Psychonarratology: from cognitive processes to readers’ narrative comprehension

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ABSTRACT

Psychonarratology studies the cognitive processes of narrative comprehension in readers’ minds. There are thus close ties between psychonarratology and cognitive processes of mind while reading a narrative. This study aims to provide definitions and explanations for the two basic crucial concepts of ‘psychonarratology’ and ‘narrative’. First, it considers the role of readers in narrative comprehension and for this reader response theory and reception theory are elaborated on. Then, the cognitive processes which are active during narrative comprehension, are discussed. Three models of this cognitive processes are presented as well. ‘Narrative’, among other discourse genres, is the focus of this study. Because of its distinctive features, a narrative has its unique way of being understood. The processes of narrative comprehension will be considered and elaborated on in this study.

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1. Introduction

The last 25 years have witnessed an increasing attention to narrative discourse within the realm of discourse psychology (Bruner, 1986; Gerrig, 1993; Goldman, Graesser, & van den Broek, 1999; Graesser, Golding, & Long, 1990; Mandler, 1984; Rumelhart, 1977; Schank & Abelson, 1977, 1996). For several reasons, narrative discourse has a privileged status among other various types of discourse. Because of the correspondence between the situations and episodes in narratives, the comprehension mechanisms of narratives are much more natural than those recruited during the comprehension of other discourse genres (such as argumentation, expository text, and logical reasoning). Moreover, narrative is the primary genre of oral discourse and is the easiest genre to remember (Graesser & Ottati, 1996; Rubin, 1995).

Inference mechanisms have had a controversial status in psychological studies of narrative comprehension. In the two past decades, there was very little scientific knowledge about inferences during text comprehension (Graesser, Olde, & Klettke, 2002). According to the same source, the discourse psychology community holds that the meaning of a narrative cannot be driven and digested from the explicit (narrative) text, instead, one of the factors for making inferences while reading a narrative is too much for the “background knowledge” of readers, which leads the reader background information is said to “go beyond the explicit information” (ibid, p. 230).

Because of narrative’s “ubiquitous nature”, to use Bortolussi’s term, narrative is studied in different disciplines. In line with this ubiquitous nature of narratives, Nash also believes that narrative “is no longer the private province of specialists in literature (as if it ever should have been)” (Nash, 1994, p. xi). Narrative is now studied across a wide range of disciplines, such as literary studies, cultural studies, linguistics, discourse processing, cognitive psychology, social psychology, psycholinguistics, cognitive linguistics, artificial intelligence, and, as Nash points out, ethnomethodology and critical legal studies (Wieder, 1974).

What is common in the study of narratives in most of these disciplines is their focus on its pragmatic functions and effects on readers (Bortolussi & Dixon, 2003). So many disciplines are engaged in the study of narrative comprehension. As Emmott explains, “reading a story is an astonishing feat of information processing requiring the reader to perform complex operations at a number of levels” (Emmott, 1997, p. v). This emphasis on the reader results from a paradigm shift; while the formalists stressed on the structural properties of narratives and the text itself, these new disciplines (already mentioned in the previous paragraph as: literary studies, cultural studies, linguistics, discourse processing, cognitive psychology, social psychology, psycholinguistics, cognitive linguistics, artificial intelligence), consider the effects that the narratives create on readers i.e. the formal characteristics of narrative texts were no longer the center of attention; rather, it was the ‘reader’ who was the heart of all these disciplines. Among these disciplines, we may refer to psychonarratology.

2. Defining narrative

One of the basic features of stories is the presence of a causal event-structure. Referring to the views put forward by Graesser, Hauft-Smith, Cohen, and Pyles (1980), a narrative presentation can be thought of as the description of a series of actions and events that unfold over time, according to causal principles. These rules of causation, in turn, demand that events occur in a logical order. Narratives have many elements, of which are setting, agent, and goals of those agents.

According to Yantis (1996), with crafted narratives it is often left, in part, to the audience to infer why the elements included in a narrative are significant. In a way, comprehending literary narratives entails the reverse of certain processes employed in real-world experience. With regard to the latter, attention is often directed as a function of current goals (Yantis, 1996); however, one may come to this idea that the former (literary narratives) demands the inference of intentions and goals through interpretation of the objects and episodes selected by the author. Another feature of narratives which distinguishes it from other types of texts, like those of expository ones, is that narratives appeal to readers’ imaginations (Bruner, 1986; Gerrig, 1993; Graesser, Mills, & Zwaan, 1997; Oatley, 1999, cited in Mar, 2004). Furthermore, Readers will mentally represent the characters’ emotional states (Gernsbacher, Goldsmith, & Robertson, 1992). This mental stimulation which arises readers’ emotions and which lets
them interact with events and the characters’ of the story, is a matter that is lacking in non-narrative texts, e.g. expository texts do not make such emotional states and feelings of congruence with those of characters. Narrative, then, is the depiction of events driven by the intentional behaviour of one or more autonomous agents in a manner that manifests an imagined world which parallels the world of real experience (Bruner, 1986; Graesser et al., 1997, cited in Mar, 2004).

3. Psychonarratology

To give a clear definition of psychonarratology in the first place, we may refer to Bortolussi and Dixon (2003) who explain it as “the investigation of mental processes and representations corresponding to the textual features and structures of narrative” (p. 24). Laszlo (2008) states that this processing depends on three factors: “the qualities of the reader, the special features of the text, and the reading situation” (p. 26). He continues that “psychonarratology frames these factors into experimental variables and investigates their joint effect on processing” (ibid.). So, psychonarratology can be said is an approach which picks up one dimension in a narrative text which causes difficulty while reading and processing, then it systematically measures how readers process those specific features of a narrative.

Approaching narratives via psychonarratology is not an easy task, however. This difficulty arises because such an approach is mental and not observable. The objections to this field of study also state that this method is not objective neither scientific, because the mind and thought cannot be seen directly. Such objections attribute subjectivity to the nature of mind and thought. In the words of one literary scholar, “the field of cognitive studies is insufficiently equipped to deal with the complexity of human thought processes. Practitioners of cognitive science can explain neither the complexity of cognitive aesthetic perception nor the depth and individuality of subjective, affective reactions” (Gross, 1997:294). Yet, this problem has been solved to some extent, as Bortolussi and Dixon (2003) explain:

- Although mental operations such as problem solving, memory retrieval, and language comprehension cannot be observed directly, one can gain knowledge of them indirectly by synthesizing a variety of observable signs such as verbal reports, response latencies, and degrees of accuracy in the performance of specific tasks (p. 26).

Thus despite the belief that unobservable entities cannot be studied, there has been some methodologies to draw inferences of unobservable phenomenon. Nuclear physics and radio astronomy are obvious examples of disciplines founded on such techniques. In line with this argument, cognitive psychology in particular has developed methods for making inferences concerning how the mind works (Bortolussi & Dixon, 2003).

We may now shift to what psychonarratology is specifically concerned with. Laszlo (2008) says that psychonarratology studies how textual features of narrative, such as the position of the narrator in the text, influence the evolution of narrative representation. He, then, accounts for five criteria based on which narratives can be psychonarratologically studied and analyzed. The first is objectivity which means that a definition of a feature should be as clear, unambiguous, and understandable as possible. The second which is closely related to objectivity, is the precision of the definition of textual features, e.g. if indirect speech is under analysis, it is not enough to say that there is ‘a little’ or ‘a lot of’ amount of indirect speech used in narrative X, but you should derive some quantitative information relevant to the narrative under study. This is referred to as precision. A third requirement for textual features is stability. Only those features of texts can be studied that are independent of the reading situation or the readers. The emotional effects evoked by reading narratives or the subjective experience cannot be regarded as stability. Instead, expressions that are related to the emotional states of the narrator of the characters in a story should be identified in the text. As the fourth factor, the textual feature to be studied should be relevant from the point of view of text processing. The investigator may choose to precisely count the frequency of letter ‘e’ in the text or the words starting with a consonant, but this has very little impact on the evolution of the reader’s representation of the text. Finally, the selected textual feature should be manageable experimentally and systematically modifiable so that its effect could be traced in the evolution of the reader’s representation (Laszlo, 2008, p. 27). The set of criteria used by psychonarratology plays an important role in investigations that study the validity of content analysis in narrative psychology (ibid.).
4. The role of the reader in comprehension

One of the fundamental aspects of psychonarratology is the ‘reader’ and how s/he processes the narrative texts. Experimental studies of psychonarratology, which try to determine its actual processes, will be useless if the ‘reader’ does not constitute a part. His/her perceptions, interpretations, and comprehension during reading a (narrative) text is of importance since, in Iser’s (1974) opinion, the text gets its meaning only when it is read; so the literary work becomes meaningful only with the engagement of the reader. There are two theories which undermine the importance of readers’ role in comprehension: the reception theory and reader response theory.

In the reader response theory, Rosenblatt declares, “the text is merely an object of paper and ink until some reader responds to the marks on the page as verbal symbols” (The Reader, the Text, the Poem 23, cited in Anderson, 2012). Anderson refers to Rosenblatt who says: a same written work is not the same for all readers for each individual brings his/her background knowledge, beliefs, culture, values, and reading context to the act of reading (ibid.). Relevant to the discussion of psychonarratology, Holland and Bleich adopt a psychological perspective on the relationship between reader and the text. Holland (1975) claims that readers “draw upon the treasury a literary work provides to re-create [their] own characteristic psychological process[es]” (1975, p. 274). According to Holland, “the fantasy content we conventionally locate in the literary work is really created by the reader from the literary work to express his own drives” (p. 817). Being rooted in psychology, the reading process in Holland’s model is a purely subjective experience, and no attention is paid to text structures, tropes, or styles. Like Holland, Bleich (1978) also locates meaning in the reader’s mind. For him, there is no knowledge except subjective knowledge, and the text does not exist outside its readers (ibid.).

The second theory that considers the interplay of text and reader was postulated in Germany by phenomenologist Wolfgang Iser, as reception theory. He explains reception theory as:

- Reception theory was a reaction to what appeared to be a stalemate in literary studies. Of paramount concern for this theory was the impact a piece of literature has on its readers and the responses it elicits. Instead of asking what the text means, I asked what it does to its potential readers.... The message (of the text) that was no longer to be ascertained triggered interest in what has since been called text processing—what happens to the text in reading (Iser, 2000, p. 311).

What becomes evident from this quotation is the important role Iser allocates to the readers of a literary text. Moreover, he believes that a text is not passive but it is active since it does something to its potential readers, as it is evident from his statement: “Instead of asking what the text means, I asked what it does to its potential readers”. Iser believes that the interaction between the reader and the text is to be conceived as an aesthetic response because this interaction stimulates the readers’ imaginations (ibid.).

Reception theory along with the reader-response theory can be accounted for in the realm of cognitive psychology. These two theories can help us understand the processes involved in readers’ mind and cognitive faculty during narrative reading (and comprehension) As Terence Wright argues, reader response refers to “a variety of positions held together only by their concern with what goes on in the mind of the reader when he or she picks up and peruses a book” (Wright, 1995, p. 530). This statement points to the fact that the involvement of readers while reading texts is tied to some operations in their minds or their cognitive faculties.

5. Cognitive processes and narrative comprehension

In psychology, the study of narrative processes has primarily fallen within the domain of cognitive psychology. In the same line, narrative theorists have always shown interest in the relation between minds and narrative (Bernaerts, Geest, Herman, and Vervaeck, 2003). There are a number of studies which try to show how this all work. Bordwell (1992) whose article centers on ‘cognition and comprehension’, investigates ‘films’ as a kind of narrative. He believes that comprehension passes the same processes which are necessary for narrative comprehension. He believes that understanding narrative films is a matter of ‘cognizing’. No exact explanation is provided by Bordwell but it seems
cognizing refers to making something cognitive or transferring something into one’s mind. The procedure of cognizing is explained by Bordwell as: “Going beyond the information given involves categorizing, drawing on prior knowledge, making informal, provisional inferences, and hypothesizing what is likely to happen next” (p. 184). Another concept which repeatedly has been the focus of this article is that perceivers who come to comprehend generally a narrative and specifically a film, is the extraction of “gists”, meaning that the perceivers try to grasp the fundamental features of the event (p.185). Thus a “gist” would seem to be “central to comprehension of this narrative” (p. 187).

6. Cognitive models of narrative comprehension

Empirical studies have demonstrated that the difference between stories and essays has measurable implications, with regard to comprehension and recall (Graesser et al., 1980; Petros, Bentz, Hammes, & Zehr, 1990; Weaver & Bryant, 1995; Zabrucky & Moore, 1999). As was discussed in previous sections of this review, because of being interesting and arousing readers’ emotions, a narrative text is recalled easier. To see how this recall works, we may refer to some models for discourse comprehension. The number and the types of models which are going to be discussed in this article, are taken from Cliffton and Duffy (2001). It has been mentioned that these models have roots in the roles of memory and knowledge in discourse comprehension. They are: memory-based models, constructionist models, and mental models. Each will be elaborated on briefly.

6.1. Memory-based models are ones in which “the activation of related information from LTM is assumed to be a passive, automatic process that occurs continually during comprehension. All concepts currently in short-term memory (STM) serve as cues that broadcast a signal in parallel to the contents of long-term memory (LTM)” (Cliffton & Duffy, 2001, p. 85). Thus in a memory based model, STM provides the cues which are necessary for syntactic and semantic differentiation makings. STM can be said does an activity which remains in a concrete, primary level (I call it concrete because it deals with the bits of language and makes them ready to be helpful in a larger process which actually takes place in the LTM). In contrast, the LTM with a more abstract air, has this capability to retrieve information existent in it. This marriage or collaboration between STM and LTM results in readers’ comprehension of a given discourse. This model can well explain a number of findings in the literature where lengthened reading times are observed for sentences that are locally coherent but that conflict with information presented in a distant sentence earlier in the text. Albrecht & O’Brien (1993), for example, asked participants to read a passage in which Mary, the protagonist of the story, was introduced a vegetarian. After six sentences, the participants encountered a sentence in which Mary ordered a cheeseburger. The reading times for this sentence were longer than in a neutral version of the paragraph that gave no preliminary information about Mary’s eating habits. Cliffton and Duffy believe that this phenomenon can be justified in a memory based model. The concept of ‘vegetarian’ was reactivated by the word ‘cheeseburger’ and this allowed the reader detect the inconsistencies within the text, therefore, a longer time was needed for its processing (Cliffton & Duffy, 2001).

6.2. Constructionist model of text comprehension was originally stated by Grasser et al. (1994). According to this view, text comprehension involves a more active and intelligent “search after meaning.” Comprehension of narrative text is assumed to involve building a representation of the causal relations among events in the text, where events are classified by types (e.g. goals, reactions, actions) (Cliffton & Duffy, 2001). Considering this search after meaning through making some representations of the causal relations among events, it can be said that Graesser et al.’s (1994) constructionist theory tares to explain the process of building situation models narrative text is comprehended. The situation model’s most distinctive feature is the inferences of knowledge that readers make during reading and the effect these knowledge inferences may have on their comprehension. Furthermore, in Grasser et al. (2002) it is mentioned that the constructionist theory assumes that the inferences and content of the situation model are systematically influenced by variations in reader goals. Thus what can be inferred is the fact that not every reader has the same interpretation and comprehension as others, and the situation model may vary for every individual. Grasser et al. explain that the constructionist theory has two distinctive assumptions that substantially narrow down the set of inferences that are routinely generated on-line during narrative comprehension: they are coherence assumption and explanation assumption (2002).
According to the coherence assumption, the comprehender attempts to build a situation model that establishes both local and global coherence among the actions, events, and states that are explicitly mentioned in the text (p. 20). The local coherence is established if an incoming explicit statement (S) can be linked conceptually to a recent proposition (P) that resides in working memory (WM). Comprehenders monitor several conceptual dimensions simultaneously during the attempts to achieve local coherence (i.e., linking S to a P in working memory) (p. 21). Global coherence is established when local segments of discourse can be organized into higher order chunks (p. 21). In other words, a kind of hierarchical relationship can be seen in local and global assumptions which in turn cause comprehension; global coherence is established when local segments of discourse can be organized into higher order chunks. The other assumption of constructionist theory that Grasser et al. refer to is the explanation assumption. It states that comprehenders tend to draw why questions while reading a specific text. Thus why questions play a much more crucial role in comprehension that other questions types. Grasser et al. (2002) says: “the causal explanation of an intentional action includes the motives (superordinate goals) for performing the action and the events/states that initiate these motives” (p. 23).

6.3. Mental models

When reading stories, readers are involved in the process of comprehension. This comprehension logically puts some burden on the mental activities of the readers. The procedure of mental activities of readers during narrative comprehension has been the concern and also discussed through the literature. Johnson-Laird along with Sanford and Garrod (1983 & 1981), agree that understanding involves two major components. First, readers would make a surface realization of the text and also translate the text into some conceptual propositions. Second, they would use their world knowledge so that they, by their background knowledge, can do some relating, linking, and drawing inferences of the concepts which they have already made in mind. By these, they can knit together the causal relations among the events and action sequences of the narrative (p. 24). In this way, readers make some mental representation of the story and all of its components like characters, context of the story, etc. Bower and Morrow (1990) describe this kind of referential representation a mental model or situation model. The matter of world knowledge in making and shaping the mental activities of readers is also well attested to in Glenberg, Meyer, and Lindem’s (1987), who believe that “constructing a mental model requires continual interaction between the text and the reader’s linguistic, pragmatic, and world knowledge” (p. 69).

A critical point which is cited by both Bower and Morrow (1990) and also by Glenberg et al. (1987), is that mental models are “updatable”, meaning that they can be modified when new information is added. Readers can use their mental model to interpret, evaluate, and trace later statement in the narrative. Johnson-Laird (1983), Sanford and Garrod (1981), and Glenberg et al. (1987) all believe in a kind of meaning construction by readers during reading a narrative. Glenberg et al. (1987) specifically put it as “mental models are the result of a constructive activity” (p. 69). There has been some debates in the literature on the issue that readers tend to remember the mental model they constructed from a text, rather than the text itself (e.g. Cliffton & Duffy, 2001; Johnson-Laird, 1983; Bower & Morrow, 1990); that is to say, readers’ mental model tries to answer this question that what is the text about rather than what the text itself is. This can be proved from the way readers read narratives. They do not memorize the whole story or novel, but they try to make some mental mappings of the events of the story and create another mapping when some new information is given.

Some insightful notes has been made by Glenberg et al. (1987) about the features of a mental model which state mental models, along with having the feature of updatability which was explained earlier, are manipulable and perceptual-like. The feature manipulable means mental models are able to reorganize and move the portions of the representations “into contiguity with other portions to create a emergent relations”; and perceptual-like means that mean that mental models integrate information from different senses so that the mental model of an event described by the text need not be different in kind from the mental model upon witnessing the event (p. 69). Finally, he considers mental models to be important to discourse comprehension. This last remark is point that is considered by other theorists as well (Collins, Brown, & Larkin, 1980; Johnson-Laird, 1983; Sanford & Garrod, 1981; van Dijk & Kintsch, 1983).

7. Conclusion
The realm of psychonarratology, as an interdisciplinary field, gives this opportunities to the researchers to investigate many concepts. One of such concepts is the cognitive processes during narrative comprehension which was already discussed in the present article. Comprehension is the matter of what happens in the minds of individuals and thus it can be attributed to the cognitive domain and what actually goes on there. The cognitive dimension along with its pertaining models which aided the comprehension of narratives were discussed. It was said that for a comprehension to take place, the surface, linguistic meaning would not suffice, rather one should appeal to his/her world knowledge to make a mental map of the events, characters, the situation, the contexts and other components present in a specific story/narrative. The ability of making different models for comprehension provides humans with a precious adaptive advantage. In studies of psychonarratology, the role of readers cannot be ignored since this field of study deals with what happens in readers’ minds. The reception theory as well as reader response theory (explained in parts 4. 1. and 4. 2.), gives us insights of this crucial role readers have in studies of psychonarratology. Also, narrative among other genres is emphasized. Narrative as a literary genre, and as having its specific features, are easier to follow and understand. That is because of the chain-like feature between narrative events which make it easier to understand and recall.

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