

The Application of Dependency Syntactic Schemas in Grammar Teaching for English Majors in China

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Abstract: Grammar teaching is an important part of English teaching. As a way of demonstrating grammatical structures with psychological reality, dependency syntax schemas are vivid and clear, thus being widely used in linguistic research and natural language processing. However, they have not received attention in foreign language teaching. In the Digital Age, we advocate the application of dependency syntax schemas into the grammar teaching for English majors in Chinese universities, in the hope of providing new insights for foreign language teaching in China.

Keywords: Dependency syntactic scheme; English grammar; Foreign language teaching

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1. Introduction

Grammar teaching plays a vital role in foreign language teaching. For English majors in colleges and universities of China, English Grammar is one of the compulsory courses as the foundation for training language skills. However, teaching grammar is not an easy task. Compared with the texts at the high school level, the depth and breadth of grammar teaching for English majors have increased. Sentence length is often higher, and syntactic structures are more complex. Students are often in a state of confusion, finding grammar knowledge boring and abstract. Teachers also report that the “long and difficult sentences” have become a “road-block” for understanding authentic English materials.

Dependency syntactic schema is an efficient method to demonstrate the results of syntactic structure analysis in linguistic research and natural language processing. However, they have not been widely used in foreign language teaching practice.

In this paper, we aim to apply dependency syntactic schemas to grammar teaching for English majors in China. “Grammar teaching” here includes not only the teaching of explicit knowledge about English grammar itself, but also the grammar-based training of language skills such as reading, writing and translation.

The study is significant. On the one hand, dependency syntax is in line with current academic trend. Its application will be a novel attempt to improve the effectiveness of foreign language teaching. On the other hand, the interlanguage data produced by Chinese EFL learners can help to discover the laws of language acquisition and verify the universality of the dependency grammar.

The rest part of the paper is organized as follows: Section 2 introduces the dependency syntactic schema; Section 3 discusses its application into foreign language teaching; Section 4 is a conclusion.

2. Dependency Syntactic Schemas

2.1 The Conceptual Idea

It is believed that one of the earliest schematic representations of sentence structure appeared in the United States in the 19th

century (Liu, 2009: 4; Osborne, 2019). Most of the syntactic schemas used in linguistic research and processing are represented as tree structures. The grammatical framework used for dependency syntactic schemas is dependency grammar, developed from “structural syntax” proposed by French linguist Lucien Tesnière (Tesnière, 1959). His thought initially served the practice of foreign language teaching during World War II.

According to Tesnière, elements in a sentence are organized by the connections between them. The element at a higher level in the connection is called the head, and that at a lower level is called the dependent (Tesnière, 1953: 4-5). Dependency can be defined as an asymmetric binary relation between syntactic words (Liu, 2009: 97-98). Therefore, syntactic structures can be represented as schemas like tree diagrams. Taking “I actually live in China” as an example, its dependency syntactic schema is shown in Figure 1.

Figure 1 clearly presents the syntactic structure of the sentence composed of five syntactic words. The arc with an arrow point from the head to the dependent, and the label on the arc indicates the type of dependency. The predicate verb “live” is the root of the entire sentence; the label “nsubj” indicates the syntactic relation between the dependent “I” and its head “live” is nominal subject.

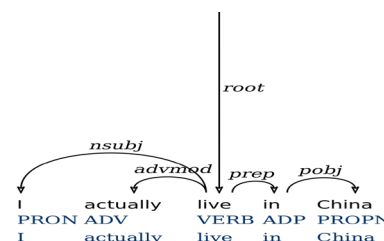


Figure 1 The schema of an English sentence

2.2 Resource

The understanding of sentence structure is reflected by schemas specified in the annotation scheme. In this paper, we mainly refer to the annotation scheme of Stanford Typed Dependencies and make appropriate adaptations. According to de Marnee and Manning (2016), the hierarchical system of dependency relations mainly includes the dependencies of arguments (arg), modifiers (mod) and auxiliaries (aux). Dependencies of arguments are divided into subjects (subj) and other complements (comp) with a distinction between clausal and non-clausal ones.

In order to display the results of syntactic analysis, one can employ visualization tools including the stand-alone tools such as DG Annotator and the web-based tools such as CoNLL-U Viewer.

3. Application of Dependency Syntactic Schemas to Grammar Teaching

This section discusses the application of dependency syntactic schemas to the grammar teaching from the following aspects: feasibility, examples, issues and solutions.

3.1 Feasibility

The introduction of dependency syntactic schemas into grammar teaching is feasible.

First, the schematic method is in line with the cognitive characteristics of students. Presenting grammatical knowledge in an intuitive and vivid schematic method helps to reduce comprehension complexity. In addition, interactive learning with syntactic analysis tools encourages students to use their brains and hands in a more autonomous way.

Second, the basic knowledge related to dependency syntactic schema matches the language proficiency level of English majors. Dependency syntax has excellent convergence with traditional pedagogical grammar. The vast majority of English majors have possessed a certain amount of basic knowledge of syntax learned in high schools. The supplementation of schematic method can deepen their understanding of English grammar.

Third, it is convenient to use the visualization tools for displaying dependency syntactic schemas. For most students with preliminary information literacy, trying out new tools on personal computers is possible in the age of information.

3.2 Examples

Dependency syntactic schemas can assist teachers in explaining “long and difficult sentences” by presenting the syntactic structures in a more intuitive and clear way. Example 1 is a long and complex sentence extracted from a textbook of English Extensive Reading.

Example 1 “The combined effects of landfill shortages, resistance to accepting out-of-state garbage, and growing national attention to the issue prompted the EPA to publish national policy guidance”.

Figure 2 presents a clear visualization of the core structure of Example 1. Centered on the trivalent verb “prompted”, the root node extends outward with three arcs, indicating that it governs three dependencies, nsubj (nominal subject), obj (object), and xcomp (open clausal complement). The schema conjure up a Chinese sentence “我请他吃饭” (“I invited him to dinner”) as shown in Figure 3.

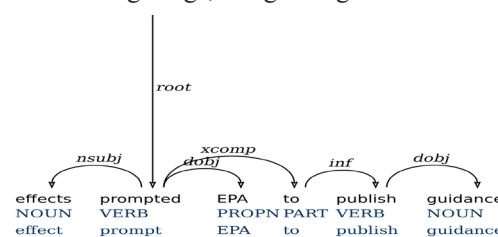


Figure 2 The schema of the core structure of Example 1

By comparing the two schemas in Figure 2 and Figure 3, it is easy to find

that the two sentences are similar in structure. Teachers can guide students to mobilize the grammatical knowledge of their native language for positive transfer, so that students can better master the syntactic structure and knowledge of the target language. Students can also produce more sentences by imitation.

After clarifying the core structure, we now turn to the long subject of this sentence, with its dependency syntactic schema shown in Figure 4.

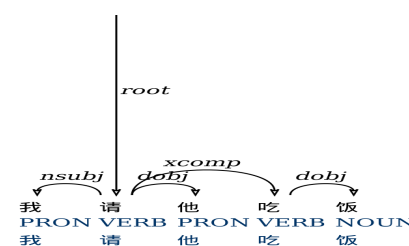


Figure 3 The schema of a Chinese sentence
“我请他吃饭”

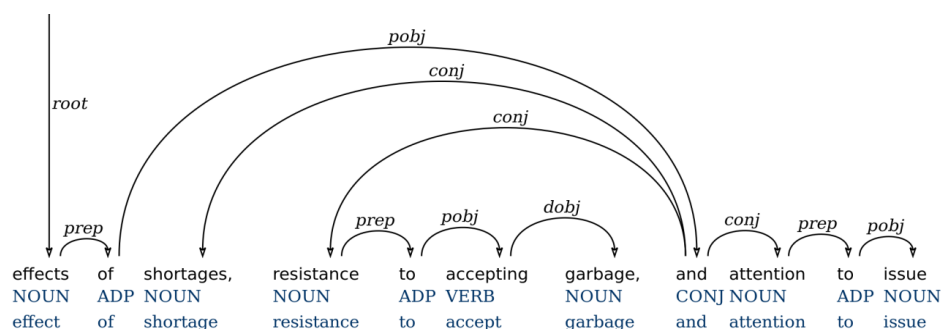


Figure 4 The schema of the subject of Example 1

Figure 4 is a subtree in a larger dependency syntactic tree of Example 1. It is headed by the noun “effects” followed by a prepositional phrase guided by “of”, with three nominal conjuncts connected by the conjunction “and”.

From the example, it is easy to see dependency syntax schemas can be used by teachers to present syntactic structures clearly, from whole to part, from trunk to branch and layer by layer. The method can also be used to test students’ proficiency in syntactic analysis, and help them to carry out syntactic analysis in an autonomous way

In addition, it can also be applied to bilingual or multilingual contexts. Syntactic similarities and differences between languages can be quickly identified by comparing their syntactic schemas. This will contribute to the effective teaching in translation and other related courses.

3.3 Issues and Solutions

The application of dependency syntactic schemas faces two main issues. One is the diversification of analytical methods; the other is the use of syntactic parsers.

As for the first issue, the ways of syntactic analysis embodied in different annotation schemes are mostly similar. The similarity ensures a common basis for syntactic analysis from the perspective of linguistic theory. The minor differences are mainly reflected in the treatment of dummy subjects and coordinations. Teachers can make some adaptations that better fit the pedagogical purposes based on theoretical consensus in linguistics.

The second issue concerns the computer-assisted learning. In addition to purely manual methods, syntactic analysis can also be automated with the help of syntactic parsers. The latest English parsers like Stanford Parser have achieved high accuracy, and can be used as an aid and a reference in grammar teaching after manual check.

4. Conclusion

As the saying goes, “a diagram is worth ten thousand words”. This paper advocates the application of a vivid and clear representation method, the dependency syntactic schema, into the grammar teaching for English majors in China. In the 20th century, dependency syntax was proposed to meet the demands the foreign language teaching. Its application today can be deemed as a return to its original aim. It is expected that the method shed new light on foreign language teaching in China.

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