

A NOTE ON TECHNICAL ENGLISH MATERIALS
 THE PLACE OF FORMAL GRAMMAR IN A
 COGNITIVE ORIENTATION

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The teaching of English as a second language is a complex endeavor involving at least two sets of languages and cultures. Even the socio-economic orientation of the students enters into the complicated process of language teaching. However, there is yet another factor of paramount importance to be considered in the scheme of language skills. It is, perhaps, the most important element of all: the textbook. The textbook lies at the center of the above mentioned configuration of external and internal factors relevant to the teaching of English. It provides the point of departure for teacher and student and is too often the end and sum of all language taught and learned in the classroom during a determined period.

Currently, most textbooks in the field of technical English reflect a notional or situational approach as opposed to the presentation of discrete grammar points. There is no problem concerning what the notional approach attempts to achieve, but there is a problem with what it does not attempt to accomplish. The author of such a text will frequently take for granted that the student learners have been exposed to the same type of language education that he has received in his native English grammar and composition. Yet teachers often find that the concepts of substantives, adverbs, transitive and intransitive verbs, among other essential grammatical notions, are only vaguely understood by the foreign student, especially those from a lower income group. The teacher finds himself, thus obliged to teach grammar not only on a fundamental level, but the grammar knowledge presupposed or omitted in notional approaches to technical English.

"The principal purpose of English In Focus: English in Mechanical Engineering (Glendinning, 1974) is not to teach more grammar, but to show students how to use the grammar they already know."¹ The English Focus Series combines the notional and grammatical approach to language teaching with seriousness and effect, but only to the degree that the supposed grammar information is known or has been learned by the students. How much grammar they do know can be only a theoretical guess. Furthermore, which grammar is being referred to in the statement? The grammar of the student's native language or the grammar of English? The fundamental ambiguity of the quoted assertion lies in the fact that more often than not, the grammar and syntax of two different languages are non-correlative. Thus, noun phrases, relative clauses, (defining and non-defining), and other notions, involve a syntax that is frequently unique to English. The point is that the naming

¹ Editor's note: underling the author's.

and indication of various grammatical concepts is insufficient as an aid to understanding English language structure. Further awareness by means of a syntactic perspective concerning the grammar point being stressed is necessary.

The following may be taken as a case in point that illustrates this need of a larger, cognitive, framework to place the grammar point in context. The language of dimensions in English in Mechanical Engineering (Glendinning, pp. 6-8) confronts the student with four different ways of describing the basic dimensions. Not only is there no mention of the terms, 'noun' and 'adjective', in this section when dealing with 'length' and 'long', for example, but the transformational aspect of noun and adjective as the direct object or predicate adjective of a verb is also neglected. Apparently, these grammar points are among those supposedly known by the students in the assumption of the author. This knowledge, however, cannot be so readily assumed. In the case that they have been previously learned by the student, it would be advisable to reinforce that knowledge by mentioning the terms, 'noun' and 'adjective', when dealing with dimensions such as 'height' and 'high', 'depth' and 'deep', in order to avoid the confusion that is apt to abound if no explanation of these grammar concepts is given. Furthermore, the syntax of English and the peculiarities of the verb 'to be' make it difficult for a Spanish-speaking student, for example, to comprehend the structure of "The table is 1.50 meters long.", and "The table is 1.50 meters in length." Spanish syntax is non-correlative in this instance. Thus, not only grammatical terms necessary for the learning process, but also some type of syntactic framework is essential to clarify the structural rendering of dimensions in English. The use of substantives and adjectives in conjunction with the verbs 'to have' and 'to be', plus the use of the noun in prepositional phrases such as 'in height' remain unexploited and unlearned unless the teacher is aware that this type of orientation is necessary because of the differing syntactical arrangements in English and Spanish. Four different ways of describing dimension without a framework explanation involving grammar and syntax is too much to ask of the student to grasp, since he is given no point of reference to distinguish, to contrast, and, therefore, to understand these four distinct presentations. There would be no problem if the student were some type of memory machine with respect to the four paradigm sentences exemplified in this section of English in Mechanical Engineering (Glendinning, pp. 6-7). The point is that mature students have the cognitive ability to understand the distinction between objectives and nouns, for instance, and that this faculty may be tapped as a resource for the understanding and the generation of the varying syntactical arrangements in question.

In contrast to the combined approach of the English in Focus Series, a textbook such as Nucleus General Science (Bates, 1976) avoids grammatical orientation and explanation completely. Since it is a textbook designed for general beginners, it leaves even more to be desired in terms of student comprehension of the distinctive and mixed language patterns that are introduced without any kind of grammatical and syntactic reference. Much valuable information is presented, but it is not taught and understood unless the teacher is conscious of the need and willing to engage in an explanation of grammar and syntax in order to give the material a contextual framework. Somehow, the students are expected to discern and recognize the differences between mixed language patterns that are often presented on the same page without an orientation to the reasons for the differing patterns, (Bates, pp. 23,

28, 36, 41) The end result is that mere paradigms are, at best, memorized. Without a grammatical and syntactic framework, a great deal of material is left untouched and unexploited when it might have been generative of further knowledge and information in terms of the learning process.

For example, the distinctive syntactic patterns of 'is' and the auxiliary, 'does', are introduced in the same exercise, (Bates, pp. 23, 36) assuming that the student is knowledgeable concerning the difference. Yet, this point of syntax in the formation of negative and interrogative statements with verbs that imply the use of modals such as 'do' and 'does', as opposed to the peculiarities of the verb 'to be' and the auxiliaries in similar formations, is one of the most deeply ingrained problems in terms of error potential in the teaching of English as a second language.

Perhaps one of the basic reasons for the often continuous difficulty that students demonstrate throughout their years of English study with regard to the idiosyncracies of the verb 'to be', the use of the auxiliary verbs, and the functions of 'do', 'does', and 'did', is due to the insular approach of simply covering the material in a textbook. The notional and situational approaches too frequently fall into the limitations of paradigm presentations. Without a larger frame of reference to act as a general guideline for the proper syntactic ordering of these different sets of verbs, the student is forced to learn and re-learn the various isolated presentations of these patterns as they are introduced in different textbook notions and situations. This attitude to teaching and learning may be called the milk bottle approach.

If the material presented in otherwise valuable textbooks in the field of technical English is to be exploited and productive, some type of formal grammatical perspective and syntactic framework is indispensable in order to focus in on the target language. This kind of orientation that is adaptive and complementary would provide a source for understanding the different patterns and structures in which the material is contextualized. The disadvantage of going through each section of each unit without providing a structural synthesis for the student is that material may be introduced, but not learned in any effective frame. If, however, the student is given a general synthesis of syntactic patterns, he is able to generate new and productive language and to distinguish mixed patterns. It has been pointed out earlier in this paper that differing structures and patterns are often introduced on the same page or unit without explanation. The student is at a great disadvantage unless he is equipped with the ability to recognize and reproduce the varying information being presented.

As an illustration of a cognitive synthesis of a syntactic pattern, the functional grouping of verbs into two classes may be taken as an example. The first class includes the verb 'to be' and the auxiliaries, such as 'will', 'can', 'must', 'would', 'could', and 'should', ('may' and 'might' may be included with the relevant explanation of their usage). These verbs are grouped together because of their parallel word order in affirmative, negative, and interrogative statements. The verb 'to be' is explained separately; students are usually familiar with the present continuous form of this verb, but need to have the passive voice of 'to be' reinforced because of the frequency of its use in technical English. The expression of the passive

voice in English language structure varies to a considerable degree with its corresponding use in Spanish, for instance; and this fact requires that a detailed syntactic orientation be given to the students beyond the usual presentation found in most textbooks.

The functional similarity of the verb 'to be' with the auxiliaries is demonstrated in the simple inversion of subject and verb to form the interrogative and in the parallel placement of 'not' to construct negative statements. The auxiliaries fall together in the suppression of the infinitive in compound form. Example: the interrogative words, such as 'What', 'Why', 'When', and 'How' may well be introduced in subject position in the various exercises where they may appear. Too frequently, students are unable to form clear and correctly structured questions. In this way, when the student is exposed to a question in an exercise, such as "What can reproduce?", he may be asked to generate similar and parallel questions of the other verbs in this first class: "What is the reproduction cycle of a chicken?" "What will reproduce/ should / may / would reproduce under certain conditions?" In this sense, patterns are being reinforced and related to a larger framework and new sentence structures are generated to produce more and varied information. The same type of reinforcement may be applied when the student is learning the pattern, "Gas will expand." "Gas can/ may / should expand." The negative syntax would follow a similar pattern to emphasize the structural parallelism in the use of the functional word, 'not'.

The second class of verbs that may be grouped together due to a basic syntactic parallelism (would include) all other verbs. The functional operation of 'do', 'does', and 'did' for interrogative and negative statements falls into similar patterns that can periodically be reinforced in the classroom in an oral and written manner. The use of these functional words to form interrogative statements with and without the introductory interrogative words is invaluable, especially for the student of technical English, since he is often placed in a question-forming position. Although these students have memorized the familiar question, "How do you do?", most of them cannot make questions such as "What does 'interlocking' mean?" or "Why do gas and water expand?" The reason for this inability, may well be that they have never learned to relate a paradigm situation to a general class of verbs that require the use of the functional auxiliaries. Rather, they have at best, simply learned isolated and unrelated usages of these function words.

This type of classification of verbs into a general syntactic framework is offered as one kind of synthesis that would be helpful to the teacher and student in order to render meaningful the notional and situational presentations of unexplained and often mixed language patterns. This classification is not offered as a panacea to the difficulties of language teaching and learning. Difficulties, nuances, and exceptions will always be present. However, it may serve as a practical and general point of reference to frame the varied material so often introduced in textbooks of technical English. Neither is it the sole approach to make sentence structuring meaningful. The division of verbs into two different

classes is however, an attempt to enable the student to create and generate new and varied information while reinforcing fixed patterns through an awareness of a larger grammatical and syntactic framework in which to order paradigm situations.

The need for a cognitive perspective in terms of grammar and syntax, then, may be predicated from the observations pointed out in this article. Current approaches to the teaching of English, whether they be notional, situational, or audio-lingual, will always necessitate a complementary cognitive framework in order to place the material introduced into a working perspective. Awareness and recognition of grammatical patterns can operate as functional aids in the understanding and generation of language. It is not as if the simply theoretical knowledge of this information would necessarily enable the student to elicit the practical forms of English. But the fact remains that cognition is a faculty that adults, and preparatory and college students possess. Therefore, it has potential as a functional value in the teaching and learning of English. Native speakers do not learn to manipulate language analytically or in terms of grammar and syntax. However, mature learners of a second language are capable of utilizing cognitive forms in the analysis and production of language introduced by the notional, situational, and audio-lingual approaches.

Again, the point is not to teach grammar for its own sake or in isolated form. The assertion is that the cognitive faculties of the student can aid him to distinguish and produce patterns on the basis of the larger framework that a certain knowledge of morphology and syntax would provide. In this way, the advantages of the current approaches to teaching English as a Foreign or Second language may be given depth and the necessary frame to produce a functional and generative knowledge of English.

REFERENCES

1. Glendinning, Eric H., 1974. English in Focus: English in Mechanical Engineering London: Oxford University Press, p. xi. (Teacher's Edition).
2. Bates, Martin and Dudley-Evans, Tony, 1976. Nucleus: General Science, London: Longman.