

## HYPERTEXT

Spoken language is a series of words, and so is conventional writing. We are used to sequential writing, and so we come easily to suppose that writing is intrinsically sequential. It need not be and should not be.

There are two outstanding arguments for breaking away from sequential presentation. One is that *it spoils the unity and structure of interconnection*. The other is that *it forces a single sequence for all readers which may be appropriate for none*.

### 1. *Spoiling the Unity and Structure*

The sequentiality of text is based on the sequentiality of language and the sequentiality of printing and binding. These two simple and everyday facts have led us to thinking that text is intrinsically sequential. This has led to the fallacy that presentation *should* be intrinsically sequential. Marshall McLuhan even put this fallacy at the center of European thought, and perhaps he was right, perhaps it is.

But sequentiality is not necessary. A structure of thought is not itself sequential. It is an interwoven system of ideas (what I like to call a *structangle*). None of the ideas necessarily comes first; and breaking up these ideas into a presentational sequence is

an arbitrary and complex process. It is often also a destructive process, since in taking apart the whole system of connection to present it sequentially, we can scarcely avoid breaking-- that is, leaving out-- some of the connections that are a part of the whole.

Of course, we do this kind of simplifying sequential breakdown all the time, but that doesn't mean we *should*, it just means we *have to*.

(Some thinkers, of course, really *do* believe that certain of their ideas are primary and that the rest follow from them, and that's fine. I criticize merely the presumption that all systems of thought have an intrinsic sequence, or should be made to.)

### 2. *Forcing Simple Sequence Inappropriate for All Readers*

People have different backgrounds and styles (as I said of the Noids and Fluffies in Chapter 1.3). Yet sequential text, to which we are funneled by tradition and technology, forces us to write the same sequences for everyone, which may be appropriate for some readers and leave others out in the cold, or which may be appropriate for nobody. (This book, too, is hardly everybody's cup of tea, since there is not very much *choice* among its sequences.)

## LITERARY 1/14 MACHINES

Thus it would be greatly preferable if we could easily create different pathways for different readers, based upon background, taste and probably understanding. Now, in normal circumstances this is handled by writing different articles (and books) about the same subject, and publishing them in different places (or ways) for different audiences. This will give readers many choices in approaching the same work.

In the computer world this will change, especially if-- as I foresee-- there will be one great repository, and everything will be equally accessible. This means that "different" articles and books will more likely be *different versions of the same work*, and *different pathways through it for different readers*.

#### THE ALTERNATIVE: NONSEQUENCE

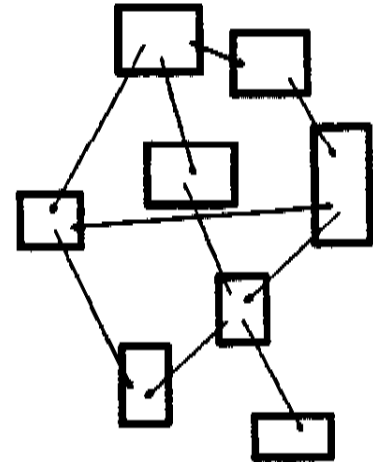
Nonsequential writing on paper can be all sorts of things-- magazine layouts, funny arrangements of poetry, pieces of writing connected by lines, or many other things.

As we go in this century from paper to the computer screen-- and tomorrow's computer screens will have the richness and resolution of paper-- all these nonsequential forms, and more, are possible. And we must discover and invent them.

Some are obvious. The most obvious is

that which simply connects chunks of text by alternative choices-- we may call these *links*, of which more later-- presented to the user. I call this simply *chunk style hypertext*. The user, or reader, moves through it by reading one chunk, then choosing the next.\*

#### CHUNK STYLE HYPERTEXT



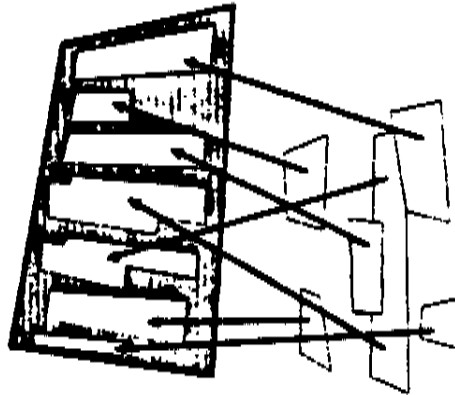
Another form of text that is becoming increasingly important is *compound text*, where materials are viewed and combined with others. (This term too has recently become common.) A good way of visualizing this is as a set of windows to original materials from the compound texts themselves. Thus I prefer to call this *windowing text*.

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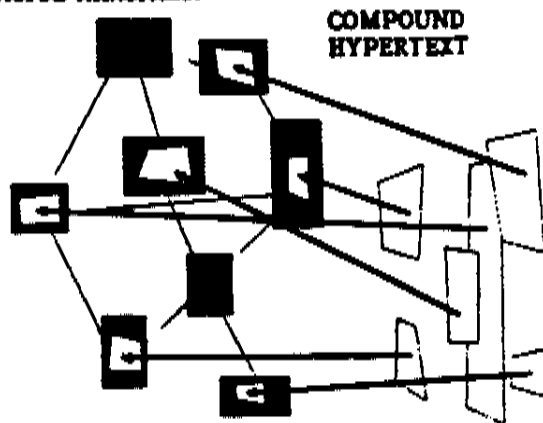
\*Note that if the connections to be followed are given different types, we may call these *colored links*.

(This is the mathematical usage, where connections are called "colored" if they are of different types.)

## LITERARY 1/15 MACHINES

**WINDOWING OR  
COMPOUND TEXT**

Extending the notion slightly, we get *windowing hypertext*-- where nonsequential writings-- hypertexts-- window to other stored materials.

**COMPOUND  
HYPERTEXT**

It is this notion, then, of windowing or compound hypertext-- which we foresee as the vital and basic new information system of the future-- that has charged and inspired the present work.

Unfortunately, for thousands of years the idea of sequence has been too much with us,\* because nothing else has been practical; and indeed, creating a system subtle and profound enough to meet our real needs has proven to be an extensive task indeed.

*The structure of ideas* is never sequential; and indeed, our thought processes are not very sequential either. True, only a few thoughts at a time pass across the central screen of the mind; but as you consider a thing, your thoughts crisscross it constantly, reviewing first one connection, then another. Each new idea is compared with many parts of the whole picture, or with some mental visualization of the whole picture itself.

It is the representation of whole structures of ideas, and placing them on the page for others to understand, that we call *writing*. Writing is the representation and the presentation of thought.

(So are pictures and diagrams; but they are intrinsically nonsequential, and so not relevant to the present argument.)

\*Except for the Talmud. This is an extraordinary hypertext, a body of accumulated comment and controversy, mostly on the Torah (the Hebrew Old Testament) and on life in general, by Jewish scholars of old. It has been accreted over centuries

with commentaries on commentaries. This hypertext is a fundamental document of Jewish religion and culture, and the Talmudic scholar is one who knows many of its pathways.

## LITERARY 1/16 MACHINES

## HYPERTEXT DEFINED

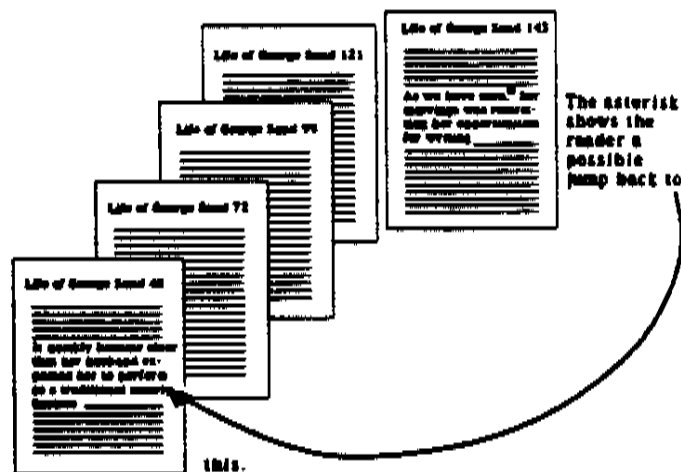
By hypertext I simply mean non-sequential writing. A magazine layout, with sequential text and inset illustrations and boxes, is thus hypertext. So is the front page of a newspaper, and so are various programmed books now seen on the drugstore stands (where you make a choice at the end of a page, and are directed to other specific pages).

Computers are not intrinsically involved with the hypertext concept. But computers *will* be involved with hypertext in every way, and in systems of every style. (Ideally, you the reader shall be free to choose the next thing to look at-- though repressive forms of hypertext do turn up.)

Many people consider these forms of writing to be new and drastic and threatening. However, I would like to take the position that hypertext is fundamentally traditional and in the mainstream of literature.

Customary writing chooses one expository sequence from among the possible myriad; hypertext allows many, all available to the reader.

In fact, however, we constantly depart from sequence, citing things ahead and behind in the text. Phrases like "as we have already said" and "as we will see" are really implicit pointers to contents elsewhere in the sequence.



# LITERARY 1/17 MACHINES