

Scripts: an Example from Newspaper Texts

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This paper advocates the use of *scripts* for a top-down approach to reading texts. A script is defined as 'a set of stereotypic expectations about content in a given text'. The paper analyzes *forecasting* scripts in newspapers and distinguishes the following categories: *Prediction, Time, Source, Basis, Range, Reassessment* and *Modifications*. It provides illustrative examples, and argues that such a description is helpful as a training device across a wide range of genres.

INTRODUCTION

Many people rely on the print media for the acquisition of up-to-the-minute knowledge. In the case of those people who are interested in getting information through a second language, the print media assumes an even greater importance. As part of our ongoing work in analyzing the language and functions of English, we report here on our application of the notion of *script* to newspaper texts. The abstract notion of a script makes obvious, similarities of content in many newspaper articles seemingly different in surface manifestation.

In this paper we explore the notion of script. One script, the forecasting script is developed and exemplified using articles from *The New York Times* and *The Wall Street Journal*. In our work in reading, we have been developing the notion that it is neither the language nor the user but the interaction between the two that is important. Among others, Van de Velde (1981) has even asserted that a text owes its very coherence to a reader's interaction with it.

We believe that *script*, as we use the concept, is the catalyst between reader and text that allows a top-down approach. Further, it appears that the top-down approach is the best strategy for a second language reader to use in obtaining meaning from a text. (A top-down approach develops from the conclusion that total meaning is something more than the sum of the component meanings. Briefly, top-down implies the view that it is the overall meaning that helps us to interpret individual components such as sentences or paragraphs. In contrast, a bottom-up approach would attempt to arrive at overall meaning by adding up the meanings of the smaller components. See, for example, the discussion of contrasting results from these two strategies in Huckin and Olsen 1983.)

SCRIPT

In linguistics, the recent interest in the distinction between a *script* and a *story* is traced to Roger Schank (1973). In one of Schank's more recent works, the concept of script is described as a "predetermined, stereotyped sequence of actions that defines a well-known situation" (Schank and Abelson 1977: 41). In contrast to the notion of a script, which exists at an abstract level, a story is the manifestation of a script which is given detailed reality in a specified situation. For example *Visiting a doctor* is a familiar script in the literature (detailed in Haberlandt and Bingham 1982: 33) whereas *I went to see Dr. Thompson yesterday* is the beginning of a story.

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There are certain expectations each of us shares if our experiences have been somewhat similar. At professional conferences, to take an example, we expect to have a registration table and name tags. We expect shared social activities such as shared meals. We expect a program detailing the lectures and discussion sections. We expect to meet people who are friends or acquaintances or at least new people who are interested in the same topics we are interested in. There are many levels of abstraction on which we could describe a conference; but on all levels there are expectations of some events that are obligatory to all conferences and some events that are optional (ie which may or may not occur).

There appear to be several kinds of evidence for scripts. One type of evidence is found in studies which have asked people to list expected events or to put random-ordered events in a sequence. One common experimental script has been *Visiting a Doctor's Office*. (This script from Bower, Black and Turner is reported in Haberlandt and Bingham 1982.) Another kind of evidence as reported by Labov (1972: 380-81) and others is found in the linguistic patterns that we use to tell the story of a situation. We comment especially on the items that varied from our anticipated script; furthermore, we often comment negatively. Returning to the *Attending a Conference* script that we briefly began to sketch earlier, we note that if a person reports *I didn't meet anyone I knew* his statement contains the implicature: *One usually meets people one knows at a conference*.

Although many studies have concentrated on the reality of scripts, very few have considered their complexity. Bower et al (1979) give the example of two businessmen headed for a convention. The two men conclude a business deal while having lunch in the dining car of a train. They describe this scene as containing four separate scripts: a business-deal script, a train script, a convention script and a special version of the restaurant script. (This example is noted from Haberlandt and Bingham 1982.)

Our working definition of script differs from that of many of the other current researchers; these differences are due partly to the different types of materials that we are analyzing and partly to a difference in philosophy. In contrast to Schank and Abelson, our definition of script is *a set of stereotypic expectations about content in a given text*. Notice that our definition differs from Schank and Abelson's in at least two significant ways. In referring to a written text, we speak of *expectations of content* rather than *actions*. Also, we do not yet feel comfortable in stating that the sequence is pre-determined, although we may later choose to do so.

At this point in our research we are concentrating on developing a list of different scripts and a list of expected content categories - both obligatory and optional - within each script. In our work we are developing a list of scripts which are at an appropriate level of abstraction to facilitate reading texts in newspapers in a second language. Some of the scripts we have found useful may help to indicate the abstract level we are working on: *Taking Stock*, *Forecasting*, and *Changing Power*. In *Changing Power*, as an example, we have found a useful level of abstraction which ties together such diverse stories as a military takeover, an assassination of a leader, retirement of a corporate president, and the inauguration of a newly-elected official. It seems that the questions that a reader wants answers to are surprisingly similar in each of these instances, and others as well. To illustrate, here are some of the obligatory concepts that a reader anticipates in a script on *Changing Power*: *Who is the new leader? How did he come to*

power? Was this ascension to power anticipated? What is the reaction of others to this change? What do we know about the new leader? What problems will he be facing? There may be other obligatory concepts; at the moment we can only assert that obligatory concepts are so strong that if a journalist has no information to develop one or more of them, he often reacts to the obligatory pressure by saying that he does not have the knowledge. (Take the examples: Was this change anticipated? What is the reaction? *Widely expected in the industry, people do not expect major changes.* vs. *It is not known yet what public reaction will be. Most people are still at work and it is possible the news has not spread widely yet.*)

FORECASTING

The script that we would like to explore in this paper is centered around the concept of *forecasting*. Forecasting is a form of prediction which seems to depend on the specialized information and training of the forecaster for its legitimacy. Most people would not be qualified to issue a weather forecast, for example: however, anyone would be able to make a weather prediction and no one would question his ability or right to do so.

To give an idea of the range of articles we are including in the forecasting script, we list a few illustrative headlines. (The A-L designation will be used to refer to the texts that later examples are drawn from.) The first few headlines are relatively straightforward:

Text A: Technology: Retailing by Computer. (*New York Times* 1/13/83 p.Y-28)

Text B: As Gypsy Moth Broadens Its Range, Little Chance of Curbing Spread is seen. (*New York Times* 3/30/83 p.C-1. Science Section Feature Article.)

Text C: A Retailer That's Leading the Way. (*New York Times*. 12/12/82 p.C-1. Lead Business Article.)

Text D: Blount Sees Profit Rise in Fiscal Third Period and Record Net in Year. (*Wall Street Journal*. 11/30/82 p.10.)

Text E: Study Cites Peril in World Agricultural Decline. (*New York Times*. 3/29/82 p.A-10.)

Text F: I.M.F. Sees Worldwide Stagnation. (*New York Times*. 3/28/82. p.D-1.)

Text G: New Forecast on Building. (*New York Times*. 3/14/82. p.D-12.)

Text H: Hong Kong Moves In for High Fashion Sales. (*New York Times* 3/27/83 p.F-4.)

Text I: Winter is Predicted to be Cold in West, Mild Along Atlantic. (*Wall Street Journal*. 11/30/82. p.26.)

Text J: Utility Shutoffs Reported on Rise. (*New York Times* 12/12/82 p.A-1.)

The following headlines illustrate that the headline alone does not always give the reader sufficient information to assign a script immediately without resorting to other checking strategies.

Text K: Sharp Rise is Found in Lung Cancer Deaths. (*New York Times*. 1/18/82. p.12.)

Notice that the date coming at the beginning of a calendar year indicates to the reader that the rise is either a report of the previous year or a prediction for the coming year. In fact, this article predicts the rise during the 1982 year.

Text L: Mount St. Helens Continues to Rumble. (New York Times. 3/16/82 p.C-3.)

The first sentence indicates that the article is a forecasting script. *Mt. St. Helens will erupt, probably mildly in one to five days.*

These two headlines show the need to use more than one source of information such as a date, subheadline, or a lead (i.e. the first sentence of a news article) before conclusively assigning a script. Eventually, we need to describe the features of headlines that are likely to conform to a script and to suggest strategies for ruling out the misleading ones. Using the example of *Forecasting*, key expressions which help to tentatively assign a forecasting script are: *sees, predicts, expects*, etc.

In a forecasting script a number of distinct categories of content appear to exist in a newspaper text, which are detailed below. For now we are basing our statements only on U.S. newspaper texts; further investigation of other texts in magazines, for example, would be necessary before we can state conclusively that the texts in different types of publications are not substantially different. These categories are based on detailed study of twelve newspaper texts.

We will list the categories of content and provide an illustration for each. Then, we will use two complete texts to instantiate these categories as they are manifested in relatively short newspaper texts.

A Forecasting Script appears to contain seven categories: *Prediction, Time, Source, Basis, Range, Reassessment, and Modifications.*

1. **Prediction** contains the topic and the announcement of an expected trend (comparative) or an expected event (non-comparative). Prediction answers the question: *What is going to happen?*

Comparative: *Now, the computer is on the verge of making a more direct impact on the way consumers do their shopping. (Text A)*

Non-comparative: *Mount St Helens will erupt, ... (Text L)*

2. **Time** tells what time period a forecast covers. It can be specific or non-specific. Furthermore, it can be a point or a duration. Time answers: *When are we talking about?*

Specified: *in winter 1982 (Text J)*

Non-specified: *'soon' or 'in the foreseeable future'*

(Note: ' ' indicates that the expression occurred in other data but not the specific texts referred to in this study.)

3. **Source**, a very important category in this script, identifies who gave the forecast and establishes the credentials of the person or group. Source answers: *Who made the prediction?* or *What organization released the prediction?* In our data the order often moves from a) a classification to b) a named group or specific member within the classification to c) a named spokesperson. This sequence may take place over a span of several sentences.

an industry group → *McGraw Hill Information Systems* → *George A. Christie.*

Source also answers: *What are the qualifications of this person or group? Why should they be listened to?*

Spokesperson is named and usually titled: *George A. Christie, Vice-President and Chief Economist of McGraw Hill Information Systems* (Text G)

Group is named and identified with focus on qualification: *Worldwatch Institute, a private research organization concerned with international environmental and economic problems* (Text E)

A group which is not just well-known but also widely accepted as qualified may not have its qualifications stated explicitly: *American Cancer Society* (Text K)

4. **Basis** provides the evidence on which the prediction is based and gives some indication of the reliability of the evidence. Basis answers: *What evidence is the forecast based on?*

Sharply rising prices for gas and electricity, cuts in welfare benefits and rising long term unemployment are making more people than ever fall behind in their utility bills leading to record numbers of utility shutoffs. (Text J)

How reliable is the evidence?: Two types of highly reliable evidence are first-hand observation or current statistics.

There are already 25,000 homes without heat or electricity in Ohio. (Text J)

The most interesting example of detailing the reliability of the prediction admitted that *Long range weather forecasting is a chancy business, of course*, and continued on to give the presumed accuracy of its predictions.

The weather service in the past has been cautious in its long-range winter forecasts. The temperature outlook has been rated as having a 65% chance of coming true in a particular place, and the precipitation forecast has been placed at just a 55% chance.

This year, for the first time, Mr Gilman introduced gradations in his probabilities. For example, his map shows a 55% chance of higher-than-normal temperatures this winter around Boston, but his confidence improves to 60% around New York City and to 65% in a coastline strip from Delaware to South Carolina.

Similarly, in the West, the map shows 60% chance of below-normal temperatures between the Rockies and the Sierra Nevada Mountains, but Mr Gilman is 70% sure of cold weather around the Great Salt Lake.

In a line running through the Midwest, the probability of above- or below-normal temperatures is placed at 50%, which means that the forecasters just don't know.

(Extract from Text I: paragraphs 8-11)

Categories one through four appear to be obligatory - which means that almost without exception each is explicitly stated in a forecast script. The infrequent exception is *time* when the implicit meaning is absolutely clear. The fifth category, *range*, appears to be a bridge between obligatory and optional. Although the notion of range appears to be obligatory, the expression of range may be implicit in short texts, especially specialist-to-specialist texts. In longer forecasts range is almost always explicit.

5. **Range** refers to the extent of the forecast. Range answers: *Who/what is affected by the forecast?*

The gypsy moth has spread west and south. (Text B)

The kind of problem ... is especially severe in northern states where the winters are coldest and where the economic slump and high unemployment have left more people pinched for cash. (Text I)

Notice that while the descriptions of the constituencies are somewhat general, they are nevertheless explicit.

6. **Reassessment** revolves around the notion of a change from an earlier prediction. Reassessment answers: *What was otherwise expected?*

...building contracting this year is expected to total 165.3 billion, about 4 billion less than the level predicted five months ago. (Text G)

Reassessment can also contain an answer to: *If this forecast weren't going to come true, what might the situation have been?*

...from 1950 to 1978...the death rate for all cancers increased from 157 to 169.9 per 1000 population. Excluding lung cancer (the topic of the forecast), the death rate dropped from 144 to 128.7. (Text K)

7. **Modification** refers to changes that could be made to prevent a prediction from coming true, to ensure its coming true or merely to augment or weaken its force. Modification answers: *Are there factors which could change the basis of the prediction?*

natural - *the severity of the winter* (implied but not stated in the text about utility cutoffs)

human - *legislation to prevent cutoffs* (Text J)

In addition, modification includes: *Are there ways to augment or reduce the impact (consequences) of the forecast when it comes true?*

...go back to wearing long johns or piling up blankets, using the oven (Text J)

These seven categories of content appear to account for most of the anticipated information in both abbreviated and extended forecasts.

EXAMPLE OF FORECASTING TEXTS

The following short newspaper articles illustrate most of the features of a forecasting script.

(Text L - *New York Times* - March 16, 1982 p. C-3)

Mount St. Helens Continues to Rumble

Vancouver, Wash., March 15 (AP) - Mount St. Helens will erupt, probably mildly, in one to five days, scientists said tonight after conducting tests within the volcano's crater.

Scientists from the United States Geological Survey and the University of Washington's geophysics center flew into the crater today and measured the floor and the dome-shaped lava

formation to check for swelling or expansion. They then issued an advisory saying the accelerating rates of ground swelling indicated the eruption was due.

Last Friday the two agencies issued an advisory predicting a possibly violent eruption within three

weeks. They said changes in the crater flood and the increased tiny, deep earthquakes pointed to a new eruption within three weeks. Very small earthquakes continuously shook the mountain over the weekend, but the volcano remained relatively quiet today.

In this text, sentence one contains the **prediction** (*Mt. St. Helens will erupt*), **time** (*in one to five days*), **classification of the source** (*scientists*), and **basis** (*after conducting tests within the volcano's crater*). Sentence two adds qualifications of the source (*scientists from the U.S. Geological Survey and the University of Washington's Geophysics Center*), specific facts for basis, and reliability of basis (*first-hand observation*). Paragraph three contains **reassessment** from an earlier prediction (the time has become more limited; from *within three weeks* to *in one to five days*) and the degree of the predicted eruption has been decreased (from *possibly violent* to *probably mildly*).

Interestingly, **range** is not explicit. However, the tendency to expect range is so powerful that readers report that they tend to infer that the volcano must not be a threat to farms or villages based on the fact that it is not mentioned. In other words, because the range of danger is not mentioned, readers, even readers who are naive about this specific situation, assume that there isn't any. Furthermore, this interpretation is consistent in this case with the interpretations of readers whose previous experience allows them to infer from the date that all nearby areas had already been devastated by the prior eruptions. For us, this is a very vivid example of the importance of including complete reference materials on all articles taken from newspapers.

Example 2: (Text K - *The New York Times* - January 18, 1982 p.A-12)

Sharp Rise Is Found In Lung Cancer Deaths

by United Press International

Lung cancer will account for more than 25 percent of all cancer deaths this year, a startling rise from a generation ago, the American Cancer Society said yesterday.

The society said in its 1982 edition of "Cancer Facts and Figures" that lung cancer would kill 111,000 of the nation's estimated 430,000 cancer victims this year. A generation ago, in 1950, lung cancer deaths accounted for only 8.7 percent of the cancer mortality rate.

"If it weren't for lung cancer developing at a much faster rate than any other kind of cancer, the overall cancer death rate would actually be going down," said Lawrence Garfinkel, the society's vice president for cancer prevention.

The society estimated that 9,000 more Americans would die of cancer this year than died of the disease in 1981. Two-thirds of the additional deaths are directly attributable to lung cancer.

The report attributed high death rate for lung cancer to smoking patterns of 15 to 20 years ago, which is the incubation period for that form of cancer.

From 1950 to 1978, the last year for which statistics are available, the death rate for all cancers increased from 157 to 169.9 per 100,000 population. Excluding lung cancer, the death rate dropped from 144 to 128.7.

"The irony of this situation is that lung cancer is among the most preventable," Mr Garfinkel said. "The best way to avoid getting it is to give up cigarettes."

In this text, we also find the date of the article a significant factor for selecting a forecasting script. The title would almost appear to suggest an account of something that has already happened; but the January date coupled with *this year* suggest *forecast* rather than *report*. The interesting category in this text is **modification**. There appears to be some variation in the interpretation of who is effected by giving up cigarettes. Can those who began smoking 19 or 20 years ago, still influence their destiny by stopping now? Or does stopping now only influence their destiny 19 or 20 years into the future? (These various interpretations illustrate the power of the interaction between text and reader.)

FUTURE RESEARCH

We will now briefly note the questions that we will raise in our continuing research on scripts themselves. After our taxonomy of scripts is developed, we plan to investigate further the interaction between script and reader. Briefly, then here are some of our nagging questions.

- A. Although scripts obviously exist on a continuum of abstractions, is there some optimal point of abstraction that will yield a relatively small number of scripts that will account for the majority of texts?
- B. What strategies help a reader select the most appropriate script(s) for a text? For the moment we are leaving aside the question of reader plan or purpose which helps him to select from among the several simultaneous, competing scripts. Our question here is what are the competing scripts.
- C. Within each of our scripts (and we expect the final useful number for newspaper articles to be about fifteen) which categories of content are obligatory and which are optional?
- D. Is there a predictable sequence of categories of content? (Here we suspect the answer will be 'no' beyond the obligatory and optional groupings that seem to be emerging.)
- E. To what extent is there overlapping? (i.e. which categories of content occur in more than one script?) In the same vein, are some categories unique? (i.e. categories which occur in only one script) Galambos (1981) looks at similar notions, namely 'distinctiveness' and 'indispensability' in describing script events.
- F. To what extent are the actual scripts predictable across cultures or across languages?
- G. Within a category of content, how predictable is the use of certain vocabulary or phrases in describing a story? If the manifestation of a script has highly predictable language, as we believe it does, then this information will be very useful when developing materials for second language readers.

ENGLISH FOR SPECIAL PURPOSES

In conclusion, we would like to make three general points about the implications of our work for the teaching of English for Special Purposes.

- I. **Student Grouping** We need not be as concerned as we have been about heterogeneity of student backgrounds and long-term goals. At the level of

abstraction we are utilizing, teachers can emphasize commonality of categories of content. The forecast script, for example, appears in journalism texts about many subjects such as science, medicine, weather, finance, etc.

- II. **Teaching Materials** Teachers who are aware of the concept of script should be able to develop a script as a class activity and immediately apply it to a just-received newspaper. Obviously, there are many ways to cut up a text for study and many possible levels of abstraction. We are recommending a *process*, not a specific script. In developing the process, the teacher should remember that the reading itself is a self-correcting, evaluative device - a matching process, if you will. The lack of classroom materials need not be a reason for postponing the introduction of the process.
- III. **Teaching Content** This research fits in with the large amount of research on Languages for Special Purposes (or LSP). (See Ulijn and Pugh, 1984.) The LSP research clearly indicates that the content of a reading course is not words (not even technical words). The appropriate content of a reading course is suggesting strategies which the learner may apply himself to his own reading, so that he may more quickly develop independent reading habits that allow him to invoke the scripts that conform to his individual plans and goals.

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