

Understanding Hypertextual Modalities Using Meaning Making Strategies

Mudassar Mahmood Ahmad

Abstract

This qualitative study attempts to understand different meaning making strategies that digital readers employ while they navigate through hypertextual compositions. These online texts are quite in vogue after the emergence of information and communication technologies. The hypertext representation under study is multimodal/multisequential which is conspicuously distinct from the classical traditional texts. This difference occurs at various levels especially the way texts are prepared, presented and explored by their readers, and therefore, a digital hypertext seems to invite noticeably different interactional strategies. These strategies appear to be unlike the way traditional sequential texts are processed for meaning making. An online multimodal hypertext (text with links, images and visuals) was selected and participants were screened for this research. They were engaged to explore the assigned representation after they were given instructional sessions about the nature and features of the text. Qualitative methods were applied for data elicitation with each of the participants. Concurrent and Retrospective think aloud protocols were administered for gaining insights based on subjective understanding. Therefore, the participants were engaged individually and their responses were recorded. Time-stamp technique was used to record and transcribe participants' online interactions and these elicited responses were analysed afterward. Furthermore, the participants were interviewed individually to understand the nature of their meaning making strategies. The findings were insightful as the participants applied new meaning making strategies in addition to the traditional ones that they use for print based representations. These strategies highlight their preferred ways of learning as well.

Keywords: *multimodality, meaning making strategies, hypertext*

Introduction

Language readers employ different reading strategies keeping in view the mode of representation and nature of the text. The importance of this skill amplifies for a (non-native) reader when the meaning making process is to take place in some foreign language, English in the Pakistani context. English as a language has been a compulsory component at all levels and "Book" as a mode of representation is used for instruction

purposes. At graduate and postgraduate level, a great number of students, in the discipline of Humanities and Social Sciences, take English as their major.

With the emergence of multimedia technologies and their increasing role in imparting knowledge, the phenomenon of reading per se is undergoing radical changes. This shift is taking place in the creation of texts that are dynamic and creative, in the reading strategies, and in the formation of new readers (Bexten, 2006; Cho, 2014; Hocks, 2003; Hagood, 2003; Saemmer, 2013). Questions are now persistently asked about the future of the books and their historically situated role and association with the readers, especially, with regards to academia. The availability of written material on the World Wide Web and Compact Disks (CDs) not only has given a successful impression to facilitating the readers throughout the globe but redefined the concept attached to the process of reading and meaning making in the English language, as well (Clark & Feldon, 2014). This is because, according to Kerckhove (2002):

The technologies that support or manage language also affect the mind, of necessity, simply because language is a system for the articulation of the mind, a kind of operating system writ large. Language thus entertains a close and intimate relationship with our inmost sensibility and also with both the content and the structure of our minds.

The impact of this change is quite conspicuous in the discipline of English Studies, where books and research dissertations are displayed onscreen defying the tradition of the print culture, and take reading beyond this localized and static reading medium strategy. Computer programs allow the display of hypertext (digitized language with embedded links, images, audio and video clips) on one page that seems to be more interactive and interesting than the printed linear page. As an onscreen virtual text, hypertext is multilinear/multisequential and allows the readers to move through the composition of “graphic, digitized speech, audio recordings, pictures, animation, film clips,” as Verezub et al. (2008) note quoting Conklin, a hypertext theorist.

One of the purposes of research into the phenomenon of digital hypertext reading is to explore the comprehension competence strategies that participants/students employ for their interaction with the hypertext composed in digital environment, and how these reading strategies facilitate meaning making and improve their understanding, and whether the supposed features associated with digital hypertext reading, in actual, facilitate or not in the whole process.

As far as the electronic forms of reading are concerned, theorists as Cohen (2006), Joly (2002), Joly & Martins (2006) are of the view that they must be conceived in a new manner. This is, perhaps, the most focused aspect of this new form. So, the purpose of my study is to understand the nature of this conception, and assess what new meaning making strategies are employed for this purpose.

Research Question

What new meaning making strategies in addition to text processing are used by advanced L2 readers in hypertext representations?

Literature Review

Flexible Nature of Reading

For digital hypertext readers, the phenomena of interactive reading emerge as a fluid journey within text. The freedom to choose one's reading paths, at one level, makes the act of reading flexible. Foltz (1996) notes:

A hypertext provides more flexibility to the reader in choosing where to go in the text. A hypertext also provides the reader with more methods to employ in order to find the relevant information in the text and to move through the different sections of the text. (p. 5)

Foltz analyzes this aspect at processing and methodological levels. Cho (2014) noted that the digital readers construct the meanings consciously knowing the difference in the reading practices. For some of the learners these meaning making interactions are flexible, yet not encouraging (Jeong, 2012; Young, 2014). Making a comparative analysis of the operational features of classical and digital text, Brody (2000) notes:

A linear text, with specified start and end points, is a stable text. The matrix in which electronic text floats is quite different—a flexible environment that allows multiple layers and n-dimensional reading variants. It is this polyvalent ability to enter, amend, and exit the text in a nonlinear fashion that defines hypertextuality. (p. 146)

The content of hypertext representation does not move from page to page in a sequence. Even the structures refute the coherence from one portion to the other (Saemmer, 2014). The text does not render it necessary to avoid skipping, rather, as Roche (2004) observes: “We do not simply progress through the text. We take detours and may or may not return. In many cases one may circle back to certain passages without having read other passages” (p. 176).

Thus, the reading of hypertext implies liberty that a reader enjoys during his/her interaction with the text. A hypertext representation does not make reading of each information passage mandatory; it rather permits a flexible nature of reading that is adjusted with the reading goals of the reader (cf. Cho, 2014).

Hypertext Enhances/Impedes Boundaries of Reading

Like other contentious issues regarding digital hypertext representations, the question whether hypertext form of representation enhances “conceptual boundaries of reading” or not, is again of obvious dispute. To know the essence of this phenomenon, the conceptual boundaries of reading need to be defined, and this conception in itself is controversial for the advocates of printed and hypertext theorists because of differing composition, presentation and accessing patterns. So, it would be unwise to examine hypertextual reading patterns from the traditional printed text reading practices and vice versa. Hence, the conceptual boundaries of reading would also be distinctly defined.

Many of the hypertext authors unequivocally see a difference in the meaning making process with regard to opposing textual representations (cf. Altun, 2003; Bell, 2010; Carusi, 2004; Hinesley, 2007; Jeong, 2012; Stoop et al., 2013). However, commentators relate confronting opinions about hypertexts and the enhancement of conceptual boundaries of reading at the structural and interactional level. For Landow (1997), hypertext broadens the reader’s concept about text, and he observes that, “hypertext links one passage of verbal discourse to images, maps, diagrams, and sound as easily as to another verbal passage, it expands the notion of text beyond the solely verbal” (p. 3).

There is a fundamental relationship of the textual structure with the interactional nature of the text. Thus, the notion of conceptual boundaries of reading is closely associated with these two features. Seeing the fluid nature of the processes of reading, it would be futile to ignore these two perspectives. Examining hypertext from the perspectives of choosing links, Roche (2004) argues that these new environments “may also mean the diminution of the reader,” that may produce a passive reader unlike traditional representations, where a reader “is actively thinking and imagining while reading a printed book” (p. 196). However, Ryan (2006) conversely observes that these choices of links, if used pragmatically, make the experience for the reader “more pleasurable, or the more aesthetically valuable” (p. 123). Carpenter (2006) also notes that in digital circumstances, enriched meaning making experiences emerge, and further observes that, “The use of interactive computer hypertext technology enhances and provokes the focus and purpose of art

instruction and learning to be more expansive and personally relevant than previous traditional methods of teaching” (p. 150).

Disorientation while Reading

Digital hypertext, with all its advantageous features, also faces charges such as disorientation and “getting lost” while interacting with the text that may result in poor comprehension. For Miall & Dobson (1998), this “disorientation is often attributed to readers’ inability to locate themselves spatially within a hypertext” (p. 2), and consequently, the reader feels lost. Thus, it is considered as a primary discomforting factor which is supposed to turn the computer-mediated text into a maze (cf. Altun, 2003, Jeong, 2012; Stoop et al., 2014). Schneider (2005) examines disorientation from the cognitive theory perspective, and defines it as, “an inability to establish a satisfactory situation model quickly that will then serve as a framework in which the episode is expected to take place, providing a sort of skeleton structure to be fleshed out by further information” (pp. 200- 201).

There can be many forms of disorientation, for example, on the part of system design, hypertext author or even the reader (cf. Cho, 2014; Hammond & Allinson, 1989; Jeong, 2012). Theng (1996) considers some of the forms of disorientation are on the part of the reader as s/he feels caught up in a maze. In this case, he finds that

In general, the "lost in hyperspace" phenomenon refers to any of the following conditions: users cannot identify where they are; users cannot return to previously visited information; users cannot go to information believed to exist; users cannot remember what they have covered; and users cannot remember the key points covered. (p. 1)

Disorientation of the reader is therefore, a widely noted phenomenon, and critics give it weightage in the process of meaning making using hypertext. Parr (2001) also points out that, “we have surely observed it in our students: the phenomenon of entering into a hypertextual environment and losing orientation, or losing confidence, or just ‘losing it’ ” (p. 238). However, some commentators argue that it is a problem less with the structure and more with the readers’ little experience using digital hypertext (cf. Cohen, 2006, p. 170; Lavagnino, 1995, p. 109). On the surface, a hypertext seems to be very useful for the reader; however, Theng (1996) contradicts this supposition and expresses his opinion that, “the more useful a hypertext, the sooner a user gets so distracted he gets lost!” It is Graff (2005) who urges readers to be wary of such situations that are specifically caused by the structure.

New Strategies of Text Processing

Applying McLuhan's (1964) credo "the medium is the message" to the new environments, it reveals that not only the meanings get changed but the processing strategies also need to be refashioned to comprehend the meanings. New terms like "interaction, associational, analogy, network" have appeared in the limelight for the theorists of social sciences and humanities (Hunter, 1999, p. 107). Because of the emergence of new features in textual presentation digital texts are explored differently for meaning making (Cho, 2014; Jeong, 2012; Saemmer, 2014). So, digital hypertext should be looked at with "new eyes" as the differences exist at the processing terrain. Chartier (2004) expounds the proceedings as he notes:

A text is always conveyed by a specific materiality: the written object upon which it is copied or printed; the voice that reads, recites, or otherwise utters it; the performance that allows it to be heard. Each of these forms of publication is organized in its own unique fashion, and each form, in different ways, influences how meaning is produced. (p. 147)

Thus all these features that, as Chartier mentions, employ different processing methods, so digital hypertext requires new meaning making strategies for multimodal language (re)presentations. Linguistic cues, images or icons, displayed on the interface, assist a reader as to how to navigate through the representational medium to achieve general or specific reading goals. Maps, flashing or blinking "eye candy," and node titles, all overtly define the structural design of the digital hypertext (cf. Foltz, 1993, p. 58). These cues help a reader to navigate the hypertextual material and process it comfortably but in a new context (cf. Cohen, 2006, p. 174). Roche (2004) notes the same aspect in these words, "The electronic medium with its supporting materials affects not only the extent to which the text is intelligible but also the way the mind of the reader or student processes it" (p. 197). The intelligibility of the content language, thus, is dependent not only on the textual-stylistic elements but also on the textual reflections and processes prompted by the new medium.

Reading strategies define the trajectory to achieve a predetermined reading task (Jeong, 2012; Mazzali & Schulz, 2004; Rich, 2008). A reader may set these reading tasks by himself/herself or they can be given by the teacher. Using specific strategies also reflect "the amount of information a reader accesses from a particular text" (Salmeron et al., 2005, p. 176). Given their primacy of nature, it is of pivotal importance to investigate the use of these strategies thoroughly that have not been

properly analyzed yet (Rimrott, 2001). Owing to a variety of intricate factors (such as, the nature of the text, the purpose of interaction, and the reader's prior/background knowledge) involved in selecting the right strategy, it becomes "harder to determine what information a subject has read and the subjects' motivations for choosing the particular information from the text" (Foltz, 1996, p. 9).

A reader with low prior knowledge of the content or the text structure may "improvise" (Batali, 1988) some of his/her reading tactics. It is because s/he may not have experienced it earlier so such steps seem to be the "immediate reactions to an issue that had arisen" (Taylor & Self, 1990, p. 308). Rich (2008) refers to a university professor Elizabeth Moje who states that, "students are developing new reading skills that are neither taught nor evaluated in school." She actually refers to the new reading environments where students unconsciously devise new reading patterns. Cohen (2006) examines these new electronic reading environments, and makes certain suggestions for reading strategies:

New comprehension processes are required for these electronic text environments. Readers must constantly self-monitor as they go through these interactive texts to ensure that they understand what the author means, and also to figure out what their role is in the interactive process, and if they feel comfortable in contributing to the interaction. (p. 171)

Protopsaltis & Bouki (2005) observe the reading processes and note that a reader chooses the reading content, and also what to skim and when to ignore some information, and even the speed of the whole interaction that constitutes the reading strategies employed by a reader (p. 161). In another study, Cho (2014) notes that the learners employ different meaning making strategies than those of the print-based text and it is because of the textual setting that requires these strategies.

Methodology

This experimental and phenomenological study warrants its own methodology and methods of collection, analysis and interpretation to be applied to data for gaining an understanding of the phenomenon of meaning making and comprehension competence in/through language. This new study is meant to highlight the role of interactive digital hypertext and its implications for the non-native students in the process of using language for meaning making and, nonetheless, the findings and insights/knowledge would substantiate how to incorporate and/or create these new environments in the existing experiences of non-native English language learners. This section provides methodological details comprising

all the necessary features for understanding cognitive processing and reading comprehension of digital hypertext.

For this purpose, an experiment was designed, and students/participants studying at Master's level in the Department of English Studies, National University of Modern Languages (NUML), Islamabad campus, were engaged. The reason for selecting NUML as research context for this study is its status as one of the leading language teaching universities not only in Pakistan but in South Asia as well. With respect to the level of the participants, it is assumed that the students at this level have adequate knowledge of English language and literature since they have qualified the university admission criteria in the discipline of English Studies and have already attained 14 years of education with English as a compulsory subject. However, to ascertain this assumption, the participants were screened by applying three parameters. It is pertinent to mention here that the elicited research data in the multimodal form regarding participants' responses can be viewed and accessed on the website www.mudassar-ahmad.com which is designed especially for the research purpose.

Qualitative Approach and Methods

This study applies qualitative approach and integrates different methods during the research (Bazeley, 2010; Bazeley, n.d.; Halcomb & Andrew, 2009; Teddlie & Tashakkori, 2006). The purpose of adopting this approach is the phenomenological nature of the study which elicits subjective responses from the participants followed by qualitative analysis. Sydenstricker-Neto (1997) prefers this design because it is "likely to increase the quality of final results and to provide a more comprehensive understanding of analyzed phenomena." Thus, these methods complement each other by "adding more depth to the information."

Creswell (2003) favors using different methods because it helps understanding the details and nature of the phenomena as well as its generalization for other studies. Johnson and Onwuegbuzie (2004) observe that the application of more than one method in a specific approach has the potential to reduce the problems that arise otherwise, and the researchers are "more likely to select methods and approaches with respect to their underlying research questions" set for the study. Maxwell and Loomis (2003) argue that a variety of methods produces "broader and more interactive concept of research design," and presents it as an alternative approach. Thus, for these researchers/theorists, this design is preferable as it emphasizes the importance of integration at various levels.

New environments invite carefully chosen methods to understand and comprehend the phenomena of meaning making because of the

distinct change in the nature of the texts and the displaying media. In this connection, Gocsik (2009) very aptly observes that, “our students are engaging in increasingly diverse discourses, delivered to them by increasingly varied media . . . where information is constructed via text, hypertext, video, and audio.” Being aware of this emerging perspective, Concurrent Think-Aloud (CTA), Semi-Structured Interviews (SSI), Retrospective and Reflexive Think-Aloud (RRTA) were used. The application of these methods/techniques served the purpose of producing authentic and valid data for further analysis.

The participants were engaged with *Hamlet on the Ramparts* (a project of Peter Donaldson, Department of English Studies, and run under Massachusetts Institute of Technology). He has reconstructed the original Shakespearean text *Hamlet* (Act I, Scene V) adding the visual and image links along with the hyperlinked language content on the same page, and thus the emergent text can be termed as hypertextual transposition (Mazzali & Schulz, 2004). This is a multimodal/multisequential digital hypertext that apparently seems to differ from the traditional printed language text in design, construction, presentation and interaction.

For this study, 10 participants were engaged. Researchers (Cho, 2014; Coiro, 2007; Foltz, 1993) have conducted such qualitative studies with less than ten participants applying think-aloud protocol. They were selected on the basis of their performance in the screening session prior to this experiment. For this study, *Camtasia/Debut Video Capture* recording software was used to record and save the details of the interaction/exploration of the text by the participants. Instructions were given to the students/participants about the nature of multimodal digital hypertext and the potential freedom that a reader is speculated/supposed to experience in the selection of the links, and they were given a demonstration thereafter.

This assigned multi-representational digital hypertext constitutes the actual text with links, images and video clips, so, the purpose was to understand and assess the application of new meaning making strategies in the new reading environments. The participants/readers attempted to engage themselves meaningfully, and it was interesting to note the difference of this activity from the traditional sequential reading patterns with which these readers are quite familiar.

Concurrent Think Aloud (CTA)

The participants were engaged for 30 minutes in this CTA session. They were familiar with the protocol of this strategy. Their responses and real-time interactions were recorded using screen recording softwares.

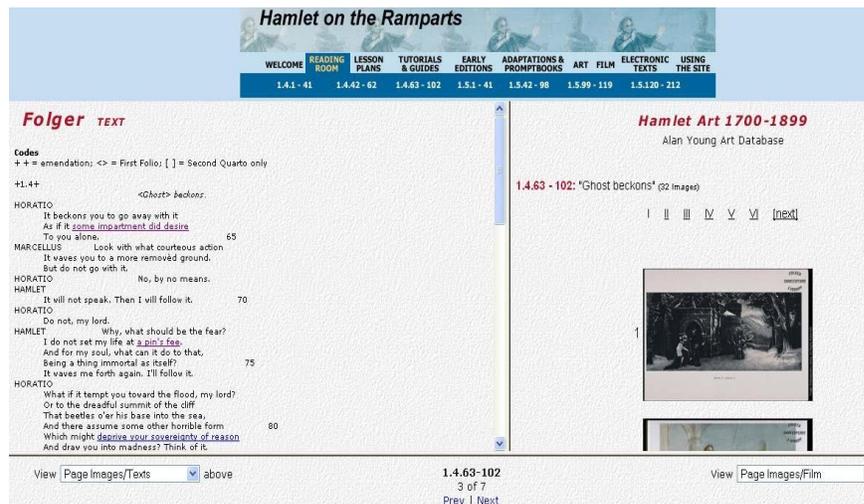


Figure 1: Multimodal Digital Hypertext with Hyperlink Language and Image Mode on the Right

Semi-Structured Interviews (SSI)

After the CTA session, 10 participants were engaged for Semi-Structured Interviews. A questionnaire for this SSI session was prepared to elicit data. These responses were recorded using JetAudio software so that they could be subsequently transcribed for analysis. The multimodal language of the given hypertext was presented quite distinctly than that of the sequentially languaged traditional text. Hence, these interviews were meant to explore the readers' perception of the digital hypertext transposition and the way they explored the hypertext for meaning making in language.

Retrospective and Reflexive Think Aloud (RRTA)

Retrospective and reflexive think- aloud protocol was used to elicit participants' responses. Their earlier performance on concurrent think-aloud was recorded using audio recorder and screen recording softwares. They were again asked for retrospection as they were shown important chunks of their performance with this multimodal text. Some theorists call this method *stimulated retrospection* because of the involvement of visual material (Guan et al., 2006). For this purpose, cues were already taken for this session from the SSI and CTA sessions. This was done to understand

their different choices for reading in a non-linear way through language of multimodal digital hypertext, *Hamlet on the Ramparts*.

Data Analysis

Concurrent Think Aloud

Before starting the CTA session, each of the participants was provided information and training about the assigned digital hypertext that consists of digitized language with 56 embedded hyperlinks for meanings, 94 images and 3 visuals. The participants were engaged individually and each of the participants was given 30 minutes for interaction while producing concurrent verbal responses. According to Block (1986), these verbal responses are based on the thoughts that “wander or rush through the minds of readers, the searches and struggles for meaning, the reflections and associations, are hidden from the outside observer. Yet, this struggle and search for control are the core of reading comprehension” (p. 463). Furthermore, a time log sheet was developed to keep the time record of the participants’ interaction in the session.

Reading Strategies

The reading strategies used by the research participants are more varied and extensive than those employed in the traditional reading setting. The application of these reading strategies also reflects the readers’ cognitive processes (Yang, 2006). During the analysis and interpretation of the responses, new categories were identified under the theme of general reading strategies. It is, because of the digital hypertext, which is unlike a print-based text that requires “new” reading techniques for meaning making.

One of the participants, AI tried to construct meanings using the three representational modes. He also compared the way representations present the textual language and the difference of effect. While using this strategy, he defined his interactive path for the meaning making activity:

First I saw the movie and then I was looking at the pictures and the text. Now, I was imaging the pictures in my mind as well and what I see from the text and I was corresponding them with the images, I was given in the session. (Pt. 30, 30:25)

The participants during their Concurrent Think Aloud session many times revealed their reading strategies and, as mentioned earlier, these are quite different from the reading strategies the readers use while interacting with the traditional print-based texts. It is, because of the intrinsic structure of the digital hypertext that provides space for multimodality. One of the

participants, FS revealed his reading strategy, and how it impacts the hypertext user's language comprehension and textual understanding. He was of the view that watching the visual first, before reading the text, had influenced his thought process, and he observed:

Now here the difference is that I have watched the movie before going through this text so I think that, that movie is influencing or framing my thought. I mean to say that my imagination has been made limited by that particular movie and as I am going through the text, and in the background of my mind, I must say, I am having that movie. So, that movie is influencing or you can say it is mediating in my thought process, in my power of imagination . . . Had it not been there, probably I'd have got different sort of, you can say, the feelings and sentiments which are being shown here by Hamlet as well as the ghost. (Pt. 31, 07:55)

Another participant AI spoke about his reading strategy when he made critical comments on what the image depicted and compared it with the language of the text (Pt. 30, 26:52, 27:26, 29:02). The participant tried to combine the effect of the different representational modes to make one mental image of the visuals, images and the textual language in order to understand it thoroughly (Pt. 30, 30:25). Thus, from some of the participants' responses, it was noted that the inclusion of the image mode was helpful for understanding the hypertext content. Participant SK said in this context that, "I can see a full image and the words are also legible, I can read the dialogues as well. This is of help. Now while you are reading the play, these illustrations help you along" (Pt. 9, 16:11).

After reading the text, ZI wanted to see the images so as to assess his understanding about the digitized language. He considered the visual not a separate mode but a representation of the textual language, and explained his interaction:

I got the idea, of the main idea of this, the whole text. Now I want to confirm that whether what I perceived is right or wrong. And after the art I would go to film for the same purpose that whether what I got is right or there is something missing. (Pt. 24, 15:14)

Another participant, HN preferred certain images to some other hyperlinked images because of the colors that attracted his attention. In his CTA responses, he said, "more interesting for me is image number 3 because it has colors. So colors always attract the person. That's why I skipped image number 2 and chose number 3" (Pt. 25, 27:55). While

interacting and producing CTA responses, there are insights for the web designers also to prepare and present such quality images that attract the attention of the viewers.

For some of the participants, prior reading of the content language facilitates the watching of the clip for a non-native participant. It is because the delivered dialogues of a native actor might be fast for the non-native viewers, and that might cause difficulty in listening comprehension. Thus, the reading strategy of these participants serves to clarify the textual meanings using visuals. Participant HR, in this context, stated, "I am able to understand because I have already read the text so it is easy to understand otherwise delivery is fast" (Pt. 16, 16:10).

During the CTA session, participant ZS explained his reading strategy which was quite different from the print-based text because the assigned digital hypertext was innately multimodal and seemed to enrich the meaning of the textual language. He expressed that he was "trying to relate that image with the text so how it can enhance the meaning from the visual effect to the textual effect" (Pt. 26, 20:55). It was further noted during the analysis of reading strategies that when a participant likes some representational mode, s/he spends more time on that mode which is a reflection of her/his reading strategy.

In the Concurrent Think Aloud session, the participants expressed general reading strategies as well as linguistic strategies while interacting with the digital hypertext. Thus, some of the participants reflected their reading strategy when they preferred one interactional mode over the other for starting interaction. Some of the participants reflected categories as clarifying meanings of digital hypertext using hyperlinks, clarifying hypertext meanings using image mode, and clarifying hyperlinked text using visual mode.

The participants, in their CTA responses, expressed many categories relating to linguistic strategies along with the general reading strategies. These linguistic strategies reflect new patterns of interaction with the digital hypertext because of its composition in the "new" environment. Since the assigned hypertext contains the vocabulary of old English, therefore, participant AA went through the lines many times to comprehend the text. He confessed that he was "reading it again and again in order to understand. I can't get its meanings because it is full of . . . old vocabulary" (Pt. 28, 00:21). Thus, according to Block (1986), participants use this linguistic strategy to comprehend the text. Not only AA, but another participant, ZI found the hypertextual language difficult to grasp the meaning, therefore, rereading of the textual representation

facilitates comprehension. For him, “The language is a bit difficult of this text, no doubt, is very difficult” (Pt. 24, 06:15).

Participant AI found the images contradicting the language in the text, thus raising questions about multiple layers of meanings while reading hypertext which is multimodal. He also questioned the image representations which is his linguistic strategy (cf. Block, 1986). He jumped between the images and made critical comments on the presentation and compared one image with the other image and also with the textual language about the scene (Pt. 30, 21:01). At another place, he said, “the picture shows that . . . he is bowing down as well, he is showing respect. On the other hand the dialogue shows that he doesn’t want to go further so it’s a clashing image making contradictions” (Pt. 30, 10:31).

Participant AI also informed that the language in the clips was spoken so fast that he could not grasp the content. He used a linguistic strategy by questioning the language and pronunciation of the visuals to understand the clip. To his astonishment, “I found the clips a little fast for me. Sometimes, it was very slow, it was understandable, sometimes it was very fast, the dialogues were spoken very fast as if a child is scrambling something” (Pt. 30, 05:11).

Participant AI critically evaluated the language spoken by the actor in the visuals and then compared it with the understanding he gleaned after reading the hyperlinked language. He questioned the words, tone, and expressions of the characters performing in the visuals, and then compared it with what he thought about these aspects before watching. To him:

In the movie that I saw “murder” was pronounced with certain anger, the way that showed his feelings. From the fact, this [word] murder is more like a question mark, it should be soft, the suspense I feel, rather, of pronouncing with aggressiveness, it should be more soft, “murder” (utters softly) like this. (Pt. 30, 12:27)

Another participant FS liked to watch the facial expressions of the characters and for that he would like to see the visual. It is because; the expressions show the intensity of emotions and the feelings of the person. Watching the visual enabled another participant AR to understand the character’s emotions in action on the stage, thus it enriched his comprehension (Pt. 22, 11:32).

Participant HR wished to have more meaning links embedded within the hypertext since he is a non-native reader and the digitalized text is composed in old English. However, “there are meanings of some specific

words, not all of them are given" (Pt. 16, 18:20), and he appreciated this facility and wished to have hyperlinked meaning of each difficult word. Thus, these hyperlinked options not only changed the context of the hypertext but also enhanced the conceptual boundary of reading. AA also did not find meanings of some difficult vocabulary items that he thought should be there for non-native readers. Thus, according to Block (1986), this searching for word-links is a linguistic strategy by the language readers. Participant AA, in this connection stated, "I find a few difficult words but meanings are not there. For a common reader, meanings should be there. There should be each and every meaning" (Pt. 28, 14:21). For another participant, AR hyperlinked words facilitated his meaning making as "all of these words' meanings are written over there so it is very easy that I can get the meanings of these highlighted words that are written in blue color" (Pt. 22, 05:35).

Participant AA repeated his linguistic strategy by reading again and again in order to grasp the text (03:29, 04:03, 05:40, 07:11, 12:06), and this strategy enabled him to understand the hypertextual language, as ZS stated, "Now I understand, now I got it" (Pt. 28, 04:15). At another place in his CTA session, he uttered his reading strategy in these words, "I can't get the meanings but I think that I should keep on reading. I'll try to look for the general idea" (Pt. 28, 15:48). At another place he disclosed another strategy while thinking aloud that, "Once I can't get it by reading silently so I read it loudly in order to concentrate on meaning" (Pt. 28, 26:45). Another participant HN very explicitly defined his reading strategy that he would first go for the text and then for the image and visual mode (Pt. 25, 00:44). Thus all these utterances are not mere reading strategies but they reflect the participants' intricate cognitive processes as well for meaning making.

Semi Structured Interviews (SSI)

After interacting with the digital hypertext in the Concurrent Think Aloud (CTA) session, the participants were engaged for Semi-Structured Interviews. 10 interviews were recorded using JetAudio software for this purpose. The audio data was transcribed using time-stamp technique on Microsoft Word pages. After preliminary analysis, related categories were found for detailed analysis.

Reading Strategies

Participant FS explained the reading strategies that he devised for a meaningful interaction with the multimodal hypertext. He basically was focused on the content language and clicked other modes to comprehend the languaged hypertext. In this context, he informed:

The main motive was to get a better comprehension of the text and since I knew that there are certain things which could help me in a better comprehension or understanding of the text whether a video or a meaning link so whenever I wanted to check my own thought, my own understanding whether I was going in the right direction I would consult the meanings or I would go to the pictures or I would go to the movie just to, not only to understand what was there but also to testify whatsoever I had in my mind, was it there in the movie as well, so for the sake of checking my own understanding and for the sake of getting more understanding about the text I used those things. (Pt. 31, 10:24)

Thus, the participant quite explicitly stated that he clicked image and visual modes to comprehend the hyperlinked digitalized language.

Retrospective and Reflexive Think Aloud (RRTA)

After conducting Concurrent Think Aloud session and Semi-Structured Interviews, cues were identified for the participants' retrospection and reflection. A cue sheet was developed for making notes from the CTA and SSI data responses about the cues for RRTA session. This session was also audio recorded using software JetAudio. The collected data was subsequently transcribed using time-stamp technique, and preliminary analysis was done to identify the categories related to the themes. 9 sessions were conducted for the RRTA as one participant could not manage to find time for this session.

In this session, the participants reflected on what they had previously said in the CTA/SSI sessions, and the way they had interacted with the assigned digital hypertext in their CTA sessions.

Reading Strategies

One of the participants, AR suggested that a new user should maintain sequence of what s/he is interacting with in a hypertext environment. He stated that, "I think it would be very easy if he has proper sequence" (Pt. 22, 05:51). Defining his reading strategy, participant AB informed that meaning links and visuals enhanced the comprehension and he devised his reading strategy in response to the reading goals. AB elaborated:

I definitely got help from the graphics . . . I was obviously able to infer from the visuals and visual really help me in answering the question that what kind of clothes it was wearing or whether it was impressive.

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