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Cognitive Literary Studies, Historicism, and the History of the Imagination

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Abstract: For the past two decades, the scholarly discussion about the merits of neuroscience and cognitive science for literary studies has been, in Germany at least, a rather heated affair. This debate, however, has been much less interdisciplinary than the subject matter would suggest and has mainly taken place *within* literary and cultural studies, often merely adapting scientific theories of the mind, the nervous system, and the brain, in order to make statements about either empathy within literary texts or the processes underlying their reception. The debate is, moreover, closely linked to a crisis of literary theory in general, especially regarding the demise of the postmodern deconstructionist paradigm and the call for a more scientific and factual approach to the object of study – literature. Since the 1990s at least, deconstruction has frequently been dismissed as a mere stance of scepticism and relativism verging on randomness. Ever since, Cognitive Literary Studies (CLS) has promised to provide a way out of the impasse by offering a more objective approach to literary artefacts based on scientific knowledge and therefore on hard scientific facts. In this paper I will argue that it is necessary not only to rely on present-day cognitive science but to historicise the relationship between literature and science as well.

The need to historicise this relationship is part of a more encompassing claim. I believe it is necessary to focus on theory not as something external to, but as a self-reflexive aspect of, literature itself. This implies the need to investigate the mind and cognition only if it is part of the literary work's self-reflexive scope within a given historical context. Historically, this reflexion presupposes a network in which scientific theories of the mind play a key role. My main example is the imagination. In this context, I will also focus on the rejection of dualism, or rather: the way that René Descartes's philosophy, especially his distinction between *res cogitans* and *res extensa*, has been treated. One key argument in favour of CLS has been the stern denunciation of Cartesian Dualism – most famously described as *Descartes' Error* by Antonio Damasio in his influential 1994 book. Diametrically opposed to this traditional dualist approach is embodied cognition, which Gerhard Lauer describes as the bedrock of the new

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interdisciplinary approach: »To put it bluntly, cognitive literary studies are ›against Cartesian interpretation‹« (Lauer 2009, 150). CLS is therefore constructed in strict opposition to a mind-and-body dualism dominant in Western thought ever since the first half of the seventeenth century – a dualism first of soul and body, and then, since the middle of the nineteenth century, of mind or cognition, on the one hand, and the brain on the other. Taking these developments into account, this paper takes its cue from another stance, however: the need to historicise the scientific and philosophical approaches to cognition instead. Recognising the historical importance of a dualist position, I argue, is essential for an understanding of the impact of scientific insights on literary artefacts at the time they were developed.

One key problem within CLS has been the focus on the *reception* of literature to achieve universally valid insights into its nature. This universalising approach mainly has the aim »to release literary studies from its bourgeois conventions« (ibid., 152) in order to focus on ordinary reading experiences. The downside of this approach has been the prioritisation of rather simple fiction instead of more challenging works of literature – arguably representative of a more bourgeois tradition. A way out of this bias is to focus less on the reception – the reading process – rather than on the *production* of the text – and the way it is reflected within the text itself. This is only possible by means of an historicist agenda, as literature, consciously or not, always echoes and negotiates scientific insights of the day. An historicist approach also involves a focus on more demanding works of literature – poetry or avant-garde works of art –, as they challenge the boundaries of what literature is and can be. In essence, I put forward the conviction that this historicising approach to cognition within literature also implies a return to theory – as a self-reflexive part of literature itself and not something to be applied to it from without.

This historicist approach to cognition as a self-reflexive aspect of literature, on the one hand, and a reflection on science, on the other, necessarily implies a rejection of any universalising approach to literary works of art. The theoretical historicism proposed in this paper presupposes a turn towards the time-bound and the particular, and respective conceptualisations of authorship, literary production, and the text itself. In order to make my point, I will focus on one key concept and cognitive faculty in the history of the humanities: the creative imagination. A historical approach to the imagination in the light of cognitive science – such as championed by Alan Richardson and Mark J. Bruhn in the field of Romantic Studies – thus serves as my starting point. To make my argument, I will focus on three historically crucial phases as they are periods of transition both within literary history and the history of science: the early seventeenth century as the beginning of the scientific revolution, the Romantic period as a second scientific revolution, and

literary Modernism as the formative phase of our contemporary scientific worldview. All three literary examples – Shakespeare, Coleridge, Joyce – can and must be seen as paradigmatic of their age as well as instrumental in bringing about literary change. At the same time, these examples will serve as flashlights to highlight a general trend.

Keywords: cognition, imagination, dualism, historicism, self-reflexivity

1 Cognitive Literary Studies and History

The field of Cognitive Literary Studies is anything but unified. It centres on a loose network of approaches to the way literary and cultural studies may benefit from progress in the field of science: »What cognitive science brings to literary theory, then, is not an entirely new approach but rather a more robust realism grounded in actual, complex, and widely distributed processes.« (Tabbi 2010, 82) CLS, Mark J. Bruhn (2014, 1) states, »denotes a heterogeneous network of interpretive and empirical projects drawing upon developmental and social psychology, evolutionary biology, emotion theory, cognitive linguistics, comparative anthropology, narratology, neuroscience, and research on categorization, conceptualization, and memory«. Consequently, the range of approaches within the field of CLS is vast, but it can be seen as unified in its promise to return to a more factual interpretation of literature after decades of theoretical scepticism. The appeal of CLS, therefore, has a lot to do with its pledge to transform the humanities by placing them on the firm basis of scientific fact. This promise, however, is difficult to fulfil, as the development of the neurosciences, on the one hand, and the questions and demands of CLS, on the other, do not always conform. In my paper, I want to complement Anja Müller-Wood's suggestion made in this special issue. According to Müller-Wood, CLS has been struggling for the past years because it has not been cognitive enough; as I aim to show, however, it has also not been historical enough in its approach.

The attempt of CLS to be more factual, scientific, and less vague also has its downsides, because what distinguishes the humanities – and thus also cultural and literary studies – is their ability to deal with ambiguities and paradoxes on a highly sophisticated level, while the business of the sciences, including cognitive science, is to eliminate ambiguities and avoid paradoxes. As Frank Kelleter (2007) has rightly argued, the difference between the two is categorical by nature. The call for a more scientific approach to literary analysis betrays, if anything, a profound lack of self-esteem within the humanities after the demise of the deconstructionist paradigm some twenty years ago. In order to merge the two

strengths of science and the humanities, I therefore propose to emphasise the historical dimension of scientific investigations, thereby historicising cognitive science as well as neurobiology. For, as Mark J. Bruhn (2014, 1, emphasis in original) maintains, it must be the aim »to investigate the complex intersections of the three domains [of] *Cognition, Literature, and History* [...] in order to advance interdisciplinary discussion and research in poetics, literary history, and cognitive science«.

The reason for this is that scientific methods of investigation, as represented by CLS, can only complement but never fully replace the methods of cultural, historical, and formalist investigations of literature. The contextualisation and interpretation of singular works of art must therefore remain at the heart of literary studies. The proposed approach should therefore focus on two aspects: first, – historically – on the way that the texts absorb, reflect, and challenge the scientific methods and theories of their day, and, second, – theoretically – on the way that the literary texts themselves reflect on their own status and the way they represent the concept of cognition. The reason for this approach is, I believe, quite self-evident, as, according to Joseph Tabbi (2010, 77, emphasis in original), »literary work is cognitive, narrative is an enactment of consciousness«.

The need to historicise scientifically informed theories of cognition within literature is therefore part of a more comprehensive claim: the need to see literature again as a *literary absolute*, i. e. as »*theory itself as literature* or, in other words, literature producing itself as it produces its own theory« (Lacoue-Labarthe/Nancy 1988, 12, emphasis in original). Historical approaches to CLS would therefore be part of literature's self-reflexive endeavour. The benefit of an historicist approach to CLS lies in the fact that it can reconcile the traditional humanistic approach with the scientific approach and overcome rather one-sided arguments made in the past. One example: rejecting Joseph Carroll's neo-Darwinist dismissal of all traditional scholarly interpretations of Jane Austen's *Pride and Prejudice*, Kelleter (2007, 163) remarks polemically:

My first objection is simply that neo-naturalist approaches tend to misconstrue the status and function of literary works in their social and cultural worlds, by treating them essentially as natural phenomena. In doing so, neonaturalists fail to recognize that *Wissenschaftlichkeit* in literary studies is not restricted to scientific methods. [...] My second objection is more instinctive, but therefore also more distressed. Carroll boldly situates his study of *Pride and Prejudice* against earlier (›traditional‹) readings of the novel. He has no patience with them. Pre-Darwinist criticism of Austen is ›impressionistic, opportunistic, and adventitious; it seeks no systematic reduction to simple principles‹. The worst of the bunch, predictably, are the postmodern readings, which Carroll describes as ›painfully inadequate‹; they ›entail false ideas about human nature‹ and offer ›distorted, skewed, and

strained accounts. He who makes such claims had better come up with something good himself. Here is the result of Carroll's own analysis: ›Mate selection is the central behavioral system activated in this novel‹.

To be fair, this kind of neo-Darwinist approach is also rejected by most scholars working within CLS. Lisa Zunshine (2015, 2), for instance, maintains that the ›distinction between cognitive literary critics and Literary Darwinists is worth emphasising because, while both draw on some of the same research in cognitive science (e. g., evolutionary theory), their views on the role of this research for literary studies are diametrically opposite‹. A truly interdisciplinary and historicist approach should therefore not try to merge methods but rather draw connections, establish a mutually informing dialogue, and (re-)construct a network.

In order to achieve this aim, it is essential to combine the proposed historical approach with the more fruitful insights of CLS. Some of the most useful approaches originate within the field of narratology and the application of schema theory to the development of plot. According to this theory, writing as well as reading literature presupposes cognitive schemata that enable us to establish coherence and to fill blank spaces and gaps with meaning. Hence, these schemata enable us to understand the ways of world-making historically, since they tell us something about the historical conception of imaginative worlds. In their seminal study *More than Cool Reason*, George Lakoff and Mark Turner (1989, 65sq.) define schemata as follows:

Conceptual schemas organize our knowledge. They constitute cognitive models of some aspect of the world, models that we use in comprehending our experience and in reasoning about it. Cognitive models are not conscious models; they are unconscious and used automatically and effortlessly. We cannot observe them directly; they are inferred from their effects.

Cognitive psychology and schema or frame theory has of course been applied to narratology in the past. Monika Fludernik (2002, 235), in her 1996 book *Towards a ›Natural‹ Narratology*, states:

[F]rom schema theory (or frame theory) in particular, I derive the insight that fictional situations are visualized in terms of re(-)cognizable real-world patterns which include the parameters of agency, perception, communicational frames, motivational explanation, and so forth.

More recently, this approach has been theorised by Peter Hühn and Jörg Schönert in order to analyse lyric poetry. In the introduction to their *Narratological Analysis of Lyric Poetry*, they write:

We can turn to the methods of cognitive psychology and linguistics for help elucidating these operations in more detail. On this basis we make the fundamental assumption that meaningful sequences come into being only with the help of reference to contexts and world

knowledge. Authors and readers, that is to say, can grasp and understand texts only by referring to pre-existent meaningful structures, to familiar cognitive schemata that already have a meaning. (Hühn/Schönert 2005, 5)

Applying schema theory to the analysis of literature is an implicit rejection of any approach that tends to locate the meaning of any given poem solely in the words on the page. It implies that in order to understand how texts, especially poetic texts, construct meaning is to understand how these texts rely on our ability to create text worlds. Elina Semino, who has explored the theoretical basis for this approach in her book *Language and World Creation in Poetry*, argues that the use of cognitive poetics is primarily directed against a concentration purely on the text. She maintains, rather, that it is necessary to consider that the »process of constructing worlds from texts is often described as central to comprehension«. Understanding a text thus »ultimately depends on the readers' ability to imagine meaningful worlds in their interaction with the text« (Semino 1997, 1). To stress this point: in our interpretation of a text as narrative sequence we depend on our ability to create text worlds as narrative constructs. The context is not a given one, but a created, »a *cognitive* one: it has to do with the assumptions and expectations that the reader brings to bear in the interpretation of a text« (ibid., 9, emphasis in original).

This focus on the reading process, however, can also be problematic, as it gives rise to interpretations which presuppose a universal and biologically determined concept of literature. Gerhard Lauer (2009, 151), for instance, discussing the theory of mirror neurons and their impact on our understanding of empathy and mimesis, draws the conclusion that scientific insights urge us to

change the frame of reference and extend the scope of our discipline from philology [...] to a broader sense of literary studies analogous to general linguistics. There is no obligation to continue the historical restriction of literary studies as a discipline to the clashing of a great book with a great mind. That is where cognitive literary studies come into play. [...] There is no need to define the discipline of literary studies that way – but there is also no need to leave the field in the ivory tower of its tradition. If we understand the subject as concerned with the anthropological ability of the human species to have literature, then insights from the cognitive sciences will gain considerable weight – and that development will have significant effects.

Whilst this approach is certainly useful, it nevertheless aims at a universal understanding of literature, neglecting the very historical determination of literary artefacts. My criticism of universals applies not only to literary history but also to the brain and cognition itself: the mind – and with it human nature in general – is not a stable entity but rather a category in transition. A reader-oriented approach, in a word, might be very insightful, but it neglects the whole

cultural-historical wealth of reflections on the nature of cognition and its role in the creative process to be found *within* literature.

Much of this has to do with the urge to overcome Cartesian Dualism – based on a popular misreading of Descartes – and the focus on the embodied mind. Today, nobody seriously doubts that the mind is the product of brain activity, but I consider it misleading to ignore the fundamental distinction between the brain, as something that can be observed objectively, and cognition that is exclusively subjective. Schema theory may help explain how the mind works, but to fully close the gap between brain and mind is, I believe, ultimately impossible. Already in the year 1872, Emil du Bois-Reymond (1912, 455, and 457) stated that science may gather an infinite wealth of knowledge about the brain – but may never truly account for cognition as consciousness that is experienced subjectively:

Mit einem Wort, der gelungenste Beweis, daß keine Wechselwirkung von Körper und Seele möglich sei, läßt dem Zweifel Raum, ob nicht die Prämissen willkürlich seien, und ob nicht Bewusstsein einfach als Wirkung der Materie gedacht und vielleicht begriffen werden könne. [...] Was aber die geistigen Vorgänge selber betrifft, so zeigt sich, daß sie bei astronomischer Kenntnis des Seelenorgans uns ganz ebenso unbegreiflich wären wie jetzt. Im Besitze dieser Kenntnis ständen wir vor ihnen wie heute als vor einem völlig Unvermittelten. Die astronomische Kenntnis des Gehirnes, die höchste, die wir davon erlangen können, enthüllt uns darin nichts als bewegte Materie. Durch keine zu ersinnende Anordnung oder Bewegung materieller Teilchen aber läßt sich eine Brücke ins Reich des Bewusstseins schlagen.

Despite of almost one and a half centuries of scientific progress, we have not advanced much further than this. Science, investigating the brain as an *object*, can explain neuronal activities leading to, for instance, empathy, but in order to understand what empathy is, we need the cultural concept that relates to each and everybody's historically and culturally determined *subjective* mind. This is what literature does and reflects upon. Therefore, I wish to claim that it is necessary to go back to the works of literature – especially the sophisticated ones as they challenge the boundaries of literature itself – in order to see how they absorb and also influence historical science: theories of the brain, the mind, and cognition. Indeed, literary and cultural studies is as valuable for cognitive science as science is for the humanities, as Sven Strasen (2013, 45) explicates:

This is the reason why literary scholarship [... does] not only have something to gain from a cognitive theory of culture, but [it] also [has] much to offer. Literature plays an important role in the negotiations, tradition and coordination of cultural models.

In order to understand the development of the concepts of cognition within literature – i. e. as reflected theoretically within the works themselves –, it is

therefore compulsory to consider individual literary works within their historical development.

The most pivotal recent contributions to the field of historical CLS come from scholars working in the field of Romantic studies. This is no accident: on the one hand, the period of Romanticism is the era in which a theoretically self-reflexive conception of literature came into its own (cf. Lacoue-Labarthe/Nancy 1988), and, on the other hand, a wide range of Romantic authors are distinguished by their keen interest in the sciences (cf. Richardson 2001). In his 2010 book *The Neural Sublime*, the Romanticist Alan Richardson (2010, xiii) maintains:

In putting cognitive and evolutionary literary approaches to work, I am also putting them to a test. Their theoretical claims, their methodological procedures, and their promise for generating new insights are weighed against the critical practices of an existing literary historical field.

One key concept that helps us understand and contextualise the development of the concepts of cognition and the mind, as well as scientific reflections on it, is the imagination. As arguably the most important aesthetic category in Romantic literature and poetic theory, this category has also been thoroughly researched from a CLS point of view by the likes of Mark Bruhn, Richard Sha, or Alan Richardson. Richardson's focus is anything but purely historical; instead he shows how the imagination, as developed in history, is also taken up in today's cognitive sciences:

Given its close associations with creativity and fiction, imagination has long been a key topic within literary and cultural theories of many kinds, although literary theoretical interest in imagination seems to have peaked during the Romantic era and to have fallen off in recent years. In contrast, imagination has only recently emerged as a serious topic for research within the cognitive sciences, following two centuries of scientific disregard if not outright ›fear and loathing‹. (Richardson 2015, 225)

Thus, Richardson is able to show how scientific investigations of this mental faculty have been made use of in order to explain findings in the so-called hard sciences:

[O]nly quite recently, mind and brain research has placed imagination prominently within a larger suite of mental abilities and procedures collectively termed the brain's ›default mode network,‹ relating imagination to memory, prospection into the future, theory of mind, mind wandering, and even navigation. (ibid., 226)

The imagination therefore promises to give insights not only into the nature of literary creativity but also on the historical reflection on cognition and cognitive science. In order to delineate the development of the imagination from a classical

psychological entity via a key concept in modern aesthetics to a contemporary concept within cognitive science, I will paint – with rather broad, but indicative strokes – an image of its trajectory from William Shakespeare via Samuel Taylor Coleridge to James Joyce.

2 Shakespeare

The change of perspective from the reception to the conception of literature offers the possibility to focus on aesthetic qualities of literary works as they reflect the creative process. In the introduction to her important and influential study *Shakespeare's Brain*, Mary Thomas Crane discusses the tension between the fact that, on the one hand, we generally presuppose that an author has created, composed, and written literary work, but, on the other hand, we accept that critical theory of the past fifty years has found a consensus that an immediate access to the author's mind is neither possible nor actually desirable. Crane claims that in the humanities, scholars have interpreted an author like William Shakespeare solely as the outcome of cultural energies rather than as a thinking human being. This tendency visible nearly everywhere in the critical theory of the past fifty years has, according to Crane, also created the need to reject extreme forms of cultural relativism. If a work is the outcome of a cultural formation or social energies, then how can we explain the fact that we tend to regard Shakespeare's works to be more extraordinary than those of, say, Webster or Middleton? A cognitive approach, according to Crane, may pave the way to conceptualise literary creation in its historical context. Crane (2001, 4) states:

I suggest that cognitive theory offers new and more sophisticated ways to conceive of authorship and therefore offers new ways to read texts as products of a thinking author engaged with a physical environment and a culture.

In this and the following sections, I want to look at the self-reflexive dimension of literature, in order to flesh out how the texts themselves relate to their own conception theoretically. In other words: the focus is on how the text reflects the creative process, not on the creative process *per se*. I will use the imagination as a paradigmatic form of creative self-reflexivity within literary texts.

My first example is the change of the conception of the imagination around 1600. In Shakespeare's sonnets 27–31, solitude and sleeplessness cause the speaker to use – and thus to reflect upon – two traditional faculties of the Aristotelian soul, memory and imagination, to conjure up and visualise the absent friend. In the first quatrain of »Sonnet 27«, images of travelling and work

separate the realm of the body from the realm of the mind or the soul and thus create a dualist notion of the human:

Weary with toil, I haste me to my bed,
 The dear repose for limbs with travel tired,
 But then begins a journey in my head
 To work my mind, when body's work's expired (Shakespeare, »Sonnet 27«, l. 1–4)

The imaginary worlds created by Shakespeare in his *Sonnets* bear witness to the character of human nature at the turn of the seventeenth century, a century that would fundamentally reinvent the scientific and philosophical understanding of the human. The clear separation of the mind from the body in these lines prefigures an anthropological paradigm shift taking place later in the seventeenth century – the Cartesian mind-and-body dualism –, while the »soul's imaginary sight« (»Sonnet 27«, l. 9) and the »remembrance of things past« (»Sonnet 30«, l. 2) are traditional concepts of Aristotelian and scholastic psychology. Thus, the mind as an entity separate from the body, on the one hand, and the imagination and memory as the inner senses and thus embodied, on the other, indicate that Shakespeare's *Sonnets* give evidence of a major change in the conception of the human nature – setting in in the early seventeenth century. Indeed, in Shakespeare's works we find, as Paul S. MacDonald (2003, 264) has argued, the most »radical, perhaps unprecedented, reconceptualization of human nature«.

This reconceptualisation is not fully achieved within the sonnets, but it is already there in a productive tension, and CLS may help to identify its components. Applying the concepts of schema and frame theory to poetry, Peter Hühn (cf. Hühn 2005, 23–32) identifies two frames in the sonnets addressed to the young man, upon which our understanding rests: first, the friendship between two men and, second, the relationship between artist and patron. The narrative script would be to pay homage to both friend and patron. We can speak about an event once this script, which shapes our expectations, is violated. The concept of frames and schemata can also be enhanced and applied to the creative conception as reflected upon within the poems, and the conflicting concepts of the imagination are the driving force here. The sleepless speaker in »Sonnet 27« uses his imagination in order to create the picture of his absent friend inside his mind. The workings of the mind are, in this case, decidedly disembodied: the notion of travelling, already introduced in line two, is expanded in the second quatrain and is turned into a pilgrimage:

For then my thoughts (from far where I abide)
 Intend a zealous pilgrimage to thee,
 And keep my drooping eyelids open wide,
 Looking on darkness which the blind do see (l. 5–8)

The religious overtones of the term pilgrimage add gravity and importance to the workings of the imagination. Two schemata concerning the mind are in conflict here. According to the Aristotelian model, the imagination is a faculty of the soul and therefore dependent on it. On the other hand, the notion of a disembodied soul is Platonic in origin and refers to the idea that the soul shakes off its bodily prison after death. This disembodied soul is now linked with the embodied imagination in the third quatrain:

Save that my soul's imaginary sight
Presents thy shadow to my sightless view,
Which like a jewel hung in ghastly night,
Makes black night beauteous, and her old face new. (l. 9–12)

These two conflicting conceptions thus create a tension within the poem: while the terms »shadow« and »sightless view« refer to the absent friend, it is the now disembodied imagination that conjures up his image. The imagination thus starts to emancipate itself from being a faculty of the Aristotelian embodied soul to become an epistemological power in its own right (cf. Haekel 2014). The rise of the imagination as an independent cognitive power, that is hinted at in these lines, was not fully achieved until the middle of the eighteenth century and the Romantic period; yet it has its roots here in the Early Modern period and especially in Shakespeare: by referring to the body as blind, it enhances imaginative poetry to be able create images »like a jewel hung in ghastly night«.

Without reference to either Aristotelian or Platonic philosophy, Shakespeare's sonnet gives us an idea of how the traditional and accepted concept of the mind around 1600 begins to crumble and collide. The poem merely refers to two schemata, but, and this is the important aspect, it violates the rules attached to both concepts. By placing the imagination high above all other aspects of the mind and the senses, the sonnet gives voice to a crisis concerned with traditional concepts of the mind. As yet, no solution outside the realm of art presents itself, but this crisis would eventually lead to one of the most fundamental transitions in Western philosophy.

Shakespeare wrote his plays and poems some decades before the modern mind-and-body problem was first formulated by René Descartes. Without turning Shakespeare into a harbinger of modern philosophy and neuroscience, it is yet remarkable how his works show signs of transition in the conception of the mind. With reference to his plays, Crane (2001, 26) remarks:

We can trace a progression in the course of these plays from an interest in the origins of the self within changing versions of both nation and household, to the placement of that self within a shifting grid of status, to the expression of the self between constraint and desire. I

believe that we can discern a movement about 1600 from depicting the body as it is contained within a cultural space to representing the ways in which the self inhabits the body.

In order to understand how the brain produces literary texts and artistic works, it is vitally important that we consider the brain not as an a-historical apparatus but rather as an organ that depends on a cultural and social context: »Cognitive theory then suggests that language, and even the mind itself, is produced through the interaction of human brains in social contexts« (ibid., 34). Peter Stockwell (2009, 4), whilst rejecting any kind of dualism, describes a similar view of cognitive science, yet includes the notion of biological evolution as well:

The mind, in cognitive science, is an embodied mind. We are the products of our evolution, and our human size, shape and configuration, in relation to the world, provides the framework within which our brains understand the world, and ourselves. The mind is not limited to the brain, in this conceptualisation, but is a combined notion made up of what brains and bodies together do in the world.

This transition in the scientific worldview foreshadowed in Shakespeare's sonnet would lead to a wholly new concept of the mind and cognition in René Descartes's philosophy. The much-vilified concept of dualism goes back to Descartes's profound scepticism, which leads him to conclude that humans are divided between the mind – *res cogitans* – and the body – *res extensa*:

At present I am not admitting anything except what is necessarily true. I am, then, in the strict sense, only a thing that thinks; that is, I am a mind, or intelligence, or intellect, or reason – words whose meaning I have been ignorant of until now. But for all that I am a thing which is real and which truly exists. But what kind of thing? As I have just said – a thinking thing. (Descartes 1984, 2.18)

One impetus, however, to separate the soul from the body was inherently modern and scientific: the conviction that the human body is an object and can be analysed with the methods of natural philosophy – a feat that could only be achieved if the immortal soul was deemed independent from the mortal body:

I explained in the *Optics* how the objects of sight make themselves known to us simply by producing, through the medium of the intervening transparent bodies, local motions in the optic nerve-fibres at the back of our eyes, and then in the regions of the brain where these nerves originate. I explained too that the objects produce as much variety in these motions as they cause us to see in the things, and that it is not the motions occurring in the eye, but those occurring in the brain, which directly represent these objects to the soul. By this example, it is easy to conceive how sounds, smells, tastes, heat, pain, hunger, thirst and, in general, all the objects both of our external senses and of our internal appetites, also produce some movement in our nerves, which passes through them into the brain. (ibid., 1.333, emphasis original)

It is only a small step from Descartes' dualist conception of the body, the brain, and the nerves to the first comprehensive theory of the nervous system as the origin of cognition as conceived by Thomas Willis in the 1660s. As opposed to the rather a-historical approach to Descartes in contemporary CLS, however, this notion of dualism is *not* created to consider the mind and the body as separate entities. On the contrary, Descartes considers a human being as necessarily a union of mind and body:

So the difference between this mode of thinking [imagination] and pure understanding may simply be this: when the mind understands, it in some way turns towards itself and inspects one of the ideas which are with it; but when it imagines, it turns towards the body and looks at something in the body which conforms to an idea understood by the mind or perceived by the senses. (ibid., 2.51)

In the context of the rise of the creative power hinted at in Shakespeare's poem, it is particularly interesting that it is the imagination, which creates this unity of mind and body. Descartes, in a word, paved the way for the modern neurobiological concept of the mind by rendering the human body an object of scientific investigation, and by establishing the imagination as a creative and therefore active force – an idea that portends not only the Romantic conception of the imagination as active and creative but also the modern concept of the mind in brain science. This feat was only possible on the basis of the introduction of the mind-and-body dualism.

At the turn of the century, William Shakespeare could not have foreseen all this. His work, however, does, I believe, show how around 1600 the concept of human nature is in a state of crisis and about to change. This does in no way mean that Shakespeare consciously braces himself for a paradigm shift. Rather, the imagination during this period begins to encompass elements that would become more and more important in the succeeding centuries. Although no-one could have predicted the impact of the discovery of the workings of the nervous system, made by Thomas Willis and others ever since the 1660s, the transition of the concept of the human had already begun and would, I argue, eventually lead to a new and scientific understanding of human nature. Shakespeare's »Sonnet 27« already signifies that the dualist conception of mind and body is not opposed to a modern conception of cognition – on the contrary, it is a necessary condition for its development within natural philosophy and science. The imagination, which already plays a central part in the early 1600s, would become an even more important element in the development of cognition as an active rather than a passive force in the following centuries, especially the Romantic period.

3 Coleridge

Literary self-reflexion *as* literary theory fully comes into its own in the Romantic period. It need not be stressed that during the Romantic period, the imagination is considered the most important concept not only of the creative genius but of cognition in general. In what is arguably the most canonical theoretical delineation of the imagination not only in the Romantic period but in British literary history in general, Samuel Taylor Coleridge (1983, 1.305sq.) describes the imagination as follows:

The imagination then I consider either as primary, or secondary. The primary imagination I hold to be the living Power and prime Agent of all human Perception, and as a repetition in the finite mind of the eternal act of creation in the infinite I am. The secondary I consider as an echo of the former, co-existing with the conscious will, yet still as identical with the primary in the *knd* of its agency, and differing only in *degree*, an in the *mode* of its operation.

In the context of this paper it shall suffice to emphasise that Coleridge conceives of the imagination as an active and creative epistemological faculty. This implies that the imagination is no longer a metaphor to describe the way we are able to conjure up the image of a red apple even when our eyes are closed – to use Richardson’s example (cf. Richardson 2015, 225) – or for the manner in which we can combine images stored in our memory in an unnatural way, for instance to create a chimera. Opposed to the traditional understanding of the imagination, which is passive and based on sense perception and memory, Coleridge’s concept is active and actually responsible for all cognition, indeed any kind of mental world creation. In this manner, he is able to define the imagination as a repetition of God’s act of creation within the mind. Even if Coleridge’s aesthetic and epistemological philosophy is steeped in Christianity, it is also very close to the present-day secular conception of cognition as a result of brain and nerve activities. Neuroscientific research has long come to the conclusion that not only products of the imagination are constructed within the mind, but each and every form of cognition as well. German neuroscientist Wolf Singer (2002, 72) remarks:

daß Wahrnehmung nicht als passive Abbildung von Wirklichkeit verstanden werden darf, sondern als das Ergebnis eines außerordentlich aktiven, konstruktivistischen Prozesses gesehen werden muß, bei dem das Gehirn die Initiative hat. Das Gehirn bildet ständig Hypothesen darüber, wie die Welt sein sollte, und vergleicht die Signale von den Sinnesorganen mit diesen Hypothesen.

In Coleridge, any effort of the brain and the mind is an act of the creative imagination. The world is not reproduced in the mind, it is not even reflected; it is actively created as a result of brain and nervous activity.

Despite its modernity, the imagination fell into disrepute in the wake of the New Historicist re-evaluation of Romantic literature and culture. The imagination was conceived of as the key instrument in the workings of the »Romantic ideology« (McGann 1983). Only recently have scholars resurrected the concept in order to investigate it in cognito-scientific terms. In 2013, Alan Richardson edited a special edition of the *European Romantic Review* concerned with scientific investigations of the imagination. Here he describes development of the discussion in the previous three decades as follows:

The trajectory of »imagination« as a key term within British Romantic studies over the past three decades has been nothing short of dramatic: from a reigning, if not the reigning, concept of the field, to a precipitous drop into disrepute, to its current re-examination in relation to the sciences of mind and brain. Recent revisionary accounts have, moreover, fundamentally resituated a concept once tied almost exclusively, at least within Romantic scholarship, to idealizing and transcendentalist modes to reveal instead unexamined, and largely unsuspected, materialist, physiological, and neurocognitive aspects. (Richardson 2013, 385)

Richardson maintains that a scientific approach not only explains much of the formal elements of literature – a task that Bruhn pursues quite impressively – but rather how an engagement with science connects Romantic authors in a manner considered hitherto to be unlikely bedfellows:

The anti-transcendent, corporeal imagination [...] makes part of a larger trend in late Enlightenment and Romantic intellectual culture that has only recently been given much in the way of sustained scholarly attention. [...] Theories and representations of the mind's embodiment link writers as diverse as Joanna Baillie and John Keats (both of whom had ample exposure to the latest advances in the emergent neuroscience of the time), and texts running from William Wordsworth's earlier poems to Jane Austen's later novels. (ibid., 389)

Bruhn (2009, 543) describes the modernity of the Romantic imagination by drawing a line between the current scientific interest in the imagination and Romantic philosophy and poetry:

Romanticists reading in contemporary cognitive science will frequently experience a strong and gratifying sense of déjà-vu. For a reigning topic of the day is imagination, the evolving theory of which looms large in virtually all the disciplines, from the most physical of sciences to the most metaphysical of humanities, that contribute to the ever-burgeoning interdisciplinary of cognitive science.

The historical approach to CLS, for which I argue here, thus not only foreshadows or reflects scientific developments, as was the case in Shakespeare's sonnets, it also emphasises the way that literature and science are part of a joint endeavour. In the Romantic period, literature is not only influenced by scientific questions

concerning the mind, it also partakes in the development of scientific theories. A vibrant field in current Romantic studies, science studies has shown that literature and culture were by no means divided areas but established a fruitful network of mutual influence.

This network also fundamentally shaped the concept of cognition. In canonical works such as Wordsworth's *The Prelude*, the world exists only in and for the mind's eye. There is no passive mimesis here but only active world creation through the imagination. This form of literature therefore is the attempt not to imitate the world but rather create it actively. How close this conception of the mind is to failure can be seen in Coleridge's poem *Dejection. An Ode*, where the epistemological faculty no longer seems to be available:

I may not hope from outward forms to win
The passion and the life, whose fountains are within.
O Lady! we receive but what we give,
And in our life alone does Nature live (l. 45–48)

The assumption that cognition is active and based on the creative imagination also implies that it may collapse:

But now afflictions bow me down to earth:
Nor care I that they rob me of my mirth,
But oh! each visitation
Suspends what Nature gave me at my birth,
My shaping spirit of Imagination. (l. 82–86)

Since it is clearly a form of depression or bi-polar disorder that Coleridge describes here, the poem not only gives an insight into the workings of the mind in creating cognition, it also provides an understanding of mental disorders:

»Dejection: An Ode«, along with other poetic productions of the age, surpasses all competing medical attempts at representing medical affliction. Rather than objectively analysing forms of depression through an external scientific lens, Romantic literature always already *precedes* the endeavours of the human sciences by subjectively re-enacting the exploration of the innermost recesses of human nature. (Sedlmayr 2011, 147, emphasis original)

As Coleridge's poem shows, this emphatic conception of cognition as imagination carries with it many conceptual problems already reflected upon in the Romantic period. Since the imagination is a mental faculty, or a metaphor of some aspects of cognition, its depiction or description, is also highly problematic, an insight apparent throughout Romantic poetry and theory. Put simply, the higher the imagination rises in esteem, the harder it becomes to draw a connection between this disembodied, active, free, and creative entity, and the very material works it

produces. No matter how fervently and thoroughly the Romantics tried to explore the mind, cognition, and the imagination in philosophy, literature, and science, its delineation is necessarily bound to a material medium. So, the dualist obstacle between the brain and the body as an object that can be investigated, on the one hand, and the mind that is only accessible to the subjective mind, on the other, eventually cannot be overcome. This insight lies at the heart of literary Modernism with which I will close.

4 Coda: Joyce

In Modernism, the focus shifts from the mind to the material medium. In effect, the imagination shifts to the background – as does the poetological reflection on this aspect of the creative conception of literature. At the same time, the mind, now described in modern psychological terms, is theorised in Modernism in an unforeseen way. James Joyce's *Ulysses* stands, of course, as one of the most detailed depictions of the workings of the mind. In that sense, it is only apt to draw the conclusion that much of his writing anticipates current scientific theorems of cognition. Joyce's poetic theory, that is always a self-reflexive part of his works, is opposed to the Romantic conception of the creative genius and rather influenced by an array of psychological theories ranging from William James, Henri Bergson to Sigmund Freud. Joyce fashioned himself – and his alter ego Stephen Dedalus – as a craftsman. Consequently, in his works, the imagination makes way for the association of ideas, in Coleridge connected with the concept of fancy.

Concerning the theory of the modular mind, Ellen Spolsky (1993, 38) writes:

[I]t confirms the realism of those representations of mental life found in the stream of consciousness writing of James Joyce and Virginia Woolf. It is no news to students of literature that the experience of mental life is of a messy, disjoint succession of perceptions and connections, capable now and then of providing a pleasurable, if highly fragile, cohesion.

CLS, in other words, helps us to identify the mental phenomena that Joyce and Woolf were exploring in their works but also theorised within the works themselves. In other words, the historical method enables readers to establish a cultural and scientific network between works of art, contemporary psychological and phenomenological works.

In this context, it is important to briefly consider how Joyce crafted his novel. It is well known that Joyce rewrote and revised *Ulysses* with every set of proof sheets he received.

Textual development and real documents, moreover, are asymmetrically phased in that, in the main, revisions occur at increasing removes from the document point of first inscription and fall in the interstices, as it were, between the documents. For example: let a change be entered in autograph on the second proofs. Though materially added to the reproduction of the text in the typesetting of these proofs, it is logically an alteration to the text first inscribed, say, in the fair copy. In terms of Joyce's manuscript text before transmission, therefore, the change appears in a document at three removes from that which carries the basic unrevised text. (Gabler 1993, 199)

This editorial matter referring to Hans Walter Gabler's 1984 edition of Joyce's novel has important bearings for an aesthetic evaluation of the workings of the mind as presented in the text. It signifies a shift from the attempt to depict the mind and the imagination as purely and immediately as possible – the Romantic ideal – to the insight that this depiction is always already mediated. Between Romanticism and Modernism occurs a shift from mind to language as material signifier and medium.

In order to underline this thought, I will close with an example. In »Calypso«, the fourth episode, Leopold Bloom sets out to buy breakfast from a local butcher. On his way home a cloud covers the sun, which has an immediate influence on his stream of consciousness, his association of ideas, although Bloom himself is unaware of this physical influence on his mind:

A cloud began to cover the sun slowly, wholly. Grey. Far.

No, not like that. A barren land, bare waste. Vulcanic lake, the dead sea: no fish, weedless, sunk deep in the earth. No wind could lift those waves, grey metal, poisonous foggy waters. Brimstone they called it raining down: the cities of the plain: Sodom, Gomorrah, Edom. All dead names. A dead sea in a dead land, grey and old. Old now. It bore the oldest, the first race. A bent hag crossed from Cassidy's, clutching a naggin bottle by the neck. The oldest people. Wandered far away over all the earth, captivity to captivity, multiplying, dying, being born everywhere. It lay there now. Now it could bear no more. Dead: an old woman's: the grey sunken cunt of the world.

Desolation.

Grey horror seared his flesh. Folding the page into his pocket he turned into Eccles street, hurrying homeward. Cold oils slid along his veins, chilling his blood: age crusting him with a salt cloak. Well, I am here now. Yes, I am here now. Morning mouth bad images. Got up wrong side of the bed. Must begin again those Sandow's exercises. On the hands down. Blotchy brown brick houses. Number eighty still unlet. Why is that? Valuation is only twentyeight. Towers, Battersby, North, MacArthur: parlour windows plastered with bills. Plasters on a sore eye. To smell the gentle smoke of tea, fume of the pan, sizzling butter. Be near her ample bedwarmed flesh. Yes, yes.

Quick warm sunlight came running from Berkeley road, swiftly, in slim sandals, along the brightening footpath. Runs, she runs to meet me, a girl with gold hair on the wind. (Joyce 1984, 4.218–4.242)

In constant revisions, Joyce added association to association, and realism makes way for experimental art; thus the secret hero is neither Bloom nor his mind, it is language as the literary medium. Although it is easy to describe this passage as a perfect example of a most realistic rendering of the embodied mind, the associations in Bloom's mind drastically exceed the brief moment the cloud covers the sun. The exact verbatim repetition of the opening words of this passage from the first episode »Telemachus« (ibid., 1.246) signifies not only temporal simultaneity, it also points to the fact that this is a linguistic, i. e. arbitrary, work of art: it is highly unlikely in realistic terms to consider that Bloom and Stephen actually think the same words at the same time. Rather, the correspondence links the two as Odysseus and his son Telemachus. *Ulysses* therefore marks an historical point at which the reflexion on literary creation as localised solely in the mind and in cognition makes way for a modern psychological approach which in itself becomes the narrative method. Joyce moves away from the imagination and focuses on the technical storage of this data within the medium of literature.

All three literary works under investigation here can and may be analysed with the use of CLS, but they can only fully be understood if they are seen as historical manifestoes of their own theory. The historical approach to CLS, which I propose here, aims at combining the insights made in, first, the self-reflexive aspects of the given works of art, second, neuroscience and cognitive science, and, third, in CLS. This self-reflexive dimension of the literary works of art may serve as a focal point around which traditional humanities and CLS can gather and intersect. This approach also shifts the focus from the reception to the conception of the work of art and has, as one of its main aims, the goal to establish a media network concerned with the science of the mind, poetology, and the works of art themselves. A thoroughly historical approach is therefore not only able to unearth the hidden cognitive dimension of literature but also its own aesthetic theory.

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