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# GRAMMAR

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## Grammar, Grammars, and the Teaching of Grammar

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*Patrick Hartwell*

For me the grammar issue was settled at least twenty years ago with the conclusion offered by Richard Braddock, Richard Lloyd-Jones, and Lowell Schoer in 1963.

In view of the widespread agreement of research studies based upon many types of students and teachers, the conclusion can be stated in strong and unqualified terms: the teaching of formal grammar has a negligible or, because it usually displaces some instruction and practice in composition, even a harmful effect on improvement in writing.<sup>1</sup>

Indeed, I would agree with Janet Emig that the grammar issue is a prime example of “magical thinking”: the assumption that students will learn only what we teach and only because we teach.<sup>2</sup>

But the grammar issue, as we will see, is a complicated one. And, perhaps surprisingly, it remains controversial, with the regular appearance of papers defending the teaching of formal grammar or attacking it.<sup>3</sup> Thus Janice Neuleib, writing on “The Relation of Formal Grammar to Composition” in *College Composition and Communication* (23 [1977], 247–50), is tempted “to sputter on paper” at reading the quotation above (p. 248), and Martha Kolln, writing in the same journal three years later (“Closing the Books on Alchemy,” *CCC*, 32 [1981], 139–51), labels people like me “alchemists” for our perverse beliefs. Neuleib reviews five experimental studies, most of them concluding that formal grammar instruction has no effect on the quality of students’

*From Patrick Hartwell, “Grammar, Grammars, and the Teaching of Grammar,” College English 47 (Feb. 1985):105–27. Copyright © 1985 by the National Council of Teachers of English. Reprinted by permission of the publisher and the author.*

writing nor on their ability to avoid error. Yet she renders in effect a Scots verdict of “Not proven” and calls for more research on the issue. Similarly, Kolln reviews six experimental studies that arrive at similar conclusions, only one of them overlapping with the studies cited by Neuleib. She calls for more careful definition of the word *grammar*—her definition being “the internalized system that native speakers of a language share” (p. 140)—and she concludes with a stirring call to place grammar instruction at the center of the composition curriculum: “our goal should be to help students understand the system they know unconsciously as native speakers, to teach them the necessary categories and labels that will enable them to think about and talk about their language” (p. 150). Certainly our textbooks and our pedagogies—though they vary widely in what they see as “necessary categories and labels”—continue to emphasize mastery of formal grammar, and popular discussions of a presumed literacy crisis are almost unanimous in their call for a renewed emphasis on the teaching of formal grammar, seen as basic for success in writing.<sup>4</sup>

#### AN INSTRUCTIVE EXAMPLE

It is worth noting at the outset that both sides in this dispute—the grammarians and the anti-grammarians—articulate the issue in the same positivistic terms: what does experimental research tell us about the value of teaching formal grammar? But seventy-five years of experimental research has for all practical purposes told us nothing. The two sides are unable to agree on how to interpret such research. Studies are interpreted in terms of one’s prior assumptions about the value of teaching grammar: their results seem not to change those assumptions. Thus the basis of the discussion, a basis shared by Kolln and Neuleib and by Braddock and his colleagues—“what does educational research tell us?”—seems designed to perpetuate, not to resolve, the issue. A single example will be instructive. In 1976 and then at greater length in 1979, W. B. Elley, I. H. Barham, H. Lamb, and M. Wyllie reported on a three-year experiment in New Zealand, comparing the relative effectiveness at the high school level of instruction in transformational grammar, instruction in traditional grammar, and no grammar instruction.<sup>5</sup> They concluded that the formal study of grammar, whether transformational or traditional, improved neither writing quality nor control over surface correctness.

After two years, no differences were detected in writing performance or language competence; after three years small differences appeared in some minor conventions favoring the TG [transformational grammar] group, but these were more than offset by the less positive attitudes they showed towards their English studies. (p. 18)

Anthony Petroskey, in a review of research (“Grammar Instruction: What We Know,” *English Journal*, 66, No. 9 [1977], 86–88), agreed with this conclusion, finding the study to be carefully designed, “representative of the best kind of educational research” (p. 86), its validity “unquestionable” (p. 88). Yet Janice Neuleib in her essay found the same conclusions to be “star-

ting” and questioned whether the findings could be generalized beyond the target population, New Zealand high school students. Martha Kolln, when her attention is drawn to the study (“Reply to Ron Shook,” CCC, 32 [1981], 139–151), thinks the whole experiment “suspicious.” And John Mellon has been willing to use the study to defend the teaching of grammar; the study of Elley and his colleagues, he has argued, shows that teaching grammar does no harm.<sup>6</sup>

It would seem unlikely, therefore, that further experimental research, in and of itself, will resolve the grammar issue. Any experimental design can be nitpicked, any experimental population can be criticized, and any experimental conclusion can be questioned or, more often, ignored. In fact, it may well be that the grammar question is not open to resolution by experimental research, that, as Noam Chomsky has argued in *Reflections on Language* (New York: Pantheon, 1975), criticizing the trivialization of human learning by behavioral psychologists, the issue is simply misdefined.

There will be “good experiments” only in domains that lie outside the organism’s cognitive capacity. For example, there will be no “good experiments” in the study of human learning.

This discipline . . . will, of necessity, avoid those domains in which an organism is specially designed to acquire rich cognitive structures that enter into its life in an intimate fashion. The discipline will be of virtually no intellectual interest, it seems to me, since it is restricting itself in principle to those questions that are guaranteed to tell us little about the nature of organisms. (p. 36)

### ASKING THE RIGHT QUESTIONS

As a result, though I will look briefly at the tradition of experimental research, my primary goal in this essay is to articulate the grammar issue in different and, I would hope, more productive terms. Specifically, I want to ask four questions:

1. Why is the grammar issue so important? Why has it been the dominant focus of composition research for the last seventy-five years?
2. What definitions of the word *grammar* are needed to articulate the grammar issue intelligibly?
3. What do findings in cognate disciplines suggest about the value of formal grammar instruction?
4. What is our theory of language, and what does it predict about the value of formal grammar instruction? (This question—“what does our theory of language predict?”—seems a much more powerful question than “what does educational research tell us?”)

In exploring these questions I will attempt to be fully explicit about issues, terms, and assumptions. I hope that both proponents and opponents of formal



grammar instruction would agree that these are useful as shared points of reference: care in definition, full examination of the evidence, reference to relevant work in cognate disciplines, and explicit analysis of the theoretical bases of the issue.

But even with that gesture of harmony it will be difficult to articulate the issue in a balanced way, one that will be acceptable to both sides. After all, we are dealing with a professional dispute in which one side accuses the other of “magical thinking,” and in turn that side responds by charging the other as “alchemists.” Thus we might suspect that the grammar issue is itself embedded in larger models of the transmission of literacy, part of quite different assumptions about the teaching of composition.

Those of us who dismiss the teaching of formal grammar have a model of composition instruction that makes the grammar issue “uninteresting” in a scientific sense. Our model predicts a rich and complex interaction of learner and environment in mastering literacy, an interaction that has little to do with sequences of skills instruction as such. Those who defend the teaching of grammar tend to have a model of composition instruction that is rigidly skills-centered and rigidly sequential: the formal teaching of grammar, as the first step in that sequence, is the cornerstone or linchpin. Grammar teaching is thus supremely interesting, naturally a dominant focus for educational research. The controversy over the value of grammar instruction, then, is inseparable from two other issues: the issues of sequence in the teaching of composition and of the role of the composition teacher. Consider, for example, the force of these two issues in Janice Neuleib’s conclusion: after calling for yet more experimental research on the value of teaching grammar, she ends with an absolute (and unsupported) claim about sequences and teacher roles in composition.

We do know, however, that some things must be taught at different levels. Insistence on adherence to usage norms by composition teachers does improve usage. Students can learn to organize their papers if teachers do not accept papers that are disorganized. Perhaps composition teachers can teach those two abilities before they begin the more difficult tasks of developing syntactic sophistication and a winning style. (“The Relation of Formal Grammar to Composition,” p. 250)

(One might want to ask, in passing, whether “usage norms” exist in the monolithic fashion the phrase suggests and whether refusing to accept disorganized papers is our best available pedagogy for teaching arrangement.)<sup>7</sup>

But I want to focus on the notion of sequence that makes the grammar issue so important: first grammar, then usage, then some absolute model of organization, all controlled by the teacher at the center of the learning process, with other matters, those of rhetorical weight—“syntactic sophistication and a winning style”—pushed off to the future. It is not surprising that we call each other names: those of us who question the value of teaching grammar are in fact shaking the whole elaborate edifice of traditional composition instruction.



### THE FIVE MEANINGS OF "GRAMMAR"

Given its centrality to a well-established way of teaching composition, I need to go about the business of defining grammar rather carefully, particularly in view of Kolln's criticism of the lack of care in earlier discussions. Therefore I will build upon a seminal discussion of the word *grammar* offered a generation ago, in 1954, by W. Nelson Francis, often excerpted as "The Three Meanings of Grammar."<sup>8</sup> It is worth reprinting at length, if only to re-establish it as a reference point for future discussions.

The first thing we mean by "grammar" is "the set of formal patterns in which the words of a language are arranged in order to convey larger meanings." It is not necessary that we be able to discuss these patterns self-consciously in order to be able to use them. In fact, all speakers of a language above the age of five or six know how to use its complex forms of organization with considerable skill; in this sense of the word—call it "Grammar 1"—they are thoroughly familiar with its grammar.

The second meaning of "grammar"—call it "Grammar 2"—is "the branch of linguistic science which is concerned with the description, analysis, and formulization of formal language patterns." Just as gravity was in full operation before Newton's apple fell, so grammar in the first sense was in full operation before anyone formulated the first rule that began the history of grammar as a study.

The third sense in which people use the word "grammar" is "linguistic etiquette." This we may call "Grammar 3." The word in this sense is often coupled with a derogatory adjective: we say that the expression "he ain't here" is "bad grammar." . . .

As has already been suggested, much confusion arises from mixing these meanings. One hears a good deal of criticism of teachers of English couched in such terms as "they don't teach grammar any more." Criticism of this sort is based on the wholly unproven assumption that teaching Grammar 2 will improve the student's proficiency in Grammar 1 or improve his manners in Grammar 3. Actually, the form of Grammar 2 which is usually taught is a very inaccurate and misleading analysis of the facts of Grammar 1; and it therefore is of highly questionable value in improving a person's ability to handle the structural patterns of his language. (pp. 300–301)

Francis' Grammar 3 is, of course, not grammar at all, but usage. One would like to assume that Joseph Williams' recent discussion of usage ("The Phenomenology of Error," CCC, 32 (1981), 152–168), along with his references, has placed those shibboleths in a proper perspective. But I doubt it, and I suspect that popular discussions of the grammar issue will be as flawed by the intrusion of usage issues as past discussions have been. At any rate I will make only passing reference to Grammar 3—usage—naively assuming that this issue has been discussed elsewhere and that my readers are familiar with those discussions.

We need also to make further discriminations about Francis' Grammar 2, given that the purpose of his 1954 article was to substitute for one form of Grammar 2, that "inaccurate and misleading" form "which is usually taught," another form, that of American structuralist grammar. Here we can make use

of a still earlier discussion, one going back to the days when *PMLA* was willing to publish articles on rhetoric and linguistics, to a 1927 article by Charles Carpenter Fries, "The Rules of the Common School Grammars" (42 [1927], 221–237). Fries there distinguished between the scientific tradition of language study (to which we will now delimit Francis' Grammar 2, scientific grammar) and the separate tradition of "the common school grammars," developed unscientifically, largely based on two inadequate principles—appeals to "logical principles," like "two negatives make a positive," and analogy to Latin grammar; thus, Charlton Laird's characterization, "the grammar of Latin, ingeniously warped to suggest English" (*Language in America* [New York: World, 1970], p. 294). There is, of course, a direct link between the "common school grammars" that Fries criticized in 1927 and the grammar-based texts of today, and thus it seems wise, as Karl W. Dykema suggests ("Where Our Grammar Came From," *CE*, 22 (1961), 455–465), to separate Grammar 2, "scientific grammar," from Grammar 4, "school grammar," the latter meaning, quite literally, "the grammars used in the schools."

Further, since Martha Kolln points to the adaptation of Christensen's sentence rhetoric in a recent sentence-combining text as an example of the proper emphasis on "grammar" ("Closing the Books on Alchemy," p. 140), it is worth separating out, as still another meaning of *grammar*, Grammar 5, "stylistic grammar," defined as "grammatical terms used in the interest of teaching prose style." And, since stylistic grammars abound, with widely variant terms and emphases, we might appropriately speak parenthetically of specific forms of Grammar 5—Grammar 5 (Lanham); Grammar 5 (Strunk and White); Grammar 5 (Williams, *Style*); even Grammar 5 (Christensen, as adapted by Daiker, Kerek, and Morenberg).<sup>9</sup>

### THE GRAMMAR IN OUR HEADS

With these definitions in mind, let us return to Francis' Grammar 1, admirably defined by Kolln as "the internalized system of rules that speakers of a language share" ("Closing the Books on Alchemy," p. 140), or, to put it more simply, the grammar in our heads. Three features of Grammar 1 need to be stressed: first, its special status as an "internalized system of rules," as tacit and unconscious knowledge; second, the abstract, even counterintuitive, nature of these rules, insofar as we are able to approximate them indirectly as Grammar 2 statements; and third, the way in which the form of one's Grammar 1 seems profoundly affected by the acquisition of literacy. This sort of review is designed to firm up our theory of language, so that we can ask what it predicts about the value of teaching formal grammar.

A simple thought experiment will isolate the special status of Grammar 1 knowledge. I have asked members of a number of different groups—from sixth graders to college freshmen to high-school teachers—to give me the rule for ordering adjectives of nationality, age, and number in English. The response



is always the same: "We don't know the rule." Yet when I ask these groups to perform an active language task, they show productive control over the rule they have denied knowing. I ask them to arrange the following words in a natural order:

French      the      young      girls      four

I have never seen a native speaker of English who did not immediately produce the natural order, "the four young French girls." The rule is that in English the order of adjectives is first, number, second, age, and third, nationality. Native speakers can create analogous phrases using the rule—"the seventy-three aged Scandinavian lechers"; and the drive for meaning is so great that they will create contexts to make sense out of violations of the rule, as in foregrounding for emphasis: "I want to talk to the French four young girls." (I immediately envision a large room, perhaps a banquet hall, filled with tables at which are seated groups of four young girls, each group of a different nationality.) So Grammar 1 is eminently usable knowledge—the way we make our life through language—but it is not accessible knowledge; in a profound sense, we do not know that we have it. Thus neurolinguist Z. N. Pylyshyn speaks of Grammar 1 as "autonomous," separate from common-sense reasoning, and as "cognitively impenetrable," not available for direct examination.<sup>10</sup> In philosophy and linguistics, the distinction is made between formal, conscious, "knowing about" knowledge (like Grammar 2 knowledge) and tacit, unconscious, "knowing how" knowledge (like Grammar 1 knowledge). The importance of this distinction for the teaching of composition—it provides a powerful theoretical justification for mistrusting the ability of Grammar 2 (or Grammar 4) knowledge to affect Grammar 1 performance—was pointed out in this journal by Martin Steinmann, Jr., in 1966 ("Rhetorical Research," *CE*, 27 [1966], 278–285).

Further, the more we learn about Grammar 1—and most linguists would agree that we know surprisingly little about it—the more abstract and implicit it seems. This abstractness can be illustrated with an experiment, devised by Lise Menn and reported by Morris Halle,<sup>11</sup> about our rule for forming plurals in speech. It is obvious that we do indeed have a "rule" for forming plurals, for we do not memorize the plural of each noun separately. You will demonstrate productive control over that rule by forming the spoken plurals of the nonsense words below:

thole      flitch      plast

Halle offers two ways of formalizing a Grammar 2 equivalent of this Grammar 1 ability. One form of the rule is the following, stated in terms of speech sounds:

- a. If the noun ends in /s z š ž č ĵ/, add /ɪz/;
- b. otherwise, if the noun ends in /p t k f Ø/, add /s/;
- c. otherwise, add /z/.<sup>11</sup>

This rule comes close to what we literate adults consider to be an adequate rule for plurals in writing, like the rules, for example, taken from a recent “common school grammar,” Eric Gould’s *Reading into Writing: A Rhetoric, Reader, and Handbook* (Boston: Houghton Mifflin, 1983):

*Plurals* can be tricky. If you are unsure of a plural, then check it in the dictionary.

The general rules are

Add *s* to the singular: *girls, tables*

Add *es* to nouns ending in *ch, sh, x* or *s*: *churches, boxes, wishes*

Add *es* to nouns ending in *y* and preceded by a vowel once you have changed *y* to *i*: *monies, companies*. (p. 666)

(But note the persistent inadequacy of such Grammar 4 rules: here, as I read it, the rule is inadequate to explain the plurals of *ray* and *tray*, even to explain the collective noun *monies*, not a plural at all, formed from the mass noun *money* and offered as an example.) A second form of the rule would make use of much more abstract entities, sound features:

- a. If the noun ends with a sound that is [coronal, strident], add /ɪz/;
- b. otherwise, if the noun ends with a sound that is [non-voiced], add /s/;
- c. otherwise, add /z/.

(The notion of “sound features” is itself rather abstract, perhaps new to readers not trained in linguistics. But such readers should be able to recognize that the spoken plurals of *lip* and *duck*, the sound [s], differ from the spoken plurals of *sea* and *gnu*, the sound [z], only in that the sounds of the latter are “voiced”—one’s vocal cords vibrate—while the sounds of the former are “non-voiced.”)

To test the psychologically operative rule, the Grammar 1 rule, native speakers of English were asked to form the plural of the last name of the composer Johann Sebastian *Bach*, a sound [x], unique in American (though not in Scottish) English. If speakers follow the first rule above, using word endings, they would reject (a) and (b), then apply (c), producing the plural as /baxz/, with word-final /z/. (If writers were to follow the rule of the common school grammar, they would produce the written plural *Baches*, apparently, given the form of the rule, on analogy with *churches*.) If speakers follow the second rule, they would have to analyze the sound [x] as [non-labial, non-coronal, dorsal, non-voiced, and non-strident], producing the plural as /baxs/, with word-final /s/. Native speakers of American English overwhelmingly produce the plural as /baxs/. They use knowledge that Halle characterizes as “unlearned and untaught” (p. 140).

Now such a conclusion is counterintuitive—certainly it departs maximally from Grammar 4 rules for forming plurals. It seems that native speakers of English behave as if they have productive control, as Grammar 1 knowledge, of abstract sound features ( $\pm$  coronal,  $\pm$  strident, and so on) which are available as conscious, Grammar 2 knowledge only to trained linguists—and, indeed, formally available only within the last hundred years or so. (“Behave



as if," in that last sentence, is a necessary hedge, to underscore the difficulty of "knowing about" Grammar 1.)

Moreover, as the example of plural rules suggests, the form of the Grammar 1 in the heads of literate adults seems profoundly affected by the acquisition of literacy. Obviously, literate adults have access to different morphological codes: the abstract print *-s* underlying the predictable /s/ and /z/ plurals, the abstract print *-ed* underlying the spoken past tense markers /t/, as in "walked," /əd/, as in "surrounded," /d/, as in "scored," and the symbol /Ø/ for no surface realization, as in the relaxed standard pronunciation of "I walked to the store." Literate adults also have access to distinctions preserved only in the code of print (for example, the distinction between "a good sailer" and "a good sailor" that Mark Aranoff points out in "An English Spelling Convention," *Linguistic Inquiry*, 9 [1978], 299–303). More significantly, Irene Moscovitz speculates that the ability of third graders to form abstract nouns on analogy with pairs like *divine::divinity* and *serene::serenity*, where the spoken vowel changes but the spelling preserves meaning, is a factor of knowing how to read. Carol Chomsky finds a three-stage developmental sequence in the grammatical performance of seven-year-olds, related to measures of kind and variety of reading; and Rita S. Brause finds a nine-stage developmental sequence in the ability to understand semantic ambiguity, extending from fourth graders to graduate students.<sup>12</sup> John Mills and Gordon Hemsley find that level of education, and presumably level of literacy, influence judgments of grammaticality, concluding that literacy changes the deep structure of one's internal grammar; Jean Whyte finds that oral language functions develop differently in readers and non-readers; José Morais, Jésus Alegria, and Paul Bertelson find that illiterate adults are unable to add or delete sounds at the beginning of nonsense words, suggesting that awareness of speech as a series of phones is provided by learning to read an alphabetic code. Two experiments—one conducted by Charles A. Ferguson, the other by Mary E. Hamilton and David Barton—find that adults' ability to recognize segmentation in speech is related to degree of literacy, not to amount of schooling or general ability.<sup>13</sup>

It is worth noting that none of these investigators would suggest that the developmental sequences they have uncovered be isolated and taught as discrete skills. They are natural concomitants of literacy, and they seem best characterized not as isolated rules but as developing schemata, broad strategies for approaching written language.

## GRAMMAR 2

We can, of course, attempt to approximate the rules or schemata of Grammar 1 by writing fully explicit descriptions that model the competence of a native speaker. Such rules, like the rules for pluralizing nouns or ordering adjectives discussed above, are the goal of the science of linguistics, that is, Grammar 2. There are a number of scientific grammars—an older structuralist model and

several versions within a generative-transformational paradigm, not to mention isolated schools like tagmemic grammar, Montague grammar, and the like. In fact, we cannot think of Grammar 2 as a stable entity, for its form changes with each new issue of each linguistics journal, as new “rules of grammar” are proposed and debated. Thus Grammar 2, though of great theoretical interest to the composition teacher, is of little practical use in the classroom, as Constance Weaver has pointed out (*Grammar for Teachers* [Urbana, Ill.: NCTE, 1979], pp. 3–6). Indeed Grammar 2 is a scientific model of Grammar 1, not a description of it, so that questions of psychological reality, while important, are less important than other, more theoretical factors, such as the elegance of formulation or the global power of rules. We might, for example, wish to replace the rule for ordering adjectives of age, number, and nationality cited above with a more general rule—what linguists call a “fuzzy” rule—that adjectives in English are ordered by their abstract quality of “nouniness”: adjectives that are very much like nouns, like *French* or *Scandinavian*, come physically closer to nouns than do adjectives that are less “nouny,” like *four* or *aged*. But our motivation for accepting the broader rule would be its global power, not its psychological reality.<sup>14</sup>

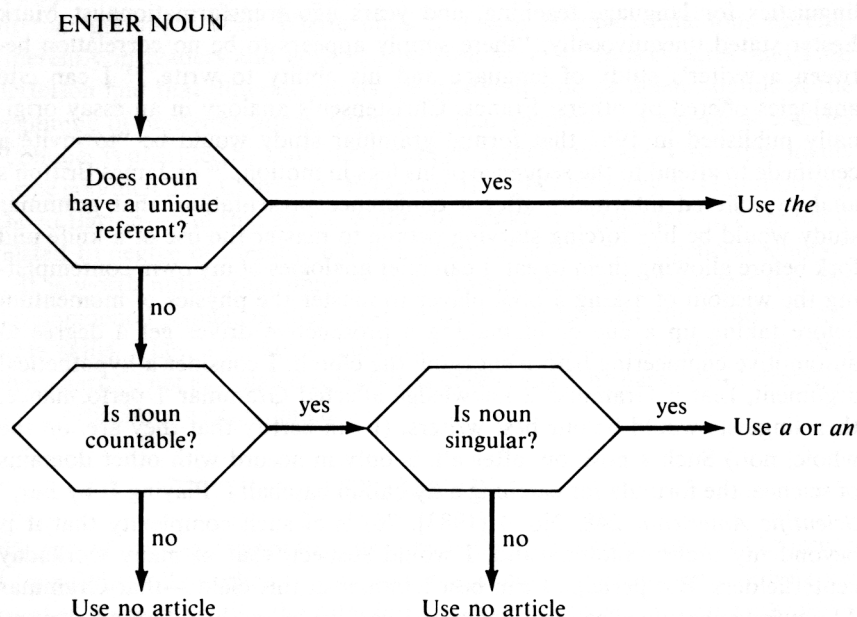
I try to consider a hostile reader, one committed to the teaching of grammar, and I try to think of ways to hammer in the central point of this distinction, that the rules of Grammar 2 are simply unconnected to productive control over Grammar 1. I can argue from authority: Noam Chomsky has touched on this point whenever he has concerned himself with the implications of linguistics for language teaching, and years ago transformationalist Mark Lester stated unequivocally, “there simply appears to be no correlation between a writer’s study of language and his ability to write.”<sup>15</sup> I can cite analogies offered by others: Francis Christensen’s analogy in an essay originally published in 1962 that formal grammar study would be “to invite a centipede to attend to the sequence of his legs in motion,”<sup>16</sup> or James Britton’s analogy, offered informally after a conference presentation, that grammar study would be like forcing starving people to master the use of a knife and fork before allowing them to eat. I can offer analogies of my own, contemplating the wisdom of asking a pool player to master the physics of momentum before taking up a cue or of making a prospective driver get a degree in automotive engineering before engaging the clutch. I consider a hypothetical argument, that if Grammar 2 knowledge affected Grammar 1 performance, then linguists would be our best writers. (I can certify that they are, on the whole, not.) Such a position, after all, is only in accord with other domains of science: the formula for catching a fly ball in baseball (“Playing It by Ear,” *Scientific American*, 248, No. 4 [1983], 76) is of such complexity that it is beyond my understanding—and, I would suspect, that of many workaday centerfielders. But perhaps I can best hammer in this claim—that Grammar 2 knowledge has no effect on Grammar 1 performance—by offering a demonstration.

The diagram on the next page is an attempt by Thomas N. Huckin and



Leslie A. Olsen (*English for Science and Technology* [New York: McGraw-Hill, 1983]) to offer, for students of English as a second language, a fully explicit formulation of what is, for native speakers, a trivial rule of the language—the choice of definite article, indefinite article, or no definite article. There are obvious limits to such a formulation, for article choice in English is less a matter of rule than of idiom (“I went to college” versus “I went to a university” versus British “I went to university”), real-world knowledge (using indefinite “I went into a house” instantiates definite “I looked at the ceiling,” and indefinite “I visited a university” instantiates definite “I talked with the professors”), and stylistic choice (the last sentence above might alternatively end with “the choice of the definite article, the indefinite article, or no article”). Huckin and Olsen invite non-native speakers to use the rule consciously to justify article choice in technical prose, such as the passage below from P. F. Brandwein (*Matter: An Earth Science* [New York: Harcourt Brace Jovanovich, 1975]). I invite you to spend a couple of minutes doing the same thing, with the understanding that this exercise is a test case: you are using a very explicit rule to justify a fairly straightforward issue of grammatical choice.

Imagine a cannon on top of \_\_\_\_\_ highest mountain on earth. It is firing \_\_\_\_\_ cannonballs horizontally. \_\_\_\_\_ first cannonball fired follows its



path. As \_\_\_\_\_ cannonball moves, \_\_\_\_\_ gravity pulls it down, and it soon hits \_\_\_\_\_ ground. Now \_\_\_\_\_ velocity with which each succeeding cannonball is fired is increased. Thus \_\_\_\_\_ cannonball goes farther each time. Cannonball 2 goes farther than \_\_\_\_\_ cannonball 1 although each is being pulled by \_\_\_\_\_ gravity toward the earth all \_\_\_\_\_ time. \_\_\_\_\_ last cannonball is fired with such tremendous velocity that it goes completely around \_\_\_\_\_ earth. It returns to \_\_\_\_\_ mountaintop and continues around the earth again and again. \_\_\_\_\_ cannonball's inertia causes it to continue in motion indefinitely in \_\_\_\_\_ orbit around earth. In such a situation, we could consider \_\_\_\_\_ cannonball to be \_\_\_\_\_ artificial satellite, just like \_\_\_\_\_ weather satellites launched by \_\_\_\_\_ U.S. Weather Service. (p. 209)

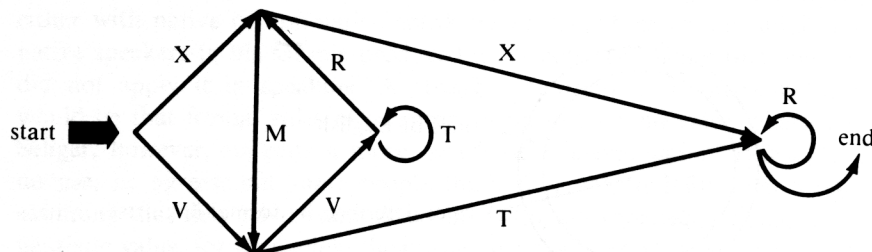
Most native speakers of English who have attempted this exercise report a great deal of frustration, a curious sense of working against, rather than with, the rule. The rule, however valuable it may be for non-native speakers, is, for the most part, simply unusable for native speakers of the language.

### COGNATE AREAS OF RESEARCH

We can corroborate this demonstration by turning to research in two cognate areas, studies of the induction of rules of artificial languages and studies of the role of formal rules in second language acquisition. Psychologists have studied the ability of subjects to learn artificial languages, usually constructed of nonsense syllables or letter strings. Such languages can be described by phrase structure rules:

$S \Rightarrow VX$   
 $X \Rightarrow MX$

More clearly, they can be presented as flow diagrams, as below:





This diagram produces “sentences” like the following:

VVTRXRR.	XMVTTRX.	XXRR.
XMVRMT.	VVTTRMT.	XMTRRR.

The following “sentences” would be “ungrammatical” in this language:

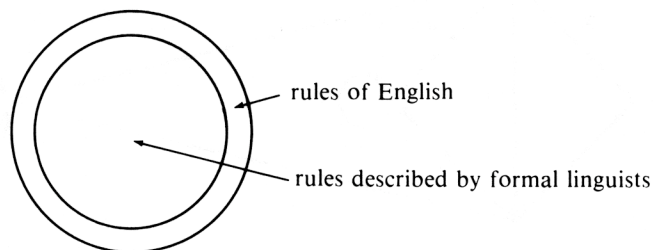
*VMXTT.	*RTXVVT.	*TRVXXVVM.
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Arthur S. Reber, in a classic 1967 experiment, demonstrated that mere exposure to grammatical sentences produced tacit learning: subjects who copied several grammatical sentences performed far above chance in judging the grammaticality of other letter strings. Further experiments have shown that providing subjects with formal rules—giving them the flow diagram above, for example—remarkably degrades performance: subjects given the “rules of the language” do much less well in acquiring the rules than do subjects not given the rules. Indeed, even telling subjects that they are to induce the rules of an artificial language degrades performance. Such laboratory experiments are admittedly contrived, but they confirm predictions that our theory of language would make about the value of formal rules in language learning.<sup>17</sup>

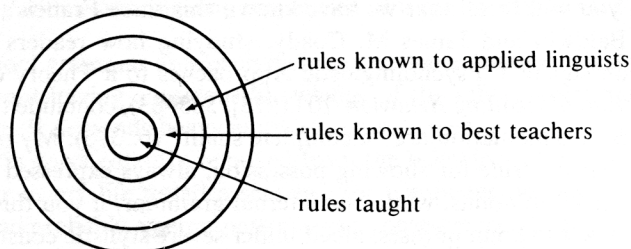
The thrust of recent research in second language learning similarly works to constrain the value of formal grammar rules. The most explicit statement of the value of formal rules is that of Stephen D. Krashen’s monitor model.<sup>18</sup> Krashen divides second language mastery into *acquisition*—tacit, informal mastery, akin to first language acquisition—and formal learning—conscious application of Grammar 2 rules, which he calls “monitoring” output. In another essay Krashen uses his model to predict a highly individual use of the monitor and a highly constrained role for formal rules:

Some adults (and very few children) are able to use conscious rules to increase the grammatical accuracy of their output, and even for these people, very strict conditions need to be met before the conscious grammar can be applied.<sup>19</sup>

In *Principles and Practice in Second Language Acquisition* (New York: Pergamon, 1982) Krashen outlines these conditions by means of a series of concentric circles, beginning with a large circle denoting the rules of English and a smaller circle denoting the subset of those rules described by formal linguists (adding that most linguists would protest that the size of this circle is much too large):



Krashen then adds smaller circles, as shown below—a subset of the rules described by formal linguists that would be known to applied linguists, a subset of those rules that would be available to the best teachers, and then a subset of those rules that teachers might choose to present to second language learners:



Of course, as Krashen notes, not all the rules taught will be learned, and not all those learned will be available, as what he calls “mental baggage” (p. 94), for conscious use.

An experiment by Ellen Bialystock, asking English speakers learning French to judge the grammaticality of taped sentences, complicates this issue, for reaction time data suggest that learners first make an intuitive judgment of grammaticality, using implicit or Grammar 1 knowledge, and only then search for formal explanations, using explicit or Grammar 2 knowledge.<sup>20</sup> This distinction would suggest that Grammar 2 knowledge is of use to second language learners only after the principle has already been mastered as tacit grammar 1 knowledge. In the terms of Krashen’s model, learning never becomes acquisition (*Principles*, p. 86).

An ingenious experiment by Herbert W. Seliger complicates the issue yet further (“On the Nature and Function of Language Rules in Language Learning,” *TESOL Quarterly*, 13 [1979], 359–69). Seliger asked native and non-native speakers of English to orally identify pictures of objects (e.g., “an apple,” “a pear,” “a book,” “an umbrella”), noting whether they used the correct form of the indefinite articles *a* and *an*. He then asked each speaker to state the rule for choosing between *a* and *an*. He found no correlation between the ability to state the rule and the ability to apply it correctly, either with native or non-native speakers. Indeed, three of four adult non-native speakers in his sample produced a correct form of the rule, but they did not apply it in speaking. A strong conclusion from this experiment would be that formal rules of grammar seem to have no value whatsoever. Seliger, however, suggests a more paradoxical interpretation. Rules are of no use, he agrees, but some people think they are, and for these people, assuming that they have internalized the rules, even inadequate rules are of heuristic value, for they allow them to access the internal rules they actually use.



### THE INCANTATIONS OF THE "COMMON SCHOOL GRAMMARS"

Such a paradox may explain the fascination we have as teachers with "rules of grammar" of the Grammar 4 variety, the "rules" of the "common school grammars." Again and again such rules are inadequate to the facts of written language; you will recall that we have known this since Francis' 1927 study. R. Scott Baldwin and James M. Coady, studying how readers respond to punctuation signals ("Psycholinguistic Approaches to a Theory of Punctuation," *Journal of Reading Behavior*, 10 [1978], 363–83), conclude that conventional rules of punctuation are "a complete sham" (p. 375). My own favorite is the Grammar 4 rule for showing possession, always expressed in terms of adding -'s or -s' to nouns, while our internal grammar, if you think about it, adds possession to noun phrases, albeit under severe stylistic constraints: "the horses of the Queen of England" are "the Queen of England's horses" and "the feathers of the duck over there" are "the duck over there's feathers." Suzette Haden Elgin refers to the "rules" of Grammar 4 as "incantations" (*Never Mind the Trees*, p. 9; see footnote 3).

It may simply be that as hyperliterate adults we are conscious of "using rules" when we are in fact doing something else, something far more complex, accessing tacit heuristics honed by print literacy itself. We can clarify this notion by reaching for an acronym coined by technical writers to explain the readability of complex prose—COIK: "clear only if known." The rules of Grammar 4—no, we can at this point be more honest—the incantations of Grammar 4 are COIK. If you know how to signal possession in the code of print, then the advice to add -'s to nouns makes perfect sense, just as the collective noun *monies* is a fine example of changing -y to -i and adding -es to form the plural. But if you have not grasped, tacitly, the abstract representation of possession in print, such incantations can only be opaque.

Worse yet, the advice given in "the common school grammars" is unconnected with anything remotely resembling literate adult behavior. Consider, as an example, the rule for not writing a sentence fragment as the rule is described in the best-selling college grammar text, John C. Hodges and Mary S. Whitten's *Harbrace College Handbook*, 9th ed. (New York: Harcourt Brace Jovanovich, 1982). In order to get to the advice, "as a rule, do not write a sentence fragment" (p. 25), the student must master the following learning tasks:

- Recognizing verbs.
- Recognizing subjects and verbs.
- Recognizing all parts of speech. (*Harbrace* lists eight.)
- Recognizing phrases and subordinate clauses. (*Harbrace* lists six types of phrases, and it offers incomplete lists of eight relative pronouns and eighteen subordinating conjunctions.)
- Recognizing main clauses and types of sentences.

These learning tasks completed, the student is given the rule above, offered a page of exceptions, and then given the following advice (or is it an incantation?):

Before handing in a composition, . . . proofread each word group written as a sentence. Test each one for completeness. First, be sure that it has at least one subject and one predicate. Next, be sure that the word group is not a dependent clause beginning with a subordinating conjunction or a relative clause. (p. 27)

The school grammar approach defines a sentence fragment as a conceptual error—as not having conscious knowledge of the school grammar definition of *sentence*. It demands heavy emphasis on rote memory, and it asks students to behave in ways patently removed from the behaviors of mature writers. (I have never in my life tested a sentence for completeness, and I am a better writer—and probably a better person—as a consequence.) It may be, of course, that some developing writers, at some points in their development, may benefit from such advice—or, more to the point, may think that they benefit—but, as Thomas Friedman points out in “Teaching Error, Nurturing Confusion” (*CE*, 45 [1983], 390–99), our theory of language tells us that such advice is, at the best, COIK. As the Maine joke has it, about a tourist asking directions from a farmer, “you can’t get there from here.”

### REDEFINING ERROR

In the specific case of sentence fragments, Mina P. Shaughnessy (*Errors and Expectations* [New York: Oxford University Press, 1977]) argues that such errors are not conceptual failures at all, but performance errors—mistakes in punctuation. Muriel Harris’ error counts support this view (“Mending the Fragmented Free Modifier,” *CCC*, 32 [1981], 175–82). Case studies show example after example of errors that occur *because* of instruction—one thinks, for example, of David Bartholomae’s student explaining that he added an *-s* to *children* “because it’s a plural” (“The Study of Error,” *CCC*, 31 [1980], 262). Surveys, such as that by Muriel Harris (“Contradictory Perceptions of the Rules of Writing,” *CCC*, 30 [1979], 218–20), and our own observations suggest that students consistently misunderstand such Grammar 4 explanations (COIK, you will recall). For example, from Patrick Hartwell and Robert H. Bentley and from Mike Rose, we have two separate anecdotal accounts of students, cited for punctuating a *because*-clause as a sentence, who have decided to avoid using *because*. More generally, Collette A. Daiute’s analysis of errors made by college students shows that errors tend to appear at clause boundaries, suggesting short-term memory load and not conceptual deficiency as a cause of error.<sup>21</sup>

Thus, if we think seriously about error and its relationship to the worship of formal grammar study, we need to attempt some massive dislocation of our traditional thinking, to shuck off our hyperliterate perception of the value of formal rules, and to regain the confidence in the tacit power of unconscious



knowledge that our theory of language gives us. Most students, reading their writing aloud, will correct in essence all errors of spelling, grammar, and, by intonation, punctuation, but usually without noticing that what they read departs from what they wrote.<sup>22</sup> And Richard H. Haswell ("Minimal Marking," *CE*, 45 [1983], 600–604) notes that his students correct 61.1% of their errors when they are identified with a simple mark in the margin rather than by error type. Such findings suggest that we need to redefine error, to see it not as a cognitive or linguistic problem, a problem of not knowing a "rule of grammar" (whatever that may mean), but rather, following the insight of Robert J. Bracewell ("Writing as a Cognitive Activity," *Visible Language*, 14 [1980], 400–22), as a problem of metacognition and metalinguistic awareness, a matter of accessing knowledges that, to be of any use, learners must have already internalized by means of exposure to the code. (Usage issues—Grammar 3—probably represent a different order of problem. Both Joseph Emonds and George Jochnowitz establish that the usage issues we worry most about are linguistically unnatural, departures from the grammar in our heads.)<sup>23</sup>

The notion of metalinguistic awareness seems crucial. The sentence below, created by Douglas R. Hofstadter ("Metamagical Themas," *Scientific American*, 235, No. 1 [1981], 22–32), is offered to clarify that notion; you are invited to examine it for a moment or two before continuing.

There is four errors in this sentence. Can you find them?

Three errors announce themselves plainly enough, the misspellings of *there* and *sentence* and the use of *is* instead of *are*. (And, just to illustrate the perils of hyperliteracy, let it be noted that, through three years of drafts, I referred to the choice of *is* and *are* as a matter of "subject-verb agreement.") The fourth error resists detection, until one assesses the truth value of the sentence itself—the fourth error is that there are not four errors, only three. Such a sentence (Hofstadter calls it a "self-referencing sentence") asks you to look at it in two ways, simultaneously as statement and as linguistic artifact—in other words, to exercise metalinguistic awareness.

A broad range of cross-cultural studies suggest that metalinguistic awareness is a defining feature of print literacy. Thus Sylvia Scribner and Michael Cole, working with the trilliterate Vai of Liberia (variously literate in English, through schooling; in Arabic, for religious purposes; and in an indigenous Vai script, used for personal affairs), find that metalinguistic awareness, broadly conceived, is the only cognitive skill underlying each of the three literacies. The one statistically significant skill shared by literate Vai was the recognition of word boundaries. Moreover, literate Vai tended to answer "yes" when asked (in Vai), "Can you call the sun the moon and the moon the sun?" while illiterate Vai tended to have grave doubts about such metalinguistic play. And in the United States Henry and Lila R. Gleitman report quite different responses by clerical workers and PhD candidates asked to interpret nonsense compounds like "house-bird glass"; clerical workers focused on meaning and plausibility (for example, "a house-bird made of glass"), while PhD candidates

focused on syntax (for example, “a very small drinking cup for canaries” or “a glass that protects house-birds”).<sup>24</sup> More general research findings suggest a clear relationship between measures of metalinguistic awareness and measures of literacy level.<sup>25</sup> William Labov, speculating on literacy acquisition in inner-city ghettos, contrasts “stimulus-bound” and “language-bound” individuals, suggesting that the latter seem to master literacy more easily.<sup>26</sup> The analysis here suggests that the causal relationship works the other way, that it is the mastery of written language that increases one’s awareness of language as language.

This analysis has two implications. First, it makes the question of socially nonstandard dialects, always implicit in discussions of teaching formal grammar, into a non-issue.<sup>27</sup> Native speakers of English, regardless of dialect, show tacit mastery of the conventions of Standard English, and that mastery seems to transfer into abstract orthographic knowledge through interaction with print.<sup>28</sup> Developing writers show the same patterning of errors, regardless of dialect.<sup>29</sup> Studies of reading and of writing suggest that surface features of spoken dialect are simply irrelevant to mastering print literacy.<sup>30</sup> Print is a complex cultural code—or better yet, a system of codes—and my bet is that, regardless of instruction, one masters those codes from the top down, from pragmatic questions of voice, tone, audience, register, and rhetorical strategy, not from the bottom up, from grammar to usage to fixed forms of organization.

Second, this analysis forces us to posit multiple literacies, used for multiple purposes, rather than a single static literacy, engraved in “rules of grammar.” These multiple literacies are evident in cross-cultural studies.<sup>31</sup> They are equally evident when we inquire into the uses of literacy in American communities.<sup>32</sup> Further, given that students, at all levels, show widely variant interactions with print literacy, there would seem to be little to do with grammar—with Grammar 2 or with Grammar 4—that we could isolate as a basis for formal instruction.<sup>33</sup>

### GRAMMAR 5: STYLISTIC GRAMMAR

Similarly, when we turn to Grammar 5, “grammatical terms used in the interest of teaching prose style,” so central to Martha Kolln’s argument for teaching formal grammar, we find that the grammar issue is simply beside the point. There are two fully-articulated positions about “stylistic grammar,” which I will label “romantic” and “classic,” following Richard Lloyd-Jones and Richard E. Young.<sup>34</sup> The romantic position is that stylistic grammars, though perhaps useful for teachers, have little place in the teaching of composition, for students must struggle with and through language toward meaning. This position rests on a theory of language ultimately philosophical rather than linguistic (witness, for example, the contempt for linguists in Ann Berthoff’s *The Making of Meaning: Metaphors, Models, and Maxims for Writing Teachers* [Montclair, N.J.: Boynton/Cook, 1981]); it is articulated as a theory of style by Donald A. Murray and, on somewhat different grounds (that stylistic



grammars encourage overuse of the monitor), by Ian Pringle. The classic position, on the other hand, is that we can find ways to offer developing writers helpful suggestions about prose style, suggestions such as Francis Christensen's emphasis on the cumulative sentence, developed by observing the practice of skilled writers, and Joseph Williams' advice about predication, developed by psycholinguistic studies of comprehension.<sup>35</sup> James A. Berlin's recent survey of composition theory (*CE*, 45 [1982], 765–77) probably understates the gulf between these two positions and the radically different conceptions of language that underlie them, but it does establish that they share an overriding assumption in common: that one learns to control the language of print by manipulating language in meaningful contexts, not by learning about language in isolation, as by the study of formal grammar. Thus even classic theorists, who choose to present a vocabulary of style to students, do so only as a vehicle for encouraging productive control of communicative structures.

We might put the matter in the following terms. Writers need to develop skills at two levels. One, broadly rhetorical, involves communication in meaningful contexts (the strategies, registers, and procedures of discourse across a range of modes, audiences, contexts, and purposes). The other, broadly metalinguistic rather than linguistic, involves active manipulation of language with conscious attention to surface form. This second level may be developed tacitly, as a natural adjunct to developing rhetorical competencies—I take this to be the position of romantic theorists. It may be developed formally, by manipulating language for stylistic effect, and such manipulation may involve, for pedagogical continuity, a vocabulary of style. But it is primarily developed by any kind of language activity that enhances the awareness of language as language.<sup>36</sup> David T. Hakes, summarizing the research on metalinguistic awareness, notes how far we are from understanding this process:

the optimal conditions for becoming metalinguistically competent involve growing up in a literate environment with adult models who are themselves metalinguistically competent and who foster the growth of that competence in a variety of ways as yet little understood. ("The Development of Metalinguistic Abilities," p. 205: see footnote 25)

Such a model places language, at all levels, at the center of the curriculum, but not as "necessary categories and labels" (Kolln, "Closing the Books on Alchemy," p. 150), but as literal stuff, verbal clay, to be molded and probed, shaped and reshaped, and, above all, enjoyed.

### **THE TRADITION OF EXPERIMENTAL RESEARCH**

Thus, when we turn back to experimental research on the value of formal grammar instruction, we do so with firm predictions given us by our theory of language. Our theory would predict that formal grammar instruction, whether instruction in scientific grammar or instruction in "the common

school grammar," would have little to do with control over surface correctness nor with quality of writing. It would predict that any form of active involvement with language would be preferable to instruction in rules or definitions (or incantations). In essence, this is what the research tells us. In 1893, the Committee of Ten (*Report of the Committee of Ten on Secondary School Studies* [Washington, D.C.: U.S. Government Printing Office, 1893]) put grammar at the center of the English curriculum, and its report established the rigidly sequential mode of instruction common for the last century. But the committee explicitly noted that grammar instruction did not aid correctness, arguing instead that it improved the ability to think logically (an argument developed from the role of the "grammarian" in the classical rhetorical tradition, essentially a teacher of literature—see, for example, the etymology of *grammar* in the *Oxford English Dictionary*).

But Franklin S. Hoyt, in a 1906 experiment, found no relationship between the study of grammar and the ability to think logically; his research led him to conclude what I am constrained to argue more than seventy-five years later, that there is no "relationship between a knowledge of technical grammar and the ability to use English and to interpret language" ("The Place of Grammar in the Elementary Curriculum," *Teachers College Record*, 7 [1906], 483–84). Later studies, through the 1920s, focused on the relationship of knowledge of grammar and ability to recognize error; experiments reported by James Boraas in 1917 and by William Asker in 1923 are typical of those that reported no correlation. In the 1930s, with the development of the functional grammar movement, it was common to compare the study of formal grammar with one form or another of active manipulation of language; experiments by I. O. Ash in 1935 and Ellen Frogner in 1939 are typical of studies showing the superiority of active involvement with language.<sup>37</sup> In a 1959 article, "Grammar in Language Teaching" (*Elementary English*, 36 [1959], 412–21), John J. DeBoer noted the consistency of these findings.

The impressive fact is . . . that in all these studies, carried out in places and at times far removed from each other, often by highly experienced and disinterested investigators, the results have been consistently negative so far as the value of grammar in the improvement of language expression is concerned. (p. 417)

In 1960 Ingrid M. Strom, reviewing more than fifty experimental studies, came to a similarly strong and unqualified conclusion:

Direct methods of instruction, focusing on writing activities and the structuring of ideas, are more efficient in teaching sentence structure, usage, punctuation, and other related factors than are such methods as nomenclature drill, diagramming, and rote memorization of grammatical rules.<sup>38</sup>

In 1963 two research reviews appeared, one by Braddock, Lloyd-Jones, and Schorer, cited at the beginning of this paper, and one by Henry C. Meckel, whose conclusions, though more guarded, are in essential agreement.<sup>39</sup> In 1969



J. Stephen Sherwin devoted one-fourth of his *Four Problems in Teaching English: A Critique of Research* (Scranton, Penn.: International Textbook, 1969) to the grammar issue, concluding that "instruction in formal grammar is an ineffective way to help students achieve proficiency in writing" (p. 135). Some early experiments in sentence combining, such as those by Donald R. Bateman and Frank J. Zidonnis and by John C. Mellon, showed improvement in measures of syntactic complexity with instruction in transformational grammar keyed to sentence combining practice. But a later study by Frank O'Hare achieved the same gains with no grammar instruction, suggesting to Sandra L. Stotsky and to Richard Van de Veghe that active manipulation of language, not the grammar unit, explained the earlier results.<sup>40</sup> More recent summaries of research—by Elizabeth I. Haynes, Hillary Taylor Holbrook, and Marcia Far Whiteman—support similar conclusions. Indirect evidence for this position is provided by surveys reported by Betty Bamberg in 1978 and 1981, showing that time spent in grammar instruction in high school is the least important factor, of eight factors examined, in separating regular from remedial writers at the college level.<sup>41</sup>

More generally, Patrick Scott and Bruce Castner, in "Reference Sources for Composition Research: A Practical Survey" (*CE*, 45 [1983], 756–68), note that much current research is not informed by an awareness of the past. Put simply, we are constrained to reinvent the wheel. My concern here has been with a far more serious problem: that too often the wheel we reinvent is square.

It is, after all, a question of power. Janet Emig, developing a consensus from composition research, and Aaron S. Carton and Lawrence V. Castiglione, developing the implications of language theory for education, come to the same conclusion: that the thrust of current research and theory is to take power from the teacher and to give that power to the learner.<sup>42</sup> At no point in the English curriculum is the question of power more blatantly posed than in the issue of formal grammar instruction. It is time that we, as teachers, formulate theories of language and literacy and let those theories guide our teaching, and it is time that we, as researchers, move on to more interesting areas of inquiry.

#### NOTES

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