infin-END/Clausal; Clausal/Infin-END; Infin-NP/Clausal, etc.), four response patterns are possible; 00, 11, 10, and 01. The 10 response pattern (which means that more than 80% of the test items are correct for the first structure in the pair while less than 80% are correct for the second) eimplies that the first structure is easier and is labeled confirmatory. The 01 response pattern, which implies that the first structure is not easier than the second, is labelled sidcionfirmatory. The response patterns on all possible pairs of structures are tabulated for each subject. To establish an ordering between a pair of structures, the number of subjects having disconfirmatory responses for that pair is divided by the total number of subjects. If the percentage does not exceed the five percent tolerance level, the first structure is considered a prerequisite to the second. In other words, mastery of the first precedes mastery of the second.

The extent to which individual accuracy rankings can be obscured by using a linear scaling method instead of one like that proposed by Bart and Krus is shown by Nadra (1983), whose study will be discussed in greater detail later. Nadra analyzed her data using both the Bart and Krus Ordering-Theoretic method and a linear scaling (i.e., a rank ordering based on the percentage of correct responses for each complement-type). Out of her one hundred subjects, only sixteen has individual accuracy rankings which correlated significantly with the linear ranking.

Second, Schwarte tried to eliminate the influence that the type of task might have on production by having a greater variety of production activities (e.g., sentence completion, sentence combining, etc.). Like Anderson, Schwarte analyzed her data using the Bart and Krus Ordering-Theoretic Method.

Anderson (1983) also replicated her own 1978 study. In this second study, she examined the mastery of complementation by eighteen Persian and eighteen Spanish ESL students in the U. S. Although her test again consisted of only translation and multiple choice items, there were two procedural changes in this second investigation. First, Anderson reduced the number of complement-types investigated in order to have an increased number of test items per type. She did this to minimize individual variability. Second, she ranked the complement-types according to the percent correct, not the Bart and Krus Ordering-Theoretic Method.

Replication of Anderson's second study was made by Butoyi (1978). Her subjects included 169 students enrolled in UCLA's ESL program. She was primarily interested in determining a common accuracy order for the twenty Spanish, twenty-two Japanese, and twenty-three Persian speakers who took her test. Like Anderson, she administered a written test consisting of translation and multiple choice items and used a linear scaling to rank the complement-types.

The last study to be reviewed was by Nadra (1983), who, unlike the previous researchers, narrowed her investigation to infinitival sentential complementation. Her subjects were one hundred Arabic-speaking women learning English in Saudi Arabia. Like Schwarte, Nadra included verbs allowing more than one complement. Her multiple choice section, however, differed because it required students to select all of the possible complements a verb allows, instead of only a possible one. In this way it could be determined whether the subjects knew the range of complements allowed with each verb. Nadra used the Bart and Krus Ordering-Theoretic Method to analyze her data.

*Commonalities in the results*

In this section the commonalities in the results of the studies are identified. Exceptions are noted in the footnotes.

The first commonality deals with the accuracy orderings established for the different complement-types. In general, infinitives (except those undergoing 'to'-deletion) are easier than gerunds.[3] Greater ease of the infinitive has also been reported in other studies not dealing specifically with complementation The ordering of infinitives before gerunds was observed by Ioup (1983) in her.

[3] Although Schwarte did not establish prerequisite relationships between Infin-NP and the gerund categories, it was usually easier based on percent correct. The exception was Prep+Gerund-END, which had the same percent correct as Infin-NP.



investigation into the acquisition of various subordinate structures by Egyptian ESL learners. This ordering is also similar to that observed in first language acquisition (Limber 1973).

A second commonality deals with the accuracy of nontensed complements with surface structure subjects. In general, infinitives and gerunds undergoing equi-noun-deletion are easier than those with expressed subjects.[4] This seems true, however, only with verbs allowing one complement. With verbs allowing more than one (e.g., 'promise', which allows both the infinitive and clausal), the effect of a surface structure subject is not so distinctive.

A third commonality deals with complement preference. In general, the infinitive is the preferred complement form. It is the form most frequently used when either the clausal or gerund is also possible.[5] It was also the form most frequently overgeneralized when only one complement was possible. Preference for the infinitive has been noted in other studies not dealing specifically with complementation. Hart and Schachter (1976), in their investigation into the frequency with which relative clauses and complements were used in the compositions of Spanish, Arabic, Persian, Japanese, and Chinese students, observed that the post-verbal infinitive was almost universally preferred by all language groups.

Preference for the infinitive instead of the clausal seems to contradict Kellerman's (1979) proposal that the more explicit structures have transfer priority. According to Kellerman, if the target language contains two structures which are equivalent syntactically but differ in explicitness, the more explicit one is likelier to be used in the target language. The clausal is the more explicit complement form since it has a wider range of applications (i.e., it can be used regardless of whether the subjects of the matrix verb and the embedded verb form are coreferential). Given that both Spanish and Finnish have infinitives and clausals, the clausal, not the infinitive, should have been the complement preferred by both speakers. A possible explanation for this contradiction is discussed in the critique section.

[4] Schwarte did not established a prerequisite relationship between Gerund-END and Gerund-NP, nor did Nadra between Infin-END and Infin-NP. However, Schwarte did find the Gerund-END easier than the Gerund-NP based on percent correct scores. Nadra, on the other hand, did not even find a difference between Infin-END and Infin-NP based on percent correct scores. This is surprising since the other studies do. The nonexistence of a difference in environment ease was probably due to Nadra's more difficult multiple choice task of having subject indicate all of the possible complements that can occur with a verb. Had the multiple choice section not been included in her analysis, the END environment would have been slightly easier.

[5] Three studies looked at complement preferences: Anderson (1978), Schwarte (1982), and Nadra (1983). Although Anderson gives some information about complement preferences in her article, additional information is provided in her dissertation, upon which her article is based (cf. Anderson 1976).

*Possible determinants for the commonalities*

Given the commonalities in accuracy orders and preferences, we now need to account for them. Because complement structures in the native languages of the subjects differ (e.g., Arabic does not have an equivalent to the English infinitive while Spanish and Finnish do (Nadra 1983), native language transfer is not a likely determinant of order. In this section, other possible factors are examined. These explanations, however, are speculative since causal relationships are difficult to prove. Moreover, when more than one is possible, all may have an influence in varying degrees. Some of the limitations of these possible explanations are also noted.

With regard to the first commonality — the ease of the infinitive over the gerund, one possible factor is the infinitive's frequency of occurrence. The infinitive's higher frequency may make it easier to master since it has more exposure and thus more opportunities for acquisition. Evidence of its greater frequency is presented by Butoyi, who established a frequency order for complements based upon an examination of about 8,000 words in the *White House Transcripts*: 46% of the 185 recorded complements were clausal, 34% were infinitive complements without surface structure subjects, 11% were infinitive complements with surface structure subjects, 4% were infinitive complements with 'to'-deletion, 3% where gerund complements without surface structure subjects, and 2% were gerund complements with surface structure subjects. Since collectively infinitives comprised about half of the complements used, its greater relative frequency may be a factor in its greater ease. Just as frequency seems to play a role in first language acquisition (e.g., Meork 1980), so it may also do so in second (e.g., Larsen-Freeman 1978).

Another possible factor in the infinitive/gerund mastery rates has been proposed by Rutherford (1982). He speculates that factivity may play a role in their acquisition. Factivity, as defined by Kiparsky and Kiparsky (1970), refers to the presuppositionality of the complement. If the presupposition associated with the complement remains constant regardless of whether the matrix verb affirms, negates, or questions it, then the matrix verb is factive. For example, in the following three sentences with the factive verb 'regret', it is presupposed that John told a lie:

(1) John regrets telling you a lie.
(2) John does not regret telling you a lie.
(3) Does John regret telling you a lie?

If the nonfactive verb 'claim' is substituted for 'regret' in the sentences above, such a presupposition cannot be made:

(4) John claims to have told you a lie.
(5) John does not claim to have told you a lie.
(6) Does John claim to have told you a lie?



In none of the sentences with 'claim' are we certain that John actually told a lie. Kiparksy and Kiparsky observed that nonfactives usually allow only the infinitive and factives the gerund.

The gerund's high occurrence with factives might make it harder to acquire. Rutherford makes this speculation in an attempt to show how the concept of markedness might account for accuracy orders. One member of a linguistic pair is marked it if involves an additional element (e.g., feature, morpheme, rule), is restricted in use, or entails greater psycholinguistic complexity (e.g., is more difficult to process). According to Rutherford, the factive might be considered the marked member of the factive/nonfactive pair due to its presuppositionality, which is assumed to cause greater psycholinguistic complexity. The gerund, in turn, might be considered the marked member of the infinitive/gerund pair because of its frequent use to denote presupposition with factive verbs in discourse. Marked members are usually acquired after their unmarked counterparts.

While intriguing, especially because of its consideration of the functional aspects of complementation, this explanation is also debatable. The linguistic item with higher presupposition may not necessarily be the marked member oa a pair (i.e., presuppositionality may not necessarily result in greater complexity). Support for this alternate view comes from Givon, who considers nonfactives, not factives, to be more marked. One of his arguments is based on cognitive-perceptual grounds: "events that have actually happened should be more salient for coding and retrieval than hypothesized events" (1984 : 289). Since complements accompanying factive verbs describe events that can be taken for granted (i.e., are uncontested), they are more salient. Forms with high perceptual saliency are unmarked.

To better understand the role presuppositionality might play in the acquisition ease of infinitives and gerunds, this author is currently investigating the perceptual difficulty of factives and nonfactives by native and nonnative speakers of English.[6] Results of a pilot test support Givon's view: factives, not nonfactives, are processed correctly more often. This was especially true for the nonnative speakers who took the test. They tended to make presuppositions regardless of whether the verb was factive or nonfactive. Although a study by Carrell (1984) indicates that ESL learners have difficulty making presuppo-

[6] In the pilot test, a complement structure was presented (e.g., Mary ignored feeling hungry), followed by another statement which presented the presupposition (e.g., Mary felt hungry). Subjects marked the presupposition as true, false, or not possible to determine. Factive verbs were presented with both clausal and gerund complements and nonfactives with both clausal and infinitives. The types of complement did not have an effect on making presuppositions. That is, nonfactives appearing with clausal complements were not more accurately perceived than the nonfactives appearing with infinitive complements.

sitions with factives[7], the results of this preliminary investigation indicate that nonfactives can actually be more problematic (i.e., for nonnative speakers, the difficulty is not so much in knowing to make presuppositions with factives but in knowing not to make them with nonfactives). Since presuppositionality did not result in greater processing difficulty, a correlation between it and the gerund's greater production difficulty seems unlikely.[8]

With regard to the second commonality — the greater ease of nontensed complements without expressed subjects, a possible factor is length (Anderson 1978). Nontensed complements without surface structure subjects may be easier because they are shorter in length than those with expressed subjects. The ease of shorter forms is also evident in the tendency of elementary ESL learners to omit functors (inflections, particles, etc.). ESL learners may use an 'economy' principle, which might be stated as 'learn and use shorter forms first'. Use of such a principle helps ease the burden of communicating. Interestingly, although sentences like 'I wanted to sing' were produced accurately more often than sentences like 'I wanted him to sing', sentences like 'I heard him sing' were not. Sentences undergoing 'to'-deletion are not as easy as those underlying equi-noun-deletion, even though both result in shorter forms.

With regard to the third commonality — preference for the infinitive with verbs allowing more than one complement, there are several possible factors. An explanation for the preference of the infinitive over the gerund might be the same as that for the differences in their accuracy, namely frequency of occurrence. For the preference of the infinitive over the clausal, which are both frequent in occurrence, three other explanations are possible. One factor again involves an economy principle. Native speakers often prefer the shorest of the grammatical alternatives. A problem with this generalization, however, is that it does not always hold. As Pawley and Syder (1983) point out, the expressions "Do what I say!" and "Do what I tell you!" are more common than

[7] The purpose of Carrell's study was to determine if ESL learners have the same ability as native speakers to draw inferences. The ESL learners had to draw presuppositions and implications from English sentences containing factive and implicative predicates. Unlike the pilot study reported here, Carrell's study did not include sentences with factive predicates.

[8] This does not mean, however, that markedness plays no role in complement ease. An example of its existence is with the verb 'decide', which has a restriction on the complements allowed. In the END environment, both the infinitive and clausal complement can be used (e.g., John decided that he would have to leave/John decided to leave). In the NP environment, however, only the clausal complement is permissible (e.g., John decided that Bill would have to leave/*John decided Bill to leave). Many ESL learners use both complements in the NP environment since both can be used in the END environment. Only later do they realize that the NP environment is 'marked'. Another example is infinitives which require 'to'-deletion (e.g., I let him go). Since most verbs do not require the deletion of the infinitival marker, the verbs that do are 'marked' and are usually acquired late.



the roughly synonymous "Obey me!" while the expression "That's got nothing to do with it" is just as common as "That's irrelevant." A second possible factor is that there is an avoidance strategy in operation. With clausals, subjects have to pay attention to tense sequencing, which is difficult for them (Anderson 1978, Schwarte 1982). Thus, subjects may prefer the infinitive because they do not have to worry about what tense to use.

A third possible factor in the preference of the infinitive over the clausal may lie in the semantic nuances each complement conveys. Riddle (1975) points out that one semantic difference is that the former denotes activity and the latter a mental or physical state. For example, the sentence 'Jane decided to be cautious' describes a deliberate act while the sentence 'Jane decided that she was cautious' describes a condition. Moreover, with infinitives there is a closer relationship between the subject and the predication of the complement. For example, the sentence 'Jerry asked her to sing' implies that Jerry actually did the asking while the sentence 'Jerry asked that she sing' does not. Use of the infinitive may have been preferred because it makes the relationship between the subject and the embedded verb more salient. Had the sentences been presented in various contexts, the preferences may have been different. The importance of providing context when investigating complement preferences is discussed in the critique section.

*Differences among the studies*

Although the focus of this review is on determining the commonalities in the results of the studies reviewed, several of their more notable differences warrant comment. These differences may be attributed to factors other than native language.

First, many of the prerequisite relationships established by Anderson for her 180 Puerto Rican Spanish speakers were not established by Schwarte for her Finnish speakers. Of the six complement-types in common, Schwarte established less than half the number that Anderson did. Two explanations are likely. First, Anderson's subjects comprised a wider range of proficiency levels. Whereas Anderson had elementary, intermediate, and advanced learners, Schwarte had mostly advanced. Many of Schwarte's subjects had probably already mastered the categories that were being learned by Anderson's subjects. Second, in order to be considered 'mastered', ninety percent of the test items for a complement-type had to be correct in the Schwarte study but in the Anderson study the criterion was only eighty percent. Both factors probably resulted in a greater number of relationships being established in the latter study. Of importance here is the fact there were no instances of 'disagreement' between the two studies (i.e., an ordering being established in one study and the reverse ordering in the other).

Second, there was an instance of 'disagreement' between the Schwarte and Nadra studies. Complement production with verbs allowing both the infinitive and gerund with expressed subjects (i.e., 'hear' and 'see') was easy in the Schwarte study but difficult in the Nadra study. Nadra's contradictory ordering was probably due to her more demanding task of requiring subjects to indicate all possible complements for a verb. Whereas Nadra's subjects had to demonstrate that they knew both the infinitive and gerund were permissible, Schwarte's subjects did not. Since Nadra's subjects were not aware that the infinitive, as well as the gerund, was permissible with 'hear' and 'see', this category has a low accuracy score. Had the multiple choice section not been included, this complement-type would have been among the easiest for Nadra's subjects. We do not know if Schwarte's subjects would have such a high score if they had had the same type of multiple choice task.

Third, the Arabic speakers differed from the Finnish and Spanish speakers in preferring the gerund over the infinitive with verbs allowing both. This is an exception to the usual preference for the infinitive and is perplexing since the Arabic speakers were like the other speakers in preferring the infinitive over the clausal. Further analysis revealed the gerund was preferred most frequently with the verbs 'hear' and 'see'. Given that most of Nadra's subjects did not even know that the infinitive was possible with these verbs, the gerund was probably chosen not as a preference but out of ignorance that the infinitive was even permissible. This shows the importance of determining if subjects even know that two forms are possible when analyzing preferences.

Fourth, accuracy of the clausal varied considerably among the studies. Butoyi noted that it was the easiest complement-type for her Persian speakers but ranked midway between infinitives and gerunds for her Spanish and Japanese speakers. The clausal was more difficult in Anderson's first study than her second. There are several possible reasons for its variability. Butoyi speculated that it was due to 'that' having such a wide range of uses (e.g., a demonstrative pronoun, relative clause marker, a determiner, a complementizer). Anderson points out that the complexity of the verb tenses used can also affect the clausal's accuracy. Unfortunately, tense complexity was not controlled in all of the studies.

*Critique of the studies*

Given the differences in production tasks, matrix verbs used, subject's proficiency levels, analysis procedures, etc., the fact that there are commonalities in the studies reviewed is remarkable. Though commendable, the research studies to date do have several limitations. Identification of these should improve future investigations.



First, none of the studies make a distinction in mastery between the selection of a complement (e.g., 'want' allows only the infinitival complement) and the formation of a complement (e.g., the verb after the infinitive marker 'to' is not inflected). Accuracy orders have been based on a combination of both aspects. No study has looked at these separately to determine what effect each aspect has. It may be that selection is only a problem for elementary ESL learners while formation is a problem for all proficiency levels.

Second, none of the studies have examined in depth whether all verbs within a complement-type are alike in difficulty. Within a complement-type, some verbs may be more difficult than others. For example, with verbs allowing only the infinitive, it has been assumed that it is just as easy to select the infinitive with 'want' as it is with 'need'. This may not be the case, however. For complement preferences, at least, there does seem to be individual verb variation: verbs within the same complement-type do not always exhibit the same preferences. Anderson, in her first study, observed that although the infinitive was usually preferred with verbs allowing both the infinitive and clausal, with 'believe' it was not. She attributes this to the fact that 'believe' belongs to a class of verbs denoting mental action and that such verbs usually take the clausal. Nadra also observed variation in preferences within the same complement-type. It is important that a wider range of verbs be examined in order to determine the extent to which complement selection, accuracy in form, and preference are dependent upon the specific verbs involved in a category. The frequency of occurrence of these verbs should also be analyzed. It may be that their frequencies, as well as that of the complement-types, have an influence on acquisition ease.

Third, none of the studies have determined whether the observed complement preferences are unique to second language learners or are shared by native speakers. To investigate this, this author administered a modified version of her complementation test (Schwarte 1982) to a small group of native speakers. The results were as follows. The native speakers were like her Finnish speakers in preferring the infinitive and gerund over the clausal. They differed in their preferences with verbs allowing both the infinitive and gerund. With 'like', the native speakers preferred the gerund while with 'hear' and 'see' they had no preference. The Finnish speakers, however, preferred the infinitive with 'hear' and 'see' and had no preference with 'like'. In sum, this preliminary investigation into native-nonnative preferences indicates that while some preferences are shared, others are not. We especially need to account for those that are not.

Fourth, none of the studies have investigated complement preferences in context. Not only do we need to investigate differences in native-nonnative preferences but we need to do so in context. Riddle's work on the semantic differences between the infinitive and clausal indicates that context can make

a difference. In contexts denoting activity or direct involvement, native speakers prefer the infinitive over the clausal. We need to determine whether ESL learners prefer a specific complement-type regardless of context. An example of how such an investigation might be set up is a study by So (1973), who developed a questionnaire to verify various observations about the semantic nuances of infinitives and gerunds. He gave contexts to native speakers and asked them to choose one of two complements. For example, with 'try' he presented the following two contexts: (1) 'Since it was getting stuffy inside, he tried — the window, but that didn't help a bit'. and (2) 'Since it was getting stuffy inside, he tried — the window, but couldn't reach it'. Subjects had to select either 'to open' or 'opening' for the blanks. So found that native speakers' preferences did vary according to the context. For the first context subjects preferred 'opening' while for the second they preferred 'to open'. Bolinger's (1968) observation that the infinitive often expresses something 'hypothetical, future, unfulfilled' and the gerund something 'real, vivid, fulfilled' was confirmed. Tasks like So's need to be administered to both native and nonnative speakers to determine if nonnative speakers have the same semantic interpretations when complements are in context. In the pilot testing of such a task, this author found that there were native-nonnative speaker differences: unlike the native speakers, the advanced ESL learners tested overwhelmingly used the infinitive in both contexts for 'try'. Since acquisition of form does not necessarily entail acquisition of function (i.e., the semantic and discourse features), both must be investigated.

Consideration of the semantic differences between complement-types may account for the contradiction between Kellerman's claim that the more explicit form of two equivalent structures will have transfer priority and the observation here that the less explicit infinitive is preferred over the more explicit clausal. Kellerman's claim did not take into consideration the slight semantic difference between the two. Unfortunately, we still know little about the various functions of complementation. Although a complement-type's presuppositionality may not be able to account for its ease, other aspects of its function may.

*Conclusion*

Perhaps the most important finding of this review is the existence of commonalities in accuracy orders and preferences across heterogeneous language groups. Further replication is needed to determine if the commonalities observed are indicative of language learning universals. ESL learners representing other native language groups, especially those whose complementation structures differ from English, need to be tested.

In addition to further replication, we need to expand our investigations.



The critique of the studies indicates that we need to investigate the relationship between selection competence (i.e., the ability to select the proper complement) and formation competence (i.e., the ability to correctly form a complement). We also need to probe the complement-types in greater detail to determine the idiosyncrasies of specific verbs and to contrast the context preferences of native and nonnative speakers.

Other aspects requiring investigation include examination of a wider range of complement-type variations. For example, we need to determine if complementation production in the noun phrase is more difficult than that in the verb phrase. Is the accurate production of 'To learn English is fun' easier than that of 'It is fun to learn English'? Moreover, are such sentences easier than 'Learning English is fun' or 'It is fun for them to learn English'?

Also needed are studies on the frequency, accuracy, and function of complements in spontaneous writing and speech. Do findings based on discrete-point tests like those reviewed here mirror how ESL learners actually use complementation in free production?

And finally, would a longitudinally-derived ranking mirror the rankings derived cross-sectionally? What effect would a formal (i.e., classroom) versus an informal (i.e., naturalistic) language learning context have on this ranking?

Only with investigations like these can we gain further insight into the L2 acquisition of complementation.

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## APPENDIX A

| Complement Categories | Examples |
|---|---|
| Infin-END | I want *to go* |
| Infin-NP | I want *Mary to go* |
| Infin-NP/To-Deletion | I let *him go* |
| Clausal | I think (*that*) *John went.* |
| Gerund-END | I enjoy *singing* |
| Gerund-NP | I enjoyed *Mary's singing.* |
| Prep+Gerund-END | He believes *in playing baseball.* |
| Prep+Gerund-NP | He was delighted *at his coming.* |
| Infin-END/Clausal | Mary promised *to go./*<br>Mary promised *that she would go.* |
| Infin-NP/Clausal | Mary expected *John to sell his car./*<br>Mary expected *that John would sell his car.* |
| Gerund-END/Clausal | He admitted *breaking the window./*<br>He admitted *that he broke the window.* |
| Gerund-NP/Clausal | Mary resented *Sam's winning the prize./*<br>Mary resented (it) *that Sam won the prize.* |
| Infin/Gerund-END | I like *to play baseball./*<br>I like *playing baseball.* |
| Infin/Gerund-NP | I heard *the tree fall./*<br>I heard *the tree falling.* |
| (Obligatory Presence of) Surface Structure Subject | I want *you* to help them. |
| (Use of) Perfect (Tense) | He claims *to have read it.* |
| Tense (Sequencing) | He *knew* that she *had left.* |

## APPENDIX B

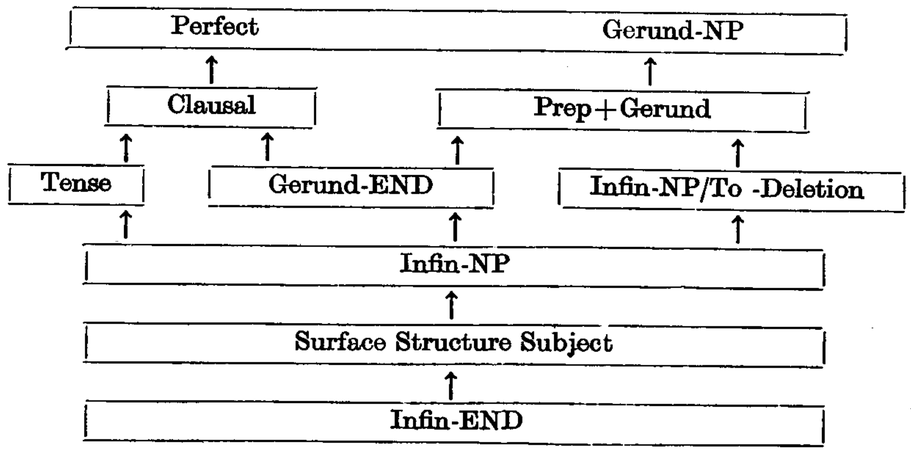


**Figure 1: Anderson's (1978) Accuracy Order for 180 Spanish Speakers. Based on the Bart and Krus Ordering-Theoretic Method**

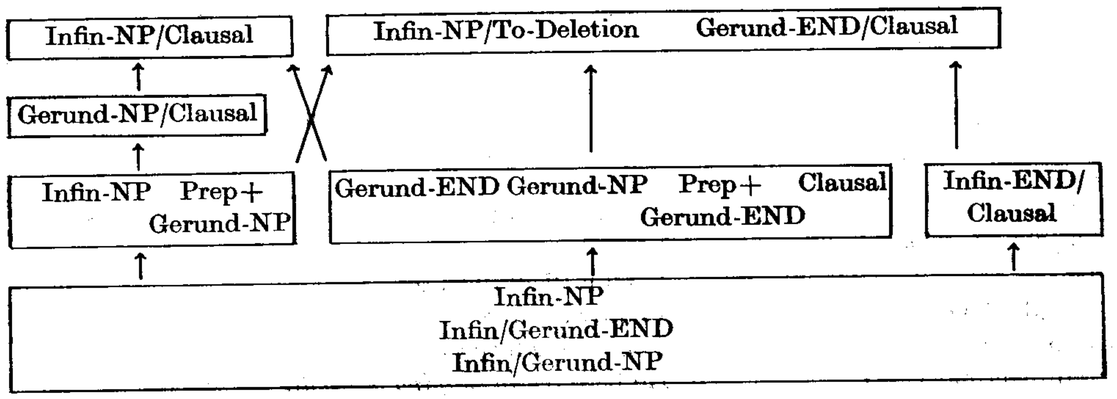


Figure 2· Schwarte's Accuracy Order for 43 Finnish Speakers. Based on the Bart and Krus Ordering-Theoretic Method

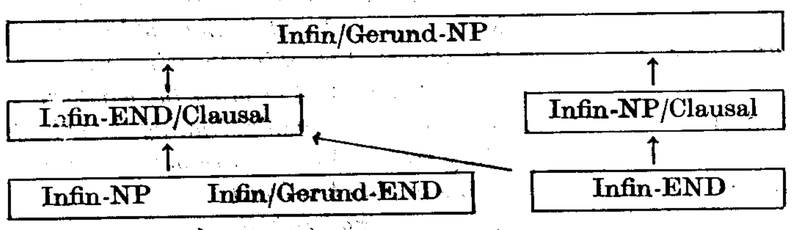


Figure 3: Nadra's Accuracy Order for 100 Arabic Speakers. Based on the Bart and Krus Ordering-Theoretic Method

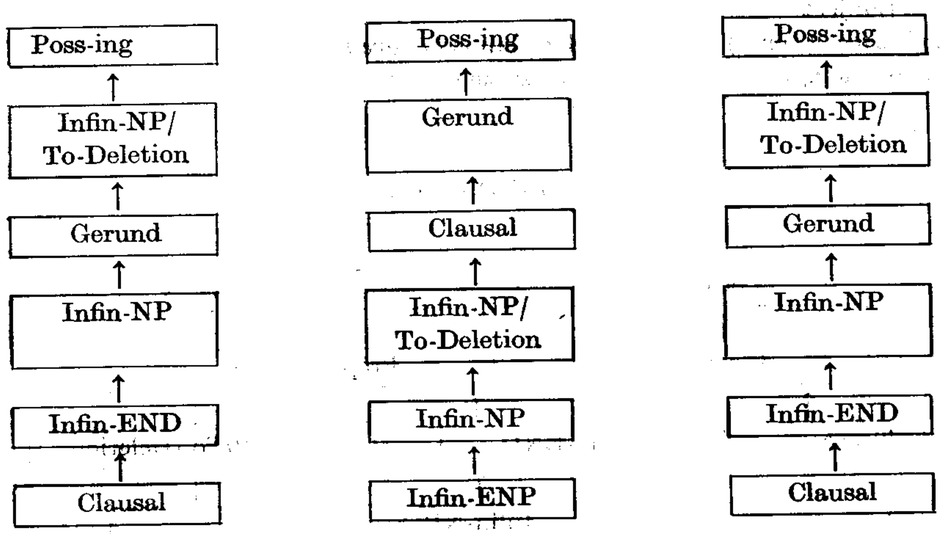


Figure 4: Accuracy Orderings Based on Percent Correct Scores