PROPOSITIONAL CONTENT AND INTERPRETATION IN EXPOSITORY TEXT

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I. Introduction

What is it about expository prose that makes it harder to follow than most spoken language? SPEECH we acquire naturally, regardless of instruction. Skill in the production and comprehension of written language—TEXT we'll call it—takes years to achieve, along with academic instruction, and, even then, success is too often incomplete. Additionally, the gap between production and comprehension seems far wider for text than for speech.

It should be apparent that we are discussing here not the prose of personal letters or newspaper advertisements but the kinds of complex expository prose found most commonly in academic texts, in the more prestigious newspapers and magazines, and in legal, medical, and business writing for nonspecialist readers. Of course, the assumed readership is not really nonspecialist. Students in a high school social studies class or a college sociology course are assumed to have achieved some appropriate level of sophistication both in the subject-matter and the language generally used to communicate it. But, leaving aside specialized content and vocabulary, what other factors might be involved? What properties of text make it harder to process than speech?

II. Grammatical Likenesses and Differences

The grammar underlying written English is essentially the same grammar as that which underlies English speech. If English text and English speech were as distinct as Castilian Spanish and Tuscan-Italian, no English-speaking illiterates would be able to understand text read aloud to them. Virtually every grammatical principle or rule valid for written English can also be illustrated in English speech.

Nevertheless, as Brown and Yule (1983: 15–18), Biber (1986: 393), and others have noted, the frequencies of occurrence of some grammatical

constructions varies considerably between speech and text. The following grammatical features have been noted as characteristic of text, more particularly academic exposition, as compared to speech (the examples are ours):

a. greater frequency of grammatical subordination[1]

   ALTHOUGH the situation worsened ... ; SO THAT they ...

b. greater frequency of heavily premodified noun phrases

   the SERIOUSLY DETERIORATING FISCAL situation

c. more frequent occurrence of passives, *it*-clefts, and WH-clefts

   a severe winter WAS ANTICIPATED; IT was a severe winter that was anticipated; WHAT was anticipated was a severe winter

d. longer stretches of rhetorically organized language using markers like *firstly, as a result, in conclusion*

e. less frequent exploitation of Topic-Comment structuring in which the grammatical subject is not the Topic

   THAT ISSUE she had failed to consider adequately.

f. More nominalizations and preposition phrases

   the DENUNCIATION OF that project BY O'Connor

Why might such features complicate comprehension? The answer, we believe, has to do with the grammatical representation of the propositional content. Take, for example, feature (f), the frequency of nominalizations and preposition phrases. The subject-verb-object order is the unmarked order for expressing propositions—it is the most common order in both speech and text. Both specific semantic roles and grammatical categories are associated with

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[1] In fact, this is a slight overgeneralization, since there are certain limited types of subordination that are used extensively in speech. For further discussion see Halliday 1979, also Poole and Field 1976.

that order. So the reader must adopt a more complex strategy in dealing with nominalizations. When major participants—the propositional agent or patient most notably—are represented not as subjects or objects but as part of a preposition phrase, ambiguities are more likely. A familiar example is the nominalization *the shooting of the hunters*. Out of a disambiguating context it is unclear whether the hunters were doing the shooting or someone was shooting the hunters. In speech, such forms are considerably less common than in writing. But grammatical phenomena alone are not responsible for the greater difficulty of text as compared to speech. Consider some other crucial differences.

III. The Interaction Difference

Speech normally involves immediate interaction between speech participants who are either physically present or connected by telephone. The immediacy is the essential feature of the interaction. The day-to-day communicative interaction linking us together is almost exclusively speech interaction. Speech is essentially suited to such interaction because its very nature permits almost instantaneous feedback. Misunderstandings are more rapidly perceived and corrected. While letters are also used for interaction, both the time-lag and the practical limitations on interaction make this medium far less flexible.

The flexibility of speech is due to the time dimension within which speech is located. Speakers can ask their listeners whether they have been clear enough, they can instantly expand on a topic when they perceive misunderstandings, and they can go back to a point made earlier. They can ask a listener to be patient because the topic will be expanded on later in the discussion. If the listener can grasp an implied logical relation, say a causal relation between two events, the speaker need not state the relation explicitly. It is thus unnecessary to use the more specialized constructions and vocabulary to communicate such logical relations. Of course the speech situation is a two-way situation. Listeners can become speakers, ask questions, express reactions, shift the focus of speaking. All of this can be done at a moment's notice.

Emphasis is another area of contrast for speech and text. In text, complex forms like *it* clefts (*It was the small businessman who was most seriously affected*) are used to communicate major emphases and to designate particular constituents as new information. Speech does not have to exploit these complex constructions. Instead it can achieve much the same effects using

simpler syntax and harnessing the mechanisms of adjustable stress and intonation. All of these differences make for a simpler spoken vocabulary and syntax.

Indeed, because speech is more impromptu, grammatical flaws are much more acceptable, within certain sociological parameters. Since the grammatical wellformedness requirements are far less compelling, speakers can stop what in the middle of a sentence when they are unsure about what they are saying and they can start again, perhaps rephrasing the same point. Speech often seems closer to being a representation of thinking in process, as we see in the following remarks made by a writing instructor to a student who has written a paper on the subconscious:

> Well, for the reader like there's two interesting tacks you should have taken—one is showing how a word central to a certain theory is interpreted by different people and uhhh ... or do what the original assignment was ... was to give somebody a definition of subconscious and because you never elaborated on anybody's, you just gave a short quote, I never got an elaborated notion of what the subconscious was and because you waited until the last paragraph to bring up this whole point about ... (reads aloud from paper) ...
>
>   S.E. Jacobs and A.D. Karliner, "Helping writers to think", *College English* (1977), 38.5, 498.

Notice how the instructor stops at the *uhhh* and struggles to reformulate what she wants to say, a struggle that continues through what the transcriber shows as a single sentence.

V. Some Advantages of Text

While text is more complex, requiring more intensive effort from both the communicator and the "audience", its relative stability over time brings with it some significant advantages over speech. This is why, despite the advent of the tape recorder and the video camera, text is still the predominant archival resource, as it is in any literate society (Olson 1981:99).

More is expected of writers than of most speakers. Conscientious writers of expository prose must work hard to ensure full communication, since there will be no opportunities to adjust the presentation in order to correct incomplete understandings. They may need to choose grammatical and lexical forms that are logically more explicit and hence rely less on inference.

English is especially rich in words and constructions that express relationships between propositions, some of which are used most frequently—and almost exclusively—in text. This greater explicitness and the availability of more specialized forms allows text to be more densely packed with ideas and concepts than, say, speech used to instruct. The combination of grammatical complexity and conceptual material makes text read aloud sound very different from speech. To verify this, just try read aloud this paragraph so that it sounds like natural speech. Compare the following extract from a talk on inflation with the text version that immediately follows it.

SPEECH ORIGINAL

Now let's think about what causes inflation, why do we have it, right? Suppose our government spends too much ... ummm ... spends more than it gets from our taxes. So it's putting out more than its getting in. Where does it get the money from? All the things it needs cost money, lotsa money, yeah? Where's it comin' from. It comes from the printing presses, that's where it comes from. It prints extra cash to pay its bills. There's more dollars around but still the same number .. the same quantity of goods and services, see. No one's making any more product, no one's giving us any more services, okay? So the sellers those guys, you know what they are, they can get away with charging you more. More money to buy those goods but there's no extra goods so they up their prices an' ... so it's ... each dollar buys less, get it? That's what inflation is, that's inflation.

TEXT VERSION

If the federal budget is in a deficit situation, i.e. expenditures exceed tax receipts, then the additional money supply must be supplemented by issuing more money. Growth in the money supply without any corresponding increase in the goods or services produced can only result in inflation.

The text is obviously more compact in proportion to the quantity of information presented. It exploits logical relation markers: *if ... then, result in*, and the *by* prepositional phrase expressing the logical relation of MEANS (*by issuing more money*). The speech original has only the result relation marker *so* and, roughly corresponding to the *if* clause of the *if ... then* sequence, the verb *suppose*. But there is a significant difference in the number of finite verbs, hence, finite clauses. While the text version has three finite verbs, the speech original has eighteen. In part this is because the spoken version has to be fuller and more repetitive if the logical relations are not explicitly stated. In part it is because the text employs complex nominals like *growth in the money supply* and *any increase in the production of goods or services* where the speech original uses finite clauses. Compare the text preposition phrase *without any increase in the production of goods* with its speech counterpart:

> without any increase in the production of goods or services

> still the same number ... the same quantity of goods and services, see ... No one's making any more product, no one's giving us any more services, okay? ... but there's no extra goods

The compactness of the text, and its fuller exploitation of syntax and morphology together make the processing task more difficult despite the greater availability of time. The speech original hammers its points home by repetitions; the listeners are checked for reaction every so often (*right? ... yeah? ... see ... okay ... you know what they are ... get it?*). A conscientious writer must be far more careful than a speaker to ensure that the text says what the writer meant it to say. Obviously the factors involved in the processing of complex expository prose are diverse. What we shall focus on here are some *grammatically* conditioned dimensions of text interpretation. To do this we need first to consider certain formal properties of text content.

V. Dimensions of Text Content

The content of a text is the information it communicates to a competent reader of such texts. Clearly this definition skates rather too lightly over a number of issues, in particular what kind of animal a "competent reader" is. But for our purposes the definition will do. What can we say about this content?

First the content is always more than the meanings of the individual clauses and sentences. Writers, consciously or unconsciously, have selected from the information to be communicated that information which is to be made explicit, leaving some content to be inferred. Some possibly relevant information may, for whatever reason, have been omitted. Of the information explicitly represented, some is asserted, some presupposed. In part, the choices are guided by the writer's view of the intended readership. The selection and arrangement of the content is partly determined by the particular sub-genre of academic exposition. Reports of quantitative sociological research, biochemical experiments, critical analyses of imagery in seventeenth century poetry all have specific conventions as to what is said or unsaid, how the content is organized, and how it must be related to the particular discipline or subdiscipline and to prior work in that field.

Secondly, the ordering of the information has certain internal textual consequences. Information provided later in a text may be adequately interpreted only in the light of information specified earlier. The sequencing itself may indicate logical relationships connecting parts of the text. For example, while this sequence:

i. The audience gasped.

ii. Arnaldo lifted up the puppet and displayed it.

communicates no special logical relation between the two events, the reverse sequence links the events in a cause-effect relation:

i. Arnaldo lifted up the puppet and displayed it.

ii. The audience gasped.

Finally, there is the choice of grammatical forms for the content. When writers choose to include more than one clause in a sentence, they may also choose to include some of the content in dependent clauses, perhaps as a subordinate relative or adverbial clause, perhaps as an embedded clause serving as subject or object of another clause. Or the writer may instead choose a nominalization to represent a semantic proposition. All of these choices affect the relative salience of parts of the content as well as their semantic functioning in the larger contexts of the sentence and text.

The dimensions of text content are thus both subtle and complex. This

discussion will limit itself to just one of the dimensions, but a crucial one, that of the expression of the *propositional content* of the individual sentences that make up a text.

VI. Propositional Content

At the core of the meaning of a text is the sequence of propositions expressed in it. We will define a proposition as a semantic unit consisting of a predicate and one or more arguments.[2]

The interpretation task for propositional content involves identifying each proposition in terms of its predicate and associated arguments. The arguments refer to entities, e.g. my father-in law, parsnips, or the concept of democracy. But knowing the referents of each entity isn't enough. If the predicate is KISS and the arguments are SHEILA and MY FATHER-IN-LAW, we still need to know the roles of the participants in the situation represented, which of the two did the kissing, i.e. filled the AGENT role, and which underwent the kissing, i.e. filled the PATIENT role. These and other roles are referred to by Chomsky (1986) as THEMATIC ROLES.

So processing a text requires at least the matching of a semantic representation with a categorial representation. That is, matching the propositional content, organized in terms of semantic predicates and referential arguments specified for thematic roles, with the grammatical forms—the sequence of constituents belonging to various grammatical categories. At first glance this may not seem too formidable a matching. Consider, for example, the following sentence:

The Philistines attacked Gaza.

The verb *attacked* corresponds to the semantic predicate, the noun phrase *The Philistines* is assigned the Agent role and the noun phrase *Gaza* the Patient role. Note one further system, that of grammatical RELATIONS. The

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[2] We use the term *argument* here in the sense of first-order predicate logic. The arguments are the terms, either constants or variables, which are associated with the predicate to form a proposition. A one-place predicate requires a single argument—a combination often corresponding to the grammatical form SUBJECT-INTRANSITIVE VERB. For discussion, see Allwood, Andersson, and Dahl 1977, especially pp.58–61. We ignore here zero-place predicates such as *rain* which are grammatically realized with an "empty" *it* as Subject. In more recent work in syntax, *argument* is also used as a grammatical term for a constituent (usually a noun phrase) which bears a semantic relation such as Agent, Instrument, Patient, etc. to a particular predicate (typically a verb or predicate adjective).

first noun phrase bears the SUBJECT relation to the clause, the second the OBJECT relation. The verb is said to be the grammatical predicate for the clause. To distinguish this last grammatical relation from the semantic role of predicate, we will refer to the form bearing the grammatical relation as the PREDICATOR.

So the reader must match up semantic units and relations with grammatical units and relations. We list the semantico-grammatical correspondences for the Philistine sentence:

A. SEMANTIC PROPOSITION: *ATTACK, PHILISTINES, GAZA*
    GRAMMATICAL CLAUSE: *The Philistines attacked Gaza.*

B. SEMANTIC PREDICATE: *ATTACK*
    GRAMMATICAL PREDICATOR: *attacked*

C. SEMANTIC ARGUMENTS: *PHILISTINES (Agent)*
                          GAZA (Patient)

    NOUN PHRASES: *the Philistines (Subject)*
                          Gaza (Object)

The predicator in our example corresponds directly to the semantic predicate, each noun phrase corresponds to a semantic argument, and the grammatical relations correspond in a straightforward way to the thematic roles. The subject corresponds to the Agent, and the object to the Patient. Many English clauses reveal these same correspondences. If all clauses were consistent in this way then the reader would find it easy to use the grammatical forms to identify the semantic units and relations that constitute the propositional content of clauses. Subjects would always be noun phrases with the Agent role, objects would always be noun phrases with the Patient role, and semantic predicators would always be expressed as finite verbs. The noun phrase with the Agent role would always precede the verb while that with the Patient role would always follow the verb.

VII. Form and Propositional Content

Of course, English is not that simple. First, not all verbs take Agent noun phrases. Neither of these sentences:

i. Steuben enjoyed the play.

ii. The play pleased Steuben.

contains an Agent. Psychological verbs tend to take one noun phrase with a role we might refer to as EXPERIENCER—or possibly PATIENT—and another with a role often referred to now as the THEME role. But even if we substitute these roles for Agent-Patient roles whenever we deal with psychological predicators, we must face the fact that the sequence in which the Experiencer and Theme noun phrases occur depends on individual properties of the predicator. In the first of the two examples above the Experiencer corresponds to the subject and the Theme to the object. In the second, the opposite sequence in which the Experiencer and Theme noun phrases occur depends on individual properties of the predicator. In the first of the two examples above the Experiencer corresponds to the subject and the Theme to the object. In the second, the opposite is true. So subjects aren't necessarily Agents, nor objects Patients.

Secondly, propositions are not necessarily expressed as clauses with verbs as predicators. Propositions can also be expressed as noun phrases. Compare the following forms:

i   Europeans denounced the tariffs.

ii. the European denunciation of the tariff

Thirdly, even in clauses and noun phrases that contain Agents, the Agent phrase doesn't always precede the predicator. Obvious counterexamples are passive voice clauses like:

The tariffs were denounced by the Europeans.

and their passive noun phrase counterparts like this one:

the denunciation of the tariffs by the Europeans

The Agent argument in both examples is object of a *by* preposition phrase.

This lack of consistency in the correspondences between grammatical categories and relations on the one hand and semantic units and relations on

the other is especially noticeable in academic exposition. As Biber 1987 points out, this is because such exposition employs a greater range of nominal constructions, passives, and preposition phrases. The task of identifying the propositional content of sentences thus cannot be reduced to the task of identifying the grammatical categories and relations.

VIII. Pragmatic Factors in Argument Identification

Readers bring to the interpretation of each proposition a whole range of nongrammatical information—knowledge about situations occurring in the real world or in fictional or hypothetical worlds such as that of Shakespeare's *King Lear* or the world as it might have been if Eve hadn't listened to the Serpent. Readers further make use of pragmatic inference from features of the discourse context. A reader encountering the sentence *A crane was purchased* would interpret it differently according to whether the text was about a building project or the activities of a zoo director. Most often, the relevant information is provided by the prior text. For example, the reference of the noun phrase *the new machine* is made clear in the previous sentence of this text segment:

> A crane was purchased for the project. *The new machine* was expensive, but it turned out to be well worth the cost.

What we will demonstrate here is that the grammar sets certain limits, regardless of the pressures of pragmatic knowledge and inference. Thus the knowledge the reader brings to bear must include some surprisingly specific grammatical knowledge, however unconscious this knowledge may be. While this is not the place to present in detail the specific grammatical parameters within which argument identification operates for English, some illustration should suffice to show their significance.

In general, *pronominals* (in the sense of Chomsky 1981) cannot have their antecedent in the clause or noun phrase containing them. It is possible—but not obligatory for antecedents to be in the next higher clause or noun phrase. On the other hand, *anaphors* such as reflexives, reciprocals (*each other*), and zero forms ("empty categories" in the Chomsky 1981 terminology) are obliged to have their antecedent within their immediate clause or noun phrase. The precise configurations allowed vary according to grammatical category and linear order. Syntactic formulations based on such configurations

as C-Command (Reinhart 1981) block coreference in sentences like this:

He was trying his hardest when *Joseph Treadgold* won.

The *he* cannot have the same referent as *Joseph Treadgold*. If the sentence is placed in a context in which we try to make the preceding text force this *he* to refer to Joseph Treadgold, the grammar will be in conflict with the pragmatics. Here is an example:

Joseph Treadgold was the only man left in the embroidery contest, but he was determined to win. So he was trying his hardest when Joseph Treadgold won.

If pragmatics takes precedence over the grammatical constraints on coreference, the prior text should force the interpretation of *he* as referring to Joseph Treadgold. If the grammatical constraints take precedence, then *he* will not be interpreted as referring to Treadgold.

The reaction of native-speakers polled on these possibilities is to let the grammatical constraints win out over the pragmatic inference. Some speakers endeavor to think of situations in which the sentences would be a well-formed combination. For example, the *he* of the first sentence of the pair might refer to some other person not in the contest but trying to get in. Then the *he* in the second sentence could be understood as not referring to Joseph, and the sentences would be a well-formed pair. But note that the grammatical constraints are observed in this interpretation, i.e. the grammar specifies certain limits to pragmatic interpretation. The second *he* still cannot refer to Joseph. Grammatical parameters constrain interpretation and thus play a significant role in argument identification.

IX. Argument Identification in Complex Prose

The range of possibilities is more rigidly constrained with respect to anaphors such as syntactic zeroes, positions in which the absence of an overt noun phrase forces a specific interpretation as to the reference of the missing noun phrase Argument. In the following example (where *e* is used to mark the missing Argument) the reader identifies the Subject of the infinitive clause *to amend the constitution* by determining the only possible antecedent, the Subject of the matrix clause:

The leaders of the movement wanted *e to amend the constitution*.

The linear position of *e* indicates its grammatical relation, which is subject. The thematic role is identified as Agent, the role assigned by the semantic predicate AMEND. Both the grammatical relation and thematic role are thus determinable within the infinitive clause itself. However the reference of the *e* can only be determined by tracking down its antecedent in the next clause up. But the missing argument isn't always the subject argument, nor is the antecedent always so close.

Consider WH questions like the following:

a. *What e* will absorb the excess lubrication?

b. *What* will the exhaust system absorb *e*?

c. *What* will the exhaust system absorb the excess lubrication with *e*

English-speaking readers or listeners encountering the *what* know that the question word refers to some Argument whose referent is nonhuman. But the grammatical relation and thematic role of the Argument cannot be determined until the readers encounter the unfilled position, that marked above with an *e*. In the case of the (a) sentence, readers don't have to wait long, since the *e* follows immediately after and is the subject, which is assigned the Agent role by the semantic predicate. In (b) the distance is greater, while in (c), not only is the distance greater but the unfilled argument position is an optional one, i.e. one for which the verb is not subcategorized. The determination of the identify of an unfilled optional argument may be less easy since the absence of an optional argument is less noticeable than a gap in a subcategorized position. Context certainly plays a role but, as Ford, Bresnan, and Kaplan 1982 point out, where the Arguments are optional, there are also syntactic biases independent of contextual factors.

The task becomes more formidable, even for native-speakers, if the dependency is a long-distance one, as in the following revisions of the (c) question:

d. *What* do the specifications say the exhaust will absorb the excess lubrication with *e*?

e. The experiment was set up to determine *what* the specifications

say the exhaust will absorb the excess lubrication with *e*.

Sentences as complex as (e) are much more likely to occur in text than in speech. This is true also for a relative clause counterpart of (e) like the following one:

> f. *the retrofitted valve mechanisms* that the specifications say the exhaust will absorb the excess lubrication with *e*.

The obstacle these examples present for comprehension is not so much length as structural complexity. Readers have to hold in memory not only an excessive number of words but also a more complex hierarchical structure. The more complex the structure, the greater is the burden placed on short-term memory.

In part the abundance of complex syntactic constructions in academic prose reflects the complexity and abstract nature of the content. But, unfortunately, complicated language forms can make it hard to determine whether the content is sensible and coherent. Some academics are less than competent as writers. But it is also true that some ideas are extremely difficult to put into readable prose.

Consider a particularly difficult example, one originating somewhat surprisingly in a report of research on reading comprehension! Here is one sentence:

> Different ease for utilization of the top-level structure of one passage over the other may be due to differences in the magnitude of signalling content factors, such as familiarity, or structural factors such as developmental differences in acquisition of the structure strategy with different discourse types.
>
>> B. Meyer et al, "Use of top-level structure in text: Key for reading comprehension of ninth-grade students," *Reading Research Quarterly*, No. 1, 1980, pp. 91–2.

For the purposes of this discussion, we will say that the sentence says the following. It may be easier to use the larger rhetorical organization of one of two passages (*the top-level structure*) in comprehending their content if, among other factors, either or both of the following are true:

a. readers are more familiar with the content

b. readers are more advanced in their perception of rhetorical structure in different types of discourse

We have provided an explanation whose linguistic form can reasonably be compared with that of the original sentence. The difference between our explanation and the original is not really a matter of length. Our statement of the meaning is a little longer than the original (53 words versus 46). More significant are differences in terminology and differences in grammatical packaging. Compare the following:

it may be easier to use the larger rhetorical organization of one of the two passages if...

Different ease for utilization of the top-level structure of one passage over the other may be due to...

Note in particular the original phrase *different ease* versus its counterpart in the explanation version *be easier*. To communicate a predicate notion, the second version uses the predicate adjective *easier*. For the same predicate notion, the original uses a noun phrase, *different ease*, which is itself part of a larger noun phrase subject. In one case a predicate form is used to express a predicate notion; in the other case it is a noun phrase within a larger one that expresses the predicate notion, even though it is not in the predicate relation position. The use of a predicate FORM in our paraphrase makes the predication easier to interpret.

Grammatical structure and semantic function can thus operate in a parallel way. In the original, there is a considerable distance between the grammatical structure and the semantic function encoded by that structure. In the paraphrase, syntactic structure and semantic function are closer, and this simplifies comprehension. The same kind of contrast between the versions is seen in the use in the original of the abstract noun *utilization* versus the infinitive *to use* in the paraphrase.

Although grammatical relations need not correspond to thematic roles on an invariant one-to-one basis, it seems clear that parallelism between grammatical relations such as subject and direct object and thematic roles such as Agent, Patient and Instrument is also helpful for interpretation. The noun phrase *the larger rhetorical structure* is the object of the verb *to use* in our version. The two semantically significant constituents are directly related in the grammatical structure. But, in the original, the counterpart of the object,

the top-level structure, is object of the semantically insignificant preposition *of*. Still, the more basic semantic relation is with the abstract noun preceding the preposition, the noun *utilization*.

Both versions are about comprehension by **readers**, but the original employs grammatical structures which allow any overt mention of the reader to be omitted. This makes for greater compactness and economy, at the expense of some comprehensibility for most of us. In context, the reference is not too unclear. Arguments are frequently omitted when the context makes their specification unnecessary. Experts in reading research may not be helped at all by any overt specification of the reader for the predicate notion expressed as utilization. The omission is not an obligatory omission—as it sometimes is. The authors could easily have written *utilization BY READERS of....* The construction they chose allows them the option of omitting or specifying.

X. Some Conclusions

Note what we have claimed. First, the further the syntax is from propositional structure (e.g. if the semantic predicates are realized as noun phrases rather than verbs, or if Arguments are not overt), the more complex is the interpretation task. Secondly, the choice of one grammatical packaging over another enables the writer to omit the overt mention of one of the "participants" (e.g. the reader). If adequate context is supplied or if the reader is familiar with the subject-matter, the omission may not hinder comprehension. On the other hand, it is just those packagings which allow for argument omission that are likely to be grammatically more complex. Thirdly, it is lexical and grammatical complexity rather than length that makes interpretation more difficult. These complicating factors are more likely to be present in text than in speech and to a much more extreme degree.

All this suggests that if only text grammar imitated speech grammar more closely, then the comprehension task would be much simpler. However, the complexity permitted by natural language grammar can sometimes allow the writer to represent complex content with greater economy and greater communicative efficiency. The abuse of this potential by less skillful writers should not blind us to the power and subtlety that can distinguish good writing. Text that is hard to read is not necessarily inefficient text.

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