

Some Hypotheses on the Nature of the Skill Development Process in Second Language Reading

Philip Hauptman
University of Ottawa

ABSTRACT: This article proposes a view of the Skill Development Process within the reading process. At the same time, the skills of *scanning* and *skimming* are explained within this proposed view. Skill Development is seen through hypotheses which propose how the Skill Development Process is hierarchical in nature beginning with lower order sub-processes. Such sub-processes are fundamentally processes of "identification," (i.e., *scanning*) the sub-processes of which are complex and hierarchical. After "identification" the Skill Development Process becomes a higher order process which introduces the sub-processes involved in "understanding," which involves *skimming*, the complex end product of having gone through—often to varying degrees—the preceding stages. The highest order process is "evaluation" which requires that the previous sub-processes have been accomplished.

1.0 INTRODUCTION

This is a practically-oriented article in which I will advance a number of hypotheses about certain aspects of the reading process, especially as it involves L2 readers. We will first look at the skill development process and sub-processes, including the processes of skimming and scanning. The hypotheses proposed are consistent with both the ideas of Benjamin Bloom (1956) regarding the hierarchical nature of cognitive activity and a schema-theoretic model of the reading process (---- 2000; Rumelhart 1977, 1980).

2.0 THE SKILL DEVELOPMENT PROCESS

Hypothesis I, The Skill Development Hypothesis:

Skill Development is a multi-stage hierarchical macroprocess, each stage consisting of sub-processes which range from lower-order to higher-order sub-processes.

Following the basic tenets of the hierarchical nature of educational goals described in Bloom's Taxonomy (Bloom 1956), Hypothesis I proposes, first of all, that the Skill Development Process is hierarchical in nature. The hypothesis further specifies that this is a macroprocess which consists of seven sub-processes grouped into three stages; each sub-process is dependent on and cognitively more exigent than the preceding, beginning with the lowest-order sub-process and working up to higher-order processes. (The stages and sub-processes of the Skill Development Process are represented in Figure 1 below.)

In a similar way, each stage in the process depends on and is more exigent than the preceding stage. The first or lowest level stage, we refer to as the *Identification Stage* (A–D in Figure 1) and would correspond to what is frequently referred to as a "beginning-level" L2 proficiency range. (I.e., earlier sub-processes could normally be performed by "beginning-level" students, and the later sub-processes could normally require an "advanced-beginning" or "low-intermediate" level to complete.) The second stage we call the *Understanding Stage* (E–F in Figure 1), and would normally correspond to an "intermediate-level" L2 proficiency range. In this case, sub-process E would likely require an "intermediate" level proficiency and sub-process F a "high-intermediate" or "low-advanced" level to complete. The third and highest order stage is the *Evaluation Stage* (G in Figure 1). This stage would most probably require an advanced-level of proficiency. More precisely, according to Hypothesis I, *understanding* involves more cognitive activity than *identifying*, and *evaluating* is more cognitively demanding than *understanding*.

2.1 Identification Stage

The Identification Stage as defined here pertains to the recognition of an element

or series of elements within a particular context. *Identification*, then, refers to the matching which takes place between an element and the corresponding stored schema or schemata. It is proposed here that the first three identification sub-processes are *scanning* sub-processes and that the entire group, the scanning stages plus *D. Identification of the Main Idea* is the *skimming* process. This is described in detail in Section 2.1.5 below.

Figure 1: The Skill Development Process: Stages and Sub-Processes

STAGES	SUB-PROCESSES
IDENTIFICATION	<p>A. IDENTIFICATION of the Topic.</p> <p style="text-align: center;">⊙</p> <p>B. IDENTIFICATION of Individual Elements Related to the Topic.</p> <p style="text-align: center;">⊙</p> <p>C. IDENTIFICATION of the Relationship of the Individual Elements to the Topic.</p> <p style="text-align: center;">⊙</p> <p>D. IDENTIFICATION of the Main Idea.</p>
UNDERSTANDING	<p style="text-align: center;">⊙</p> <p>E. UNDERSTANDING the Relationship Between the Main Idea and the Subordinate Details.</p> <p style="text-align: center;">⊙</p> <p>F. UNDERSTANDING the Discourse.</p>

EVALUATION	● G. EVALUATION of the Text.
------------	---------------------------------

2.1.1 SCANNING

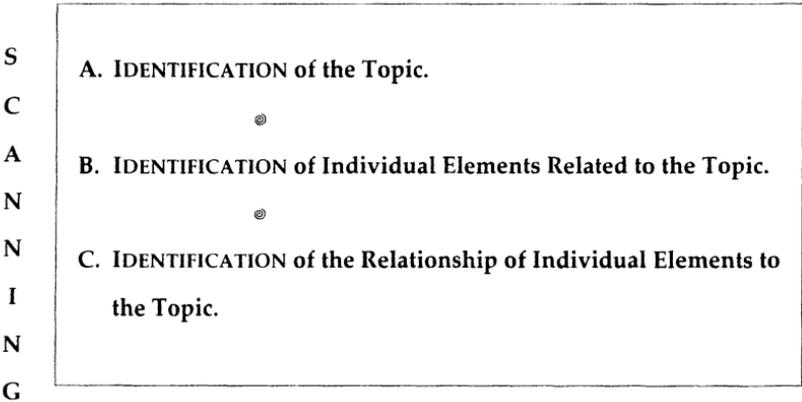
The present use of the term *scanning* is quite standard: searching through a text for specific information (e.g., for the answer to a question). In so doing, the reader has a mind set of what she is looking for. Since this serves to eliminate all parts of the text which are not needed to answer the question, the identification process is thus cognitively undemanding.

I am proposing that the first three sub-processes of the reading process are essentially hierarchically-arranged scanning sub-processes; that is, each sub-process is a preparation for the following one and dependent on the preceding one. This is represented in Figure 2 below.

A. *Identification of the Topic.*

The identification of the topic of a text, as the lowest-level sub-process in the hierarchy is, by definition, the least cognitively exigent. Initially, the reader accesses the most general content schemata, frequently from a mere glance at the text in order to grasp an idea of the theme, i.e., answering the scanning question: *In general, what is the text about?* This is frequently performed in a top-down manner from noticing a prominent picture, chart, title(s) or sub-title(s) and thus inferring the topic. At this point the reader begins to search for the answer to the question, *Is my initial hypothesis correct?* (i.e., *Is the topic actually what I think it is?*). According to this view, then, topic identification serves as the first hypothesis from which the rest of the text will be constructed.

Figure 2: Scanning.



B. *Identification of Individual Elements Related to the Topic.*

The second sub-process refers to the frequently performed bottom-up activity of the reader's eyes moving rapidly through the text to spot individual lexical items. At first, the reader fixates on any lexical item which can be identified. Later, she tries to concentrate on those which appear to be consistent with the schemata previously accessed during the identification of the topic while answering the scanning question, *What words do I recognize which seem to go along with the topic?*

C. *Identification of the Relationship of the Individual Elements to the Topic.*

This stage refers to the reader's concentration on only those individual elements which are directly related to the topic and while so doing, trying to find out more about this relationship. This is the reader's attempt to try to specify the schemata

more fully and to try to hypothesize the structure of the text. At this stage the reader asks, *How do these individual words relate to the topic?* A simple example, taken from a text entitled "Evolution: Two Different Views," may help to clarify the processing which a student might go through in performing the first three sub-processes. Identification of the Topic may be accomplished by information from the title or the accompanying graphics. Identification of Individual Elements Related to the Topic might entail identifying such lexical items in the text as *Lamarck, generate, long neck giraffe, Darwin, natural selection*. In this case, as the reader might hypothesize that indeed the text discusses two issues (without necessarily understanding how the two issues are related), the proponent of one being Lamarck and the other being Darwin and that in some way Lamarck discusses "generating" which in some way is related to the long neck of the giraffe. Moreover, Darwin is somehow related to an idea labeled "natural selection."

2.1.5 SKIMMING

Hypothesis II, The Skimming Hypothesis:

Skimming is a composite process comprising increasingly exigent scanning sub-processes and ending with the identification of the main idea.

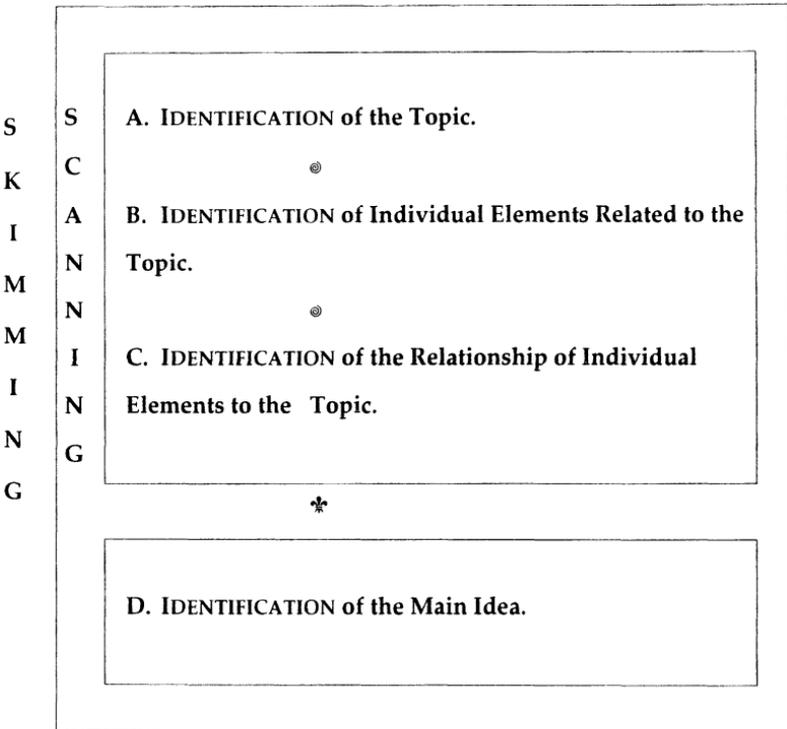
Hypothesis II proposes that skimming be viewed as a composite—as opposed to a singular—process, the end point of which is the identification of the main idea of the text or text part (c.f. Figure 3 below). Simply put, skimming is the result of having gone through the complex task of scanning on various levels: identifying a topic, identifying elements related to the topic, and finally

identifying how the topic and elements are related. Once the reader is able to hypothesize how the topic and individual elements are related, she has refined her hypotheses to the point of identifying a main idea.

The practical consequence of this particular view of skimming is that students who have difficulty skimming in L2 must learn how to successfully perform the sub-processes.

A schematic representation of the total skimming process is given in Figure 3.

Figure 3: The Skimming Process



D. *Identification of the Main Idea.*

Corollary to Hypothesis II:

Identification of the main idea is the end point of a complex activity involving various levels of scanning.

As can be seen from Figure 3, main idea identification, like skimming, is a complex activity i.e., the end product of having gone through—often to varying degrees—the preceding stages. It is important to underline, however, that in our view this is still only an identification process. The reader begins reading by hypothesizing the topic based on any information she can identify. Then she tries to identify some elements and some relationship which might exist between the elements and the topic. In order to arrive at this point, she has begun to hypothesize a main idea schema for the text or text part. This hypothesis is now to be accepted or rejected. To be accepted, it must be tested by asking a scanning question such as: *Is this hypothesis correct?* If the hypothesis is rejected, then a new one will have to be formed and tested.

2.2 Understanding Stage

The Understanding Stages represent a significant change in the ongoing Skill Development Process because of the greater cognitive input required from the reader. It is no longer simply a question of the reader looking for a match between some of the textual features and low-level schemata. The reader must begin to understand how elements are structured in terms of the text. This stage is essentially a discourse-level stage since the sub-processes require the reader to process a larger number of propositions and those at a relatively high level.

E. *Understanding the Relationship Between the Main Idea and the Subordinate Details.*

This sub-process is the first level of *understanding* and requires distinguishing between main and subordinate ideas. In order to do so, the reader must see **how** the individual elements relate to the main ideas—not merely that they do relate to the topic or main idea. In other words, the reader must have a clear idea of the main idea and how it is structured; she must be able to distinguish between main and secondary ideas, and she must begin to distinguish among the secondary ideas in the text.

F. *Understanding the Discourse.*

The sixth sub-process represents a cognitive activity which is a far greater distance from the preceding than the distance between any other two sub-processes in Skill Development. Thus, in order to perform this sub-process, the reader will have not only sufficient content background but also sufficient formal experience in text and rhetorical structure with a variety of rhetorical focuses, e.g., cause and effect or response-problem solution, etc. in order to access the appropriate schemata. For this reason, the sixth sub-process, unlike the five preceding, requires a relatively high L2 proficiency on the part of the reader.

2.3 Evaluation Stage

Although those of us who teach in a bilingual milieu know from our own experience that very able non-native readers can probably extract as much information from a text as their native counterpart, we are nevertheless convinced that the non-native reader rarely—if ever—approaches a text in exactly the same way as a native reader. The performance, by an L2 reader, of this final stage is, however, probably as close to the performance of a native

reader of any stage in the Skill Development Process.

G. Evaluation of the Text.

According to Bloom's taxonomy (1956), this stage would be the most cognitively demanding in the entire process. Learning how to understand and interpret a text is frequently the object of study for many students of literature and frequently beyond the scope of the vast majority of second-language courses.

3.0 SUMMARY AND CONCLUSIONS

A number of issues were addressed in this article. First, it seems clear that a schema-theoretic model is perfectly adequate for explaining what is apparently taking place when successful adult L2 students are reading their second language. Moreover, it appears to be a useful model for applying these notions for the development of L2 reading programs. Second, I have presented hypotheses concerning the Skill Development Process and the notion of difficulty/ease which lead to the following conclusions:

1. The Skill Development Process should be regarded as a hierarchy of three stages, beginning with the least cognitively exigent, the Identification stage, continuing to the Understanding Stage and ending with the most exigent stage, the Evaluation Stage.
2. Four sub-processes have been proposed in the Identification Stage. It was further proposed that the first three, *Identification of the Topic*, *Identification of Individual Elements Related to the Topic* and *Identification of the Relationship of the Individual Elements to the Topic*, are scanning sub-processes. Furthermore, it was proposed that the combination of the scanning sub-processes plus the final identification sub-process, *Identification of the Main Idea*, be considered to

be skimming, which would, therefore, be viewed as a composite process.

3. It was proposed that the Understanding Stage consists of two sub-processes of the *Understanding the Relationship Between the Main Idea and the Subordinate Details* and *Understanding the Discourse*.
4. The Evaluation Stage proposed entailed the sub-process of *Evaluation of the Text*.

REFERENCES

- Bloom, Benjamin, ed. 1956. *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook I: Cognitive Domain*. New York: David McKay Company, Inc.
- , 2000. Some Hypotheses on the Nature of Difficulty and Ease in Second Language Reading: An Application of Schema Theory, *Foreign Language Annals*, Vol. 33(6): 622-631.
- Rumelhart, David E. 1977. Toward an Interactive Model of Reading. In: Dornic, S., ed. *Attention and Performance, VI*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 573-603.
- Rumelhart, David E. 1980. Schemata: The Building Blocks of Cognition. In: R.J. Spiro, et al. (Eds.) *Theoretical Issues in Reading Comprehension*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, 33-58.

Philip Hauptman

Department of Linguistics

University of Ottawa

Ottawa, Ontario, Canada

Email: Hauptman@uottawa.ca