TOWARD AN EMBODIED THEORY OF UNDERSTANDING LITERARY TEXT

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Original scientific paper
DOI: 10.31902/fll.46.2023.9
UDC 801.82:165.242.2

Abstract: In this article, I aim to theorize and formulate the understanding of literary text within an Embodied Cognitive Approach. After sketching out the analyses of literary text understanding conducted within the framework of the so-called Common Cognitive Approach, I will proceed to point out their shortcomings. I will then lay the scientific foundations of the Embodied Theory of Understanding Literary Text (ETULT) by referring to direct and indirect evidence from neurology, psychology and so on. I will introduce ETULT in detail, with the help of evidence from fiction, Dante's *Divine Comedy*. I will also delineate the outlines of some field studies for the future, through developing questionnaires and brain scans (fMIR and EEG). In short, ETULT asserts that understanding literary texts is an embodied act, occurring processually on two levels of representation: Schematic and Embodied (The Two-Layered Representation Hypothesis or TLRH). Upon encountering a literary text, the reader forms a Blended Mediated World which is a fusion of the Text World and the Readerly World (The Blended Mediated World Hypothesis or BMWH). Within this mixed world, while those projected parts from the Text World which correspond with sensorimotor experiences of the reader are understood in an embodied way, the parts that lack embodied equivalence in the reader's sensorimotor experience function as Perceian Representamens, setting the reader in search of relevant Objects of Signs, which occur in the form of sensorimotor experiences (The Object-Search Hypothesis or OSH). The reader then becomes involved in a cycle of coming and going movements between the literary text and the socio-physical environment, demonstrating thus the processual nature of embodied understanding.

Keywords: Embodied Theory of Understanding Literary Text; Two-Layered Representation Hypothesis; Object-Search Hypothesis; Blended Mediated World Hypothesis

1. Introduction

Embodied Cognition is an approach within Cognitive Science that attaches causal, constitutive importance in cognitive processes to the *body* and the *environment* this body *interacts with*. This approach has been proposed as a challenge to Standard or Conventional Cognitive Science, which limited cognitive

activity to the *mind/brain* (Shapiro 2019, 1; Wilson & Foglia, 2017). Embodied Cognition is not a uniform, consistent approach, however, and there are various sub-approaches to it. Thus, depending on which element in the Embodiment Thesis is highlighted, from *cognition* (in the sense of the *mind/brain*) through *environment* to *body/action* (which are inseparably interrelated), there emerge rather different approaches (Wilson & Foglia, 2017).

Within the realm of literature, the approach which has so far been almost exclusively applied to the analysis of literary texts places its emphasis mainly on the *cognition* (*mind/brain*) side of the Embodiment Thesis. While it does not ignore the other elements altogether, it does not pay them due attention either. It seems that the great emphasis on *cognition* (or conceptual system), and the inadequate treatment of the *environment* and the *body/action*, cause the approach practically to not be able to distance itself from Standard or Conventional Cognitive Science. Hereafter, for the sake of analysis, this approach will be referred to as the Common Cognitive Approach, so as to be distinguished from the so-called Embodied Cognitive Approach, within which ETULT is proposed. Taking into account all three elements of *cognition* (*mind/brain*), *environment* and *body/action* to the fullest, my aim in this article is to theorize and formulate how readers in real life situations come to understand literary texts, in a way which is psychologically (and, hopefully in the near future, also neurophysiologically) more real. The especial emphasis in this paper on a full treatment of the *environment* and *body/action* sides of the Embodiement Thesis, as we shall see, is what makes all the difference between ETULT and the current work conducted within the Common Cognitive Approach.

The analyses carried out within the Common Cognitive Approach (including Cogintive Poetics/Stylistics) tend to use theories in Cognitive Psychology and especially Cognitive Linguistics. Drawing upon such theories, these analyses try to examine various aspects of literature, including how readers come to make sense of literary texts. What characterizes the analyses of literary text understanding within the Common Cognitive Approach is their inadequacy in treating the crucial role played by the elements of *environment* and *body/action* in the process of literary understanding. In fact, both the *environment* and the *body/action* have recently received some attention within the Common Cognitive Approach; as we will see, this attention is of a limited nature though. Furthermore, there is also the important issue (closely associated with the *body/action*) of the role of human *personal interest* in motivating individuals to engage with texts, literary or otherwise, which calls for address, and which has not received appropriate treatment by analyses within the Common Cognitive Approach. In the present paper, I will try to consider these issues through proposing a unified theory which brings all the above elements together, with a claim as to psychological reality, both intuitively and empirically.

2. Review of Literary Text Analyses within the Common Cognitive Approach

In accordance with the three elements of the Embodiment Thesis mentioned above, that is, *cognition* (or *mind/brain*), *environment* and *body/action*, the review of the relevant literature is divided into two parts: the first will refer to the shortcomings of those analyses conducted within the Common Cognitive Approach that seem to be solely restricted to the *mind/brain*, and mainly date back to the earlier stages of the development of the Common Cognitive Approach; and the second will indicate the failings of more recent works that have tried to integrate the *environment* and *body/action* elements within their theoretical frameworks, and reveal the latest developments in the field.

2.1. Early Works

For the first part, two chapters have been selected, one by Gibbs and another by Steen, from *Cognitive Poetics in Practice* (2003). In his article, Gibbs first rejects theories that consider text understanding as the activation of pre-existing, fixed structures pre-stored in the long-term memory, claiming that "understanding literary texts […] is a dynamic activity that relies on concrete, often embodied information, which people creatively compose in the moment of reading" (2003: 29). This view of meaning construction, he says, "allows for the flexibility needed to interpret novel events and language" (Ibid.). He chooses a passage from the novel *Catch-22* in order to demonstrate the notion of dynamic understanding. In the passage, there is something that, as Gibbs explains, cannot be understood merely by the activation of pre-existing, fixed and static conceptual structures; instead, it requires that the reader come to understand it in a dynamic, reflexive way. The passage describes an American soldier who feels proud of himself not helping build the officers' club. As Gibbs says, this situation contradicts usual expectations, since one normally feels proud of something they have done, not something they haven't participated in. Here, Gibbs says, through a manipulation in the pre-existing conceptual structures stored in the mind at the moment of reading and making a parallelism between "higher officers" and "the enemy," the reader manages to construct meaning dynamically and, consequently, comes to understand the passage.

Steen too moves along the same lines. A the beginning of his chapter, he points out that, in order to understand literary texts dealing with love, readers need some "world knowledge" about this concept. By choosing the Cognitive Scenarios for his analysis, he then proceeds to provide a cognitive model that could represent this world knowledge. According to him, "A more dynamic way of looking at love is to see it as a scenario" (2003: 68). He then goes on to present the basic structure of the love scenario, a structure which "explains almost any love story" (ibid.: 69), and which has a few stages. Then, he goes further to

complement his proposed scenario by adding a couple of motivations and results to each stage. He then goes on to provide some support for his proposed model by analyzing a poem by George Crabbe, "a marriage ring," showing that the concepts employed in the poem are somehow included in his model.

These two analyses suffer from the same defects. First, they restrict understanding literary texts to the *mind/brain*, reducing it to the activation of pre-existing ("dynamic," though) conceptual structures, and does not indicate the role of the *environment* or *body/action* in the process of understanding literary texts at all. Second, they limit dynamicity of understanding literary texts to a kind of selectional activation of conceptual structure content (here, that of love) on the part of the reader, depending on the text he/she is reading. Thus, dynamicity of understanding literary texts in these analyses remains in the narrow sense of the contents of the *mind/brain*, overlooking the dynamic relationship between *mind/brain*, *environment* and *body/action*.

2.2. Recent Developments

As for the second part of the review section, two other articles have been chosen, one by Canning (2017) and another by Lahey (2019), both conducted within Text World Theory (TWT). Admitting the unidirectional nature of TWT up to date, in that it has been solely limited to the text-driven construction of Text World Networks by the reader through their existing knowledge (or rather to the *mind/brain* of the reader), Lahey tries to incorporate the *environment* and *body/action* elements (or, to use her own terminologies, the knowledge derived from the Text World fed back into the Discourse World and vice versa) in her analysis through suggesting a cognitive feedback loop, which allows for a bidirectional or circular movement between the reader's *mind/brain* (Discourse World) and the text (Text World). She examines a real-life place and all the events related to it (Cape Breton Miners' Museum in Glace Bay) and its representation in a literary work named *The Glace Bay Miners' Museum* by Sheldon Currie, claiming that "readers familiar with the Cape Breton Miners' Museum in Glace Bay will also be likely to map in a bi-directional (or, more accurately, circular) way, using their pre-existing knowledge of the real-life miners' museum (and all it represents) in their construction of a text-world for Currie's narrative, and applying Currie's narrative toward a fresh understanding of the real-life monument" (2019: 68).

In this work, although Lahey takes a step forward and considers the *environment* and *body/action* seriously within the Common Cognitive Approach, in that she, through a cognitive loop, presupposes a dynamic relationship between the text and the reader in the process of understanding, nevertheless her treatment of these crucial elements is limited: it is restricted to the previous *embodied interactions* of the reader with the *environment* up to the point of encountering the text; beyond that, there is no mention of the text motivating

the reader to move around and seek out new experiences through *bodily action*. (Although Lahey does not use such terminologies as *environment*, *body/action* or *embodied interaction* in the exact sense employed here, they are taken to be implying almost the same concepts.) This means that, *a fortiori*, there is no mechanism which might account for such a crucial phenomenon. What we see is a dynamic relationship between the existing knowledge of the reader and the information provided by the text writer. We are still far from a full treatment of the elements of *environment* and *body/action*.

The study that Canning (2017) conducted before Lahey also reveals similar shortcomings. Within the same theoretical framework (TWT), Whiteley examines the role of the *environment* and *body/action* elements in the form of a shared on-line reading group in Northern Ireland's only female prison in the process of understanding a literary text named *The Story of an Hour* by Kate Chopin. One woman in the group who has first-hand, "visceral" experience about a central theme of the story (death of a partner) explains it to the other women in the group who cannot properly make sense of it, as they lack such experience, thus bringing them vicariously to an understanding of the story. "During the shared reading situation of the prison reading group, text-worlds are jointly negotiated by multiple discourse-world participants, and those co-constructed text-worlds feed back into the discourse situation" (2017: 178). Here again, there occurs a limited treatment of the *environment* and *body/action*, as the focus of the study lies on how discourse participants draw on their existing knowledge to understand literary texts, not on how a literary text might motivate them toward *embodied action* within the *environment* for gaining new "visceral" experience.

It is worth noting that these two studies (alongside other works conducted in a similar vein) implicitly confirm one of the central claims of ETULT: that is, one cannot understand a literary text (or any text in general) unless they have already experienced the situations represented in it. For other similar studies within the Common Cognitive Approach, see Stockwell 2002, 2019, 2020; Nuttall 2017 (which is conducted almost in the same way as the two explained above, only it differs in terms of the social context within which the literary reading occurs, that is, an online book review site); Whiteley 2011; Whiteley & Canning 2017; Norledge 2019; and Giovanelli 2019 (both similar to the studies above, only one deals with a social context of school children and the other with university students).

Finally, I shall note the pioneering, insightful and well-documented book by Gerrig on the psychology of reading (1998) which explores salient aspects of experiencing narrative worlds mainly from a cognitive-psychological point of view. It is very inspirational in all of its six chapters, especially the first one, which expands on the metaphors of transportation and performance for reading literary texts, and the final one, which investigates the effects of literary texts on

readers, two themes which touch upon what is the main concern in this paper. What it lacks, however, is a treatment of the issue which uses the latest developments undertaken in the field of Cognitive Science, gathering around all the related material under one unified theory.

3. Cognitive-Scientific Underpinnings of the Embodied Cognitive Approach

According to the Embodied Cognitive Approach adopted here, *cognition* is assumed to have evolved in human beings from a need to *interact with* the *environment*. In other words, *cognition* has an adaptive function, and that is facilitation of *action* in the *environment* for the sake of survival (Hostetter & Alibali 2008; Wilson 2002). Therefore, according to this evolutionary view, *cognition* (*mind/brain*) and *action* – which necessarily takes place through a *body* with certain anatomical and physiological characteristics within a *socio-physical environment* – are closely associated, to the point of forming a causal, constitutive link (perception/cognition FOR action, cf. Riener & Stefanucci 2014). This means that each of these components depend on the other for their existence and constitution: on the one hand, there will be no *action* (through a *body* within a *socio-physical environmen*t) without *cognition*; on the other hand, *cognition* is not possible without *bodily action* within a *socio-physical environment*. Furthermore, this link is mutual, and it operates in a cyclic fashion: *cognition* helps the individual *act* better in a *bodily* manner within a *socio-physical environment*, and in turn, *bodily action* causes the individual to acquire better *cognition* of the *socio-physical environment*. Various empirical evidence, from behavioral through neurological to developmental, supports what is claimed here.

3.1. Behavioral Evidence

Behavioral evidence refers to the experiments that empirically demonstrate that sensory perception of objects causes the potential actions associated with them to be activated in people's minds. For instance, Tucker and Ellis (1998) found that participants respond more quickly to the question whether an object is upright or inverted if the hand they respond with is the same one they actually grasp the object with in real situations. For example, if there is an inverted teapot with its handle on the right, then participants will respond more quickly with their right hand than their left. The same thing happens when participants are asked to respond either with a squeezing hand shape or with a pinching one. When they are shown objects graspable by squeezing (e.g. a hammer), then their response with a squeezing hand shape is quicker, and vice versa (Ellis & Tucker 2000).

3.2. Neurological Evidence

Neurological evidence refers to research conducted into the so-called *mirror neurons* in monkeys (di Pellegrino, Fadiga, Fogassi, Gallese & Rizzolati 1992), and probably humans as well (Rizzolati, Fadiga, Gallese & Fogassi 1996). Mirror neurons, which are located in the premotor cortex, get activated both when one is doing something themselves and when they watch someone else doing it. For example, it is found that when people see familiar tools their left ventral premotor cortex becomes activated (Grafton, Fadiga, Arbib & Rizzolati 1997). Indeed, easily manipulatable objects such as an apple or a shirt activate the premotor cortex more strongly than do objects that cannot be easily manipulated such as a traffic light (Gerlach, Law & Paulson 2002).

3.3. Developmental Evidence

Developmental evidence refers to the experiments that show children's motor development stages and perceptual (cognitive) development are correlated. When infants learn to crawl, their perceptual skills change in many ways (Campos *et al*. 2000), and the same is true when they learn to walk, so that crawling and walking infants see the world differently (Kretch, Franchak & Adolph 2013). For example, when pushed toward the deep side of a *visual cliff*, infants who have experience of crawling or controlling a walker, show cardiac accelerations (a sign of fear), while infants without any crawling or walker experience do not show any significant heart rate change. On the other hand, walking provides infants with access to distal parts of the environment, and this consequently increases engagement with distal objects and people, thus accelerating language development, as opposed to crawlers who interact with proximal objects and people.

In light of such evidence, it is asserted that, for a better grasp of the process of understanding literary text, the same assumption that there is a mutually causal, constitutive relationship between *cognition* and *body/action* within a *socio-physical environment* should also be taken into account for analyzing literature. According to this approach, the reader's *action* is influenced by the literary text he/she engages with, so that their behavior is motivated by the potential for action the text provides. The *bodily action* that ensues, in turn, produces a more exact understanding of the text. This mutual influence goes on and on, only to end up in a cycle of movements between action and understanding, which gets the individual closer and closer to a satisfactory grasp of what the text intends to say. But how may this process be captured and integrated into a unified theory?

4. The Embodied Theory of Understanding Literary Text (ETULT)

The Embodied Theory of Understanding Literary Text (ETULT) is composed of three main parts, for which the empirical support remains to be provided, as

will be explained at the end of the paper: (1) The Two-Layered Representation Hypothesis (or TLRH); (2) The Object-Search Hypothesis (or OSH); and (3) The Blended Mediated World Hypothesis (or BMWH).

4.1. The Two-Layered Representation Hypothesis (TLRH)

The first hypothesis or TLRH has roots in Glenberg's work on language comprehension (Glenberg & Kaschak 2002). Glenberg's theory called Indexical Hypothesis proposes that language comprehension occurs in three stages: (1) mapping words onto real objects or their perceptual symbols (or concepts); (2) activation of affordances (or sensorimotor experiences) associated with objects or perceptual symbols stored in memory; (3) and finally, meshing the affordances according to the syntax of the sentence. What matters for us in Glenberg's theory of embodied language comprehension is that he considers language comprehension to take place not conceptually and abstractly but perceptually and concretely: the meaning of a sentence is not understood until the sensorimotor experiences associated with the situation it represents are activated in the individual's mind/brain. Thus, when an individual reads a sentence which describes a particular situation, the sensorimotor simulations associated with a specific, concrete experience of that situation get activated in his/her mind/brain, helping him/her comprehend the meaning of the sentence (Scorolli 2014).

While Glenberg's theory is limited to sentence comprehension, nevertheless it may be generalized and extended beyond the sentence level to include textual understanding in general, and understanding literary text in particular. According to this extended theory, understanding a literary text requires that the reader activate his/her sensorimotor experience associated with situations represented in it. Here too, these sensorimotor experiences are not general, abstract concepts, but they are specific and concrete perceptual structures. However, it is not always the case that the reader already possesses all the sensorimotor experiences described in the literary text he/she engages with: he/she might lack them. What happens in such cases? For this issue to be addressed, the process of literary text understanding should be considered to occur on two levels: Embodied and Schematic. This means that, while reading a literary text, the reader develops two layers of representation in his/her mind/brain, one which includes his/her embodied experiences and which activates sensorimotor structures associated with situations, and the other which is abstract and which gets created when the reader lacks the sensorimotor experiences correspondent with situations represented in the literary text. In the latter case, a ghostly, skeletal representation is created in the reader's mind, one that has been vaguely constructed, and lacks in specific, concrete flesh and blood details. This Schematic Representational Layer serves to keep going the

flow of reading, producing a superficial understanding of the text (cf. Barsalou, Santos, Simmons and Wilson 2008; Borghi and Cimatti 2009 & 2012).

However, one cannot genuinely speak of an individual really understanding a literary text until his/her Schematic Representational Layer is filled up with relevant sensorimotor experience. To fill up his/her Schematic Representational Layer, the reader needs to acquire the relevant sensorimotor experience associated with the situation represented in the literary text. The acquisition of these sensorimotor experiences comes about through *bodily action* in a *socio-physical environment*. When the reader comes upon a situation in a literary text for which he/she lacks corresponding sensorimotor experience, he/she has to turn to the *environment* in order to fill up the empty structures in his/her Schematic Representational Layer with the relevant perceptions and actions. Having thus filled up his/her Schematic Representational Layer, partially or totally, with the relevant sensorimotor experience, the reader now returns to the literary text to continue with his/her reading, only to turn to the *environment* upon encountering new situations in the literary text.

4.2. The Object-Search Hypothesis (OSH)

Here, as we can see, a dynamic, tripartite relationship is formed between the reader (or his/her *mind/brain*), the literary text (more precisely, his/her Schematic Representational Layer) and the *environment* (or sensorimotor experience). This is the second hypothesis of ETULT, or OSH. According to it, in order to understand a literary text, the reader goes to the *environment* (physical and social) and, upon gaining the relevant sensorimotor experience there, comes back again to the text, only to repeat the cycle again. This tripartite relationship and its dynamic nature can best be captured in terms of Peirce's Semiotics in the form of Representamen, Object and Interpretant. Situations the reader finds him/herself lacking corresponding sensorimotor experience for play the role of Representamens in Peirce's Semiotics, which by definition stand for or point to something beyond themselves, unknown to the individual. Objects are what Representamens point to, or those same unknown things. These are, in fact, sensorimotor experiences associated with situations, which are at the moment unknown to the individual, but are possible to be arrived at through relevant perceptions and actions. This constitutes Peirce's definition of Interpretant (deledalle 2001, 18-21).

What brings the individual to Objects of Signs in Peirce's thought is called Diagrammatic Reasoning. In his logic, Peirce distinguishes between three types of inference: *abduction*, *deduction* and *induction*. When encountered with a Representamen whose Object is not immediately known to them, individuals try to find it out through Diagrammatic Reasoning. Thus, they first form an abduction (educated guess) to the best of their knowledge about the most probable thing which could act as the Object of Representamen in question;

then, they provide deductively the typical conditions needed for such a guess to come true; and finally they go on to test those conditions against the Representamen in question (Bundgaard & Stjenfelt 2001).

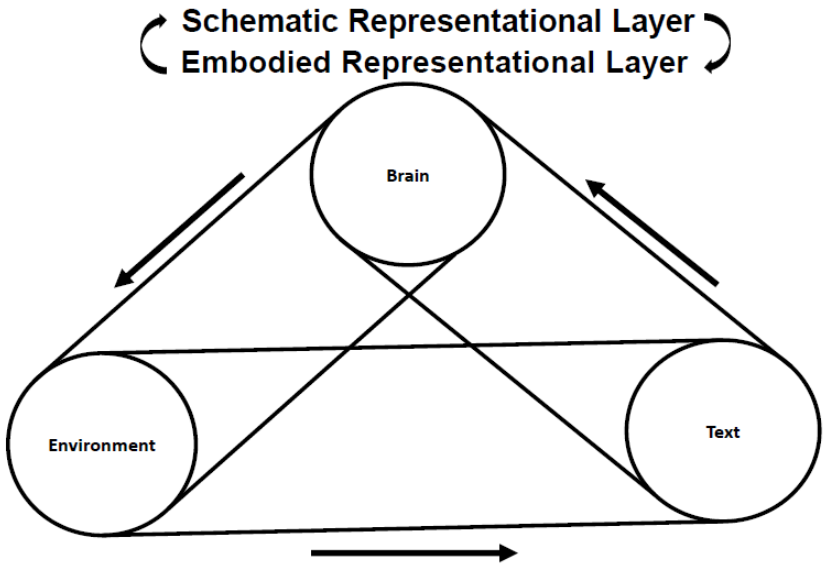

Fig.1. Two-Layered Representation Hypothesis

4.3. The Blended Mediated World Hypothesis (BMWH)

But how do these two hypothesized cognitive mechanisms (TLRH and OSH) come into effect in real-life reading situations? It is here that Conceptual Blending Theory (Fauconnier and Turner, 2002; Turner, 2014) comes into play. Contrary to the Common Cognitive Approach analyses conducted within TWT which assume two separate worlds, Text World and Discourse World, that are later connected via some kind of cognitive feedback loop, I suggest the mechanism of a Blended Mediated World at the very beginning of a reader's encounter with a literary text. This mechanism is the very precondition for the reader to get involved in the fictional universe in the first place, and to construct and maintain a trace of the events represented in the literary text later on, in whatsoever form that mental representation might occur, Text Worlds, Mental Spaces or any other terminologies. The storyline unfolds within this Blended Mediated World.

Reading, literary or general, is an encounter between two Worlds, each having its own similar or different system of, to borrow a term from

Glenberg and Kaschak, perceptual symbols (or, traditionally speaking, concepts): Readerly World and Text World. Upon (or even prior to) encountering a literary text, the reader makes correspondences between the contents of his/her World (stored in his/her mind/brain in the form of perceptual symbols or schemata) and those of the World represented in the text. The more the reader is able to find correspondences between his/her own World and the World of the Text, in terms of such attributes as the protagonist's age, gender, education, as well as the kinds of situation and event represented in the text, the more he/she is likely to be absorbed into the Blended Mediated World, or, to use the Blending Theory terminilogy, "to live in the blend" (Fauconnier and Turner 2002: 83). In this case, where the reader, upon some *personal* basis, has been drawn into the Blended Mediated World and urged to "live in the blend," he/she is also more motivated to get involved in the Object-Searching process, that is, to look for experiences associated with situations represented in the text for which he/she lacks sensorimotor simulations in his/her system of perceptual symbols or schemata. These sensorimotor experiences found within the Text World but missing within the Readerly World act as empty Schematic Layers (or Representamens) and drive the reader toward trying to fill them with Embodied Layers of experience, thus setting him/her in search of relevant Objects of Signs, possibly in a cyclic manner.

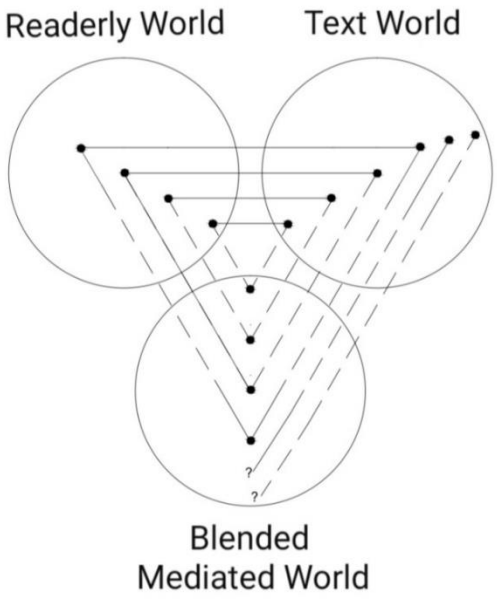

Fig.2. Blended Mediated World Hypothesis

The key point here is the Blended Mediated World built through the cognitive mechanism of Blending, which allows and ensures the effect of the text to go well beyond the on-line moment and the immediate context of reading onto the *environment* through the *bodily action* of the reader. Therefore, as long as the reader "lives" within the mentally constructed Blended Mediated World, the text is able to exert its influence over him/her, providing the necessary motivation for off-line *embodied interaction* with a *socio-physical environment*. The assertion made here is very much in line with the philosophical view which emphasizes the importance of *personal interest* in what motivates individuals to engage with texts, literary or otherwise. An appropriate treatment of this, however, goes well beyond the scope, and the space constraints, of the present paper. See, for example, the notion of *application* in Gadamer's philosophical hermeneutics (Gadamer, 1975; Zimmermann, 2015). I will try elsewhere to address this issue in more detail and more fully.

In the next section, I will go on to make the abstract, theoretical picture presented here more understandable through a concrete, practical analysis of a literary piece of evidence.

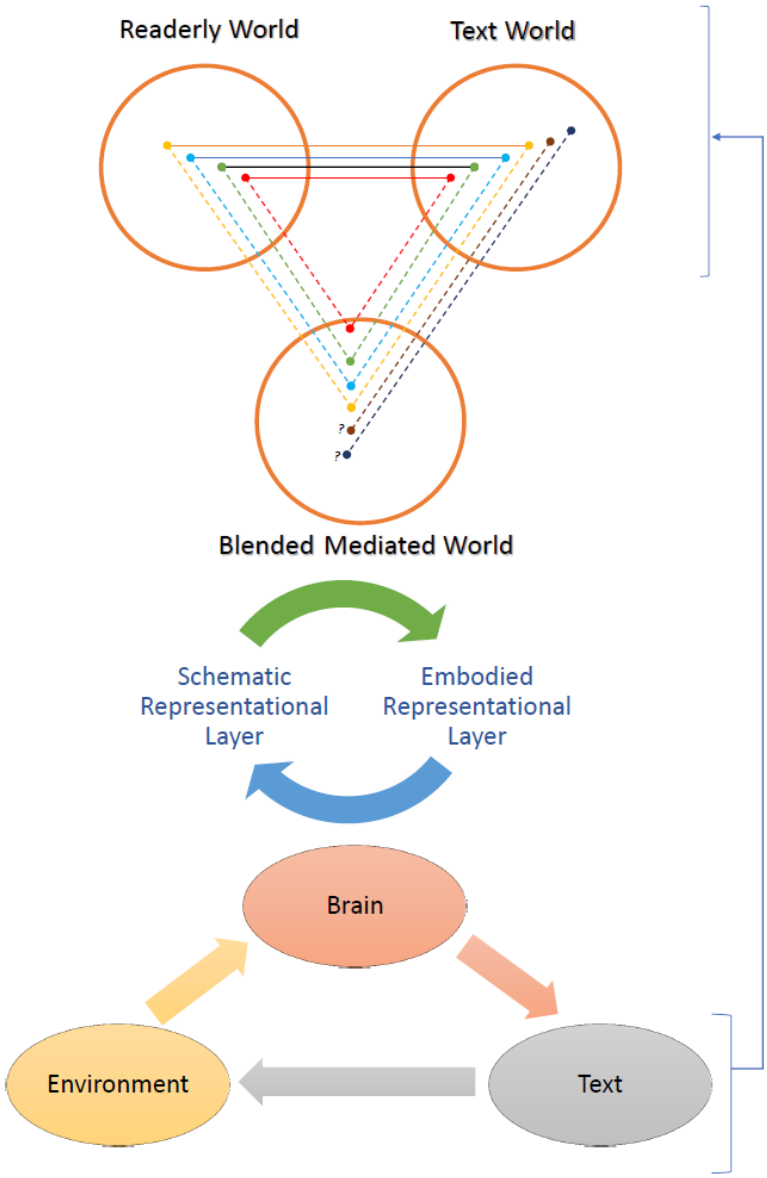

Fig.3. ETULT in full

5. Discussion

While I recognize that such claims require empirical support, nevertheless what has been at stake here is above all provision of a precise, adequate conceptual description of the overall structure of ETULT. Therefore, in this section, I will show how what was explained in the previous section works in practice as applied in the case of a literary text.

As for empirical data, I will provide at the end of the paper an outline of some prospective field studies which remain to be conducted in the near future, hoping that it will excuse lack of empirical data right now.

The instance chosen for analysis from among numerous other possible cases of fictional evidence is Dante's *Divine Comedy*. In Canto V of Inferno, Dante describes the fate of the souls who in the world were guilty of carnal lust. Among the souls he sees in this second circle of Hell are a couple named Paolo Malatesta and Francesca da Rimini. Their sin has been a forbidden love they have enacted, and thereupon have lost their lives:

I began: "Poet, I would like, with all my heart,
to speak to those two there who move together
and seem to be so light upon the winds."
[…]
When the winds bent their course in our direction
I raised my voice to them, "O wearied souls,
Come speak with us if it not be forbidden."
[…]
"Love led us straight to sudden death together.
Caina awaits the one who quenched our lives."
These were the words that came from them to us.

What strikes us as interesting here is the way Dante represents the love affair between Paolo and Francesca: in Dante's view, what leads them to such an action is the book they are reading on a similar situation between Lancelot, a Knight of the Round Table, and Guinevere, Queen to King Arthur, king of England in the Arthurian legend. This way of portraying Paolo and Francesca starting a love affair may be a figment of Dante's imagination, since there is no historical record as to how they actually became amorously engaged for the first time. Perhaps Dante intended to highlight the importance of literary texts influencing and orienting people's minds and lives. In *The Divine Comedy*, after Dante asks Francesca how their relationship started, Francesca replies:

one day we read, to pass the time away,
of Lancelot, how he had fallen in love;
we were alone, innocent of suspicion.

Time and again our eyes were brought together
By the book we read; our faces flushed and paled.
To the moment of one line alone we yielded:

It was when we read about those longed-for lips
Now being kissed by such a famous lover,

That this one (who shall never leave my side)

Then kissed my mouth, and trembled as he did.
Our Galehot was that book and he who wrote it.
That day we read no further." (Musa 1984,112-113)

The romance *Lancelot du Lac*, resembles Paolo and Francesca's situation in many respects, from a forbidden love and hesitation in its expression through the knights to the rulers and the like. Paolo and Francesca recognize this. In terms of ETULT, upon encountering the the romance book, Paolo and Francesca, by drawing on the content of the Text World and that of their own Readerly World, form, so to speak, a joint Blended Mediated World, making a set of correspondences between their actual situation and the situation represented in the literary text. For instance, Paolo and Francesca identify themselves respectively with Knight Lancelot and Queen Guinevere; Giovanni is likened to King Arthur, and the book they are reading to Prince Galehaut, as is referred to in Dante's text, "Our Galehot was that book and he who wrote it." Once the Blended Mediated World is set up, the Text World (or the book) continues to exert its influence, even when they are no longer reading the book in an on-line fashion.

After setting up the joint Blended Mediated World, Paolo and Francesca form two Representational Layers, one Embodied, and the other Schematic. Located in their Embodied Representational Layer are those same correspondences they made between themselves and the characters of the book (similar pre-existing sensorimotor experiences). In fact, this Embodied Representational Layer serves as the personal basis on which they can form the Blended Mediated World and "live in it." Their Schematic Representational Layer concerns LOVE, since Paolo and Francesca lack sensorimotor experience concerning the situation of loving and being loved, "innocent of suspicion," as Dante points out. To put it another way, for Paolo and Francesca, this empty Schematic Representational Layer about LOVE plays the role of a Representamen pointing to an Object beyond it, an Object that equals those same sensorimotor experiences represented in the literary text they are reading. The process of leading to these sensorimotor experience (Object of Sign) constitutes the Interpretant, which comes about through Diagrammatic Reasoning. At this point, Paolo and Francesca, "living" within the joint Blended Mediated World, turn away from the text and direct their attention to the immediate *socio-physical environment* around them, which is made up of the very place they are reading in, together with their very presence by each other's side. Then, they start to *act* in an *embodied* manner in the form of looking

at each other, "time and again our eyes were brought together by the book we read."

This *embodied action* of looking at each other may be considered as an interpretive attempt aimed at coming to the Object of Representamen: Paolo and Francesca exchange looks in order to figure out whether what they read about the amorous feelings of Lancelot and Guinevere applies to their own case; and the subsequent blushing serves as a signal that confirms their conjecture. This is Peirce's Diagrammatic Reasoning. Thus, although the whole thing happens so briefly, by turning away from the text to the *environment* and through the *bodily action* of looking at each other, Paolo and Francesca acquire their first sensorimotor experience associated with the love situation, filling up partly their Schematic Representational Layer concerning the perceptual schema of LOVE. On the one hand, this shift from the text to the *socio-physical environment* and the subsequent *bodily action* cause them to get a more precise understanding of the literary text by discovering new things in it; on the other hand, the very newly acquired understanding of the literary text allows them, in turn, more skillful action within the *environment*.

Paolo and Francesca's shift from the *environment* to the text and their persistence to understand the romance, which is a result of "living" within the Blended Mediated World, leads them once more to *bodily action* within their *socio-physical environment*: "It was when we read about those longed-for lips, now being kissed by such a famous lover, that this one […] then kissed my mouth, and trembled as he did." Here, there are smiles and kisses instead of looks. (In the original Italian text, "riso" is used, "Quando leggemmo il disiato 'riso', esser basciato da contanto amante" (Alighieri 2013: 159), which means "laughter," and which is more of an action than smile.) In this case too, there occurs the same interpretive process as described above about the looks: that is, they once more use Diagrammatic Reasoning in order to acquire more sensorimotor experience (Object of Sign) associated with the love situation (Representamen). The whole process is likely to go like this: after reading the relevant part of the romance, Paolo and Francesca, who by now have already filled up partly their Schematic Representational Layer of love with the sensorimotor experience of looking and blushing, decide to acquire the remaining sensorimotor experience associated with LOVE and, as is suggested in the romance, smiles and kisses constitute the next step in this path. Following what they have been reading, and considering the circumstances surrounding their actual situation such as facial expressions, signals of physical distance, posture, and the like, Paolo and Francesca form the abduction that they both desire love making in full. Then, they consider that smiles and kisses will possibly provide the conditions that help them reach

this goal, and that, if they both really want consummation, they won't respond negatively to such conditions (the deduction part). As for the induction part of their Diagrammatic Reasoning, after Paolo sees Francesca smile, he too gets down to work and returns her smiles with kisses, without confronting any resistance on her part, and thus confirming their abduction. Thereafter, they set aside the book altoghether and, while still under the influence of the Blended Mediated World, get fully engaged in the *bodily action* of love making in the immediate *socio-physical environment*, acquiring more and more of sensorimotor experiences associated with a love situation. This way, they flesh out their Schematic Representational Layer of love more fully.

5. Conclusion

In this article, I tried to point out the true nature of reading and understanding literary texts in real-life situations, and to pinpoint the shortcomings of the current theories within the Common Cognitive Approach to capture this. Then I presented the Embodied Theory of Understanding Literary Text (ETULT), and explained its three hypotheses, showing how it works in practice. The results confirm the central claim of the present paper that understanding literary text is a dynamic, processual activity that, usually, comes about through recurrent shifts between the text and the *environment*. While the example we examined was a dramatic, fast and brief one, with the whole event taking place over a very short period of time and within one place only, nevertheless other instances of literary text understanding, fictional or real, may last longer (even one's whole life), and involve more places and spaces (cf. *Madame Bovary* and *Don Quixote*). Understanding literary text does not merely take place within the narrow limits of the *mind/brain* or some particular social context; rather, it goes beyond and extends onto the *body* and the *environment*, keeping the reader in a state of shifts between *reading* and *acting*.

6. Suggestions for Empirically Supporting Studies

As for the first hypothesis of ETULT, that is The Two-Layered Representation Hypothesis (TLRH), I have thought out an EEG experiment. I consider these two hypothesized layers to be associated with *difficulty degree* of texts: thus, easy texts create Embodied Representational Layers (because they readily correspond with our pre-existing embodied experiences), while difficult ones generate Schematic Representational Layers (because whatever mental effort we exert, we cannot find anything matching them). Now, if we consider the fact that mentally difficult tasks, like problem solving, show high activity in the Beta wave frequency band, and the mentally easy tasks (automatic ones) reveal high activity in the

Alpha wave frequency band, then, through an examination of the results of some devised reading tasks, we can make conclusions about the psychological and neurophysiological reality of the hypothesis.

The second and third hypotheses of ETULT, that is The Object-Search Hypothesis (OSH) and The Blended Mediated World Hypothesis (BMWH), can simply be put to the test through developing a questionnaire, which will ask participants to what extent the claims made above apply in the case of them as well. Here too, of course, it is possible to devise some EEG or fMRI experiments, but I have not yet thought out what shape it might take.

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HIN ZU EINER VERKÖRPERTEN THEORIE DES VERSTÄDNIS LITERARISCHER TEXTE

Dieser Artikel untersucht die Anwendung eines verkörperten kognitiven Ansatzes zum Verständni Literarischer Texte. Es schlägt eine vollwertige Theorie vor (Verkörperte Theorie des Verstehens literarischer Texte oder The Embodied Theory of Understanding Literary Texts (ETULT)), um zu formulieren, was passiert, wenn sich Leser mit dem Verständnis literarischer Werke beschäftigen. Die Theorie sich aus drei miteinander verbundenen Hypothesen zusammensetzt: Hypothese der zweischichtigen Darstellung oder The Two-Layered Representation Hypothesis (TLRH), Hypothese der Objektssucht oder The Object-Search Hypothesis (OSH) und Hypothese der Gemischten vermittelten Welt oder The Blended Mediated World Hypothesis (BMWH), die zusammen das Verhalten von Lesern bei der Begegnung mit literarischen Texten erklären.

Was diese Arbeit charakterisiert und was sie von anderen in der kognitiven Poetik auszeichnet, ist die prozesshaft dynamischen Betonung, die sie einnimmt die Rolle, die Text, Körper und Umwelt zusammen spielen, um ein Verstädnis des literarischen Texten zu erreichen, indem alle diese drei Elemente in einer einheitlichen Theorie zusammengefasst werden.

Kurz gesagt, behauptet ETULT, dass das Verstehen literarischer Texte ei verkörperter Akt ist, der prozessual auf zwei Repräsentationsebenen stattfindet: schematisch und verkörpert (The Two-Layered Representation Hypothesis oder TLRH). Bei der Begegnung mit einem literarischen Text bidet der Leser eine Blended Mediated World, die eine Verschmelxung von die Textwelt und die Leserwelt ist (The Blended

Mediated World oder BMWH). Innerhalb dieser Mischwelt die projizierten Teile aus der Textwelt, die sensomotorische Erfahrungen des Lesers korrespondieren dabei, werden auf eine verkörperte Weise verstanden. Aber die Teile, die fehlen verkörperte Äquivalenz in der sensomotorischen Erfahrung des Lesers, fungieren als Perces Representames, den Leser auf die Suche nach relevanten Zeichenobjekten versetzen, die in Form sensorimotorischen Erfahrungen sind (The Object-Search Hypothesis oder OSH). Der Leser wird dann in einen Bewegungszyklus zwischen dem literarischen Text und der sozio-physischen Umbegung verwickelt, was somit die prozessuale Natur des verkörperten Vestehens demonstriert.

Keywords: Verkörperte Theorie des Verstehens literarischer Texte, Hypothese der zweischichtigen Darstellung, Hypothese der Objektssucht, Hypothese der Gemischten vermittelten Welt