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WHAT IS REALLY INVOLVED IN READING AND WRITING*

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The processes underlying written text encoding/decoding are more complex than has previously been assumed. More is involved than is subsumed in mechanical encoding or decoding —in penetrating the spelling, punctuation, and morphosyntax. A model is presented which considers some of the issues and teases out some factors in greater detail. It is proposed that text is not transparent even to native speakers —let alone to non-native speakers —but that the factors implicated can be isolated and addressed in classrooms to make text less opaque. At the same time, conceiving the processes as reciprocal means that understanding the factors can facilitate writing as well as reading.

1. INTRODUCTION

Before one can talk about the factors involved in reading and writing, it is first necessary to understand what we mean by the activities of reading and writing, what sorts of reading and writing most people do. In order to do so, it is necessary to reticulate the possible kinds of audiences with the broad objectives of writing. This exercise can lead to the production of a taxonomy of the genres available in a particular language —English in this case, though it must be clear that the taxonomy of genres in English will not necessarily be in complete accord with such a taxonomy in any other language (Kaplan 1988a); indeed, the taxonomy will not be identical even for all varieties of English— thus, non-metropolitan varieties of English (e.g., Indian-English, Philippino-English, Nigerian-English, etc.) are likely to produce quite different taxonomies from those found in metropolitan varieties (e.g., Australian English, British English, Canadian English, etc.). Such a taxonomy can also show that there is not a one-to-one relationship between genres and rhetorical purpose; that is, a particular genre can, in fact, serve more than one rhetorical intent, and a given rhetorical intent can be accomplished through several genres (Kaplan 1982, 1988b). (It is, of course, also possible that the traditional names for various genres in any given language may be misleading and somewhat inaccurate; that is the genre *diary*, for example, may occur in several cells in the taxonomy and may in fact serve several rhetorical intents.)

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Figure 1. A Model for the Relationship between Audience and Types of Writing

AUDIENCE	Writing without Composing	Writing with Composing	
		for knowledge telling	for knowledge transforming
SELF	shopping list	diary	
ONE KNOWN OTHER	birthday card	personal letter	
ONE UNKNOWN OTHER		business letter	
SMALL-GROUP KNOWN			sermon
SMALL-GROUP UNKNOWN			
LARGE GROUP	tax form		novel drama poem short story

2. A TAXONOMY OF GENRES IN ENGLISH

Figure 1 is an attempt to illustrate the relationship between rhetorical purpose and audiences. As the Figure suggests, audiences can be categorized as consisting of five types: One can address *one's self, one known other* (e. g., a family member), *one unknown other* (e. g., an unknown officer of a business or of government), *a small group of known persons* (e. g., a parish or a class), *a small group of unknown others* (e. g., a group at a conference or in a consultative environment), and *a large group,* which will be by definition composed largely of unknown individuals (e. g., a conference plenary audience or a broad public audience for a published piece).

But, as the Figure further suggests, type and size of audience is not the only variable; one will have different rhetorical purposes in mind in the act of writing or reading. Some writing requires no composing by the writer of text —it may be defined as *writing without composing;* for example, when one completes a questionnaire or fills a form, the rethorical constraints are established by the designer of the form, not by the person completing it. The form defines itself. It is the case that participants in a particular culture (increasingly in a global sub-culture) learn the conventions implicit in form-filling; thus, when confronted with the question:

Sex: ....

one is aware that the proper response is:

male (M) or
female (F)

rather than:

yes (or *no)* or
whenever possible.

But it is not the respondent who determines the rhetorical purpose. Form-filling does not require "composing" in any normal sense; rather, it requires ticking (√) choices provided by the questionnaire composer or responding with a single word or short phrase (e. g., *male, New Zealand, 20/9/29,* etc.).

In every case, there is an assumption about the extent of overlap in world knowledge between the writer and the audience. Clearly, when the audience is one's self or one known other, the amount of overlap is extensive, and when the audience is a large unknown group, the amount of overlap may be insignificant. The assumption about overlap of world knowledge circumscribes the rhetorical intent. Consider the very first cell in the matrix in Figure 1: one of the genres that one employs in writing without composing to one's self is the *shopping list.* Shopping lists are typically composed of nouns or brief noun phrases arranged in columnar order. When the author of the list actually does the shopping, there is a 100% overlap between the world knowledge of the author and the audience. When another person does the shopping, annotation of the list may be required because world knowledge is in fact not identical. When my wife composes the weekly shopping list, it may look like this:

milk
dog food
eggs
laundry soap...
etc.

and when she does the shopping, the list may stand as written because there is a total overlap in world knowledge between writer and reader. But on the occasion when I must do the shopping from her list, the list requires extensive annotation, as, for example:

milk (2 half-gallons of low fat milk with the most distant shelf-date),
dog food (6 cans of whatever is on sale this week),
eggs (1 dozen white, medium),
laundry soap (1 large box of soap powder with bleach + trade name)...

The annotation becomes necessary because the world knowledge of writer and readers does not coincide in this register despite the fact that my wife and I have been together for a great many years.

But human beings do not engage exclusively in writing without composing. On the contrary, some significant portion of written text consists of *writing through composing.* This general category may be subdivided into two parts: writing through composing for *knowledge telling,* and writing through composing for *knowledge transforming* (Bereiter and Scardamalia 1987). *Knowledge telling* is simply what its name suggests; it

is a composing/reading act in which human beings normatively engage with reasonable frequency. The rhetorical intent is simply to pass along information already well known to the author, and readers approach such genres with the intent of receiving knowledge. It is the kind of text which is precisely at the heart of the teaching/learning experience. The classic knowledge-telling text is an encyclopedia entry.

Writing through composing for *knowledge transforming* is quite different. In the knowledge-transforming environment, the writing act becomes a sort of heuristic act through which the composer transforms knowledge into some completely new configuration and is simultaneously him/herself transformed through the process of creating the text. This is, by far, the rarest form of composing activity; many literate human beings live entire lifetimes without ever having the experience of knowledge transforming. The classic knowledge-transforming text is the kind of novel cultures have come to designate as "classic."

Figure 1 contains a random set of genres as illustrations. Readers are encouraged to fill in various other examples from their own experience. Observation of the matrix when the cells are fairly well filled suggests that the genres occurring toward the top left of the Figure are more common while genres occurring toward the bottom right of the Figure are less common. "Common" in the sense used here, refers to normative human behavior in literate societies rather than to actual frequency and distribution of products through society; that is, *few of us* have ever written a novel or even attempted such an endeavor –novels are produced in the tens of thousands of copies and sold in bookstores, held in libraries, owned by individuals– but *most of us* have written a shopping list –existing only in a single ephemeral copy, one which was probably destroyed after the shopping was completed. It is possible that there is a predictable inverse relationship between the frequency of use of a genre and the distribution of copies of the genre; such a notion makes intuitive sense –if something is common, it is undistinguished and not worth replicating or saving, but if something is relatively rare, everyone wants to share in it.

Indeed, if a diagonal is drawn across Figure 1 (as in Figure 2), it becomes possible to claim that the genres which occur above the line are common, frequently produced, and in some senses uninteresting, while those occurring below the line are uncommon, infrequently produced, and in some senses intensely interesting. It can be observed that schools tend to deal with the genres below the line rather than with the genres above the line. But it can further be observed that the genres above the line occur most frequently in literate societies and are used most often by human beings within the normative activities of literate societies. Because these latter genres are so common, it has been the assumption of the schools that they constitute "what everybody knows"; they are virtually never taught, and it is commonly believed that youngsters will intuit these forms from usage. On the other hand, because the genres occurring below the line are relatively rarer (and, to be fair, because they tend to be carriers of high culture), schools devote an inordinate amount of time to them.

This is not an argument against the teaching of belletristic text; it is an argument for the teaching of ordinary genre. There is no evidence that youngsters intuit the more common genre from usage (Connor 1991); on the contrary, one hears a constant complaint to the effect that youngsters do not know how to complete a job application or fill out a drivers' license form. It is important to address the whole range of genres

Figure 2. A Model for the Relationship between Audience and Types of Writing

AUDIENCE	Writing without Composing	Writing with Composing	
		for knowledge telling	for knowledge transforming
SELF	shopping list	diary	
ONE KNOWN OTHER	birthday card	personal letter	
ONE UNKNOWN OTHER		business letter	
SMALL-GROUP KNOWN			sermon
SMALL-GROUP UNKNOWN			
LARGE GROUP	tax form		novel drama poem short story

available in any language, to provide conscious, explicit instruction in the creation and use of all genre-types, and to eschew the notion that some types are so transparent as not to require attention at all. On the contrary, evidence suggests that no text is transparent and that youngsters need explicit focused attention on the full range of genre. This is not to suggest that equal amounts of time must be spent on shopping lists and great novels. At the same time, it seems important to spend the available time on the rhetorical structure of various genres, on the understanding of audience assumptions, and on the relationship between rhetorical intents and available genres.

3. A word about conventional knowledge

The conventions of text –spelling, punctuation, matters of subject-verb agreement, paragraph indentation, margination– also need explicit attention. There is, equally, no reason to assume that learners will intuit the conventions. But these conventions are to a significant degree prerequisite to reading and writing. The writing class which spends its time on conventions is not a writing class; such a structure cheats students by confusing convention with meaning. This is not an argument for the avoidance of conventions; they too are necessary. Rather, this is an argument that the conventions should be attended to *before* reading and writing can be given the attention they deserve.

This matrix in Figures 1 and 2 does not explicitly take account of basic linguistic knowledge. Basic linguistic knowledge exists at two levels: on the one hand, it implicates a knowledge of the *lexicon and semantics* and also of the *morphosyntax* of the language. (The phonological level of language is omitted in this discussion because it is possible for an individual to be able to read in a language s/he does not speak, and because, ideally, skillful readers and writers do not go through a process of phonation as they engage in these activities.) On the other hand, it is equally important to understand the *conventions* of the written system. *Morphosyntactic* knowledge implicates basic sentence recognition as well as awareness of the transformations that are permitted and the transformations that are productive in various environments. *Lexical* and *semantic* knowledge implicates not merely knowledge of meanings but the ability to group lexical meanings into sets evocative of schema (Carrel, Pharis and Liberto 1989); e.g., the set:

hose, shovel, *bulb,* fertilizer, water

is different from the set:

hose, panty, brassiere, girdle, slip

and is again different from the set:

bulb, lamp, lamp-shade, wall socket, wire.

Conventional knowledge (Atkinson 1991) implicates a consciousness of the appearance of text on a page. There is nothing obvious, transparent, or universal in the notions that a text is centered on a page, that it is surrounded by margins on all sides, that paragraphs are indented, that hyphenation occurs at the ends of lines and can only occur between syllables, that punctuation is snugged up against the next immediate leftward word. (In Chinese, by contrast, when children are taught to write, they learn to place each character in an imaginary space; characters are, thus, centered in an imaginary box. So is punctuation; thus, at least this one aspect of the appearance of text is essentially different in Chinese and English.) The pedagogical problem involves recognition of the fact that all three of these features of text –lexical knowledge, morphosyntactic knowledge, and conventional knowledge– need to be taught. Schools are very good at teaching morphosyntactic structure; they are not so skillful at teaching either lexical or conventional knowledge –indeed, they do not always admit that these exist. A further problem lies in the probability that these three kinds of knowledge are prerequisite to reading and writing, not corequisite. The frequent misunderstanding of the relationship between these prerequisite skills and the ability to read and write often results in a substitution of the teaching of these prerequisite skills for the teaching of reading and writing. To summarize, it seems to me that these skills can be grouped together as *performative ability.*

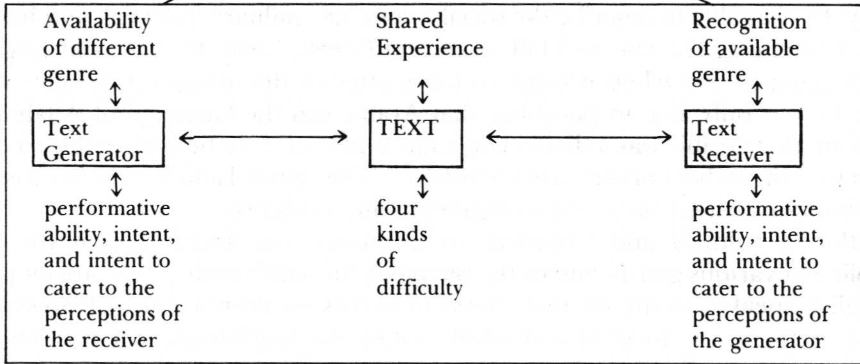
4. A MODEL OF THE FACTORS INVOLVED IN READING AND WRITING

The sort of matrix suggested in Figures 1 and 2, however, does not explicitly account for everything that goes on in reading and writing. There are a number of additional factors involved which must be taken into account in order to have a sense of the complexity of the activities we call reading and writing and of the complexity of the task children are asked to acquire gradually over the schooling years.

Figure 3. Model of Text Generation and Reception

Phenomenological Reality

Cultural and Historical Constraints



Four Kinds of Difficulty

Effect on Generator	Effect on Text	Effect on Receiver
contingent (arcane/technical references which need to be looked up) *tactical* (willingness of the generator to be understood only up to a point)	*ontological* (imitations of the language itself)	*modal* (inaccessible or alien interpretations of the human condition)

Reading and writing do not occur in a vacuum; rather, they occur in a cultural and historical context. Not only is an individual's world knowledge constrained by culture and history, but one's knowledge of what is available for discussion, how topic is established and who owns it, and what constitutes argument and evidence are all equally constrained by culture and history. English speakers, for example, do not find discussion of bathroom functions and of death easy. This is not to say that such discussions cannot occur; on the contrary, they can, but these are not comfortable subjects and, if they do occur, they require an indirectness of language which tends to soften discussion, to obfuscate, to employ highly figurative language.

The question of topic control is an interesting one. In English-speaking cultures, topic control can be accomplished in several different ways. For example, when one answers the telephone, it is with the understanding that the caller, regardless of his/her relative status and power, has control of the topic. In Chinese culture, in most situations, it is the senior individual present in a situation who owns topic; in the English-speaking environment the senior person owns topic only in a clearly hierarchical context (e. g., school principal/student, officer/enlisted person, etc.), but in many contexts it is not clear who owns topic and any person may capture topic.

Some years ago, in working with a doctoral candidate writing on a problem in language planning I was presented with evidence of cultural and historical constraints. The candidate was a deeply devout Moslem, son of a major Islamic leader in his country. He was able to describe the social, economic, military, political, and historical factors influencing the rise and fall of ancient Greek, Latin, French, and English as world languages, but when it came to the matter of discussing the relative role of Arabic, he was only able to point out that Arabic was the language of Allah and of the Koran, that Arabic was a divine language, and therefore he was unable to discuss or even to bring to bear other sorts of evidence. The cultural and historical constraints in his situation limited his access to argument and evidence.

Within a cultural and historical environment, individuals are aware of the availability of various genres and of the purposes for which such genres are employed. An English speaker in the normal course of events would not think of presenting a cooking recipe in the form of a classical sonnet. An English speaker may know the form of a sonnet, will know what its uses are, and will not use it for a mundane topic like a cooking recipe. As an English speaker would not write a recipe in the form of a sonnet, s/he would be equally inhibited in trying to read a recipe in the form of a sonnet. Thus, both text generator and text receiver will be constrained by the availability of various genres and by the traditional uses of those genres.

The matter of performative ability has already been discussed. The point is that both text generator and text receiver will be constrained by their respective performative abilities. To the extent that either is limited in the ability to manipulate morphosyntactic knowledge, lexical knowledge, and conventional knowledge, the individual will be unable to deal with text. But not only must each participant be possessed of some modicum of performative ability; the text generator and text receiver enter into a silent compact in which each demonstrates a willingness to accommodate to the other in terms of implicit intent and awareness of the intent of the other (Kaplan 1983). Communication through a text is quite literally impossible unless there is some degree of shared world knowledge, shared historical and cultural context, shared performative ability, and shared intent between the text generator and the text receiver.

Meaning is not in the text; on the contrary, meaning is negotiated between the text generator and the text receiver through the medium of the text (Widdowson 1984). The medium of the text, however, is not passive. It too is constrained in a number of ways. Steiner (1978) has identified four kinds of "difficulty" implicit in the text. The first two of these difficulties are centered between the text generator and the text; that is, they are difficulties that are created in the text by the text generator. Contingent difficulties adhere to the surface of the text like burrs. *Contingent difficulty* is created by the use of arcane or technical reference (jargon) by the text generator. This paper is full of jargon; in generating this text, I have assumed certain knowledge on the part of the text receiver, and on the basis of that assumption I have felt comfortable in using such terms as *lexical* and *morphosyntactic.* To the extent that my assumptions about the knowledge possessed by the audience reading this text have been incorrect, I have been guilty of creating a contingent difficulty. But such problems can be solved; the text receiver can look up the hard lexical items in a dictionary, or in an encyclopedia, or somewhere. At some point, given the will to discover the contribution of these items to text meaning, they can all be looked up.

Tactical difficulties result from the willingness of the generator to be understood only up to a point. Certainly, in totalitarian states, it is common practice among writers not to make their meaning explicit. But the technique is not restricted to text generators in totalitarian states; in most societies, politicians and other "official" spokespersons often allow themselves to be understood only up to a point. The devices underlying tactical difficulties not only permit a text generator to protect him/herself from the charge of holding unorthodox views but further permit text generators to withhold part of the truth to serve political or even personal ends. The technique is widely practiced in the court room where both witnesses and attorneys may constrain text to achieve some particular end.

While contingent and tactical difficulties are centered between the text generator and the text, *modal difficulties* are centered between the text and the text receiver. Modal difficulties are created when the interpretation of the human condition presented in the text is so inaccessible or alien as to become impenetrable to the text receiver. A number of years ago, I had the privilege of attending an Aboriginal Coroboree in a small Aboriginal community in the Northern Territory of Australia. In the course of this event, tribal elders performed on musical instruments called digeredoos. I was told by my guide that they were, in their performances, telling myths. But the event was so inaccessible to me, partially because of my ignorance of Aboriginal life-styles, partially because I brought to bear on the event evaluative mechanisms insensitive to Aboriginal ways, that I cannot claim to have "understood the text." I could apply my western knowledge of music, and I could invoke my academic knowledge of anthropology in my attempt to understand, but in no way could I achieve the sort of understanding that any Aboriginal youngster could. The society of which I am a member claims an extraordinary ecumenicism, but it is, I think, a spurious ecumenicism, and modal difficulties do occur right across a wide variety of texts which we pretend to be able to access.

Although contingent and tactical difficulties are centered between the text generator and the text and modal difficulties are centered between the text and the text receiver, *ontological difficulties* are centered squarely in the text itself. Ontological difficulties have to do with the constraints on the language itself. While writers of nonsense verse, like Lewis Carrol, and some few poets like e e cummings have attempted to stretch the limits of the language, the fact remains that the language is not extremely susceptible to being bent out of its characteristic shape. While cummings could write "Anyone lived in a pretty how town...," using unpredictable syntactic relationships to achieve an artistic point, could flaunt the conventions of language as he did in writing his name without capital letters or punctuation, or could even succeed in using typography to his own ends, as he did in the poem entitled "Grasshopper" by his editors, the language does not easily lend itself to extreme flexibiliy.

In sum, the generation of text and the reception of text are both constrained by the several variables accounted for in the model. Meaning is not within the text, but is negotiated between the text generator and the text receiver through the medium of the text. That negotiation is constrained by virtue of the fact:

- that it must occur within a phenomenological reality defined in cultural and

historical terms, which is in turn constrained by mutual awareness of the frequency and distribution of available genres,

- that it is sensitive to the performative ability in terms of morphosyntactic, lexical, and conventional knowledge of both text generator and text receiver,
- that it implicates the compact of cooperation both text generator and text receiver must enter into, and
- that it is further constrained by the four kinds of difficulty specified.

If there is any validity in the model here presented, it should be clear that text is never transparent (not to native speakers and certainly not to second-language learners who bring to the task a different configuration of knowledge, a different awareness of the frequency and distribution of genre, and a different modal and ontological perception), and that the acts of reading and writing in every language are very complex indeed. It is not enough to bring to the acts of reading and writing a performative ability; on the contrary, in order to derive meaning from the negotiation between text generator and text receiver, both must bring to that negotiation a great deal of knowledge and skill from a variety of knowledge universes. If this were not true, text would have only one absolute meaning and the phenomenon of deriving a different meaning from each exposure to a given text could not exist. It seems clear that the knowledges brought to the acts of reading and writing differ with relative maturity and experience. At the same time, it is not the case that the young reader/writer must be isolated from the text by virtue of its opacity. The function of the teacher is not to provide the learner with one inviolable meaning, but rather to provide the learner with the skills needed to participate in the negotiation of meaning and to facilitate with the learner greater degrees of transparency of text (Kaplan 1986). But it is probably not the case that the learner can acquire the capacity to negotiate meaning without help, that the learner can intuit the meaning of the text (which would imply that the meaning is there to be intuited), or that the teacher can assume the transparency of the task. Reading and writing are much more difficult tasks than they have been represented to be, and as the societal meaning of literacy changes, as the literacy tasks become more demanding, it seems essential that teachers understand the complexity of the task and provide the sorts of instruction that is designed to make text less opaque and increasingly accessible (Cressy 1980, Kaplan 1990, Kintgen, Kroll and Rose 1988).

5. Conclusion

In this paper, I have tried to explicate what I believe to be the factors underlying the acts of reading and writing. To the extent that these two activities may be perceived as being reciprocal, these various factors need to be taken into account in the teaching of reading and writing. My basic purpose in presenting this model is to suggest that the underlying activity is extremely complex, that learning to read and to write (as opposed to learning only to decode text) is likely to take longer than has been assumed in the past, but most importantly that learning to read and write is not simply a matter of understanding the lexical and syntactic structure or the conventions of a language.

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