A Comparison of L1 and L2 Reading: Cultural Differences and Schema

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Abstract

The ways in which learning to read and reading in first (L1) and second (L2) languages are the same or different have long been a topic of intense. Reading in a language which is not the learner's L1 is a source of considerable difficulty. Reading in the L1 shares numerous important basic elements with reading in a second or foreign language, the processes also differ greatly. Intriguing questions involve whether there are two parallel cognitive processes at work, or whether there are processing strategies that accommodate both first and second languages. This paper will examine how reading in the L1 is different from and similar to reading in the L2. More specifically, factors of cultural differences: content (background knowledge) schema, formal (textual) schema, and linguistic (language) schema, will be examined. Based on such a discussion, a profile of a biliterate reader is provided.

1. Introduction

The ability to read is acknowledged to be the most stable and durable of the second language modalities (Bernhardt, 1991). In other words, learners may use their productive skills, yet still be able to comprehend texts with some degree of proficiency. Reading, whether in a first or second language context, involves the reader, the text, and the interaction between the reader and text (Grabe, 1991; Chun&Plass, 1997; seng&Fatimah, 2005). Although reading in the L1 shares numerous important basic elements with reading in a second or foreign language, the processes also differ greatly.
Despite these interests, second language research on reading, is frequently dismissed as being marginal and derivative from first

language reading. Reading in a second language, for example, was often viewed as merely a slower version of doing the same task in the native language. Such comparisons, however, imply that second language tasks are mapping tasks – that is replacing one mode of behavior with another. While it is true that the L1 and L2 reading process have similarities, it is also important to recognize that many factors come into play, which in turn makes second language reading a phenomenon unto itself. Despite the similarities between reading in an L1 and reading in an L2, a number of complex variables make the process of L1 different from L2. Because the reading process is essentially "unobservable" teachers need to make significant efforts in the classroom to understand their students' reading behaviors and be able to help students understand those behaviors as well. It is therefore important that teachers know as much as possible about the cultural, linguistic, and educational backgrounds of their readers since many of these factors that influence reading in an L2 context.

While the research in this domain encompasses a great deal of literature which cannot possibly be covered in its entirety here, it is hoped that this discussion will nonetheless provide readers with an overview in this area.

2. Reading in L1 and L2

Reading is defined as a decoding process for the purpose of extraction of meaning from written texts (McDonell, 2006:1).Reading comprehension in both L1 and L2 involves the interaction of many variables. Reading involves a reader, a text, and a writer. Readers, regardless of language, use mental activities in order to construct meaning from the text. Reading skills are developed in an 'interactive' process. This process involves the surface representation encoded by a writer and ends with reader's interpretation of the written text and interchanges between the writer and the reader. For a better theoretical understanding of the complex processes involved in reading comprehension, reading comprehension is explained by the performance on tasks assumed to measure constituent components of the reading comprehension process. Chun&Plass (1997:61) distinguish two reading components of a' lower ' order such as letter identification, word recognition and syntactic parsing, from components of ' higher' order such as applying knowledge about text and genre characteristics of text structure and using strategies to form an appropriate text representation. The process of reading explains the

way a reader tackles and comprehends a text. Reading comprehension encompasses a variety of factors, such as comprehension of the printed characters, background knowledge, (dis)interest in the passage being read, the mastering of reading strategies (inferencing and predicting, being the two most important), and linguistic ability (Barnett, 1989: 343).

Several models of the reading process have been put forward to account for the experimental findings. A key element in explaining reading is the amount to which what the brain already knows affects perception of what is being read (top-down processing). This idea was initially thought to be in contrast to earlier ideas that reading was a linear progression from page to understanding (bottom-up processing), but newer research seems to indicate that both elements play important parts in reading. Recent research suggests that at least for the L2 learners that the accepted theory of ESL reading was changed dramatically, from serial (or bottom-up) model, to reading as an interactive process. In this interactive process, every reader brings a multitude of skills and knowledge to the task: decoding skills, word – recognition skills, vocabulary knowledge, knowledge of grammatical structures, and conceptual abilities (Grabe,1991). An attempt will be made in this unit of the paper to present different models of reading and comprehension in both L1andL2. Attempts to demystify the black box of the L2 reading process through a close examination of L1, since much of L2 reading research is grounded to L1 research, as Gascoigne (2005:1) states, have relied primarily upon explanatory borrowed from L1research and theory that have evolved from those placing an emphasis on text-based variables (e.g., vocabulary, syntax, grammatical structure), to those stressing the importance of the reader (e.g., background knowledge, strategy use, reading purpose, interest in the topic).

Chun&Plass(1997:60)and McDonell(2006:1-3)state that currently, there are three overlapping approaches to viewing and describing reading that reflects, in part, the development of reading research.These approaches are the bottom-up approaches, the top-down approaches, and the interactive approaches. Researchers argue that reading models/approaches explain the process of reading comprehension.McDonell(2006:3)believes that these models represent a usable view of the way reading works, they provoke new ideas about reading and provide a paradigm against which aspect of the reading process may be tested.

(1)Bottom-Up models

The world of reading in both L1andL2 research and theory was dominated by the bottom-up approaches , where the reader is passively interpreting the text from its basic units (letters, their phonic equivalents, and words) to its more complicated and larger entities (clauses, phrases, sentences) (Gascoigne 1997:2) .

Gascoigne(1997:2) and McDonell(2006:1-2) state that in the bottom-up theories and models, the reading process is considered a text – driven decoding process where the reader reconstructs meaning from the smallest units of text. Gascoigne (1997:2) adds that an analysis of decoding skills showed that readers discriminated between sound and letters matching phonemes for alphabetic systems. This process becomes later the phonics approach that was popular during the 1950s and 1960s.

According to Chun&Plass (1997:61) the bottom-up processing models place an emphasis on "textual decoding". They can be seen as "data-driven" and emphasis the priority of text as input and hence, lower- level processes such as letter and word recognition.

One model which becomes the most characteristics of bottom-up reading model is Gough's model (1972) which propounded the visual recognition of individual letters before their visual grouping into meaningful strings, i.e., words McDonell(2006:2). In Gough's model(1972) letters are seen as the starting point of reading process .They are recognized by a" Scanner" and then passed on to a "Decoder" which carries out a phonemic decoding transforming them into systematic phoneme strings. These strings are then fed into a "Librarian", containing a 'Lexicon' leading to the recognition of the word. The reader then proceeds to fixate on the next word till all the words are processed in a given sentence and then processed through a 'Marlin' where syntactic – semantic rules operate to create meaning. The final stage of the model involves actual vocalization of the accessed print .Therefore, the reader was considered as a 'decoder' of a concealed text, especially when this occurred in L2reading Carrell et al (1989:650). In other words, Gough's model perceives the reading process as linear and unidirectional necessitating a sequential decoding technique, and the reader as someone who "approaches" the text by concentrating exclusively on the combination of letters and words in purely linear manner"(McDonell,2006:2). Gough's model

envisages reading as a process that begins with the smallest units and ends with larger units of meaning.

Shrum and Glisan (2000:123) argue that according to bottom-up model reading is considered as a relatively static activity and meaning is embedded in the text, and the reader's job is to understand what was being transmitted via the words on the page. Meaning is understood through the analysis of individual parts of the language and the reader processes language in a sequential manner", combining sounds or letters to form words, and then combing words to form phrases, clauses and sentences of the text. They (2000:123) add that valued skills include discriminating between sounds and letters, recognizing word order and suprasegmental patterns or structures, and translating individual words. In the strict bottom up model, the graphic, syntactic, lexical, semantic and pragmatic codes were considered consonant with the meaning of the text.

Early work onL2 reading assumed that reading is a passive process in bottom-up processing. Difficulties in L2 reading and reading comprehension were viewed as being essentially decoding problems, deriving from the print (Carrell et al, 1989). It was thought that while reading, readers ought to be able to construct a meaning from which they could assimilate the original meaning of the author. She noted in her research on L2 readers ,that lower proficiency students often relied more heavily on bottom-up , text–based strategies.Chun&Plass(1997:63)note also that while L1 readers are mainly engaged in higher –level processing,L2 readers pay more attention to lower-level processes. Gascoigne (2005:2) states that the bottom-up position was well suited to the audio-lingual method of L2 instruction in the 1960s and 1970s, which considered the decoding of sound-symbols relationships as an essential component of the language learning routine.

However, research showed that the sequential bottom-up approach does not bear itself out in actual practice, also the grammatical processing by L2 learners take a more complex form than can be explained by a recourse to the bottom-up (McDonell, 2006:1).The main limitation of this model is that reading becomes very laborious and that, especially in English and other languages with too many graph phonic rules, such as a visual recognition could be inapplicable.

(2)Top-Down Models

While bottom-up models treat the reading process as decoding activity with an emphasis placed on the structure of the text, top-down models take the opposite position and consider the reader and his/her interests, world knowledge, reading skills as the driven force behind reading comprehension (Goodman, 1967 in McDonell, 2006: 2).The model therefore, seen as a 'reader-driven' rather than 'text-driven'. According to top-down model readers as language learners need to go through an active process rather than simply decoding the graphic representations. Anderson (1999 in Karakas, 2000:26) explains this as follows:

> *"Reading is an active, fluent process which involves the reader and the reading material in building meaning. Meaning does not reside on the printed page…(a)synergy occurs in reading ,which combines the words on the printed page with the reader's background knowledge and experience."(Karakas, 2000, 26)*

Top-down theory came whereupon the researchers attributed to the reader an active role in which his/her understanding springs from a merging his/her linguistic abilities which later will be known as 'linguistic background knowledge' and his/her conceptual abilities as 'cognitive background knowledge'. Nunan (1991 :3)argues that usually all agree that the "reader rather than the text is the heart of the reading process" ,the interaction of the reader and the text is central to the reading process, where the readers bring to this interaction their knowledge of the text at hand, knowledge of and expectations about how language works, motivation, interest, and attitudes towards the content of the text. Rather than decoding each symbol, or even every word, the reader forms hypotheses about text elements and then 'samples' the text to determine whether or not the hypotheses are correct.

The top-down processes include background knowledge and cultural schemata as well as knowledge of formal schemata. According to the most strains of schemata theory, 'comprehension' is a result of a "union of the text and the reader's background knowledge", and thus, the top-down processing occurs as the reader "makes inferences" based on these schemata (McDonell, 2006:4).While readers do use

sounds, letters, and syntactic approach they draw on their schema to predict the meanings of the text, and then read to confirm this prediction.

It can be seen that the top-down approaches emphasizes the reconstruction of meaning rather than the decoding of form. Psycholinguists maintained that meaning is more important and takes place over structure.

Major figure in this model is Goodman (1967).Goodman (1967 in Karakas, 2000:26-7; and McDonell, 2006:2) characterizes the reading process as a "psycholinguistic guessing game" where readers are able to make informed predictions as they process the text. Predicting and sampling are strategies employed by the reader in order to reduce his/her dependence on the text itself.The reader takes up industrious guessing game like puzzle and through reading s/he employs her/his pre-existing knowledge s/he tries to guess the meaning s/he does not grasp(Carrell et al ,1989:652) Barnett(1989:13) states that the reader uses general knowledge of the world or of particular text components to make intelligent guesses about what might come next in the text[and]samples only enough of the text to confirm or reject these guesses. What Goodman proposed was the knowledge that the reader use to reduce redundant features of the text to make significant guesses to create meaning.

Goodman's model is based on cues systems represented by three levels of language within the text that he terms graph phonic, syntactic, and semantic .The first deals with the recognition of visual and phonetic features of written English, a process involve textual scanning and then fixating on a word. It may be also involve morphophonemic features. The processing at syntactic level involves knowledge of syntactic constraints that apply to English and the third on semantic possibilities based on collocational values and meaning of words.

However, the reader does not use all of the "textual cues", but s/he chooses information s/he familiar with, i.e., the reader uses background knowledge to guide him/her to produce comprehension. Goodman(1973 in Karakas,2000:26) explained this as follows:

"…the reader does not use all the information available
to him .Reading is a process in which the reader picks
and chooses from the available information only enough
to select and predict a language structure which is decodable.
It is not in any sense a precise perceptual process"

Carrell et al (1989:653) noted in her research on L2 readers, that more advanced English languages learning readers were able to
engage top-down processes based on prior knowledge and schemata.

The top-down approach had a considerable influence in preparation of ELT textbooks both inL1andL2. (McDonell, 2006:4).However, the top-down models have problems. Experiments have shown that the claims of Goodman can not verified since reading as a process is seen as heavily text -bound and texts are sampled in a fairly dense manner. It was realized that a good model of reading could not rely on entirely top-down approaches since the actual reading process does not involve a fair share of bottom-up too(ibid).

(3) Interactive Models

What evolved from the succession of the bottom-up model by the top-down one is the dispute between "passive" and "active"(Carrell&Eisterhold, 1983:75).So, the next step was to combine these theories in a merged model called Interactive Reading.

Grabe (1991:383);Chun&Plass(1997:61);and Seng &Fatimah (2006:2) claim that the term interactive approaches refers to two different conceptions: firstly, to the general interaction between the reader and the text , that is , the reader makes use of information from his/her background knowledge or prior knowledge in (re)constructing the text meaning and information; secondly, to the interaction of many component skills that work together simultaneously in reading process. Simply stated , reading involves an "array of lower-level rapid , automatic identification skills and an array of higher-level comprehension/interpretation skills"(Grabe,1991:383). In sum, an interactive approach to reading is one that takes into account the contributions of both lower-level processing skills(identification or decoding) and higher-level comprehension and reasoning skills(interpretation and inferencing).It is widely believed that comprehension results from these interactive variables operating simultaneously rather than sequentially. In this model meaning is seen as an outcome of the interaction between the reader and the text, not only resides in the text itself, but also lies in the interaction between the reader and the text (Grabe, 1991:384). To this end everything in the reader's background knowledge has a significant role in reading comprehension. It follows that, since one important part of interactive processing theory emphasizes schemata the reader's pre-existing

concepts about the world and about the text to be read. (Barnett, 1988:1).Interestingly, most cognitive psycholinguists and most foreign language reading specialists   stress the interaction – of – skills arrays whereas most L2 researchers stress the interaction between reader and text. Both view reading as interactive (Barnett, 1988:1).The reader interacts with the text to create meaning as the reader's mental process work together at different levels. The level of the reader comprehension of the text is determined by how well the reader variables (interest level in the text, purpose for reading the text, knowledge of the topic, foreign language abilities, awareness of the reading process) interact with the text variables(text type , structure , syntax and vocabulary) (ibid).

A model that would be a good example of such an approach is the 'interactive-compensatory' model proposed by Stanovich (1980 in Nunan,1991:4; Bock,1993:2; and McDonell,2006: 3).They find out that:(1)the model is 'interactive' in that the reader makes sense of what s/he reads by (1)decoding the linguistic items on the page(bottom-up processing)and (2)relating this information to what s/he already knows about the world(top-down processing).This background information is acquired through one's experience of the world and is stored in abstract knowledge structure known as "schemata".(2)The model is 'compensatory' in the sense that the deficient in any knowledge source results in a heavier compensatory reliance on other knowledge sources.Nunan(1991:4) adds that these sources include all those looked separately in bottom-up and top-down processes, such as phonological, lexical, semantic and discourse knowledge.

Bock (1993:2) finds out that a weakness in one area of knowledge, for example, lexical knowledge may be compensated by strength in another area, like orthographic knowledge or if a reader's linguistic knowledge, for example, is weak at one point s/he will compensate by drawing on background   knowledge, and vice versa. Seng&Fatimah(2006:2) assert this opinion by stating that Stanovich's model incorporates an assumption that a "deficient in one of the subcomponents sub skills of reading may cause a compensatory reliance on another skill that is present", for example, poor word recognition (i.e., lack of ability in a lower level) can be compensated by extra reliance on contextual factors (higher level skills).On the other hand, the lack of background knowledge may be compensated by

a   reliance of bottom-up processing of a word or a phrase in order to construct meaning.

This model assumes the following views: 1) the bottoms-up and top-down processes are equally important. It follows that during efficient reading, incoming textual data is processed (bottom-up), which activates appropriate higher level schemata (top-down) against which the reader tries to give the text a coherent interpretation. The reader makes predictions on the basis of these top-down processes and then searches the text for confirmation or rejection of these partially higher order schemata. What the reader brings to the text is important. In this view, reading is regarded not as a reaction to a text but as interaction between the writer and the reader mediated through the text (Bock 1993:2) ; 2)the lower-level processes including lexical decoding ,syntactic parsing,   semantic appropriation and working memory activation bore an interactive relation with higher-level processes like genre activation, contextual interpretation ,schema generation, and inferencing (McDonell,2006:3).In both views ,if the interaction led to a failure at one point, then it was compensated by activation of other models of processing; and 3) while the bottom-up approach was strictly linear and the top-down horizontal , the interactive – compensatory approach acted both at a syntagmatic and paradigmatic levels of textual processing (ibid).

Carlo&Ellen(1996:30) state that L2 reading research has been heavily influenced by interactive theories of reading. These theories have centered on the transaction between a reader and a text on that transaction's relationship to reading comprehension. Coady(1979 in Karakas,2000 :27)has suggested a model in which the EFL/ESL reader's background knowledge interacts with conceptual abilities and process strategies to produce comprehension.

Coady's (1979) model of the EFL/ESL Reader

Conceptual Abilities

Background Knowledge

Process Strategies
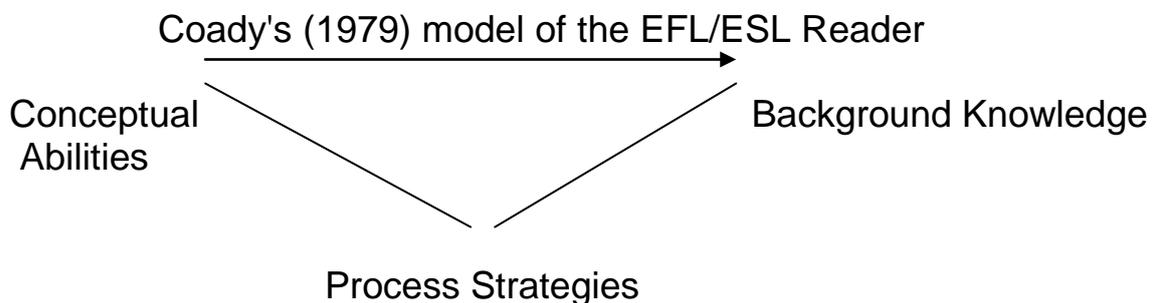
Conceptual ability means general intellectual capacity. Processing

strategies mean various subcomponents of reading ability (e.g. grapheme-morphophoneme correspondence, syllable-morpheme information, lexical meaning and contextual meaning.

Karakas(2000:27)believes that good L2 readers are those who can efficiently integrate bottom-up and top-down processes.

A harmonious fusing of micro skills, cognitive and metacognitive strategies is being sought in the interactive model particularly in the field of L2 research. The focus is not only limited to strategies at the top-down level but also adequate development of language skill for the L2 learners.

The advantages of the interactive reading model as summarized by McDonell(2006:3-4): 1) readers employs both analytical decoding and prediction about forth coming items based upon visual, orthographic ,lexical, semantic, syntactic and schematic information .In summary, the eyes reads the words(visual information store), transfers them to the brain (feature extraction devise),the latter attempts to match them to pre-existing data(pattern synthesizer)and, thus, understand them and make predictions (through syntactical ,semantic, orthographic and lexical knowledge)about information to come, which are in the text instant approved or turned down as the eyes absorbs further data2)it combines the strength of both bottom-up and top-down reading in which comprehension is considered a result of bottom-up and top-down elements working in concert; and interaction between the reader and the text; and3)it allows for deficiencies at one level to be compensated for another. In particular, higher level processes compensate from deficiencies at lower-levels, and this allows for possibility that readers with poor reading skills at the level of grapheme and word can compensate for these by using other sources of knowledge such as the syntactic class of a given word or semantic knowledge.4)a more integrated approach is being sought for developing interaction between background knowledge and the constituent units of texts at the phonemic, lexical, syntactic, and semantic levels. This had led to the development of 'pre-reading',' while- reading' and 'post-reading' tasks that facilitate a reader's interaction with the text and provide orientation to content and context.5) extensive research in both L1 and L2 reading skills are being carried out with varying degrees of success to understand both the 'interactive' and 'compensatory' aspects of the reading process, i.e., both bottom-up and top-down.

3. Schema and Schema Theory

Before proceeding any further, the notion of schema must be defined. Linguists, cognitive psychologists, and psycholinguists have used the concept of schema(plural: schemata/schemas)to understand the interaction of key factors affecting and influencing the comprehension process (Hang-Yun&Ping,2007:14).Schemata have been described as "cognitive constructs which allow for the organization of information in long-term memory"(Widdowson,1983).Cook(1989:69) states "the mind is simulated by key words or phrases in the text or by the context, activates a knowledge schema " Widdowson and Cook both emphasize the cognitive characteristics of schema which allow humans to relate incoming information to already known information. This covers the knowledge of the world, from every day knowledge to very specialized knowledge, knowledge of language structures, and knowledge of texts. In addition to allowing humans to organize information and knowledge economically, schemata also allow them to predict the continuation of both spoken and written discourse. The first part activates a schema, which calls up a schema which is either confirmed or disconfirmed by what follows.

Alvarez and Victoria (1989:1) state that readers rely on their prior knowledge and world experience when trying to comprehend a text. They define schema as "an organized knowledge that is accessed during reading." Readers make use of their schema when they can relate what they already know about a topic to the facts and ideas appearing in a text .The richer the schema is for a given topic the better a reader will understand the topic.

Barnett (1988:1) and Brantmeier (2004:1) define schema as the mental frame work that helps the learner organize knowledge, direct perception and attention, and guide recall. Barnett (1988:1) believes that into this framework, the reader fits what s/he finds in any passage. If new textual information does not fit into a reader's schemata, the reader misunderstands the new material, ignores the new information, or revises the schemata to match the facts within the passage. Brantmeier (2004:1) contends that schemata are "…used to disambiguate, elaborate, filter, and compensate." All of these actions-interpretation, inference, evaluation and compensation –are based on the existing knowledge that the reader brings to the text.

Rumelhart(1980 in Xie,2000:68)believes that comprehension is a process of selecting the schema illustrating input information. However

the main functions of schemata for reading comprehension are in editing and planning for retrieval. Here, editing is to select, abbreviate, abstract, arrange, organize and polish reading material. While schema selection, abbreviation and abstracting are the first stage editing,
schema arrangement, organization and polishing are the second stage editing. The first stage editing accommodates information related to schema and filters the irrelevant. Schema, on the other hand, is the base of planning for retrieval. In reading comprehension, proper schemata need to be activated to search for information in memory.
Stott (2001:2) views schema as a 'framework that organizes knowledge in memory by putting information into the correct "slots", when new information enters memory, it is not be compatible with one of the slots, but it must actually be entered into the proper slot before comprehension can occur .As new knowledge is perceived, it is coded into either pre-existing schema or organized into a new one.

Research on L1 and L2 readers has shown that prior or pre-existing knowledge has a considerable impact on the extent to which information is understood and remembered (Carlo&Ellen,1996:31.)A number of studies have been conducted into the influenced of
schematic knowledge on the comprehension process of L2 readers. Aslanian(1985 in Nunan,1991: 6) ,for example, sets out to discover what interpretive process went on her learners' heads as they completed a multiple choice /gap test of reading passage. Aslanian's study shows that schematic knowledge structure can either facilitates or inhibit comprehension.

David&Lynne(2000:1) state that since the late 1960s a number of theorists have developed interactive theories of reading which place a great importance on the role of the reader and the knowledge s/he brings to bear on the text in the reading process .these interactive theories ,which now dominate reading research and strongly influence teaching practice ,draw heavily on schema theory.

According to Carrell&Eisterhold(1983:73) schema theory views reading comprehension as "an interactive process between the text and the reader's prior knowledge." They (1983:73) add that schema theory is based on the belief that "every act of reading and reading comprehension involves one's knowledge of the world as well", which may be culturally based and culturally biased.

Despite the fact that schema theory 'is not a well-defined framework for the mental representation of knowledge' (Grabe, 1991: 389), 'it has been an extremely useful notion for describing how prior knowledge is integrated in memory and used in higher-level memory processes'

(ibid:390). Stott(2001:3) states that schema theory, now widely accepted as playing a key role in reading comprehension, is based on the assumption that the reader's prior knowledge directly impacts new learned knowledge.

Schema theorists have advanced our understanding of reading comprehension by describing how prior knowledge can enhance a reader's interaction with the text.

Accordingly, comprehension occurs when a reader is able to use this prior knowledge and experience to interpret an author's message (Alvarez& Victoria, 1989:1).

According to schema theory, in reading, operations of bottom-up and top-down processes are simultaneous. When input information verifies the relevant concepts or fills the slots in a schema structure, or when input information is consistent with the reader's schema knowledge which s/he uses to make predictions,' top-down' processing facilitates the assimilation of new information into the information already stored and if it is not, the operation of bottom-up processing helps the reader to make appropriate responses. In addition, top-down processing with known ideas helps the reader to clarify misunderstandings and to select reasonable explanations from the input.

The application of schema theory to L2 reading dates back to the 1980s with studies conducted with ESL students of many instructural levels. Brantmeier(2004:2) states that these researchers concluded that what students already know (their background knowledge)significantly influence their understanding of L2 reading materials. Brantmeier(2004:2) continuous ,with ESL students from only the high intermediate and advanced levels of instruction, research has shown that content schemata, as seen as culturally familiar and unfamiliar content, influence L1and L2 reading comprehension.

Carrell&Eisterhold(1983:74)claim that schema theory has provided numerous benefits to ESL teaching and most ESL textbooks attempt schema activation through pre-reading activities ,which had been developed to help students relate new information appearing in written text to their pre-existing knowledge.   Stott (2001:1) contends that schema-theoretic research highlights reader problems related to absent or alternate (often culture-specific) schemata, as well as non activation of schemata.

Widdowson(1983)has reinterpreted schema theory from an applied

linguistics perspective. He postulated two levels of language: systemic level and schematic level. The systemic includes the phonological, morphological and syntactic elements of language. While the schematic level relates to background knowledge. In widdowson's scheme of things, this background knowledge exercises an exclusive function over the systemic of language. In comprehending a given piece of language, the reader uses interpretive procedures for achieving a match between his/her schematic knowledge and the language which is encoded systemically.

4. Types of Schema

Two types of schemata most often discussed in reading research and identified by researchers (Barnett, 1988; Karakas, 2000; Stott, 2001;and Ajdeh,2006;) are content schemata and formal schemata. Content schema, which refers to a reader's background or world knowledge, provides readers with a foundation, a basis for comparison (Carrell & Eisterhold, 1983; Carrell, Pharis, & Liberto, 1989). Formal schema and linguistic schema,formal schema often known as textual schema, refers to the organizational forms and rhetorical structures of written texts. It can include knowledge of different text types and genres, and also includes the understanding that different types of texts use text organization, language structures, vocabulary, grammar, level of formality/register differently,and linguistic/language schema refers to one's knowledge of lexicon,syntax and semantics.Schooling and culture play the largest role in providing one with a knowledge base of formal schemata (Carrell &Eisterhold,1983).

While formal schemata cover discourse level items, linguistic or language schemata include the decoding features needed to recognize words and how they fit together in a sentence. First language readers, may through repeated examples, be able to generalize a pattern or guess the meaning of a word, which may not have initially been part of their linguistic schema. The building of linguistic schema in a second language can proceed in the much the same way. As a matter of fact, content and formal schema combines together to convey information in most of the reading materials, affecting reader's comprehension simultaneously and interactively(Hong-Yun&Hu Ping ,2002:17).

From the above discussion it is evident that schema plays an important role in text comprehension, both in the L1 and L2 context. For example, whether reading in a first or second language, one can assume that both native and non-native readers will understand more

of a text when they are familiar with content, formal, and linguistic schema. An L2 reader, however, who does not possess such knowledge can experience schema interference, or lack of comprehension- ideas which are examined further in the following discussion pertaining to relevant research in this area.

4.1. Content Schema, Cultural Orientation, and Background Knowledge

Content schema or cultural orientation in terms of background knowledge is also a factor that influences L2/FL reading and has been discussed by Barnett (1989), Carrell and Eisterhold (1983), and Johnson (1982). As Carrell and Eisterhold (1983:80) point out, "one of the most obvious reasons why a particular content schema may fail to exist for a reader is that the schema is culturally specific and is not part of a particular reader's cultural background." It is thought that readers' cultures can affect everything from the way readers view reading itself, the content and formal schemata they hold, right down to their understanding of individual concepts. Some key concepts may be absent in the schemata of some non-native readers (such as 'lottery' in Carrell & Eisterhold, 1983:87) or they may carry alternate interpretations. The concept of 'full moon', for instance, in Europe is linked to schemata that include horror stories and madness, whereas in Japan it activates schemata for beauty and moon-viewing parties (for ordinary people not werewolves!).

The contribution of background knowledge to comprehension has become clear from a range of experimental studies manipulating relevant sources of knowledge under varying conditions in both L1andL2 readers .Most methodologies investigating the role of schemata or background/prior knowledge were variations on Carrell's (1987) paradigm. This study involved 28 Muslim Arabs and 24 Catholic Hispanic ESL students of high-intermediate proficiency enrolled in an intensive English program at a Midwestern university. Each student read two texts, one with Muslim-oriented content and the other with Catholic-oriented content. Each text was presented in either a well-organized rhetorical format or an unfamiliar, altered rhetorical format. After reading each text, the subjects answered a series of multiple-choice comprehension questions and were asked to recall the text in

writing. Analysis of the recall protocols and scores on the comprehension questions suggested that schemata affected the ESL readers' comprehension and recall. Participants better comprehended and remembered passages that were similar in some way to their native cultures, or that were deemed more familiar to them. Other studies have shown similar effects in that participants better comprehended and/or remembered passages that were more familiar to them (Ammon, 1987;Johnson, 1981, 1982; Shimoda, 1989). Further evidence from such studies also suggested that readers' schemata for content affected comprehension and remembering more than did their formal schemata for text organization. For example in the Carrell's (1987) study described above, subjects remembered the most when both the content and rhetorical form was familiar to them. However, when only content or only form was unfamiliar, unfamiliar content caused more difficulty for the readers than did unfamiliar form.

A study by Steffensen and Joag-Dev (1984 inNunan,1991:8; Mienke&Verhoeven ,1998: 253 ;David & Lynne, 2000:1) based on schema theory demonstrates the effect of cultural background conducted a study using two descriptions of weddings both written in English. One was a description of an American wedding, while the other was of and Indian (subcontinent) wedding. Both the Indian students, for whom English was an L2, and the American students, for whom English was the L1, read the descriptions and were asked to recall the descriptions. It was found that readers comprehended texts about their own cultures more accurately than the other. While the readers indicated that the words were easy to understand, the unfamiliar cultural protocol of an Indian wedding made the passage more difficult to remember.

Johnson's (1981) study investigated the effects of the cultural origin of prose on the reading comprehension of 46 Iranian intermediate advanced ESL students at the university level. Half of the subjects read the English texts of two stories, one from Iranian folklore and one from American folklore, while the other half read the same stories in adapted English. The subjects' reading comprehension was tested through the use of multiple-choice questions. The recall questions and the texts were also given to 19 American subjects for comparison purposes. Results revealed that the cultural origin of the story had a greater effect on comprehension than syntactic or semantic complexity of the text. In another study, Johnson (1982) compared ESL students'

recall on a reading passage on Halloween. Seventy-two ESL students at the university level read a passage on the topic of Halloween. The passage contained both unfamiliar and familiar information based on the subjects' recent experience of the custom. Some subjects studied the meanings for unfamiliar words in the text. Results of recall protocols suggested that prior cultural experience prepared readers for comprehension of the familiar information about Halloween on the passage. However, exposure to the unfamiliar words did not seem to have a significant effect on their reading comprehension.

An interesting study was carried out by Kang (1992). Kang's study examined how second language readers filter information from second language texts through culture specific background knowledge. Korean graduate students with advanced English read stories and answered questions. A think-aloud protocol assessing their understanding and inferences indicated an effect of culture specific schemata and inferences upon text comprehension. Although all the variables and factors surrounding the issues of how culture shapes background knowledge and influences reading are not fully understood, there is agreement that background knowledge is important, and that content schema plays an integral role in reading comprehension. Overall, readers appeared to have a higher level of comprehension when the content was familiar to them. Given this, second language readers do not possess the same degree of content schema as first language readers, and hence, this can result in comprehension difficulties.

4.2. Formal and Linguistic Schema and Text Comprehension

Many studies have also examined the role of text schemata in relation to readers' comprehension. Most of these studies employed similar methodologies in that participants read texts and then recalled information, for the most part in writing. The structures inherent in the texts (e.g., compare-contrast, problem-solving structures in expository text, and standard versus structurally interleaved versions of stories) were identified. Recalled information was analyzed for specific variables such as the number of propositions recalled, and temporal sequence of story components.

For the most part, these studies suggested that different types of text structure affected comprehension and recall (Carrell, 1984). Some studies also showed that there may have differences among language

groups as to which text structures facilitated recall better (Carrell, 1984). For example, Carrell's (1984) study showed that Arabs remembered best from expository texts with comparison structures, next best from problem-solution structures and collections of descriptions, and least well from causation structures. Asians, however, recalled best from texts with either problem-solution or causation structures, and least well from either comparison structures or collections of descriptions. These results; however, must be taken as suggestive as further studies examining the interaction of language background with text structure are needed. Regardless of these findings, as previously stated, it is important to recognize that organizational structures in text will differ across cultures. Stone's (1985) study examined whether language patterns found in English, which differed from those in Spanish, would have a significant effect on ESL learners' comprehension while reading English text. Average fifth grade readers were randomly assigned to either an initial Spanish-speaking group or an initial English speaking group. Nine stories were developed for the study, three for each of three different language patterns categories: similar, moderately similar, and dissimilar. Measures included a retelling and comprehension questions. Results showed that on the retelling measures, the lowest scores were found on stories that were most dissimilar from the students' initial language, and oral reading errors increased as language pattern similarity decreased. The results support the contention that texts violating readers' expectations about language patterns can have disruptive effects.

   Over the last few years, the field of contrastive rhetoric has emerged initiated by the work of Kaplan (1966). Its areas of focus are the role of the first language conventions of discourse and rhetorical structure on L2 usage, as well as cognitive and cultural dimensions of transfer, particularly in relation to writing. For the most part, contrastive rhetoric identifies problems in composition encountered by L2 writers and by referring to rhetorical strategies of the first language, attempts to explain them. It is clear that such differences in text structure can lead to difficulties in reading.

   Mauranen (1992) examined cohesion in both Finnish and English economic texts and found that Finnish writers employed relatively little metalanguage for organizing text and orienting the reader. In contrast, native English speakers used plenty of devices for orienting the reader in terms of what is to follow in the text and how the reader should

understand the different sections of the text. This pattern was found in their writing as well. Finnish writers used less demonstrative references than native English writers. Lindeberg (1988), in her examination of text linguistic features, found differences between Finnish and English writers in terms of topic development and the functions of verbs. Numerous differences have also been found in terms of writing styles between American-English and other languages. American students for example will often comment on the more

theoretical and abstract essays of French writers whose essays lack the details and rhetorical patterns found in the American essay tradition. Chinese writing is often described as being verbose, ornamental, and lacking in coherence from a Western point of view, while Japanese writing has been noted for differences in text organization. It appears that they prefer a specific-to-general pattern placing the general statement at the end of paragraphs (Connor, 1996). Lastly, it is important to point out that the differences between the writing systems and rhetorical structures of the native language and the target language may be another factor that influences reading. Orthographic systems vary widely and while some languages may contain many numbers of symbols, other languages contain a limited number. For example, Chinese calligraphy is a writing system with numerous symbols and one that has strong aesthetic elements thereby differing from English. Arabic also has a unique writing system in that it is written and read from right to left. These kinds of differences in writing systems can pose difficulties for second language readers. Undoubtedly, students reading in a second language will encounter such difficulties not faced by first language readers. In summary,

teachers must therefore be explicit about the structures of the materials the students are reading in the L2 class through which students can become aware of culturally shaped expectations about text and language. Connor (1996) provides an extensive survey on this issue and considers the types of differences between the native and target language that can interfere with text comprehensibility.

Language includes decoding features needed to recognize words and how they fit together different languages .Linguistic schema is the decoding needed to recognize words and how they fit together in sentences.The more text is understood when language content and linguistic schemata is established in languages being acquired.

One of the differences between L1 and L2 reading concerning linguistic (language) schema is that The L2 may contain a linguistic

base that is syntactically, phonologically, and semantically different from the target language.Grabe (1991:387) notes that students begin reading in an L2 with different knowledge base than they had when starting to read in their L1.For examplemL1 readers already have a sufficient vocabulary base before they actually start to read. They also have some grammatical knowledge of their own language.L2 reader does not share these advantages .The end result, comprehension, is based on linguistic information. While L1 readers are already proficient enough in the spoken language, having acquired 5,000 to 7,000 words and a working knowledge of the grammar by the time they start reading (Grabe, 1991:387), L2 readers only start learning these aspects of the target language at the time they start reading.

An L2 reader's L1 can help or disturb his/her reading depending on the similarities or differences in orthographic, lexical, syntactic and discourse systems between the two languages (Chun& Plass, 1997:62). An example of phonological-orthographic language knowledge is the knowledge that not all types of consonant cluster in English can occur at the initial or final word positions. Zakaluk (2000 inSadeghi, 2007:5) finds out that there are obvious differences in the phonological and orthographic pattern of Iranian EFL readers' L1 and L2 may introduce some problems at least for beginning readers. For example, no consonant clusters can occur at the initial word position and none with more than two phonemes anywhere else in a word in Farsi, the official language of Iran. Differences in syntactic structures between L1 and L2 have also been reported as a source of reading problems for L2 learners. For example, German EFL readers might face problems because they 'attend more to function words' in their language, while English readers 'attend more to content words' (Grabe, 1991:388).

There is no dispute among researchers that vocabulary knowledge is crucial to reading comprehension. Walter (2003:1) believes that reading in a L2 calls for fast, automatic word decoding and access to the mental lexicon (dictionary); this means working on building speed and fluency and on learning to recognize at least 10,000 words in the new language. Lexical knowledge and background knowledge are the two most important elements that determine text readability. It is clear that as the number of unknown lexical items in a reading passage increases; the more difficult it is for students to read it with comprehension.

Conclusion

It can be said that the reading in an L1 is similar to and different from reading in an L2. Reading in both contexts requires knowledge of content, formal, and linguistic schema. Reading is also a meaning-making process involving an interaction between the reader and the text. Readers use mental activities in order to construct meaning from text. These activities are generally referred to as reading strategies or reading skills. Successful L1 and L2 readers will consciously or unconsciously engage in specific behaviors to enhance their comprehension of texts. Top-down and bottom-up strategies are used by effective readers as they read. It has been found that readers go through an ongoing process while reading which involves the continuous process of sampling from the input text, predicting what will come next, testing and confirming predictions, and so on. Readers do not read word for word, but rather use their background knowledge, and various strategies such as predicting and confirming to comprehend text. To this extent then one can say in general terms that reading in the L1 and L2 can be similar. However, as seen from the studies above reading in the L2 is also very different from reading in the L1.

Second language refers to "the chronology of language learning; a second language being any language acquired after the native" (Stern, 1983: 12). This definition implies a firmly developed native language. In addition, the term second language implies that the language is probably not spoken in the home. Furthermore, the second language may contain a linguistic base that is syntactically, phonetically, semantically, and rhetorically distinct from the target language. As previously discussed, schema plays an important role in reading comprehension. An L2 reader who is not familiar with culturally based knowledge or content schema, or a reader who does not possess the same linguistic base as the L1 reader will encounter difficulties. Such difficulties may be greater when there is a greater difference between the L1 and the L2. If for example, syntactic structure in a second language student's native language is very different from that of the target language, a greater degree of cognitive restructuring is required (Segalowitz, 1986). Grabe (1991) also notes that students begin reading in an L2 with a different knowledge base than they had when starting to read in their L1. For example, L1 readers already have a

sufficient vocabulary base and know thousands of words before they actually start to read. They also have some grammatical knowledge of their own language. L2 readers on the other hand, do not share these advantages. Furthermore, while the second language reader may have linguistic skills, they often do not have finely honed sociocultural skills, which often mean that a second language reader is not equipped with the knowledge to perceive texts in a culturally authentic, culturally specific way, an idea related to lack of content schema. The end result, comprehension, is based on linguistic data.

Given the above discussion, a profile of a biliterate reader can be offered. Biliteracy means that one can read in two more languages. The ability to read and read successfully implies text comprehension and the knowledge of which reading strategies and skills to use, and under what conditions in the languages in question. A biliterate reader in Spanish and English, for example, would mean that the reader is able to read successfully in both languages and would engage in some of the following reading behaviors to enhance reading comprehension and to read effectively. Such a reader would overview text before reading, employ context clues such as titles, subheading, and diagrams, look for important information while reading and pay greater attention to it than other information, attempt to relate important points in text to one another in order to understand the text as a whole, activate and use prior knowledge to interpret text, (which includes content, formal, and linguistic schema), reconsider and revise hypotheses about the meaning of text based on text content, attempt to infer information from the text, attempt to determine the meaning of words not understood or recognized, monitor text comprehension, identify or infer main ideas, use strategies to remember text (paraphrasing, repetition, making notes, summarizing, self-questioning, etc), understand relationships between parts of text, recognize text structure, change reading strategies when comprehension is perceived not be proceeding smoothly; evaluate the qualities of text, reflect on and process additionally after a part has been read, and anticipate or plan for the use of knowledge gained from the reading. While this list is not prioritized or complete, it does provide one with a description of the characteristics of successful illiterate readers. Such a reader would employ these strategies and reading behaviors when reading in all languages. Furthermore, the illiterate reader, regardless of text type, language, or orthography would develop strategies and schemas for

dealing with different languages and texts. The illiterate reader therefore is a flexible reader and one who possesses the knowledge, skills and strategies to accommodate to each language situation, and hence the process of reading in either language will not be seen as different by the reader.

This paper has attempted to discuss some of the differences and similarities between reading in a first language and reading in a second language. Factors of cultural differences were considered with special attention directed to the role of schema and how this relates to text comprehension in an L1 and L2. There are certainly a number of other factors which would contribute to the difference in L1 and L2 reading, but it hoped that this discussion shed some light on how cultural factors, namely differences in types of schema can contribute to this difference. While the two processes are also similar in some ways, it must be noted that students' perception of their reading difficulties are also similar in many ways across languages. Readers, especially L2 readers, can better understand some of those similarities. Teachers must therefore question students about their reading and reading behaviors, as students themselves can offer tremendous insights into both their L1 and L2 reading experiences.

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