From Poetic to Cognitive: Bridging Literature and Science in Cognitive Poetics*

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Although the relationship between literature and philosophy is sanctioned by a long tradition, such a link reveals many limitations: philosophically anchored text analyses impressionistic and reductive in their use of "text-active models" (Holland 1995). Cognitive poetics (Tsur 1992; Stockwell 2002), a burgeoning school of literary criticism, avoids those traps by reshifting its attention to the reader's mind and by "applying the principles of cognitive science to the interpretation of literary texts" (Louwerse & van Peer 424). In doing so, it attempts to build a bridge between the sciences and the humanities. Despite its refreshing approach, CP is still banished to the margins of criticism; the reason being that it is seen by the humanities as: (1) foregrounding the cognitive at the expense of the poetic (Danaher 2) and (2) relying too heavily on cognitive neuroscience. This paper explores to what extent cognitive science has influenced the field of literary studies. Through examination of three seminal books on CP (Stockwell 2002; Gavins and Steen 2003; Brône and Vandaele 2009) and the essay "Music and Movement" (2012) by Lawrence Zbikowski, it aims both (1) to demarcate the boundaries between the cognitive and the poetic in selected cognitive analyses of literary texts and (2) to explore to what extent the application of scientific theories has had an impact on the language cognitive scholars use in their papers. Finally, this paper argues that if CP is to be recognized as a reliable methodology, it should borrow insights from reception theory and go truly empirical.

The past few decades have witnessed intensified efforts to challenge the predominance of post-structuralism in literary studies. Apart from engendering

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interdisciplinary projects and collaborations¹ between neuropsychologists and literary critics, these efforts have led to insights into literary emotion (Antonio Damasio 1994, 2000)² and growing interest among cognitive scholars (George Lakoff, Mark Turner or Gilles Fauconnier) in domains that are traditionally ascribed to literature. These developments indeed account for the shift from a cultural to a more neurological focus that has been taking place in literary studies. In spite of the long-standing relationship between literature and philosophy, this gradual paradigm shift has revealed many limitations in philosophically anchored post-structuralist studies. It has shown them to be subjective, impressionistic and reductive in their focus on "text-active models" (Holland 1995). Clearly, a number of concurrent approaches that have arrived relatively recently on the academic scene, suffice it to mention neuroaesthetics (Zeki 1999), evolutionary humanism (Carroll 1995)³ and cognitive poetics (Stockwell 2002), attempt to avoid those traps by viewing literature in particular, and art in general, as strongly linked to the mind and the body. ⁴ Their resistance to the post-structuralist doctrines of textuality and indeterminacy aside, these three disciplines are united by their emphasis on the biological aspects of the creative process. In his introduction to neuroaesthetics (2009), Zeki makes a convincing case for "studying the neural basis of visual art" by articulating the obvious: "Art [...] as a human activity [...] depends upon, and obeys, the laws of the brain." In contrast, the radical biologism found in literary darwinism verges on the absurd unless we accept that Jane Austen's oeuvre, as Brian Boyd (1–30) renders it, provides useful material for a study of preferences in human

A prominent example is a close collaboration between the literary critic Elaine Scarry and the neuropsychologist and memory expert Daniel Schacter, which has, among other things, resulted in the publication of *Memory, Brain and Belief* (2000). An interdisciplinary project between the linguist Gilles Fauconnier and the literary critic Mark Turner has proved likewise fruitful. One of their collaborative studies, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities* (2002), has significantly advanced our understanding of the way human beings conceptualize metaphors.

² Neuroscientist Antonio Damasio has done intensive research on literary emotion. His somatic marker theory (1994) yields illuminating insight into reception aesthetics and brings us closer to an explanation for "why people laugh, cry or become excited when experiencing art" (Kohn 122). See Damasio's *Descartes' Error: Emotion, Reason and the Human Brain* (New York, London: Penguin, 1994) and his *The Feeling of What Happens* (New York: Harvest, 2000).

³ See Joseph Carroll's *Evolution and Literary Theory*, Columbia: University of Missouri Press, 1995.

⁴ It would be a great oversight not to mention Richard Shusterman's somaesthetics at this point. Indisputably, it has played a major part in bringing together the mind and the long-neglected body. In his 1999 formulation of somaesthetics, Shusterman maintains that "our sensory perception depends on how the body feels and functions, what it desires, does, and suffers" (301). This assumption, as Anna Budziak (2012) speculates, could provide a good starting point for explorations of the way an artist's health condition or mental disorder is reflected in his/her style. Such explorations, for example, would allow us to explain how Ludwig van Beethoven's deafness affected his later musical works or, as Budziak (2012) proposes, to investigate whether John Milton's blindness had any impact on the syntax and lexis in *Paradise Lost*.

mate selection. Of these three approaches, cognitive poetics⁵ doubtless seems best suited to literary studies. With its interest in the "literary mind" (Turner 1996), it explicitly refers to Ingarden's⁶ work and reader response theory.⁷ Most importantly, it "applies the principles of cognitive science to the interpretation of literary texts" (Louwerse and van Peer 424). Consequently, in CP the discourses of literature become interwoven with the discourses of science and thus, as I will demonstrate, CP attempts to build the bridge between the sciences and the humanities.

This epistemic marriage implies that even though CP does not come out of nowhere, its labels of "a new brand of poetics" (Gavins and Steen 5) and "a new science of literature and reading" (Stockwell 11) might be justified. Indeed, CP's fresh perspective may result from the fact that this approach makes frequent forays into psychology, linguistics, artificial intelligence and neurobiology, or, in short, cognitive science. Rather than giving new interpretations, cognitive literary critics explore the ways in which we arrive at different interpretations. In doing so, they endeavour to find out how our minds work. Their efforts, then, aim at re-evaluating literature's status by placing literature on a par with "the study of how the human being thinks" (Craig and Hamilton 8). Such a conviction, in turn, agrees with Stockwell's slightly populist statement: the recognition that CP entails "the democratization of literary study" (11). In contrast to prescriptive post-structuralist approaches that teach us how to read literary texts, CP has a descriptive function. Establishing an intimate link between meaning and knowledge, it views literature "as a specific form of everyday human experience and especially cognition that is grounded in our general cognitive capacities for making sense of the world" (Gavins and Steen 1). It simultaneously brings the long-neglected emotional dimension of literature into view by "relating the structures of the work of art [...] to their presumed or observed psychological effects on the recipient" (Gavins and Steen 1). In other words, CP proposes an experientialist approach⁸ to account for both similar and different readings produced by readers' minds.

⁵ For the sake of economy, I shall refer to cognitive poetics as CP.

⁶ Unlike his New Critical colleagues, Ingarden felt it inappropriate to treat texts as autonomous objects. He claimed that, rather than disconnecting literature from scientific knowledge, we should integrate it "within a general cognitive ecology" (Tabbi 79).

In their essay "From Iser to Turner and Beyond: Reception Theory Meets Cognitive Criticism" (2002), Craig Hamilton and Ralf Schneider reveal intriguing affinities between reader response theory and cognitive criticism. Both lines of research overlap not only in their interest in the human mind but also in their use of "different names to talk about similar things" (11).

As Stockwell eloquently puts it, CP's experientialist approach means that CP "offers a means of describing and delineating different types of knowledge and belief in a systematic way, and a model of how to connect these matters of circumstance and use to the language of the literature" (4). Rational as it may sound in theory, it seems to be hardly feasible in practice. In his *CP: An Introduction*, Stockwell never hints at how to apply an experientialist approach in text analyses. Instead, he unabashedly reduces the texts he takes under discussion to linguistic data, a practice Stockwell frequently frowns upon in his essays.

Interestingly, despite its refreshing perspective, CP remains a stepchild within the field of literary studies. The angst that the humanities may feel for this doctrine is, above all, caused by CP's reliance on neuroscience and, by extension, empiricism, which supposedly reduces the autonomy of the humanities. To place too much faith in empiricism⁹ may not only slight the complexities of literary creativity but may also lead to obvious conclusions. Within the school of CP alone, there exists a rift concerning the appropriate method of research, with cognitive scholars opting either for empiricism (e.g. Louwerse and van Peer), indirect empiricism (e.g. Stockwell and Gavins) or introspection. If empiricism is accused of reductive bias, then the other two methods are considered selective and unreliable since they provide only "predictions for what readers do when they read" (Gavins and Steen 6). Furthermore, according to Danaher, CP "foregrounds the cognitive at the expense, and not in service of, the poetic" (6). Instead of enhancing our appreciation of literariness, it guides us through the reading jungle to deepen our understanding of the effects literary texts have on us. As a result, alongside attempting to grasp the ineffable, CP spoils the pleasure of reading. This undesirable side effect of CP can be illustrated by the example of Helen Keller. In The Story of My Life (1902), she writes that before she turned 6, she had had no name for *ice cream* and so whenever she felt like eating it, she would experience an immense cold feeling on her tongue. Unfortunately, upon acquiring the term ice cream, she lost this peculiar sensation. As an analogy, by applying CP, we run the risk of being deprived of an experience resulting from literariness. Finally, in his essay "Cognitive Poetics and Literariness: Metaphorical Analogy in Anna Karenina," Danaher downplays the revolutionary character of CP. He argues that this doctrine "assigns cognitive labels to concepts with a long and proven tradition in literary criticism, without adding any significant content, (2). For instance, the basic idea of the embodied mind on which CP is built originally stems from Maurice Merleau-Porty's 1940s phenomenology, 11 even if it was only verified empirically in the 1990s. In the same vein, cognitive narratology, rather than marking a departure from the older paradigms, merely follows the path structuralist narratology paved earlier.

The purpose of this paper is therefore to investigate the validity of such charges against CP, specifically by exploring to what extent cognitive science has influenced the field of literary studies. My research material includes Peter

⁹ As Jeroen Vandaele and Geert Brône observe, "in some areas of literary studies there is fear of empiricism, with its formalization procedures and/or quantitative approaches" (22).

Much as Danaher's observation holds true, it cannot be denied that by affixing cognitive tags to long-established literary terms, CP seeks to redress those terms for the purpose of developing analytical tools to study the workings of the human mind. In her review of CP, F. Elizabeth Hart makes it clear that to cognitive literary scholars, "the tools literary scholars need not merely to dispense with the older paradigms but actually to surpass them in their ability to teach us about meaning-making are most readily and sensibly found in the cognitive sciences" (226).

See Merleau-Ponty's *Phenomenology of Perception*, transl. C. Smith, London: Routledge and Kegan Paul, 1962.

Stockwell's seminal book Cognitive Poetics: An Introduction (2002), its companion publication Cognitive Poetics in Practice (2003) edited by Gavins and Steen, Cognitive Poetics: Goals, Gains and Gaps (2009) edited by Brône and Vandaele, and the essay "Music and Movement: A View from Cognitive Musicology" (2012) by Lawrence Zbikowski. In total, I have examined 36 chapters and essays, all of them providing theoretical and practical discussions of a wide range of cognitive tools: deixis (Green 1992); prototypes (Rosch 1975); text worlds (Werth 1999); conceptual metaphor (Lakoff and Johnson 1980); cognitive narratology (Herman 2003); scripts (Schank and Abelson 1977); mental spaces (Fauconnier 1994); and cognitive grammar (Langacker 1987). Since some of the contributors in the edited sources specialize in cognitive psychology and cognitive linguistics (CL), it is noteworthy that the scope of these sources is not solely restricted to poetics. Furthermore, the analyzed material mostly favours indirect empiricism, placing it in stark contrast to the predominant empirical practice found in CL. As Fabiszak and Konat report (2012), out of the 206 articles published from 1999–2012 in the journal Cognitive Linguistics, 12 145 were empirical studies based on either corpus data or experiments.

As such, the aim of this paper is twofold. In the first instance, I want to find out whether the application of scientific theories has had an impact on the metalanguage in CP. Secondly, I intend to demarcate the boundaries between the cognitive and the poetic in selected cognitive analyses of literary texts. In my understanding of the term *poetics*, I follow Jonathan Culler and Manfred Bierwisch's complementary views which, when combined, can be summarized in the following way: "poetics starts with attested meanings, effects or perceived regularities and asks how they are achieved" (61; 98–99). Additionally, in terms of the most basic classification, poetics can be divided into (a) descriptive poetics and (b) historical poetics. In this context, granted that poetics concerns the craft of literature and that cognition has to do with the mental processes involved in reading, the combination of these two components in CP, as Stockwell concludes, amounts to "a science of reading" (2).

With reference to the first aim of this paper, I found that the statement and documented references in the examined articles offer convincing proof that the *scientification* of literary studies in CP is underway. In their attempts to uncover the workings of the reader's mind, cognitive analysts notably borrow

Remarkably, with its 21 empirical articles, the 2011 issue of *Cognitive Linguistics* set a record. Simultaneously, we can observe a sharp rise in empirical studies conducted by cognitive linguists (2002 and 2007 issues—3; 2010 issue—14)

Even though it specifically referred to poetry, Bierwisch's 1970 definition of poetics, and especially the concluding part on poetic competence, might have prefigured Culler's famous statement. Bierwisch writes, "The actual objects of poetics are the particular regularities that occur in literary texts and that determine the specific effects of poetry; in the final analysis—the human activity to produce poetic structures and understand their effect—that is, something which one might call poetic competence" (98–9).

explanatory and descriptive tools from a variety of disciplinary traditions. Their source material, for instance, comes from CL, pragmatics, neurophysiology, anthropology, computer science or neuropsychology. And these diverse, and conspicuously scientific influences confirm that CP is attuned to cognitive science. With regard to the study of literary emotion, Kohn indeed affirms that it was as early as the 1970s that the sciences and humanities began to join "forces in exploring both theoretically and empirically the source of emotion in literary narrative" (121). Reuven Tsur, who has been running a CP project for over 30 years, tends to support his analyses with evidence from brain research. In his chapter on deixis in Cognitive Poetics in Practice, for example, he draws on Newberg et al.'s Single Photon Emission Computed Tomography study of Tibetan meditators in order to account for the way readers follow the spatiotemporal coordinates in literary texts. In the same publication, the psychologist Raymond W. Gibbs Junior forcefully rejects evidence from phenomenology or philosophy in favour of evidence from empirical psychology. He states that "empirical work in cognitive psychology showed that a 'family resemblance' principle offered a better account than did the classical model for how people identify an instance as belonging or not to a category" (Gibbs 29). Zbikowski, on his part, finds justification for his claims in the neurophysiology of emotions, or—more specifically—in "mirror neurons" (Gallese et al. 1996). Elaborating on experiments on macaque monkeys, which indicate relationships between motor actions and cognition, Zbikowski speculates as to whether a similar mechanism works for the link between music and movement. Finally, Max Louwerse and Willie Van Peer's article in Cognitive Poetics: Goals, Gains and Gaps constitutes an exceptional case in which advances in science not only set a theoretical basis for analytical analyses, but are directly applied to them. These scholars employ a computational model called Latent Semantic Analysis to argue that the understanding of literary language can be explained not only through embodied analyses conducted by most cognitive poeticians, but also with recourse to a symbolic approach.

CP's strong reliance on cognitive science is beyond doubt. Its subordinate position, however, is mainly due to the fact that, as Joseph Tabbi eloquently puts it, "literature needs to wait on confirmations from science" (80). Furthermore, some of its originators, like Mark Turner, tend to shift their attention from literature to mechanisms of thought and thus become cognitive scientists. But let us now examine this scientifically inclined doctrine in terms of the ratio between the cognitive and the poetic. Does CP strengthen or dampen our perception of a text's literariness? Does it constitute, as Stockwell argues, a science of reading or rather a science of cognition? First of all, a glance at any of the 36 selected articles reveals that their authors reduce historical poetics to a minimum. In most of these essays this aspect is strikingly absent. Only Stockwell, Gavins and Semino make an effort to place the texts they analyze in their historical contexts. Take, for instance, Semino's text-world analysis of Carol Ann Duffy's poem "Mrs. Midas," which is preceded by a biography of the writer and a remark

about her feminist affiliation. Another notable observation is that, even though the examined articles widely employ key issues of literary reading—such as tone, literariness, character, narrative, metaphor or plot—and they seem to do it as a pretext for affixing cognitive labels to those concepts and engaging in lengthy cognitive deliberations. In short, the poetic merely serves as a starting point for the cognitive. To substantiate this conclusion, let me give you a few selected examples: in CP, (1) "the use of the word wife [in Sir Henry Wotton's poem "Upon the Death of Sir Albert Morton's Wife"] activates the marriage scenario as a specific variant of the love scenario" (Steen 74); (2) "narrative perspective [...] can be interpreted as a reflex of the mind or minds conceptualizing scenes represented in narrative texts" (Herman 99); (3) "the world of a literary text consists of one or more deictic fields, which are composed of a whole range of expressions each of which can be categorized as perceptual, spatial, temporal, textual and compositional in nature" (Stockwell 47); (4) metaphors in "The Dream of the Rood" do not account for "a simple retelling of the passion of Christ, but a schema reinforcement¹⁴ by simple repetition" (Stockwell 85). These examples show that, rather than focusing on a text's literariness, CP analyses predominantly concentrate on a text's potential utility for cognitive models. Still, there are exceptions to this rule. It may be convincingly argued that Semino's possible-worlds analysis and Gavins's textworlds analysis indeed highlight the text's literariness by illustrating its detailed internal structure and its ideal graphic representation as visualized by the reader.

Towards achieving the second aim of my present paper, I began with a test that slightly modifies Danaher's observation that CP "foregrounds the cognitive at the expense of, and not in service of, the poetic" (6). In order to place the emphasis on the role of the poetic, I would say that: in CP, the poetic is in service of the cognitive, not the other way round. CP foregrounds the cognitive not only through the content oriented towards explaining the workings of the mind, but also, as I propose, through its meta-language. Predicated on complex analytical machinery, CP in a way exemplifies a return to the hermetic discourse of structuralism. It enforces its scientific meta-language both (a) on a purely verbal level and (b) by means of visual aids in the form of diagrams, tables and graphs. The verbal component is comprised of borrowings, mostly from linguistics and computer science. Consider, for example, Turner's famous concepts of "blending," "mapping" and "projecting," all in circulation now. These terms encapsulate the ways we understand and process conceptual metaphors such as MELANCHOLY IS THE END OF THE WORLD, by mapping onto each other propositions taken from (a) the source domain of THE END OF THE WORLD and (b) the target domain of MELANCHOLY. Stockwell, for instance, chooses to resort to computer science. In his chapter on deixis, he introduces the term "edgework" to refer to the process of identifying the boundaries of deictic fields, and the terms "push" and "pop" (49) to describe deictic shifts. Some of

¹⁴ This and the previous emphases are my own.

the sentences in this chapter are almost incomprehensible, especially when taken out of context, for example: "Characters can also be kept 'live' by conjoining coordinate clauses to maintain co-reference to the character, by subject-chaining (using pronouns to keep the current entity-role live)" (54). In discussing how we scan cognitive input in his chapter on cognitive grammar, Stockwell distinguishes between "summary scanning" and "sequential scanning" (64). While "summary scanning" typically occurs when nominals are processed ("Look at the sun"; "It's a sunny day"), "sequential scanning" takes place in the case of dynamic actions ("The sun crossed the sky in a blaze of light"). In Giora et al.'s article entitled "Does an 'Ironic Situation' Favor an Ironic Interpretation?", we find yet another example of what may happen if dry empiricism is applied in literary studies. In this case it leads to mathematics:

The difference between the two was significant, t(14)=15.34, p<.0001). They demonstrate that there was no difference in the mean reading time of ironic targets following either a context featuring a frustrated expectation (1927 msec, SD=421) or a context featuring a realized expectation (1906 msec, SD=453), t1(53)<1, n.s., t2(14)<1, n.s. (Giora et al. 392)

Moreover, the complex and convoluted language in CP becomes even less palatable when used in analyses restricted to poems or short extracts—a preferred practice in CP which is, however, regarded as one of its weaknesses. As Semino notes, text-world diagrams "become impossibly complicated when applied to stretches of text longer than a few sentences" (59). Indeed, in CP, literary masterpieces are often reduced to static diagrams and building blocks, intricate graphs and tables full of mathematical jibber-jabber. CP, then, represents an attempt to apply logic in breaking down literature into its components. To use cognitive terms, COGNITIVE POETICS IS A LINGUISTIC DISSECTION OF LITERATURE.

In conclusion, CP (a) borrows considerably from the cognitive sciences, (b) uses literature as a tool to explore how the human mind works and (c) utilizes its own meta-language. But one important question still remains, namely: what is the future of CP within the field of literary studies? In this regard it is in the first instance advisable to find an alternative for the name 'CP', since it gives the false impression that the discipline's main focus falls on poetics. One such alternative would be "Cognitive Criticism" (CC), which could indeed function as an umbrella term that also embraces related disciplines. In contrast to Stockwell's "science of reading," CC would be a science of art reception, which would emphasize its already wide scope of application. It is important, however, that CC should not neglect its roots in reception theory and should therefore adopt a truly empirical approach. But what I have in mind is not the stricter forms of empiricism preferred by Louwerse and Van Peer, but rather the "soft" empiricism favoured by Norman Holland and David S. Miall. Finally, in its

disciplinary outlook, CC could primarily be geared towards its two main concerns: aesthetics and pedagogy. The latter has already been undertaken in combination with highly promising lines of inquiry into literary emotion. But, despite the fact that CC has enormous potential for application in education, the former has so far not been initiated. With the help of CC in a simplified and accessible version, students and pupils could, for example, learn about their cognitive experience and thus enhance their awareness as readers. Such an educational project seems especially relevant in the context of Nicholas Carr's discovery in his phenomenally popular book *The Shallows: What the Internet is Doing to Our Brains?* (2011): the prediction that the Internet will not only rewire our brain, but, more unsettlingly, that it will shallow the human mind so much as to strip it of the ability to derive sheer aesthetic pleasure from literature and art.

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