

THE READER'S MIND BEYOND THE TEXT – THE SCIENCE OF COGNITIVE NARRATOLOGY

GABRIELA TUCAN

West University of Timișoara

Email: gabrielatucan@yahoo.com

Abstract: *The paper argues that narrative functions as a valuable resource for thought and also for developing human cognition and mental work. More specifically, the paper outlines an approach to studying narratives as basic cognitive tools for thinking, and thus my contribution will continue to explore several cognitive processes that allow readers to comprehend narrative texts.*

Keywords: *cognitive narratology, cognitive processes, mental representation, post-classical narratology, possible world theory*

1. What the Mind Has to Do with the Text

Cognitive sciences have taken an interest in the active mental processing that makes behavior understandable. The fact that most of our mental work is largely unconscious and extremely intricate requires an interdisciplinary framework and a wide range of methodologies so that more light will be shed onto our mental behavior. In the end, knowledge between sciences and across disciplines will reveal more about human cognition and mental processing. The convergence of linguistics, psychology, computer science, philosophy of mind, neuroscience, and anthropology all contributed to the cognitive revolution in the 20th century with far-reaching transformations for the world in which we are presently living.

In recent years, literary scholars have shown real interest in these challenging disciplinary boundaries for the study of cognition. Together with the other cognitive sciences and also the findings in neuroscience, literature has much to offer in the dialogue between sciences and humanities. It can make an essential contribution to understanding how our mind functions when we produce and comprehend stories. In actual fact, the study of narrative can give us an insight into human cognition and mental work. From this perspective, the study of literature can answer one crucial question: how are language users able to recognize and produce stories of any narrative mode? Indeed, when we produce and comprehend stories, we actually perform crucial cognitive processes; narrative texts can allow access to these cognitive operations that are extremely complex, rapid, and largely unconscious. In conclusion, the study of the literary mind has revived the interest in the narrative thinking toward “the rehabilitation of imagination as a fundamental scientific topic, since it is the central engine of meaning behind the most ordinary mental events.” (Fauconnier and Turner 2002:15)

Everyday thinking and the literary capacity have much to share; for both, we use roughly the same mental instruments: “If we want to study the everyday mind, we can begin by turning to the literary mind exactly because the everyday mind is essentially literary,” claims cognitive scientist Mark Turner (1996:7). Truly, story production and comprehension can become basic mental activities, essential to human thought, and, as nicely put by Mark Turner, stories will thus make life possible. Yet, stories are always present in our life and so absorbing that we tend not to notice them. As a result, stories are of a paradoxical nature: they are a constant presence, but still they generally go unnoticed and are largely unconscious. For this reason, it is probably worth analyzing the basic mental mechanisms that are relatively similar both in the everyday and the literary.

2. The Science of Cognitive Narratology

Cognitive narratology seeks in different ways to rethink literary interpretation in the sense that narrative should be regarded as a tool of understanding and a way of helping individuals to structure and make sense of their experiences. If we see narrative as an instrument of mind, then the interpretative processes we make use of in narrativizing processes will reveal much about how our brain functions. One main statement assumed in cognitive narratology would be that the human brain functions primarily in terms of narrative. Therefore, a dialogue between researchers in cognitive sciences and those interested in the study of stories will open new lines of communication, essential for cognition and narratology alike.

However, the implications of recent cognitive studies for narratology are not sufficiently acknowledged. For instance, MIT Encyclopedia of the Cognitive Sciences (= MITECS, 1999) lacks entries for *narrative* or *story* and does not discuss relevant narrative concepts that would answer key research questions of cognition. In this respect, cognitive narratologist David Herman (2000) makes the strong claim that narratology should be considered a sub-domain of the cognitive sciences, and therefore stories should be treated as resourceful tools for cognition: “both language generally and narrative specifically can be viewed as tool-systems for building mental models of the world” (Herman 2000:1).

The broader point of cognitive narratology would be to define narrative understanding as a process of building mental models as a result of text interpretation. In fact, this is a process of reconstruction, in the sense that interpreters rebuild roughly the same mental models that appear in story production. When dealing with a story, interpreters try to understand the intentions and goals of characters, the circumstances that surround specific acts in the story, or actions and events in the story; and all this entire process of interpretation is aimed to suit the design of the story. Admittedly, text understanding and interpretation, even in the case of long and complex literary pieces, is viewed as a natural process. However, cognitive narratologists are trying to prove that below apparently simple work of interpretation, interpreters use complex cognitive operations for meaning making. Another point made by cognitive narratologist David Herman is that text interpreters do not simply put together parts of the story by rearranging the plot, but

rather they immerse into the world of the story in which they live out imaginary events; they respond emotionally to actions and characters, draw inferences, and also imagine alternatives for events in the story:

Interpreters of narrative do not merely reconstruct a sequence of events and a set of existents but imaginatively (emotionally, viscerally) inhabit a world in which, besides happening and existing, things matter, agitate, exalt, repulse, provide grounds for laughter and grief, and so on- both for narrative participants and for interpreters of the story. More than reconstructed timelines and inventories of existents, storyworlds are mentally and emotionally projected environments in which interpreters are called upon to live out complex blends of cognitive and imaginative response, encompassing sympathy, the drawing of causal inferences, identification, evaluation, suspense, and so on. (Herman 2002:16-17)

As they try to comprehend stories, interpreters take the ‘deictic shift’, i.e. the power of stories to transport the interpreter to the time and space of the storyworld. So, the act of comprehension is not simply limited to the reconstruction of the timeline and the existents within the story, but it takes cognitive abilities and emotional response to construct actual storyworlds or imaginary projections of potential stories that are embedded into the ongoing story. In effect, the work of comprehension undergone by interpreters necessitates complex cognitive operations for bringing together all the elements, essential for recovering the overall meaning of a story. Given the wide variety of story types, cognitive narratologists have tried to identify exactly that set of cognitive tools that interpreters use in order to recognize stories and learn how to distinguish them from non-stories; more specifically, how to identify stories, for instance, of short fiction and then differentiate them from the ones in more complex novels. However, the universality of stories in our world appears to complicate matters even more; critics in the field of narrative studies have often been puzzled by such large inventory. Indeed, the effort to control and understand narrative has required the design of a unitary model for common reference.

In this sense, cognitive narratology aims at redefining narrative interpretation as a process of “reconstructing the mental representations that have in turn guided their production [the production of stories]” (Herman 2002:1). Consequently, the main research question would be the one of discovering and assessing those complex cognitive operations required in interpreting characters, actions, events, circumstances, and, broadly speaking, the whole design of the story. This new approach to text processing and understanding makes the leap to a new ‘logic of narrative’.

3. Post-classical Narratology

Indeed, recent studies in narratology have meant a rebirth for what was initially thought to be the death of narratological research after the fall of the structuralist paradigm. In fact, it seems that new methodologies, perspectives, or voices (feminist, deconstructive, rhetorical, discourse-analytical, etc.) show that narratology has undergone a transformation into a host of narratologies

or a plurality of narrative analyses. *Post-classical narratology*, in short, reassesses the possibilities of earlier structuralist models of the 1960s, but it reveals “a more sustained reflection on its scope and aims, a fuller awareness of surrounding critico-theoretical developments, a less programmatic and more exploratory posture, a greater willingness to admit that, when it comes to the study of narratives (or anything else!), no one can or should hope to get everything right once and for all,” as suggested by Herman (1999:3).

Especially important in this respect is the rethinking of the scope and role of narrative analysis: postclassical approaches to narrative attempt at asking basic question about stories, story production, and comprehension – what stories are and how they can be read, described or analyzed, and ultimately, lived. Narrative can thus help us comprehend how we build storyworlds and how we represent the world in our mind and imagination. This long and painstaking process of storyworld representation is encoded in the narrative process and is ready to be discovered by readers. To underscore this large narrative repertoire that shows human mind in action in countless forms and modes would mean denying the benefit that literary studies can bring to other sciences preoccupied with the study of the mind and brain. So, it is essential to reshape the understanding of literature so that it can benefit from the contact with other disciplines, and also to cast more light on the complicated research into how we think and how our mind functions.

This new interdisciplinary approach can now offer literature in general, but narratology specifically, emergent functions that have not been considered before. As a cross disciplinary science, narratology can become a valuable and reliable research method used to attend innovations in the field of artificial intelligence or medical neurosciences. Cognitive narratologists are now suggesting that if we are able to understand how the human mind makes and processes stories, then there are greater chances for delving further into the unknown terrain of the human brain.

Grown out of a “spreading dissatisfaction with the more bleakly relativistic and antihumanist stands of poststructuralism” (Richardson and Steen 2002:1), the new interdisciplinary narrative theory has forged links between literary theories and cognitive science; more specifically, the goal for the new science of literary cognitive theory has been set in relation to one or more fields within the broad cognitive science: artificial intelligence, cognitive psychology, philosophy of mind, cognitive linguistics, or neurosciences – narratology as a cognitive science.

In spite of the fact that cognitive researchers all share the interest in mind, they follow different research lines and have different theoretical objectives. Nevertheless, the project of integrating narrative theory and cognitive sciences should be viewed from two main perspectives: firstly, it is the contribution made by the cognitive sciences to narratology, and secondly, scholars have looked into what narrative theories can do for cognition. Furthermore, what is important for this cognitive approach is that it addresses stories as an essential part of our basic mental equipment – “the power of language lies not in words, but in the mind”, suggests Turner (1991:209) – and our narrative competence seems to be of utmost importance even for the most ordinary events in our life. It is a fact that we tend to understand and remember our world better

when we process it in terms of stories that will be mentally stored and available for us when needed. Admittedly, people use stories as an everyday activity, so they must reveal something crucial about how we cope with the world around and how we manage our complex experiences. In truth, the recognition of the vital role of stories in our everyday life has set a new agenda for narrative analysis. This ‘narrative turn’ seeks to explain more complex reading processes rather than focus on short and artificially constructed texts that were used in early cognitive attempts in literature. Researchers in the field since the 1980s have developed programs of study that consider thinking organized in narrative terms and have viewed stories as basic units for our human thought: “Analysts have studied narrative as itself an instrument for sense-making, a semiotic and communicative resource that enables humans to make their way in a sometimes confusing, often difficult world.” (Herman 2003:12)

4. Cognitive Narratology and the Theory of Possible Worlds

Overall, cognitive narratology is a narrative theory used as a new possibility for a cognitive approach to narrative analysis and a new research method for the cognitive processing of literature. From this standpoint, stories as ‘instruments of mind’ or ‘tools for thinking’ can increase our cognitive capacities related to memory, change, spatial perception, temporal reasoning, or problem solving – “reading involves the interaction of the mind with the text” (Emmott 1999:XI). In keeping with the principle that this intricate work of cognition happens across both literary and everyday thinking, literary exploration can illuminate many parts of human understanding and thought.

This new cognitive approach to stories focus on the process of building mental models of the narrative world and also looks into the source of these mental representations. More specifically, *possible-world theory* has been used to define the world-creating properties of narrative discourse. The theory of possible worlds was initially developed by logicians and philosophers of language in order to deal with logical problems, such as necessity or possibility:

Necessity can be defined in terms of propositions that are true in all possible worlds; possibility in terms of propositions that are true in at least one possible world; and impossibility in terms of propositions that are not true in any possible world. (Palmer 2004:33)

Later, the theory was adopted by narratologists to explain the possible worlds emerging during the course of a narrative text and to deepen the understanding of how fictional worlds are built. Researchers interested in possible worlds claim that in the actual domain of the text statements receive a truth-value, which may not be true outside the text. Further research was carried out by such narrative theorists as Lumobir Doležel (1998), Thomas Pavel (1986) and Marie-Laure Ryan (1991) so as to better analyze the origin of the worlds created by fiction (known as *narrative worlds*, *fictional worlds*, *storyworlds*, or *text worlds*). In light of this theory, narratology transfers its basic working concept – ‘story’ – to the newer concept of ‘narrative

world' (one of the many possible worlds of the text). In truth, the theory of possible worlds has set new lines of inquiry for the science of narratology: one central question refers to the reader's access to the storyworld. Researchers look into the channels that facilitate the transportation of the reader to the new fictional world; how are fictional worlds accessed and comprehended? The reconstruction of the narrative world may be done, as maintained by Doležel (1998:20), "by crossing somehow the world boundary between the realms of the actual and the possible".

In sum, texts are fully comprehended when the worlds of the text are represented on a cognitive level. For one thing, readers create imaginary worlds in order to keep track of events, agents, or actions in the story. During the course of a narrative, several possible worlds unfold, each at differing degrees of completion at a given moment in the story. Apart from what 'happens' in the world of the text, readers may need to make sense of other alternate worlds that are dreamed of, imagined, wished for, or secretly planned; indeed, the world of the text involves complex relationships between the character's virtual worlds and the explicit 'reality' of the text. In effect, the theory of possible worlds distinguishes between two separate narrative domains unfolding in the fictional world: one central actual domain and a host of other non-actual alternative worlds or *counterparts* of "the text actual world" (term used by cognitive poetician Peter Stockwell in his *Cognitive Poetics: An Introduction*, 2002). Put differently, the set of events in the textual world always relate to alternative sequences that the characters constantly contemplate but never realize:

A possible-world approach is particularly useful in describing the internal structure of the textual universe, and in accounting for the development of the plot. This results from seeing the textual universe as a dynamic combination of a text actual world on the one hand, and different *types* of alternate possible worlds formulated by characters on the other. (Semino 2003:86-87)

As indicated above, the plot advances and develops through continuous changes in the text actual world, but equally important are the changes in the network of unrealized potential worlds. In this sense, Ryan (1991) formulates her "Principle of Diversification" – '*seek the diversification of possible worlds in the narrative universe*'; the diversification of the narrative universe confers real aesthetical value to narrative worlds; therefore, the interest raised by plots of great narrative resides in a 'system of purely virtual embedded narratives' – "story-like constructs contained in the private worlds of characters" (dreams, fictions, and fantasies and any kind of representations about potential states or events – plans, beliefs, desires, passive projections) (Ryan 1991:156). The possibility for these embedded narratives to enter in complex relationships with each other produces textual richness and variety: "the aesthetic appeal of a plot is a function of the richness and variety of the domain of the virtual, as it is surveyed and made accessible by those private embedded narratives." (Ryan 1991:156)

Generally speaking, fictional worlds display rich alternativity that is mostly character-centered; to exemplify, Stockwell (2002) speaks of several types of alternative discourses created by characters in narrative; to start with, the epistemic world shows the fictional beliefs of

characters or their speculations regarding what might happen in their world ('speculative worlds'). Another alternative world may be generated by the intentions of the characters ('intention worlds'), or by their wish to change something in their world ('wish worlds'). In other cases, characters construct 'obligation worlds' filtered through their sense of morality. Alternatively, 'fantasy worlds' comprise a large inventory of hopes, wishes, dreams, or pure fictions (Stockwell 2002:94-95).

5. Cognitive Processes and the Indeterminacy of Fictional Worlds

In line with the theory of possible worlds, Lubomír Doležel (1995; 1998) maintains the theoretical assumption that fictional worlds should be treated as autonomous objects, and not as representations of the actual world. The fictional world differs from the real world in two essential instances: first, the limits in fiction are constantly expanded by the immense power of fictional language, and second, all fictional worlds are ontologically incomplete. The ontological incompleteness of the fictional world stands in opposition to the fullness of the real world:

the incompleteness of fictional worlds results from the very act of their creation. Fictional worlds are brought into existence by means of fictional texts, and it would take a text of infinite length to construct a complete fictional world. Finite texts, the only texts that humans are capable of producing, necessarily create incomplete worlds. (Doležel 1995:201)

As already stated, Doležel views textual worlds as ontologically incomplete and structurally determined by blanks or gaps. Gaps may be differently located: either in the difference between story and discourse, or alternatively, in the texture of the storyworld itself. Even more interesting is the nature of the gaps; as shown by Doležel (1995), some gaps are temporary (missing information in the story is later presented in the discourse, as in the 'whodunit' story type), while other gaps are permanent (present in the representation of the storyworld). Furthermore, Doležel sees the opposition gaps-facts as representations in the fictional world of the presence or absence of texture. So, the overall meaning of a text is a composite of explicit, implicit, or non-existent information.

Interpreters 'read' the gaps in the text and the challenge increases as the incompleteness of the world increases. So, to a great extent, the process of reconstructing the fictional world is done implicitly, which leads us to the conclusion that the production of the text itself depends on the implied meanings posed by the fictional world. Information about particular fictional texts can be communicated in an implicit manner, rather than being overtly or explicitly expressed. This problematic issue of 'gaps' in storyworlds and of implicit meaning in text production and comprehension has long been debated in literary critical studies, and not without a reason: it seems that the literary function depends significantly on the recovery of implicit meaning. The interplay between presence and absence in literary texts relates to Wolfgang Iser's concept of 'indeterminacy'. The 'information gaps' in a literary construct, writes Iser, which are deliberately

left unmentioned or are withheld on purpose can provide the stimulus for the reader's imagination:

With a literary text, we can only picture things which are not there; the written part of the text gives us the knowledge, but it is the unwritten part that gives us the opportunity to picture things; indeed without the elements of indeterminacy, the gaps in the text, we should not be able to use our imagination. (Iser 1974:283)

However, interpreters need to find markers of implicitness grounded in the explicit structure of the text; these markers are of two different natures, as stated by Doležel (1995). Implied meaning can be communicated by intentional absences in the text ('negative markers') or by 'positive signals' dropped in the fictional world (allusions, hints, insinuations, etc.).

According to Lubomír Doležel, interpreters recover implicit meanings by using particular procedures: logical inferences and presuppositions based on our encyclopedia of stored knowledge. It seems that a great deal of text implicitness comes from cognitive presuppositions made in the construction and reconstruction of fictional worlds. For instance, interpreters enter the fictional world with a set of existential presuppositions or with knowledge regarding human action; that is, they use the cognitive mechanism of 'minimal departure' from the real world:

unless the text tells us otherwise, we assume an identity with the actual world. Gravity still works, China exists, there was a Norman Conquest of England in 1066, and unless we are directed otherwise, these and all our other actual world assumptions are put into operation by default. (Stockwell 2002:96).

It is worth mentioning that the inferences or presuppositions necessary for recovering implicit meanings may differ according to the encyclopedic knowledge of the interpreter. Different readers share particular knowledge relative to their culture, social or historical context, and in this way they may recover different meaning from the text. Nevertheless, Doležel (1995) draws attention to another aspect, namely the fact that the knowledge generated by our actual world should not interfere much with the formation of the fictional world. What he means is that the fictional encyclopedias created by the possible worlds of the text should be viewed as autonomous from the real world:

What I would like to add is that encyclopedia is also relative to possible worlds. The actual-world encyclopedia is just one among numerous encyclopedias of possible worlds. In this paper I am interested in fictional encyclopedias, the stores of knowledge about possible worlds constructed by fictional texts. Fictional encyclopedias are many and diverse, but all of them to a greater or lesser degree digress from the actual-world encyclopedia. (Doležel 1995:206)

6. Final remarks

In sum, the theory of possible worlds looks at literary texts for traces of cognitive processes and mental representations. It should be also mentioned that thought processes analyzed by cognitive narratology are at large emotional, metaphorical, and rather 'illogical'. That said, cognitive narratologists seek to pay closer attention to the attempts of writers and readers to imagine, understand, and represent images perceived at a cognitive level. Critics in the field of cognitive narratology thus reopen new research topics that will help us better understand the boundaries between body, language, culture, and texts. Eventually, this new narrative science links narrative theory and the cognitive sciences in a double game that proves relevant for both cognitive narratology and the science of the brain and mind: better understanding of the workings of the mind and of complex neuronal processes is instrumental to our ability to make sense of stories. Conversely, the thinking organized in narrative texts can be used as a semiotic resource for comprehending our intricate mental activity.

References:

- Doležel, Lubomír. 1995. "Fictional Worlds: Density, Gaps, and Inference". *Style* 29(2):201-214.
- Doležel, Lubomír. 1998. *Heterocosmica: Fiction and Possible Worlds*. Baltimore: Johns Hopkins University Press.
- Emmott, Catherine. 1999. *Narrative Comprehension: A Discourse Perspective*. New York: Oxford University Press.
- Fauconnier, Gilles and Turner, Mark. 2002. *The Way We Think. Conceptual Blending and the Mind's Hidden Complexities*. New York: BasicBooks
- Herman, David (Ed.) 1999. *Narratologies: New Perspectives on Narrative Analysis*. Ohio: The Ohio State University.
- Herman, David (Ed.) 2003. *Narrative Theory and the Cognitive Sciences*. Stanford, California: CSLI Publications, Centre for the Study of Language and Information.
- Herman, David. 2000. "Narratology as a Cognitive Science". *Image and narrative. Online magazine of the Visual Narrative*. 1(1):1-31. [Online]: Available: <http://www.imageandnarrative.be/inarchive/narratology/narratology.htm> [Accessed 2012, 23 September].
- Herman, David. 2002. *Story Logic: Problems and Possibilities of Narrative*. Lincoln, NE: The University of Nebraska Press.
- Iser, Wolfgang. 1974. *The Implied Reader: Patterns of Communication in Prose Fiction from Bunyan to Beckett*. Baltimore and London: The Johns Hopkins University Press.
- Palmer, Alan. 2004. *Fictional Minds*. Lincoln, NE: The University of Nebraska Press.
- Pavel, Thomas. 1986. *Fictional Worlds*. Cambridge, London: Harvard University Press.
- Richardson, Alan and Steen, Francis F. 2002. *Literature and the Cognitive Revolution: An Introduction in Poetics Today* 23(1):1-8.
- Ryan, Marie-Laure. 1991. *Possible Worlds, Artificial Intelligence, and Narrative Theory*. Bloomington: Indiana University Press.
- Semino, Elena. 2003. "Possible Worlds and Mental Spaces in Hemingway's 'A very short story'" in *Cognitive Poetics in Practice*. Gavins, Joanna and Steen, Gerard (Eds). London: Routledge, pp. 83-98.
- Stockwell, Peter. 2002. *Cognitive Poetics: An Introduction*. London: Routledge.
- Turner, Mark. 1996. *The Literary Mind. The Origins of Thought and Language*. Oxford: Oxford University Press.

Notes on the author

Gabriela Tucan is an assistant at the Department of Modern Languages and Literatures at the West University of Timișoara, where she is now specialized in teaching ESP, academic writing, as well as creative writing. She has received two MA degrees in Creative Writing and Adult Education at the West University of Timișoara. She is currently working on her PhD thesis titled “A Cognitive Approach to Short Storytelling”, which analyses the cognitive operations necessary for reading and comprehension E. Hemingway’s short stories. Her broader research interests cover cognitive narratology, the properties of conceptual blending, and cognitive theory.