The Journey, Building and Container Metaphors in the Schema Theory

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The schema theory assumes that reading is achieved not merely by linguistic knowledge such as vocabulary and syntax, but also by the reader's background knowledge which the reader brings into the process of building his interpretation. The attempt of the present paper is to show that the reading theories based on the schema theory are largely dependent on metaphors by analyzing the expressions of the texts and articles listed in the references at the end of the paper.   This paper will deal with the journey, building and container metaphors among others since they are not only deeply concerned with the concept of the "process" of reading, but also prevailing and commonly found in any article and book on the schema theory.   It will be also shown that these three metaphors are not used separately but are closely related with one another to form an organic system as to what the reading process is.

I

The schema theorists argue that the reader uses his prior knowledge which works as an expectation in the reading process. When his further reading sustains his expectation, it is confirmed, but when the proceeding information contradicts with his expectation, it will be modified or replaced by a new expectation.

This process is explained as follows:

> (1) The reader *progresses into* a passage, supporting the position that the reader *builds* on a previous *store* of knowledge by adding information from the reading. (Clarke and Silberstein 1977: 137)
>
> (2) He *progresses* into the material, he confirms or revises these expectations and *builds* still more *on the basis* of what has been read *so far.* (Coady 1979: 6)
>
> (3) Bottom-up processing is *building* textual meaning from the smallest units to the largest, ... modifying information *encountered* in the text. (Carrel 1988: 101)

The italicized expressions are in a large sense metaphors although they are hard to recognize as such since they are so prevalent in everyday expressions.

The metaphorical expressions used (1)-(3) are:

> (4) *READING IS A JOURNEY* as in "progress," "encounter" and "so far."
>
> (5) *READING IS BUILDING* as in "build," and "on the basis of," and
>
> (6) *KNOWLEDGE CAN BE CONTAINED* as in "store."

Some schema theorists contrast their views with the traditional reading theory and criticize it on the grounds that the theory presupposes meaning to exist in the text:

> (7) They suffer from what has been called a "meaning is in the text" fallacy. (Carrell 1988: 109)
>
> (8) Misconception that all "meaning is in the text" fails to use any top-down processing. (Devine 1988: 136)

In the traditional view, the reader's task is only to extract meaning from the text. The schema theorists claim that reading is not a passive task, but rather an active performance on the part of the reader.

In everyday conversation, doing something difficult and time consuming is described with vocabularies concerned with "journey."

When "journey" is applied to reading, the reading process is described as if readers go forward in the field, in which the reader corresponds to a traveler and a text to the field. Just as journey is composed of the path, starting point, and goal, the reader is supposed to start with orthographic displays, to go forward and finally to get to the goal, i.e., meaning.

(9) Readers *move through* a story. (Goodman 1988: 15)

(10) The reader would be *half-way* there. (Adams and Collins 1979: 19)

(11) The reader *starts with* the perception of graphic cases. (Eskey and Grabe 1988: 225)

(12) A skilled reader might *arrive at* an understanding. (Adams and Collins 1979: 9)

(13) One can nonetheless *arrive at* an understanding of the text. (Carrell 1988: 252)

(14) The receptive process *starts with* the phonological or graphic display as input, and it does *end with* meaning as output. (Goodman 1971: 136)

(15) Readers *leap towards* meaning. (Goodman 1988: 15)

(16) The efficient language user *takes* the most *direct route* ... to *get to his goal*. (Goodman 1971: 136)

The journey metaphor entails that the reader "encounters" some things on his way to meaning:

(17) the key vocabulary to be *encountered* in the text (Carrell 1988: 244)

(18) The reader *encounters* the phrase. (Carrell and Eisterhold 1988: 78)

(19) Readers *encountered* the sentence. (Rumelhart 1980: 44)

(20) New information is *encountered*. (Rumelhart 1980: 53)

In travelling, we will eventually get to the goal, although we may sometimes halt when facing some obstacle. We may also get lost or go astray into a wrong path on the way to the goal. These characteristics are applied to reading to show analogically that the reader will eventually understand the text meaning though he may stop reading when encountering unfamiliar words and/or sentences,

or he may misunderstand the content in the middle of the passage. The building image is also used to describe reading process which emphasizes the reader's active role and downplays the passive views employed by the traditional reading theory. The building metaphors in reading are used as follows:

(21) Readers *construct* the meaning of the text. (Steffensen 1988: 142)
(22) Most readers are able to *construct* a ... interpretation of the text. (Coady 1979: 11)
(23) the active, *constructive* process necessary to comprehension (Carrell 1988: 101)

Although building metaphors emphasize the reader's own interpretation, he is not free to interpret a given text in whatever way he likes. Rather, what he has to do is to "reconstruct" the writer's thoughts as accurately as possible:

(24) the *reconstruction* of the text (Coady 1979: 6)
(25) the most accurate *reconstruction* (Coady 1979: 8)

The reader uses materials to reconstruct the textual meaning:

(26) *blocks* of information (Steffensen 1988: 142)
(27) each *source of* information contributing to a comprehensive *reconstruction* of the meaning of the text (Eskey 1988: 94)

The application of the journey metaphor requires the writer to start with meaning and end with orthographic displays. Simultaneously, the reader tracks back through this process starting with the orthographic displays and ending with the meaning.

(28) Receptive processes *begin with* the encoded display and *reverse* the process, step by step, to *get back to* meaning. (Goodman 1971: 135)

The building metaphor, on the other hand, suggests that while the writer changes his meaning into orthographic displays, the reader makes a replica of the writer's meaning from the orthographic displays.

> (29) The reader is internally *re-creating* a *replica* of the textual message. (Coady 1979: 5)

The replica is the counterpart of the goal in the journey metaphor.

The building metaphor is composed of the following characteristics:

> (30) Buildings are composed with parts.
> (31) Buildings are vertically structured.
> (32) Buildings have foundations.
> (33) Buildings are constructed with human labor.

Just as a building is a structured substance, the schema is composed of its sub-parts:

> (34) Schemata have also been called the "*building blocks*" of cognition. (Carrell and Eisterhold 1988: 82)
> (35) They [lower-level schemata] are *constituents*. (Rumelhart 1980: 42)

Whereas a building is a vertical substance, the schema is a hierarchic organization with higher and lower constituents:

> (36) A schema is a *hierarchy*. (Adams and Collins 1979: 3)
> (37) One moves *down* the *hierarchy*. (Adams and Collins 1979: 3)
> (38) This *higher* schema would then activate still other of its constituent schemata, and this activation would flow its subschemata back *down* to *lower* level schemata. (Rumelhart 1980: 42)
> (39) at the *bottom* of the *hierarchy* (Carrell 1983: 26)

At the top of the hierarchy there is a general schema, and as one goes down the hierarchy, more concrete schemata form as a

foundation:

> (40) this *higher*, more *abstract* schema (Rumelhart 1980: 42)
> (41) from most *general* at the *top* of the hierarchy to most *specific* at the *bottom* (Carrell 1983: 26)
> (42) Terms like top-down ... bottom up are ... metaphors ... *top* ... referring to ... *higher* order ... *bottom* to the physical text on the page. (Eskey and Grabe 1988: 223)

The schema theory employs the building metaphor to describe how our knowledge is systematically organized.

II

The fact that we know the range of weights of various kinds of animals is expressed by the container metaphor:

> (43) A person has *stored* the range of weights. (Adams and Pearson 1988: 52)

In the schema theory, possessing knowledge and concepts is explained using the container metaphor:

> (44) concepts *stored in* memory (Rumelhart 1980: 34)
> (45) Knowledge is *stored in* human memory. (Anderson and Pearson 1988: 40)

New information gained in the process of reading is conceived as an object which is put into a container:

> (46) *putting* the information gained *into* memory (Coady 1979: 10)
> (47) New information ... *enter* and become a part of the knowledge *store*. (Carrell *et al.* 1988: 10)

The container image distinguishes the outside and inside by the boundary or outer shell of a container. The container image utilized

in reading, therefore, entails the following characteristics:

(48) Human brain and memory are containers.
(49) Information is an object.
(50) The information which is put into a container becomes comprehensible.
(51) The information which is left outside of a container remains incomprehensible.

It follows from these properties that text comprehension is conceived as putting information gained in the text into the appropriate slots of the schema:

(52) The data that are needed to instantiate, or *fill out*, the schemata become available. (Carrell and Eisterhold 1988: 77)
(53) Comprehension of a message entails *filling* the slots in the appropriate schema in such a way as to jointly satisfy the constraints of the message and the schemata. (Anderson *et al.* 1977: 369-70)
(54) The features of the data *enter* the system *through* the best fitting, bottom-level schemata. (Carrell and Eisterhold 1988: 77)
(55) The system searches the input for information to *fit into* ... higher order schemata. (Carrell and Eisterhold 1988: 77)

The reader puts new information into slots as if he is placing objects into the rooms of a building. He does this work by relating information to the slot:

(56) Readers *assign* it[sic] members *to* an ... concepts already stored in memories. (Clarke and Silberstein 1977: 136)
(57) Efficient comprehension requires the ability to *relate* the textual material *to* one's own knowledge. (Carrell and Eisterhold 1988: 76)

The following statement employs the term "bind" to explain the concept of "relating":

(58) The comprehension of a specific situation or story involves the processes of instantiation whereby elements in the situation are *bound to* appropriate slots in the relevant schema. This process not only serves the purpose of *filling out* the details of the schema, but also of temporarily

> *connecting* it *to* characteristics of the *bound* schema.
> (Adams and Collins 1979: 4)

This statement combines the link and container images to describe text comprehension. In order to fill out the slots, the reader has to bind information to an appropriate slot.

By undergoing a series of related tasks, the reader's understanding of a text proceeds. And as he continues to find further connection between information and slots and to fill in these slots, the amount of information which is stored into the slots increases and meaning uncertainty decreases. As to the construction image, on the other hand, the further one reads a text, the more meaning he constructs. In a journey, the further the traveller goes, the more path he covers. The journey metaphor, therefore, will draw the implication that the more one reads, the more meaning he processes. Thus, the construction and building metaphors are compatible with the journey metaphor:

> (59) A text only provides *directions* ... as to how they should retrieve or *construct* meaning from their own, previously acquired knowledge. (Carrell and Eisterhold 1988: 76)
> (60) It *starts with* a linguistic surface ... and *ends with* meaning which the reader *constructs*. (Goodman 1988: 12)
> (61) Readers maintain constant focus on *constructing* the meaning throughout the process, always *seeking* the most *direct path to* meaning, always using strategies for *reducing* uncertainty. (Goodman 1988: 13)

The difficulty and misunderstanding are also described by metaphors. The journey metaphor shows that for the reader who encounters unfamiliar words, the words are considered to be obstacles on his way to the goal, i.e., meaning or interpretation:

> (62) They are *stopped by* an unfamiliar word. (Clarke and

Silberstein 1977: 145)
(63) Vocabulary constitutes one of the main *obstacles*. (Yorio 1971: 112)
(64) New lexical items .... *block* his comprehension. (Yorio 1971: 112)

When the reader comes across a difficult word, he cannot fit it into an appropriate slot.

The journey metaphor describes the reader's misinterpretation as being similar to a traveller straying into a wrong path:

(65) They *deviated from* the text. (Rigg 1988: 215)
(66) The children *deviate from* the text. (Rigg 1988: 208)
(67) Comparing the mismatches between expectation and observation can illustrate *where* the readers have *deviated*. (Goodman 1988: 13)
(68) *biasing* the interpretation in one *direction* (Anderson *et al.* 1977: 371)

These expressions show that the reader's interpretation is different from what the writer meant. The failure will arise when the reader puts information into wrong slots or uses a wrong schema. The result is that the reader gets an interpretation quite different from the writer's meaning.

When the reader notices that his expectation is incompatible with new information, this is described as follows in the journey image:

(69) They *encounter* something that does not make sense. (Carrell 1988: 252)
(70) We *encounter* a mismatch between the top-down predictions and the bottom-up information. (Carrell and Eisterhold 1988: 79)

When this arises, the reader must modify his expectation. This task is described as follows:

(71) To say that one has comprehended a text is to say that she has found a mental "*home*" for the information in the text, or else that she has *modified* an existing mental *home* in order to *accommodate* that new information. (Anderson and Pearson 1988: 37)

According to the schema theory a reader constantly refers to prior-knowledge and then confirms, modifies and changes this knowledge while reading. This process is more concretely illustrated in (71) in terms of the building metaphor.

This paper has shown that although theories seem to be free from dependence on metaphors, the journey, building and container metaphors structure the concept of reading in their own ways, and that these metaphors work together to structure the concept of reading. These metaphors emphasize the active performance made by readers and suppress the passive view on reading. The three metaphors dealt with in this paper are based on our everyday experience such as going forward, making an object from materials, placing an object into a container and so on. This characteristic will suggest that we establish concepts on the basis of bodily interaction in our environment and that these basic concepts or schemata help to structure more abstract concepts including reading. More research is needed to reveal how various reading theories are structured by basic schemata and how metaphors are used in the schema theory to improve our understanding of reading instruction. Consideration of the three metaphors discussed in this paper seems to help teachers to provide their students with a proper background knowledge in the art of reading, and to assist them in taking the shortest route deriving the most from their reading in the most rapid and efficient

manners. These additional topics will be dealt with in detail in my forthcoming papers.

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