TRANSFORMATIONAL-GENERATIVE SYNTAX AND THE TEACHING OF SENTENCE MECHANICS

Of the various skills needed in writing, the skill to detect and eliminate certain mechanical errors—run-ons, comma splices, unintentional sentence fragments, lack of subject-verb agreement—would seem one of the easiest to master. After all, such errors deal not with paragraphs or whole essays but with individual sentences. Further, as the often-used designation "sentence mechanics" suggests, such errors deal with "mechanics," something machinelike, automatic. Yet, teachers of writing all too often encounter native writers, both basic and nonbasic, who progress in the higher-level writing skills (e.g., invention and organization) but still write with runons, comma splices, fragments, and lack of subjectverb agreement. Indeed, the mechanical errors occur with such frequency that teachers begin to question not just their teaching methods but the linguistic competence of their students. Where exactly does the fault lie? More importantly, given that most students have had little or no formal training in traditional or modern grammar, what can be done to eliminate such persistent errors? This essay, written from the perspective of transformational-generative linguistics, suggests that these errors persist not because of the lack of language ability in students but because of the instructor's lack in exploiting that ability.

Basic writing instructors know that writing exhibiting run-on sentences, comma splices, unintentional sentence fragments, and errors in subject-verb agreement invites strongly negative linguistic and social

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criticism. Many in society, often in positions of power, view such mechanical errors as signs of illiteracy, if not mental incompetence. Given the constraints of the reader-writer relationship and the difference between writing and speech, instructors will have more success changing the habits of the offending writers rather than the habits of a censorious public. Yet, eliminating mechanical errors has proved a formidable task for both students and teachers of writing. Although the traditional handbooks offer "rules" to aid in the correction of these errors, the rules are in actual practice difficult to apply, especially if students have had little or no formal study of grammar. For example, traditional handbooks instruct students to make the verb of a sentence agree in number with its subject. But, this seemingly simple and straightforward rule is impossible to apply if students do not know what the term "subject" means or how to locate a subject in an actual sentence. Another seemingly accessible handbook rule states that a fragment is not a sentence and, hence, cannot be punctuated as one. For students to understand and apply this rule, however, they must first understand what is meant by "sentence"; but to understand what is meant by a sentence, they must understand what an independent clause is, and to understand the latter, they must understand what a subject and verb are.

For writing instructors, the path proves equally tortuous. To help students eliminate, for example, sentence fragments, instructors might try explaining the concept of fragment. But to do so inevitably leads to the concept of sentence, which, in turn, leads to the concepts of independent clause, subject, and verb. As most writing teachers can attest, the same tortuous route applies in explaining the concepts of run-on sentences and comma splices. The crux of the problem is obvious: much of conventional instruction to correct run-on sentences, comma splices, sentence fragments, and errors in subject-verb agreement makes reference not merely to opaque grammatical terms but, worse still, to opaque grammatical terms which interlink in their definitions with other equally opaque grammatical terms.

To help students correct sentence mechanics, writing instructors need a method which eliminates the dovetailing of grammatical concepts, one which enables students to identify the relevant grammatical categories *independently* of other grammatical categories. The standard, or classical, model of transformational-generative grammar can serve as a significant pedagogical aid here. The model posits two levels of representation for sentences, an abstract deep structure of meaning relationships and a concrete surface structure of realized sentences. The surface structure is derived from the deep structure by a set of rules, or transformations. As I will demonstrate shortly, it is the transformational part which proves useful in the correcting of sentence mechanics. What makes the transformational part particularly useful is that transformational rules are sensitive to various syntactic categories.

Take, for example, the rule of Tag-Formation, which relates the a and the b sentences in each pair of sentences below:

- la. John can swim.
 - b. John can swim, can't he?
- 2a. The neighbors will be moving to Los Angeles.
 - b. The neighbors will be moving to Los Angeles, won't they?
- 3 a . The car with the mag wheels and the tinted windows has been washed.
 - b. The car with the mag wheels and the tinted windows has been washed, hasn't it?
- 4a. Betty studied her chemistry last night.
 - b. Betty studied her chemistry last night, didn't she?

If given only the a sentences above, native speakers of English can easily transform them into the corresponding b sentences—that is, into the tagquestions. Writing instructors can readily demonstrate this both to themselves and to their students by reading the a sentences in class and having their students orally produce the corresponding tag-questions.

But how is it possible that native speakers of English can perform such transformations so effortlessly? Specially, how do native speakers create the "tags" (e.g., the can't he, won't they, hasn't it, didn't she) at the ends of the original declarative sentences and thereby convert the declarative sentences into tag-questions? Native speakers certainly have not memorized the corresponding tag-question for each declarative sentence. Rather, they have internalized a rule, here the rule of Tag-Formation, which enables them to transform each declarative sentence into the corresponding tag-question. While linguists have formulated Tag-Formation in different ways, most agree that the rule essentially copies certain constituents of a sentence to create the tag at the end. The grammatical elements which get copied are the first auxiliary verb (if none occurs, a form of do is added instead), the verb tense, the negative not in contracted form (if the sentence is positive), and the subject noun phrase in pronominal form. Although Tag-Formation is a complex rule involving several operations, all native speakers of English have an implicit knowledge of the rule; otherwise they would be unable in daily life to transform the a sentences in 1-4 into their corresponding tagquestions. This fact is highly important, for if native speakers already know the rule of Tag-Formation (although they may not be able to state it explicitly in the manner linguists do), instructors do not have to teach the rule. After all, instructors cannot teach students what they already know. A second and more important point follows: if native speakers of English already know the rule of Tag-Formation, they must also know the syntactic categories involved in the rule; that is, native speakers of English, whatever their formal background in grammar, already have an underlying knowledge of such syntactic categories as sentence, auxiliary verb, tense, negative, and (subject) noun phrase. (How else could they correctly identify and copy these elements in the tag?) Stated in a somewhat different way, even though students may lack the ability to assign traditional labels to certain syntactic categories, they nevertheless unconsciously know what they are. It is precisely this unconscious knowledge of syntactic categories that writing instructors should exploit in the teaching and correcting of sentence mechanics.

Yet, just how can instructors exploit this underlying knowledge of syntactic categories? The correction of sentence fragments can serve as an illustration. To understand the notion of sentence fragment, students need to make use of the concept of sentence (i.e., a sentence fragment is only a "part" of a sentence). But herein lies a pedagogical problem. How can writing instructors introduce the concepts of sentence without also invoking such dovetailing concepts as independent clause, subject, and predicate? The solution is to bypass these latter concepts and to exploit directly the student's implicit underlying knowledge of the syntactic category "sentence." That students already have an intuitive knowledge of what constitutes a sentence is clearly evident in their ability to use the Tag-Formation rule to transform any declarative sentence e.g., the a sentences in 1-4 above—into its corresponding tag-question. Put in a slightly different way, Tag-Formation operates on only declarative (and imperative) sentences, not fragments. If this is so, the rule will operate on sentences such as 1a, 2a, 3a, and 4a but not on sequences such as:

- 5. Although John will stay home.
- 6. Whatever was bothering the neighbors.
- 7. Who saw that she had been trying.
- 8. Waiting for the show to begin.

As suggested earlier, if students are asked to transform sentences like 1a, 2a, 3a, and 4a into their corresponding tag-questions, they can easily perform the transformation; however, with sequences like 5-8, they will find the task impossible since Tag-Formation works only for declarative (and imperative) sentences, not fragments. Put in the most simplistic terms, if a sequence of words can be transformed into a proper tag-question, it is a sentence; if not, it's a fragment. Worth emphasizing here is that students do not need to know how to formulate the Tag-Formation rule to realize this fact; neither is it necessary for instructors to introduce transformational-generative linguistics as background. Yet, if instructors can get students to recognize the simple fact that tagquestions cannot be formed from fragments, then students will have an easily and always available means of testing for fragments—and without first having to undergo time-consuming and often confusing formal instruction in what constitutes a sentence, independent clause, subject, predicate, and so on.

The Tag-Formation rule can also help identify and correct run-on sentences and comma splices. This is so because, as suggested above, the Tag-Formation rule differentiates between two general types of word sequences: a sentence and a nonsentence. Technically speaking, neither a run-on nor a common splice is a bona fide sentence since each consists of two or more sentences incorrectly joined as one sentence. The value of the Tag-Formation rule is that it can be utilized to determine the

"sentencehood" of the whole sequence (i.e., the run-on or comma splice) and its parts. For purposes of demonstration, instructors might ask their students to write the proper tag-questions for such sequences as the comma splice in 9 below, and the run-on in 10:

- 9. Jerry decided to become an accountant, Susan became a doctor.
- 10. The guard made his nightly rounds all seemed in order.

With sequences like 9 and 10, students either will be unable to produce a proper tag-question (in which case they will have strong evidence that the sequences are nonsentences), or they will produce the following sequences:

- 11. Jerry decided to become an accountant, Susan became a doctor, didn't she?
- 12. The guard made his nightly rounds all seemed in order, didn't it? If asked to read sequences II and I2 aloud, however, most students will find them unnatural as individual sentences because one part sounds like a question and the remaining part does not. If requested to do so, most students can also separate the question part from the nonquestion part (it's generally easier to separate two unlikes than two likes). The separation point, of course, is the point where the run-on or comma splice actually occurs. Ignoring punctuation and capitalization, sequences II and I2 will thus divide into two parts:
 - 13. Jerry decided to become an accountant // Susan became a doctor, didn't she?
- 14. The guard made his nightly rounds // all seemed in order, didn't it? To demonstrate further that run-ons and comma splices incorrectly join sentences, instructors should ask students to form a tag-question from the remaining part (i.e., the first, or nonquestion, part) of 13 and 14. Again, most students will be able to do so because this part, like the second part, is also a sentence.

The ability to use the Tag-Formation rule as a testing device can, of course, be highly valuable in the actual correction of run-ons and commas splices. Logically, the detection of run-ons and comma splices is necessarily prior to correction. The advantage of using the method outlined above is that if students are instructed not to join sentences with merely commas or no punctuation at all, they can use the Tag-Formation rule to identify just what parts of suspect sequences are individual sentences and then insert the correct form of punctuation. If the lack of a semicolon is the mechanical error, an added boon is that the method can be used to demonstrate (or verify) that a semicolon, in its primary function, should join sentences, not fragments.

Lastly, the use of underlying syntactic knowledge can help identify and correct errors in subject-verb agreement. With errors in subject-verb agreement, the primary source of error lies in locating the subject of the sentence—that is, the noun phrase (more specifically, the noun) constituent with which the verb agrees in number. To simplify matters here, I exclude from discussion collective noun phrases; noun phrases following the expletive, *there*; and compound noun phrases joined by *or*; all

of which require special rules. I make these exclusions in order to focus on the more general type of error, namely, errors dealing with the simple misidentification of the subject. This kind of error usually occurs because some phrase (e.g., prepositional phrase, participial phrase) or some subordinate clause intervenes between the main clause subject and its verb. The following sentences (where the symbol * designates an ungrammatical sentence) exemplify this type of error:

- *The use of electronic security devices have increased in the last decade.
- 16. *The company which operated several branch offices in New York, Chicago, and Los Angeles were going bankrupt.

In the two sentences above, the sources of the agreement errors are the intervening prepositional phrase (i.e., of electronic security devices) in 15 and the intervening relative clause (i.e., which operated several branch offices in New York, Chicago, and Los Angeles) in 16.

Conventional instruction to eliminate agreement errors such as those in 15 and 16 is, however, fraught with difficulty. To help eliminate subject-verb agreement errors caused by intervening constructions, writing instructors might, for example, try explaining that prepositional phrases, or more accurately, objects of prepositions, can never serve as subjects of sentences; however, this leaves the onerous task of explaining just what constitutes a prepositional phrase or an object of a preposition, and, inescapably, what constitutes a preposition (not to mention what constitutes a subject). If instructors attempt to explain that relative clauses, or more specifically, noun phrases in relative clauses, also cannot serve as subjects of main clauses, an even greater store of proliferating categories lies on the horizon (e.g., main clause, dependent clause, relative pronoun, subject, verb, noun phrase).

To break the chain of interlinking categories, writing instructors can again make use of the implicit syntactic knowledge of their students. Since the Tag-Formation rule makes reference to the notion of subject (i.e., it's the subject which gets copied in pronominal form in the tag), the rule would seem to provide an effective means of identifying subjects of sentences. All one needs to do to locate the subject of a sentence is to form the derivative tag-question, locate the pronoun (or simply, the last word) in the tag, and determine which word in the sentence the pronoun refers to (i.e., "stands for"). However, a discomforting problem may arise here. In sentences like 15 and 16 above, the Tag-Formation rule will not always work in identifying subjects for all students. For example, given the grammatical declarative sentences 17a and 18a below, students will produce the corresponding grammatical tag-questions 17b and 18b:

- 17a. The use of electronic security devices has increased in the last decade
 - b. The use of electronic security devices has increased in the last decade, hasn't it?

- 18a. The company which operated several branch offices in New York, Chicago, and Los Angeles was going bankrupt.
 - b. The company which operated several branch offices in New York, Chicago, and Los Angeles was going bankrupt, wasn't it?

However, if students begin unwittingly with the *un*grammatical sentences 15 and 16, which I will repeat as 19a and 20a below, they are likely to produce unwittingly the ungrammatical tag-questions 19b and 20b:

- 19a. *The use of electronic security devices have increased in the last decade.
 - b. *The use of electronic security devices have increased in the last decade, haven't they?
- 20a. *The company which operated several branch offices in New York, Chicago, and Los Angeles were going bankrupt.
 - b. *The company which operated several branch offices in New York, Chicago, and Los Angeles were going bankrupt, weren't they?

In 19b, the pronoun they in the tag substitutes not for the subject use but incorrectly for devices (the object of the preposition of); in 20b, the pronoun they substitutes not for the subject company but apparently either for offices (the direct object of the relative clause) or for New York, Chicago, and Los Angeles (the compound objects of the preposition in).

The errors in forming the correct tag-question in 19 and 20 raise at least two important questions. First, do such errors mean that students do not really know how the Tag-Formation rule operates and, more specifically, do not know what the subjects of sentences are? The answer in both cases is no. Because of the greater length and complexity of declarative sentences 19a and, particularly, 20a, many writers—including sophisticated ones—will fall prey to errors in linguistic performance (not linguistic competence), more specifically, to limits of short-term memory. Producing the correct pronoun in the tag of a tag-question requires, among other things, holding the subject of the sentence in memory until the end of the sentence, a task which becomes more difficult as other constructions, particularly other noun phrases, increase the distance between the subject and the tag. (Instructors of writing can demonstrate to themselves and to their students that the underlying knowledge of subjects is still there with 19a and 20a by deleting the intervening constructions, changing the verbs have increased and were going to increased and went, respectively, and then having the students form the tagquestions.)

The second question is more pedagogical. If Tag-Formation does not always work in identifying subjects, particularly in long and complex sentences, is there some other means that writing instructors can use as a backup—or as an initial resource—to help students identify subjects? For example, let us say that a student has unwittingly produced the ungrammatical tag question in 19b and insists that devices is the subject of the sentence since that is what the they in the tag refers to. An instructor who recognizes that 19a and 19b are ungrammatical versions

of 17a and 17b, respectively, would insist just as strongly that the subject is use, not devices, since use is what it in the grammatical tag-question 17b refers to. Because the instructor and student apply the Tag-Formation rule to different declarative sentences—the student to 19a and the instructor to 17a—they end with different results. Is there any way to resolve the issue?

Fortunately, in such situations, instructors and their students can use as a resource another question formation rule of transformational-generative linguistics, namely, the Yes-No Question rule. This transformational rule, known implicitly by all native speakers of English, transforms declarative sentences to questions of the following form:

- 21a. The gambler could have lost all of his money already.
 - b. Could the gambler have lost all of his money already?
- 22a. The witness whom the police believe was threatened refuses to testify.
 - b. Does the witness whom the police believe was threatened refuse to testify?
- 23a. Yesterday afternoon, Martha bought a new stereo.
 - b. Yesterday afternoon, did Martha buy a new stereo?
- 24a. My friends from Canada, Joseph and Sandy, have been thinking about moving to Florida.
 - b. Have my friends from Canada, Joseph and Sandy, been thinking about moving to Florida?
- 25a. Although having a bad cold, the child is planning to go to the party.
 - b. Although having a bad cold, is the child planning to go to the party?

As evidenced from the illustrative sentences above, the Yes-No Question rule moves the first auxiliary verb (if there is one) and verb tense of the main clause to the immediate left of the subject noun phrase. If no auxiliary verb occurs in the main clause, as in 22a and 23a, another transformational rule known as Do-Support inserts a do form to take the place of the "missing" auxiliary verb. Again, neither the Yes-No Question rule nor the Do-Support rule need be taught formally in the classroom since all native speakers of English not only know these rules already but constantly use them in daily speech to produce grammatical yes-no questions.

What is significant about the Yes-No Question rule for the problem at hand is that it specifically makes reference to the subject noun phrase of a sentence. This means that students can use the Yes-No Question rule as another means to identify subjects. Specifically, after the application of the Yes-No Question rule (and, if necessary, the Do-Support rule) to a declarative sentence, the subject of a sentence will be that noun phrase which occurs to the *immediate right* of the auxiliary verb (or the inserted do form if no auxiliary verb occurs). Given that it is the auxiliary verb that always undergoes the movement (and not the subject), the location of the subject can be stated in a somewhat unorthodox yet simpler fashion: the (simple) subject of a sentence is the noun (i.e., "person, place, or

thing") which stands to the nearest right of the word that has moved (or the nearest right of the do form if it has been inserted). Thus, in sentences 21-25, the subject nouns (of the main clauses) are, respectively, gambler, witness, Martha, friends, and child.

While identifying subjects with the Yes-No Question rule does have the disadvantage of instructors having to explain what a noun phrase or a noun is, the rule has some clear benefits. For one, the use of the rule can resolve the problem encountered earlier in determining the actual subject of the sentences in 17 and 19 and other similar sentences. If students transform the declarative sentences in 17a and 19a not into tag-questions but into yes-no questions, the resulting questions would be, respectively:

- 26. Has the use of electronic devices increased in the last decade?
- 27.*Have the use of electronic devices increased in the last decade? Disregarding for the moment the ungrammaticality of 27, the application of the Yes-No Question rule here shows clearly that use and not devices is the actual subject of the sentence since use is the noun which

devices is the actual subject of the sentence since use is the noun which stands to the nearest right of the moved auxiliary verb have. Transforming more complex sentences such as 18a and 20a results, respectively, in the following yes-no questions:

- 28. Was the company which operated several branch offices in New York, Chicago, and Los Angeles going bankrupt?
- 29. *Were the company which operated several branch offices in New York, Chicago, and Los Angeles going bankrupt?

Here (again ignoring ungrammaticality), the application of the Yes-No Question rule shows that *company* is the subject, not *offices* nor the compound noun phrase *New York*, *Chicago*, *and Los Angeles*.

The Yes-No Question rule, however, provides a still greater benefit with respect to resolving the subject-verb agreement problem. Because the Yes-No Question rule places the verb which carries number agreement and the subject back to back, students can perceive more clearly if indeed the verb and its subject agree in number. Put in another way, because the Yes-No Question rule can radically shorten the distance between the subject and the number-carrying verb, students are less prone to performance errors, such as lapses in short-term memory. Thus, if given sentences 27 and 29, especially in contrast to sentences 26 and 28, students will more clearly see not only the ungrammaticality of sentences 27 and 29 but also the reason why. Again, none of this requires students to have prior schooling in grammar.

As with any method employed to attack persistent mechanical errors, the method of exploiting underlying syntactic knowledge has some drawbacks. It may not work in all cases in all dialects, and, obviously, it will not work for nonnative speakers of English, or at least, nonnative speakers with a weak command of the language. The method, however, does have some decided advantages. It works for most standard speakers of English; it requires no formal training in traditional or transformational-generative grammar (all an instructor needs are sample

sentences and fragments for demonstration purposes); it can be employed from the elementary school level to the college level; it can be used both in a classroom setting and in individual tutoring sessions (it can be taught very easily to student tutors); it can be expanded to include other matters of sentence mechanics (e.g., explaining and applying punctuation rules which make reference to independent and dependent clauses). Lastly, and perhaps most important at least for basic writers, the method develops not only self-reliance but also self-confidence because it emphasizes what students already know rather than what they do not. The method is, in other words, intuitive rather than theoretical. Indeed, if anything, the method brings to the surface the immense, often untapped (and often unappreciated), store of linguistic knowledge that students bring to the classroom everyday.

Notes

¹By the "standard" or "classical" model of transformationalgenerative grammar, I mean that model of language presented by Chomsky in Aspects of the Theory of Syntax. Those wishing a cogent history of the development and reception of transformational-generative linguistics in the United States can consult the two books by Newmeyer listed in the bibliography.

²For a classical version, see, for example, the formulation in Akmajian and Heny 1-11, 202-18. Further discussion and other treatments of Tag-Formation appear in Arbini; Huddleston; Cattel; and Culicover

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³I use the term "simplistic" deliberately here, for some notable exceptions do occur. For example, from the fragment "A nice day," we can derive "A nice day, isn't it?" However, instructors can utilize such examples to reinforce the idea that all tag-questions derive from underlying declarative sentences and not parts of them. By undoing the effects of Tag-Formation and other transformational rules (e.g., deleting the -n't and putting the copied elements of the tag back into their original positions), instructors can demonstrate that "A nice day, isn't it?" actually derives from "It is a nice day" (the underlying declarative sentence) and not from "A nice day" (a part of the underlying declarative sentence). The derivation of "A nice day, isn't it?" proceeds thus: "It is a nice day" (underlying declarative sentence) to "It is a nice day, isn't it?" (derived sentence after the Tag-Formation rule has applied) to "A nice day, isn't it?" (derived sentence after another rule has deleted it and is in the main clause). This derivation, incidentally, reveals an exception to the simplified description of the Tag-Formation rule given in the text. Tag-Formation also copies forms of the main verb be in the tag if these be forms have no accompanying first auxiliary verb (e.g., "Bill is happy, isn't he?" vs. "Bill could be happy, couldn't he?"). Another notable exception involves sentences like "I believe (that) John will go to Las Vegas," where the appropriate tag-question seems to be "I believe (that) John will go to Las Vegas, won't he?" rather than the expected "I believe (that) John will go to Las Vegas, don't I?" Yet, the fact that we can still derive an acceptable tag-question by copying elements from within the original

sentence suggests that, if not the whole sentence, at least the embedded clause (i.e., John will go to Las Vegas) is a sentence and not a fragment. Of interest here is that constructions like "I believe that...." (with that being unstressed) can serve as another test of "sentencehood" since only sentences (and not fragments) can be immediately embedded after them. To demonstrate this, the instructor might ask that students try to embed fragments like 5-8 immediately after "I believe that...." (Discerning readers may notice that the sequence "A nice day" cannot occur in this slot—hence, it is a fragment.) For a pragmatic explanation of why sentences containing cognition verbs (e.g., believe, suppose, guess) followed by an embedded clause behave differently in the formation of tagquestions, see Lakoff.

⁴As an added attraction, the Yes-No Question rule can be used to test for fragments, run-ons, and comma splices in the same way that the Tag-Formation rule can. This is so because the Yes-No Question rule, like the Tag-Formation rule, applies successfully only on bona fide sentences, not fragments, run-ons, or comma splices. Indeed, in many cases, the Yes-No Question rule may be an easier and more effective rule to use. I invite the reader to test these claims not only with the demonstration data given for the Tag-Formation rule but also with other word sequences in English. When teaching students how to test for fragments with the Yes-No Question rule, instructors should make clear that no new words may be added to suspect sequences except, if necessary, some form of do (i.e., do, does, or did).

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