

## Original Contributions - Originalbeiträge

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## Neurohermeneutics A Transdisciplinary Approach to Literature

The study of literature and arts in general has been recently enriched by the changes in the heuristic paradigms regarding the very essence of the cognitive processes implied by the artistic experience. In the frame of the epistemological changes occurred in the past decades, since the so-called “neuro-turn” and the definition of an “epistemology based on the brain” (see Edelman, 2007), the linkage of humanities, cognitive studies and neuroscience has put at stake the need of inquiring about arts and literature in a transdisciplinary perspective, in order to get new insights into how our mindbrain fulfils the mysterious process of imagining a fictional world, constructing new meanings out of this experience, and to develop a methodology to newly interpret arts and the literary text.

In this perspective, the main focus of literature is human nature and the involved relationship among the human mind, the cognitive processes of the brain and the world. As Turner (1996) claimed years ago, literary criticism needs to take into account new results in the field of cognitive science and neurosciences, since only through the intertwining of art and cognitive neuroscientific research it will be possible to acquire innovative perspectives in the study of the human mind and arts. Narration – particularly literary narration – is the oldest and one of the most sophisticated products of the human mind; it therefore mirrors many of its more relevant processes. The brain processes that normally underlie the interaction of the human being with the world are reflected forcefully and in condensed manner especially in art and literature. Cognitive acts make use of narrative and creative processes, as reaffirmed in the past decades by several scholars, among them by Gibbs (1994), overcoming the classical distinction between usual thought, referred to action in the world, and the narrative literary one, referred to counterfactual worlds (Turner, 1996). Therefore, it seems inadequate to deal with a specific aesthetic phenomenon without considering the complexity in which it is rooted, that is to say the connection between the brain and its activity, and what such activity has produced and is nourished by –body, environment,

\* This paper is the result of a common research of the two authors. For the text’s editing, let us refer to each author by pointing out its initials in brackets.

history- as well as the relationship between reason and emotion, matter and energy, reality and representation.

In this frame, we have developed a neurohermeneutic approach for a new investigation of the literary experience, related to the above-mentioned transformation of the cognitive paradigms regarding new views of human nature that have resulted from recent discoveries in the cognitive and neural sciences. Our aim is to grasp and describe phenomenologically the mirroring process between the two extremes of the literary experience, i.e. the writer's creative process and the reader's imaginative reconfiguration of the text, and what they share in common. The reader revives the mental imaginative processes of the author by creating his/her unrepeatable individual experiences of the text and subjectively redesigning it.

Neurohermeneutics aims to contribute to the current debate about the linkage between literary, cognitive and neuroscientific studies, focusing on the relationship between mindbrain's processes mirrored in the formal features of the text and the strategies activated by a text in order to involve the reader in imagining, emotionally feeling and cognitively getting meanings out of the literary experience. The result of this kind of investigation will explain the anthropological relevance of the meaning-making process during the reception of the literary text as a result of complex dynamic emergent processes of inquiring after truth, questioning the cultural literary device and its historic ways and conditions for symbolic communication and activation of the subject's imagination. This is in order to gain some new interpretations of literary texts in the light of questions about the processes engaged by the human mind in its attempt to interact with the environment and to investigate the construction of new images and new meanings in the world.

Unlike many traditional approaches to literary criticism, which tend to fragment literary texts into its components, we propose to investigate literary texts as complex constructed dynamic system, responsive to the functioning system of the human mind, and therefore as a device for obtaining knowledge and constructing meaning. The text mirrors the mental processes and dynamics of the author (see Freeman, 2007, p. 1179) which can be traced back to the linguistic, stylistic and rhetoric structures of the "formalized language" of literature. These formal features affect the imaginative, emotional and cognitive processes of the author and reader alike; the latter (see Miall, 2006; Swann & Allington, 2009a; 2009b) should be considered as a fluid and variable creative agency in relation to the author and the text. Therefore, in our view, the text – and through it the author – "guides" (see Abramo, Gambino & Pulvirenti, 2017, p. 46) readers to create their own counterfactual mental world according to their own cultural backgrounds, experiences, memories, emotions and imaginative faculties. In our approach, the text is intended as an anthropological cognitive device interacting with the

imaginative, emotional and experiential background of the reader, giving rise to new cognitive avenues as a result of the aesthetic pleasure produced by this new counterfactual world.

The immense amount of work about human brain and cognition of the last 50 years should have induced literary critics and theorists to consider the new ideas emerging from the cognitive sciences, neurology, neurophysiology, neurophenomenology, neuroaesthetics, empirical psychology, etc. as fundamental in their search for new paradigms for literary studies. And yet, literary scholars have shown remarkably little interest in starting transdisciplinary disciplinary studies about literature. As Richardson (1999, p. 157) pointed out: “That what must be the great interdisciplinary venture of our times, cognitive science (or, as a number of researchers now prefer, the cognitive neurosciences), has been left largely unexamined in a much heralded era of inter-disciplinarity scholarship”.

On the contrary, the study of this interaction put forward on empirical bases by cognitive scientists has offered to literary studies the idea of rhetoric figures and schemes, as well as stylistic features as properties of literary language that inform human thought. This means that some procedures, strategies and structures that we consider as peculiar features of literary texts are in fact the same that we use to organize and negotiate the world, our experience in it and our thought (Turner, 1996). Therefore, our mind could be structured on a “literary and narrative basis” and the reading process could be a sort of simulated dynamic process of featuring the world around us.

Pioneering work was started by some literary scholars such as Reuven Tsur, Norman Holland, David Miall, Marie-Laure Ryan, David Herman and Patrik Colm Hogan, and many considerable studies have been made from linguists such as Mark Johnson, George Lakoff and Peter Stockwell. Bridging literary studies and cognitive science was also the aim of scholars of the “hard sciences” such as Gerald Edelman, Antonio Damasio, Anjan Chatterjee, Eric Kandel, Semir Zeki, as well as from scholars who worked concentrating on the process at work between the text and the reader’s brain, such as Raymond Gibbs, Merlin Wilfred Donald, Mark Turner, Ellen Spolsky, Arthur Jacobs, Gabrielle Starr, and Stanislas Dehaene.

To mention only some cases, we go back to the debate of the eighties, when we can track back the first relevant issues on cognitive–linguistic, poetic and literary criticism – Holland (1988) pointed out the advantages emerging from cognitive neuroscience; Gibbs (1994) investigated the aspects and features of what he has defined as the “poetics of mind”, postulating that rhetorical figures, such as metaphor (which has also been deeply analyzed by Lakoff and Johnson, 1980), metonymy, allegory and irony, reflect the working procedures of fundamental cognitive processes (Gibbs, 1994).

In the nineties, some studies about poetics bridged issues of cognitive science with the approaches of earlier literary formalism and structuralism (Tsur, 1992a; Freeman, 1995; Miall, 1989, 1990, 1995) or with aesthetic theories (Esrock, 1994; Scarry, 1999). Other fields of research have applied cognitive theories to rhetoric and composition studies (Oakley, 1998; Herman, 1999) and to narrative studies (Fludernik, 1993, 2006; Turner, 1996; Herman, 1999). Turner (1996) developed the field of the cognitive rhetoric (Turner, 1991) and a cognitive model of narrative, and Crane and Richardson (1999) made the attempt to project a new interdisciplinarity, giving rise to what has been defined as “cognitive literary criticism” (Richardson & Steen, 2002, p. 2; Richardson, 2015). In search of a corrective for post-structuralist and deconstructionist claims, Spolsky (1993) has praised in this new critical frame the guarantee of neurological authenticity, and Tsur (1983) the possibility of working on the universal rules of cognitive processing, despite the historical changes considered as a contingent factor. Studies linking literature and cognitive science of the past decades raised issues such as prosody, figurative language, narrative and imagery, supplementing other research of historical and sociological nature about culture and literature. A further development is represented by the Darwinian literary criticism, now on the decline (Samson, 2015, p. 29) and by the cognitive stream of research focussing on issues of evolutionary biology and combining them with cognitive theory and psychology in culture and in literary texts (Zunshine, 2010).

Recently, the cognitive poetic theories developed by Tsur (1983, 1992a, 1992b) have been pursued, with particular success, by Stockwell (2002, 2007) and Hogan (1996, 2003, 2009, 2011a, b, 2013a, 2013b, 2013c, 2014a, 2014b, 2014c). This last scholar has delivered in-depth studies regarding narrative comprehension as a process of (re)constructing storyworlds on the basis of textual cues and inferences that they make possible (Hogan, 2003). In one of his last studies *Literary Brains: Neuroscience, Criticism, and Theory*, Hogan states that the neuroscientific humanistic aim is “to contribute to the understanding of the human mind and human society” (Hogan, 2014a, p. 303), focusing in particular on how neuroscience bears on aspects of research that are specific to the literary study such as inquiries about emotion, memory and embedded cognition.

Cognitive and linguistic issues have also been integrated into postmodern literary theory, addressing cultural and literary production as peculiar to the human cognitive system (Spolsky, 1993; Crane & Richardson, 1999). Related to this approach, another stream of inquiry has focused the search for the invariant or “universal” (Ramachandran & Hirstein, 1999; Sternberg, 2003) literary structures matching the invariances at cognitive level (see Hogan, 2009; Miall, 1988, 1989, 1995, 2006; Richardson, 2015; Regev et al., 2013). The basis of such research is the implicit assumption that literary discourses about reading, writing and

interpretation of literary texts distinguish “literariness” from other forms of discourse (Miall & Kuiken, 1994).

On another front, the reception theory studies started by the fundamental theories of Iser (1976; 1980; 1991) have been successfully cognitively developed by Martindale (1978, 1988, 2007); Schmidt (1979, 1983); Van Dijk (1979); Van Peer (1986, 2007); Hoffstaedter (1987); Miall (1988, 1989, 1990); Zwaan (1993); Miall and Kuiken (1994); Oatley (1994); Hanauer (1997); Gerrig (1993) and Bortolussi and Dixon (2003). An interesting prosecution of the reception studies has been delivered by Arthur Jacobs and his team. He theorizes a “transdisciplinary empirical investigation of and theorizing about (poetic) literature reception by eye or ear including its neuronal underpinnings” (Jacobs, 2015b, p. 2). This model represents one of the most convincing and productive hypotheses since it is, in comparison to many cognitive–linguistic studies, neuroscientifically based, of ecological validity and generality, and applying a successful method of integration. In fact, Jacobs speculates about methods and models for inquiring not only about the affective–cognitive bases of literary reading (starting with the “fiction feeling hypothesis” of literary reading) but also about the neural underpinnings of the processes instantiated by the act of reading a literary text, integrating issues derived from studies in text processing, poetics, and neuroaesthetics. The “fiction feeling hypothesis” is based on the “Panksepp–Jakobson hypothesis” (Jacobs, 2015b; Schrott & Jacobs 2011; Jacobs & Kinder, 2015c) and attests that no proper neuronal system for art reception has been developed during human evolution. The affective and aesthetic responses are processed by ancient emotion circuits, which are shared with mammals. Jacobs speculates that, by emotionally experiencing and rating words or text passages, networks associated with real emotions, such as “fear and disgust” (i.e. amygdala and insula) or reward and pleasure (i.e. ventral striatum and orbitofrontal cortex), are more active than in neutral neuronal conditions. Starting from these premises, he focuses his inquiry on the elaboration and experimentation of tools for text analysis based on the following elements, which we point out as relevant to our approach: text, context and reader (Jacobs, 2015b, p. 4). Jacobs has developed a dual system model investigating different levels: neuronal, affective–cognitive and behavioural. The first system, involving implicit processing, instantiates an automatic route processing background elements in the text. This route relies on the left hemisphere reading network, evoking non-aesthetic fiction feelings. The more explicit second system is based on the activation of a slower route processing foregrounded elements in the text, mainly employing the right hemisphere reading network. The first route is faster and operational in activating situation models. The second route is slower and activated in aesthetic processes, supported by emotions and basic neural systems related to pleasure. Specific areas which are active in the first system are the

anterior temporal lobe, relevant to proposition building, the posterior cingulate cortex, the ventral precuneus and the dorsal medial prefrontal cortex (Jacobs, 2015a, p. 148). The faster route involves fluent reading (with short fixations, large saccades and low affect ratings), whereas the slower route involves slowed reading (with long fixations, small saccades and high affect ratings; Jacobs, 2015a, p. 142). Such a model, along with its further heuristic implications, is very accurate and successful in giving an account of the phenomenon of the reading process in the whole and of its complexity, without focussing on its partial aspects. Jacobs' findings relying on neuroscientific evidence can be successfully applied to further questions arising from the field of literary criticism, in order to take into account the literary experience as a complex, integrated process of interactions of textual features and brain undergirding activations.

Summing up, we can refer to cognitive literary criticism as an open range of interpretative strategies, reconstructing possible models of mental processes underlying the literary text (Richardson & Steen, 2002). The future goal is the realization of real cross-disciplinary work achieved in team by scholars of the humanities and of the "hard sciences", in order to develop a discourse about the human being, experiencing literature and arts, from different connected perspectives and with diverse interacting modalities (GP).

What is now at stake is to bridge qualitative text analysis with quantitative research, in order to analyze the entire relation among author, text and reader, focussing on the process of how textual features and strategies guide the reader to construct the aesthetic object, how already Schleiermacher (I, p. 21) pointed out: "The act of understanding a text can be achieved by joining two modalities of enquiry, the qualitative and the quantitative". An inquiry focussing on both textual structures and comprehension strategies may overcome the exegetical boundaries of methodologies still splintering the aesthetic experience in its constitutive phases and aspects and to achieve new interpretations of literary texts.

In order to get a heuristic model of interpreting structural features, style and rhetoric figures of the literary text as matching processes of the human thought, we have developed neurohermeneutics starting on the one side from Schleiermacher's hermeneutic approach about the literary text as expression of the author's thought, and on the other from Iser's (1976; 1980; 1991) reader's response theory. In this way, we aim at developing a possibility of empirically trying to get evidence of a correlation between features of the text and features of the cognitive process by the reader, in order to elaborate specific hypothesis on which features of the text might stimulate physiological arousal data and on how we can investigate the relation among reader, text and author in both qualitative and quantitative way.

Such a transdisciplinary investigation may take into account the approach and results of different disciplines such as hermeneutics, literary anthropology and cognitive studies on the functioning of thought (Turner, 1991, 2006), on the embodied simulation (Gallese, 2004, 2007, 2008, 2009, 2011, 2012, 2014, 2016, 2017, 2018; Gallese & Sinigaglia, 2011; Freedberg & Gallese, 2007; Gallese et al., 2009; Gallese & Cuccio, 2015; Gallese & Guerra, 2015), on empathy, on emotions (Damasio, 2010; LeDoux, 1996, Caruana & Viloa, 2018) and on the neural correlates of the aesthetic experience (Zeki, 1998; 1999; 2004; 2008; Zeki, Romaya, Benincasa & Atiyah, 2014; Ishizu & Zeki, 2013; 2014; Chatterjee 2014; Chatterjee & Vartanian, 2014), in order to highlight new perspectives in understanding the still mysterious mindbrain's processes, such as that of the fictional world of beauty created by the imagination.

Within the context of an embodied vision, i.e. one rooted in corporeity, and considered as the outcome of complex interactions between the brain/body on the one hand, the environment and historical epochs that they have produced and interact with continually (Thelen, Schöner, Scheier & Smith, 2001; Beer, 2003) on the other hand, neurohermeneutics regards literature as a sort of symbolic stage: here, we may discover the most refined inferential and representational mechanisms, which preside over the creation of a fictional world of inexhaustible images. These images mirror, within the virtual space of the literary counterfactual world, the complex dynamics that the subject carries out in the elaboration of his own experience in the world. The mental representations of this experience are then transformed into words – through a complicated and largely uncharted but thrilling brain process – and thus become symbols and metaphors of a “second degree” world, i.e. the fictional world of fiction, meant to elicit the mental representation of similar experiences in the reader's mindbrain. Considered through this perspective, the literary artwork will be investigated as a complex “device” in which the mental faculties and functions that characterize the human being as a sentient, conscious and knowing being, become manifest as on a stage, mirroring themselves within an implicit mind's dialogue among author, text and reader. Although the reader's act is highly unpredictable and bound to individual experience, it is possible to highlight textual strategies, i.e. the formal features of the literary text, such as language, style and rhetoric figures, as rhetoric tools which elicit aesthetic appreciation and trigger the human mind's creative processes of the imagination.

We refer to Schleiermacher's fundamental idea that reading is based on a the “double relation”, on a circular relation between author, text and reader (Schleiermacher, 1977; Schleiermacher, 1998), and propose to adopt the concept of a “neurohermeneutic circle”, intending the dynamics which takes account of the entire literary experience, modifies the perspective of the interpreter and

allows an understanding and interpretation of the literary text as a complex device that stimulates the reader to construct ever new meanings through the activation of a “guided act of imagination”. The neurohermeneutic circle is triggered by the peculiarities of the *foregrounding* features of the literary device, as already theorized by Miall and Kuiken (1994). The term foregrounding was introduced by Garvin (1964) as an English translation of the Czech term used by Mukarovsky “aktualisace” (Garvin, 1964). This concept refers to what Rosenblatt defines as second level of comprehension of the text, as can be inferred from Leech’s linguistic theory. From his linguistic point of view, *foregrounding* features can be assessed in relation to a background, as those elements, which the reader grasps as the most significant part of the message; in fact, they provoke a pause in the reading process, since the reader needs to isolate such elements and interpret them by measuring them against the background of the expected pattern (Leech, 1969). According to Miall and Kuiken (1994), *foregrounding* refers to a wide spectrum of stylistic effects, able to determine ambiguities at different levels: phonemic (alliterations, assonances, etc.), syntactic (parallels, inversions, ellipses, etc.), rhetorical (metaphors, personifications, etc.). Therefore, we can assume that *foregrounding* is systematically and hierarchically put in place to induce an effect of *defamiliarization*, unlike what happens in the use of natural language, in which a communicative intent prevails. In general, we can regard arts as a communicative form which conveys the perception of the things not as they actually are, but as they ambiguously might be. The technique to achieve this goal is to make things “non-familiar”, to make the form ambiguous, to increase the difficulty and duration of the act of reception, since reception is in itself an aesthetic process and it must be prolonged as much as possible (Shklovskij, 1965, p. 12).

*Foregrounding* features need to be considered not as stable variances, but as an unstable and changeable manifestation of neurocognitive processes underpinning both the creative act and the reception of the text (meaning the affective and cognitive impact on the reader); they need to be elucidated in order to build up those immanent concepts and principles which can serve as axioms and need further to be related to the contingent epistemological frames reconstructed by the investigation into the cultural, philosophical, aesthetic and social specificity of the epoch. Our focus on *foregrounding* stems from the consideration that this phenomenon exhibits a dual dynamic: it is realized at the textual level and determines specific responses in the reading process. In this sense, we consider it as the pivot around which the inquiry of the literary text can overcome the consolidated antithesis between the immanent approach and the reception’s studies.

As *foregrounding* we consider textual phenomena such as the stylistic phonometric sound organization, the morphosyntactic structures and rhetoric figures detected at lexical, sublexical, interlexical and supralexic level as interconnected with



semantic activations occurring in the reading experience (Gambino & Pulvirenti, 2018a). We have developed a *Foregrounding Assessment Matrix* (FAM) in order to evaluate in poetic texts the potential of *foregrounding* features and semantic *density fields*. This in order to make previsions about the emotional valence and arousal effect of single parts of the text and of the text as a whole, to find out the semantic latency at the syntagmatic and paradigmatic level and to work out figures or forms of ambiguity. According to the elucidated features, we are able to assess which mental processes are instantiated, i.e. visual, imagining, blending, strong affective emotional response, memorial production or others.

By different forms of *foregrounding* and *density fields*, the reader is “guided” “to fill in the gaps” of the text, according to its latencies, ambiguities and fluctuations, through the simulation of a “virtual” experience, rooted in the embodied reality of its memorial, emotional and cognitive background. The reader is led by the *foregrounding* features and the semantic *density fields* to “unblend” the condensed world of the stylistic and rhetoric structures. As “process of unblending” we intend a virtual experience in our head, i.e. living a highly emotional experience like discovering the head of the river Orinoco, by simply sitting in an armchair at home, quietly reading Humboldt’s *Travels*. To better explain what we mean, we refer to one of the most important dynamics of the mindbrain system, in relation to language and to texts, that has been theorized by Turner under the principles of “compression and decompression”, and their very complex dynamic relation under the name of “blending” (Fauconnier & Turner, 2002). In Turner’s words:

“Human thought ranges across vast stretches of time, space, causation, and agency, activating potentially enormous conceptual networks that cannot possibly be held in working memory and that would be intractable to human thought except that blending can be used to create tight, manageable compressions of the network to provide small mental platforms on which we can stand to reach up to work here and there in the rest of the network” (Turner, 2014).

Turner intends compression as a basic feature of human thought. The arts are very successful in providing us with some even more complex forms of compression – in poetry, stories, drama, music, sculpture, painting, fashion, and so on, the whole “scenery” of a personal experience is compressed, into the words printed on a page or into the colour spots of a painting. In fact, in our opinion, the aesthetic literary experience starts by the authorial imaginative process of “blending” his world, his stories, and his visions into what we call the compressed ‘tokens of the text’ (i.e. schemes and figures); it is completed by the reader’s imaginative process which is able to “unblend” these “tokens” into the whole range of physical, emotional and cognitive elements of a fully lived experience. In short, both actions are situated within the intrinsic relation among elements, the parts and the

whole, the inner and the outer elements of the text, triggering our imagination to the whole sensory and emotional features of a real experience self-emerging in our mind. By the process of “unblending” the “tokens” of a text, the reader concludes the creative process of the writer. He creates new worlds of meanings, semantises non-semantised elements, produces new kinds of levels of constraint, new contexts in which to interpret otherwise discarded “extra-systemic” elements (Paulson, 1991, p. 44). The agency (both of the author and of the reader) is also a relevant aspect of the neurohermeneutic circle and is to be considered as a dominating quality of the literary experience, since whatever seems extra-systemic or casual at a given level, must be taken as a possible index of another coding system at another level. In fact, the reader creates a new context (environment), he/she puts into action cognitive processes and emotional dynamics that make it possible to “virtually recreate” the source of imaginative process. The reader is therefore elicited to activate his/her mindbrain system “resonating” to the inner relations and dynamics among the elements in the text, producing an own inner experience in the fictional world created by his/her imagination. In this way, he/she creates his/her own representations of the perceptive, memorial, emotional processes, which are experienced in the embodied simulation instantiated by the act of reading. Personal phantasmata, memories and emotions become alive in order to construct an individual representation of that experience, by reactivating the complex mental processes “blended” in the text.

Finally, from the investigations conducted applying our neurohermeneutic approach about works of the German eighteenth-century literature such as Goethe, Chamisso and Kleist (Gambino & Pulvirenti, 2012, 2013, 2014, 2015a, 2015b, 2017, 2018b), we can draw the following conclusions.

The neurohermeneutic circle is an ideal heuristic tool since it allows to better comprehend the main dynamics of the literary experience intended as a complex system of meaning making and of the literary text considered as a device which guides the active imagination of the reader. According to ancient and modern studies on aesthetics, the fictional representation of feelings and emotions, of actions and motions, produces an intense activity of the imagination appealing to the bodily simulation (Johnson, 1987; Cuccio, Carapezza & Gallese, 2013) and the sensory-motor system. The reader, by “unblending” the “tokens” of the fictive counterfactual world of the literary text, creates new representations of the perceptive, memorial and emotional processes experienced by the simulation of the literary experience; he/she recalls personal *phantasmata* and memories, in order to construct a private and intensely emotional representation of what he/she is experiencing in the “unblending” act.

The neurohermeneutic circle highlights the deep, sometimes subliminal interactions occurring within the complex system of a literary experience. Moving

from a first interrogation of the *foregrounding* features in the text, we investigate these textual features in their relational dynamics, in order to trace some of the possible author's mindbrain processes. The cognitive approach to the text implies that, despite all individual differences, all humans share some basic mental dynamics, which are condensed and abbreviated in the literary text; the author's view of the world can therefore be represented in the text and refeatured by the reader, by virtue of these shared mental dynamics. Moreover, during the aesthetic experience, the artistic representation reactivates the most complex processes of the mind, that of imagination, providing new and surprising views of the human experience in its encounter with the world. According to this approach, we may obtain new perspectives and new insights into the study of literature and art in general as well as in the most basic functions of the human mind. It is by surpassing the boundaries of the self during the act of reading or experiencing art that every subject has the possibility to overcome the limits and boundaries of his or her own cognitive potential, instantiating a creative elaboration of an unknown experience, enlarging his/her stable horizon of understanding.

During the literary experience, not only are cognitive processes activated but also linked bodily perception and emotions are involved and the imagination is powerfully activated by the experience of beauty. The experience of beauty allows the mind to overcome its cognitive limits, giving rise to ever new challenges in understanding the unstable world around us and the internal world that we desperately try to stabilize, in that inexhaustible process of creating and recreating meaning that is the ultimate meaning of our existence. In Goethe's words:

[...] Formation, Transformation,

Eternal mind's eternal recreation.<sup>1</sup> (Faust II, vv. 6285-6288) (RG)

### Summary

In the epistemic frame of the biocultural turn and of the neuroaesthetics, we have developed neurohermeneutics as an approach to literature that aims at contributing to the current debate about the linkage between literary, cognitive and neuroscientific studies, focusing on the relationship between mindbrain processes mirrored in the formal features of the text and the strategies activated by the author in a text in order to guide the reader in imagining, emotionally feeling and cognitively getting meanings out of the literary experience. The aim of the neurohermeneutical approach is to grasp and describe phenomenologically the mirroring process between the two extremes of the literary experience, i.e. the writer's creative process as it is mirrored in the formal features of the literary work and the reader's imaginative reconfiguration of the text, and what they share in common. The reader revives the mental imaginative processes of the author by creating his/her unrepeatable individual experiences of the text and subjectively

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<sup>1</sup> [...] Gestaltung, Umgestaltung, /Des ewigen Sinnes ewige Unterhaltung.

redesigning it in an endless loop of features that trigger the imagination and its creative potential both while writing and by reading literature.

**Keywords:** neurohermeneutics, literature, cognitive poetics, reader-response, foregrounding.

## Neuro-Hermeneutik. Ein transdisziplinärer Ansatz in der Literaturwissenschaft

### Zusammenfassung

Innerhalb des erkenntnistheoretischen Rahmens der Bio-kulturellen Wende und der Neuro-Ästhetik haben wir die Neuro-Hermeneutik als einen Ansatz in der Literaturwissenschaft entwickelt, der zur gegenwärtigen Debatte über die Verbindung zwischen literarischen, kognitiven und neurowissenschaftlichen Studien beitragen soll. Im Fokus steht der Zusammenhang zwischen Gehirnprozessen, die in den formalen Merkmalen des Textes gespiegelt sind, und den Strategien innerhalb des Textes, durch die der Autor den Leser dazu führen will, aus der literarischen Erfahrung Vorstellungen, Gefühle und kognitiven Bedeutungsgewinn zu ziehen. Ziel des neuro-hermeneutischen Ansatzes ist es, den Spiegelungsprozess zwischen den beiden Extremen der literarischen Erfahrung, nämlich dem kreativen Prozess des Schreibenden, wie er in den formalen Merkmalen des literarischen Werks gespiegelt ist, und der imaginativen Neukonfiguration des Textes durch den Leser, sowie was beiden gemeinsam ist, zu verstehen und phänomenologisch zu beschreiben. Der Leser läßt den mentalen imaginativen Prozess des Autors wieder aufleben, indem er/sie seine/ihre unwiederholbaren individuellen Erfahrungen mit dem Text hervorbringt und diese subjektiv in einer endlosen Schleife von charakteristischen Merkmalen, die die Vorstellungskraft und ihr kreatives Potential sowohl beim Schreiben als auch beim Lesen von Literatur auslöst, wieder neu erschafft.

**Schlüsselwörter:** Neuro-Hermeneutik, Literatur, kognitive Poetik, Leser-Rezeption, Foregrounding.

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