An Inductive Approach to English Grammar Teaching

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Abstract

This paper introduces an inductive approach to English grammar teaching that can help students to rediscover their subconscious knowledge of English grammar and bring it to consciousness, as the grammar of a language is acquired through abstracting a set of grammatical rules from language data, rather than through imitation (cf. Chomsky, 1986; 1995; 2002). The fundamental ideas behind this inductive approach can be summarized as the following four steps: 1) give students a set of English language data about an area of English grammar; 2) ask students to generalize a grammatical rule from the set of data; 3) ask students to test the grammatical rule against new English language data; and 4) ask students to revise the grammatical rule to accommodate the new data. The significance of this inductive approach lies in the fact that it actively involves students in their English grammar learning process because they have to formulate grammatical rules by themselves and to check, test and revise these rules, rather than to memorize them without understanding why, and that it will reform the traditional way of teaching English grammar by bringing a fresh perspective into this field to develop and enchange students’ English grammar competence and skills.

1. Introduction

English grammar instruction is extremely important, especially for English majors and liberal studies majors. However,
prescriptive and deductive approaches to English grammar teaching (e.g. pattern drills, rule memorization, etc.) have proved ineffective and boring, because the grammar of a language is acquired not through imitation but through abstracting a set of grammatical rules from language data (cf. Chomsky, 1977, 1986, 1995, 2002). This has been evidenced by many studies on child language acquisition (cf. Akmajian & Heny, 1975; Pinker, 1995, 1999; Lightbown & Spada, 2006). Given the fact that our students (native and near-native English speakers and advanced English learners) already have a subconscious knowledge of English grammar which allows them to make judgments about the grammaticality and structure of English sentences, the most important job in teaching them English grammar is perhaps nothing more than to make them aware of this subconscious knowledge of theirs and to convert it into a conscious knowledge. Therefore, the purpose of this article is to introduce an inductive approach to English grammar teaching that will help our students to *rediscover* their subconscious grammar knowledge and bring it to their consciousness, and to show how it is applied in the classroom. The first part of this article addresses the theoretical background of this inductive approach from the perspectives of language, the language speaker and language acquisition. The second part of this article elaborates the basic ideas behind this inductive approach and shows how it works. The third part of this article discusses the application of this inductive approach to the teaching of two areas of English grammar. The final part of this article presents the major advantages of this approach, as compared with both prescriptive and deductive approaches to English grammar teaching.

2. Language Acquisition and Grammar Teaching

According to Chomsky (1972, 1977, 1986, 1995, 2002), the grammar of a natural language is a systematic description of
the linguistic abilities of its native speakers, and these linguistic abilities would enable any native speaker to speak and understand his or her language fluently. Part of these linguistic abilities could be characterized as a native speaker’s intuition or grammatical competence about the sentence well-formedness and sentence structure of his or her mother tongue. That is to say, a native speaker of a natural language is able to tell whether a given sentence in his or her mother tongue is well-formed or not, and whether a given sentence in his or her mother tongue has a particular structure or not. Though a sentence can be well-formed in different senses, we are concerned only with its syntactic well-formedness here. As Chomsky points out in his works, a native speaker’s grammatical judgment not only holds for the sentences that he or she has said or heard before, but also holds for those that he or she has never said or heard before. In other words, a native speaker of a natural language is capable of producing and understanding new sentences and making grammatical judgments about their well-formedness and structures.

This important property of language speakers suggests, as pointed out by Chomsky, that the grammar of a natural language is acquired by its native speakers not through imitation but through abstracting a set of grammatical rules from a certain amount of language data. This set of grammatical rules specifies how sentences are built out of clauses, how clauses are built out of phrases, how phrases are built out of words, and how words are built out of morphemes, etc. Therefore, acquiring the grammar of a natural language involves formulating a finite set of grammatical rules which can generate an infinite number of sentences in that language, as language is rule-governed. This analysis is evidenced and confirmed by many studies on child language acquisition (cf. Akmajian & Heny, 1975; Pinker, 1995, 1999; Lightbown & Spada, 2006).
People may wonder why a native speaker of a natural language may still need to learn its grammar if he or she has already acquired an appropriate set of grammatical rules that would allow him or her to build up well-formed sentences and make correct grammatical judgments. The answer to this question is that the grammatical rules of a natural language are normally acquired by its native speakers subconsciously, and these grammatical rules are internalized and cannot be brought to consciousness without formal grammar training. As Chomsky (1972) points out, “a person who knows a language has mastered a system of rules that assigns sound and meaning in a definite way for an infinite class of sentences ... Of course, the person who knows the language has no consciousness of having mastered these rules or of putting them to use, ...” (pp. 103-104). This statement is strongly supported by the often-observed fact that a native speaker of English without formal grammar training can speak well-formed English sentences and can make grammatical judgments about English sentences, but he or she may not be able to give a conscious explanation of why a given sentence is grammatical or ungrammatical. Even if they could, their so-called conscious explanations are no better than the ones given in (1):

(1) (Situation: A native speaker of English without formal grammar training is asked to check the grammaticality of a given sentence.)

Case A: Why is this sentence ungrammatical?

Typical Answers: Because it doesn’t sound right; 
Because I don’t feel comfortable about it; 
Because that is not the way we speak; 
etc.

Case B: Why is this sentence grammatical?
Typical Answers: Because it sounds fine; 
Because it doesn’t bother me; 
Because that is the way we speak, etc.

Obviously, these answers are not explanations because they do not tell you anything about sentence formation or sentence structure with respect to the (un)grammaticality of the given sentence. You cannot learn anything from those answers, except that the given sentence is grammatical or ungrammatical. It is absolutely not sufficient or adequate if those answers are offered by an English teacher to his or her students. Thus, even a native speaker of English needs formal grammar training though he or she has already acquired a subconscious knowledge of English grammar (cf. Brown, 2000; Rodgers, 2001; Richards & Renandya, 2002).

3. An Inductive Approach to English Grammar Teaching

Given the fact that a native speaker of English has already acquired a subconscious knowledge of English grammar which enables him or her to make grammatical judgments about the well-formedness and structure of English sentences, the most important job in giving him or her formal English grammar training is to help him or her become aware of this subconscious knowledge and to convert it into a conscious knowledge (cf. O’Malley & Pierce, 1996; Gerngross, Puchta & Thornbury, 2007). Now, the question is how to make a native English speaker (or a near-native English speaker, or even an advanced English learner) become aware of this subconscious knowledge and to bring it to consciousness. This question is actually a question on teaching methodology and will lead to the introduction of an inductive approach to English grammar teaching, which is based on the property of language, the language speaker, and language acquisition.
First, let us present the basic ideas behind this inductive approach to English grammar teaching, which can be roughly characterized as the following four steps:

(2) **STEP 1**: Students are given a representative set of sentences about an area of English grammar;

**STEP 2**: Students are asked to generalize a grammatical rule to account for the set of English sentences;

**STEP 3**: Students are asked to check and test the grammatical rule against new sentences about the same area of English grammar;

**STEP 4**: Students are asked to revise the grammatical rule to accommodate the new sentences.

Now, let us use the teaching of the English reflexive pronouns as an example to show how this inductive approach works (cf. Radford, 1988). According to Step 1, students are given a mixed group of grammatical and ungrammatical sentences regarding the use of the English reflexive pronouns, as exemplified by (3):

(3)  
   a. John won’t commit *himself.*  
   b. *Himself* won’t be committed.

According to Step 2, students are asked to produce or generalize a grammatical rule from the group of sentences to account for both its grammatical and ungrammatical sentences. Based on their grammatical judgments about the two sentences in (3), students would formulate a tentative grammatical rule which governs the use of the English reflexive pronouns in the following manner:

(4) A reflexive pronoun does not have independent reference, and must take its reference from an antecedent.
Under this rule, the sentence in (3a) is grammatical because the reflexive pronoun *himself* can take its reference from its antecedent *John*. However, the sentence in (3b) is ungrammatical because the reflexive pronoun *himself* does not have an antecedent to refer back to.

According to Step 3, students are asked to check and test the rule in (4) against new sentences involving the use of the reflexive pronouns, and to find out whether this grammatical rule can apply to new sentences. For example, the sentences in (5) can be used for students to check and test the rule in (4):

(5)  
   a. *John won’t commit *themselves*.  
   b. *John won’t commit *itself*.  
   c. *John won’t commit *myself*.  
   d. *John said that Mary won’t commit *himself*.  

The result of such a check and test shows that the rule in (4) cannot account for the ungrammatical sentences in (5), even though an antecedent is available for the reflexive pronoun in each of them. In other words, based on students’ grammatical judgments about these sentences in (5), *John* cannot serve as an appropriate antecedent for the reflexive pronouns *themselves*, *itself*, *myself* and *himself* respectively: that is, in (5a) *John* does not agree with *themselves* in number; in (5b) *John* does not agree with *itself* in gender; in (5c) *John* does not agree with *myself* in person; and in (5d) *John* and *himself* are not in the same clause. Thus, the inadequateness of the rule in (4) calls for its revision, which will lead us to Step 4.

In order to accommodate these ungrammatical sentences in (5), students are asked to revise the grammatical rule in (4), which may end up as follows:

(6) **A reflexive pronoun does not have independent**
reference, and must take its reference from an antecedent that agrees with the reflexive pronoun in number, gender and person, and that is a clause-mate of the reflexive pronoun.

The revised rule in (6) does not only account for the sentences in (3), but accounts for these ungrammatical sentences in (5) as well. It is not surprising that there might still be counter-examples out there against this revised rule. Thus, students may need to repeat Steps 3 and 4 to check this revised rule against more new sentences involving the use of the reflexive pronouns and further revise it, until they establish a grammatical rule that can accommodate the use of the English reflexive pronouns in all sentences.

The following section will show how this inductive approach can help students to learn and distinguish between three types of determinative elements in the English noun phrase, and how to establish the English coordination rule.

4. The Application of the Inductive Approach

4.1 Three Types of Determinative Elements in the English Noun Phrase

It is well known that in English, nouns can be preceded by a number of determinative elements such as articles, demonstratives, possessives, numerals, quantifiers, etc., as shown by (7):

(7) a. all the books / all my books / all these books
    b. both the books / both my books / both those books
    c. the six books / my six books / these six books
    d. all the six books / all my six books / all these six books
However, the co-occurrence of these determinative elements has to follow a particular order; otherwise, the resulting noun phrase would be ungrammatical, as shown by (8):

(8)  
a. *the all books / *my all books / *these all books  
b. *the both books / *my both books / *those both books  
c. *six the books / *six my books / *six these books  
d. *all six the books / *the all six books / *the six all books  
   *six all the books / *six the all books  
e. *all six my books / *my all six books / *my six all books  
   *six all my books / *six my all books

According to Quirk, Greenbaum, Leech, and Svartvik (1985), the determinative items preceding a noun can be divided into three categories: predeterminer, determiner, and postdeterminer. The order between them is that predeterminer precedes both determiner and postdeterminer, and determiner comes before postdeterminer. In order to help students to identify and distinguish between the three types of determinative elements and to use them correctly, we can make use of this inductive approach to English grammar teaching in the following way:

**STEP 1:** Give students a representative group of English noun phrases that contain the three types of determinative elements, as exemplified by (9):

(9)  
a. all the five books   b. *all five the books  
c. *the all five books   d. *the five all books  
e. *five all the books   f. *five the all books

**STEP 2:** Ask students to refer to their grammatical judgments to identify the three types of determinative elements out of the English noun phrases in (9).
According to students’ grammatical judgments, only the noun phrase in (9a) is grammatical, and the noun phrases in (9b-f) are not grammatical. Thus, the quantifier all must be a predeterminer, the definite article the must be a determiner, and the cardinal numeral five must be a postdeterminer. This will help students to set up a tentative classification of English determinative elements, like the one in (10):

(10) a. PREDETERMINER: all
    b. DETERMINER: definite article
    c. POSTDETERMINER: cardinal numeral

**STEP 3:** Ask students to use the classification in (10) to identify other determinative elements out of new English noun phrases, as exemplified by (11):

(11) a. all my fingers / *my all fingers
    all these houses / *these all houses

b. both the students / *the both students
    both my eyes / *my both eyes
    both these cars / *these both cars

c. my six children / *six my children
    these six tables / *six these tables

d. the first exam / *first the exam
    my first car / *first my car

Based on students’ grammatical judgments about the noun phrases in (11), the classification of English determinative elements in (10) can be expanded to include possessives, demonstratives, ordinal numerals and the quantifier both, as shown by (12):
(12) a. PREDETERMINER: *all, both
b. DETERMINER: definite article, possessive, demonstrative
c. POSTDETERMINER: cardinal numeral, ordinal numeral

**STEP 4:** Ask students to apply the classification of determinative elements in (12) to more new English noun phrases to identify more determinative elements:

(13) a. *half my income / my half income
   *half the furniture / the half furniture
   *half those fish / those half fish

   b. *double the money / the double money
      *twice my salary / my twice salary

   c. *one-third the income / the one-third income

   d. the last opportunity / last the opportunity
      *a last chance / last a chance
      *the next meeting / next the meeting

The students’ grammatical judgments will help them again to expand the classification of determinative elements in (12) to include half, multipliers, fractions, general ordinals, and the indefinite article *a(n)*, as shown by (14):

(14) a. PREDETERMINER: *all, both, half, multiplier, fraction
b. DETERMINER: definite article, indefinite article, possessive, demonstrative
c. POSTDETERMINER: cardinal numeral, ordinal numeral, general ordinal
Obviously, the classification list in (14) is not an exhaustive one, and it may not include all determinative elements in English. But if students check and test this list against more and more English noun phrases with determinative elements, they will eventually build a list of all predeterminers, determiners and postdeterminers in English.

4.2 The Coordination Rule

In English there is a group of coordinating conjunctions whose job is to conjoin words, phrases and clauses. The most-frequently used coordinating conjunctions are and, or, and but, as shown by (15), (16), and (17):

(15) WORD COORDINATION:
   a. I met your brother and sister.
   b. He speaks quickly but thoughtfully.
   c. You may stand or sit.

(16) PHRASE COORDINATION:
   a. John has a car and a boat.
   b. Tom did not go to the movies but stayed at home.
   c. Have you left your key on the table or in the drawer?

(17) CLAUSE COORDINATION:
   a. I washed the dishes and I dried them.
   b. Ted came here yesterday but he won't be here tomorrow.
   c. I may see you tomorrow or I may call you tonight.

However, it is not true that any random words or phrases in English can be conjoined by a coordinating conjunction, as shown by the ungrammatical, unnatural, or unidiomatic sentences in (18) through (22):
WORD COORDINATION:

(18) a. *We made him comfortable and chairman.
    b. *We made him chairman and comfortable.
    (Compare: We made him chairman.
            We made him comfortable.)

(19) a. *John is here or nice.
    b. *John is nice or here.
    (Compare: John is here. / John is nice.)

PHRASE COORDINATION:

(20) a. *I wrote to Mary and a postcard.
    b. *I wrote a postcard and to Mary.
    (Compare: I wrote to Mary. / I wrote a postcard.)

(21) a. *Ted has become a teacher and very tall.
    b. *Ted has become very tall and a teacher.
    (Compare: Ted has become a teacher.
            Ted has become very tall.)

(22) a. *Mary likes to relax and classical music.
    b. *Mary likes classical music and to relax.
    (Compare: Mary likes to relax.
            Mary likes classical music.)

The grammaticality of the sentences in (15), (16) and (17) signifies that we can conjoin quite freely two nouns, two adverbs, two verbs, two noun phrases, two verb phrases, two prepositional phrases, and two clauses. However, the ungrammaticality of the sentences in (18) through (22) shows that if we conjoin an adjective and a noun, or an adverb and an adjective, or a prepositional phrase and a noun phrase, or a noun phrase and an adjective phrase, or a verb phrase and a
noun phrase, we will create an ungrammatical sentence or an
unnatural, unidiomatic or ‘forced’ sentence which may only be
used for humor. Thus, this fact strongly argues for the existence
of a coordination rule in English. Now, let us see how this
inductive approach can help students to ‘rediscover’ this
coordination rule and bring it to consciousness:

**STEP 1:** Give students a representative set of English sentences
that involve word coordination and phrase coordination, as exemplified by (23) and (24):

(23)  
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<td>a. Good politicians <strong>and</strong> philosophers are rare. <em>(N and N)</em></td>
<td>b. She is a <strong>rich but</strong> considerate person. <em>(A but A)</em></td>
<td>c. You can argue <strong>for or against</strong> this claim. <em>(P or P)</em></td>
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<td>d. John talks <strong>and walks</strong> like a boss. <em>(V and V)</em></td>
<td>e. You can take <strong>these or those</strong> books. <em>(D or D)</em></td>
<td>f. He shut the door <strong>slowly but forcefully.</strong> <em>(ADV but ADV)</em></td>
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<td>g. The lady <strong>and her son</strong> are very nice. <em>(NP and NP)</em></td>
<td>h. He is a <strong>very shy but rather honest</strong> man. <em>(AP but AP)</em></td>
<td>i. Jane will fly <strong>to New York or to Boston.</strong> <em>(PP or PP)</em></td>
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<td>j. Ted <strong>came to New York and visited his son.</strong> <em>(VP and VP)</em></td>
<td>k. He talks <strong>very slowly and very freely.</strong> <em>(ADVP and ADVP)</em></td>
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(24)  
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<td>a. <em>The or Russian</em>* books are on sale. <em>(D or A)</em></td>
<td>b. *We made him comfortable and chairman. <em>(A and N)</em></td>
<td>c. *John is here and kind. <em>(ADV and A)</em></td>
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<tr>
<td>d. *I wrote to Mary and a letter. <em>(PP and NP)</em></td>
<td>e. *Ted has become a student but very tall. <em>(NP but AP)</em></td>
<td>f. *Mary likes to relax and classical music. <em>(VP and NP)</em></td>
</tr>
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</table>

**STEP 2:** Ask students to generalize a grammatical rule from
the sentences in (23) and (24) to account for both the
word coordination and phrase coordination facts.
Based on students’ grammatical judgments about the sentences in both (23) and (24), a tentative rule of coordination in English could be established in the following manner:

(25) **Only identical lexical categories or phrasal categories can be conjoined grammatically and idiomatically.**

**STEP 3:** Ask students to check and test the tentative coordination rule given in (25) against new sentences involving word coordination or phrase coordination, as exemplified by (26) (cf. Radford, 1988):

(26) a. *Robin rang up his father and up his brother.*
   b. *Could you turn off the fire or off the light?*
   c. *A nuclear explosion would wipe out plant life and out animal life.*
   d. *Bill ran down the President and down the road.*

The result of such a check and test shows that the coordination rule in (25) may not be able to account for the ungrammatical sentences in (26), even if the two conjoined items in each of these sentences appear to be identical: that is, they might be both prepositional phrases. However, if we take a close and careful look at the two apparent prepositional phrases in each of these sentences in (26), it will turn out that the first of the two conjoined items is not a real prepositional phrase. That is to say, *up* in (26a) forms a phrasal verb with *rang*; *off* in (26b) forms a phrasal verb with *turn*; *out* in (26c) forms a phrasal verb with *wipe*; and the first *down* in (26d) forms a phrasal verb with *ran*. These phrasal verbs have specific meanings of their own, and their component words cannot be separated from each other (that is, *ring up* means “call someone by phone”; *turn off* means “stop the flow of gas, electricity, liquid, etc.”; *wipe out* means “destroy completely”; and *run down* means “say unkind things about someone; pursue and overtake someone”). In
other words, *up his father, off the fire, out plant life and down the President* in (26a-d) are not constituents, so that they cannot be conjoined with constituents such as the prepositional phrase *down the road* in (26d). Neither can they be conjoined with *up his brother, off the light, and out animal life* in (26a-c), which are not constituents either. Thus, the inadequateness of the coordination rule in (25) calls for its revision, which will lead us to Step 4:

**STEP 4:** Ask students to revise the tentative coordination rule in (25) to accommodate the new sentences involving coordination, as shown by (26).

In order to account for the ungrammatical sentences in (26), the coordination rule in (25) needs to be revised in the following way:

(27) **Only constituents of identical categories can be conjoined grammatically and idiomatically.**

Under this revised rule, not only the grammatical sentences in (23) and the ungrammatical sentences in (24) can be accounted for, but the ungrammatical sentences in (26) can be explained as well. We may need to check and test this revised rule against more new sentences involving other conjoined words and phrases, until we eventually establish an adequate coordination rule to account for all the coordination facts in English.

5. **Conclusion**

Compared with prescriptive and deductive approaches to English grammar teaching, the major advantages of this inductive approach to English grammar teaching can be summarized as follows:
A. This inductive approach is based on English native speakers’ (or near-native English speakers’, or even advanced English learners’) subconscious knowledge of English grammar and makes use of their grammatical judgments about the sentence well-formedness and sentence structure to “rediscover” and establish a set of conscious grammatical rules that underlie their grammatical competence.

B. This inductive approach actively involves students in their grammar learning process, because they have to formulate grammatical rules by themselves and to check, test and revise these rules, rather than to receive them passively from their teachers without understanding the reasons behind them.

C. This inductive approach helps students to understand and establish the English grammatical rule system in a way that is simple, logical, and also consistent with their intuition or grammatical judgments about the sentence well-formedness and sentence structure.

References


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