Routledge Research in Cognitive Humanities

NARRATIVE, PERCEPTION, AND THE EMBODIED MIND

TOWARDS A NEURO-NARRATOLOGY

Lilla Farmasi

Narrative, Perception, and the Embodied Mind

This book encourages cross-disciplinary dialogues toward introducing a new framework for neuro-narratology, expanding on established theory within cognitive narratology to more fully encompass the different faculties involved in the reading process.

To investigate narrative cognition, the book traces the ways in which cognitive patterns of embodiment – and the neural connections that comprise them – in the reading process are translated into patterns in narrative fiction. Drawing theories of episodic memories and nonvisual perception of space, Farmasi draws on theories of episodic memories and nonvisual perception of space in analyzing a range of narratives from twentieth century prose. The first set of analyses shines a light on perception and emotion in narrative discourses and the construction of storyworlds, while the second foregrounds the reader's experience. The volume makes the case for the fact that narratives need to be understood as dynamic elements of the interaction between mind, body, and environment, generating new insights and inspiring further research.

This book will appeal to scholars interested in narrative theory, literary studies, cognitive science, neuroscience, and philosophy.

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Towards a Neuro-narratology

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Part I

From cognitive narratology, to neuro-narratology

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Introduction

In the storyworld of *Time's Arrow* by Martin Amis, doctors are all terrible people who slowly make the condition of patients worsen (luckily, often due to some accident, these people are suddenly healed). At the same time, the helpful pimp makes the blackeye of the prostitute disappear and comforts the crying baby in the room in a second with a quick punch, and selfless Nazis nurse crowds of sickly and malnourished Jewish people back to health. Amis created this absurd world where values and ethics are turned upside down with the help of one strategy: time flows backward in the novel. Dialogues and descriptions are both reversed in the book and making sense of what is going on requires extra effort at the beginning from the reader. Although, it is not hard to get used to, especially if one reads a lot of it in one sitting as I did. I was halfway through the novel, already very used to its narration, when something interesting happened. I remember sitting in our living room, looking up from the book as my mother came into the room. In the next moment, in my mind's eye, she backed out of the room the same way she came in.

It was quite an unusual and surprising experience since there was nothing (consciously) intentional in it, and I can only assume that my brain reversed what I saw because, due to the intense reading experience of Amis' novel, a part of it was simply in the habit of making sense of things I perceived that way. It is by no means evident that being immersed in the fictional world of a novel where time flows backward should affect the way my brain processes visual input from the real world. How could something like that happen? How do we process fictional worlds, and what does that have to do with how we process real experiences? What sort of neurological processes take part in the way we read and comprehend narratives? Which elements and aspects of a narrative allow or influence the meaning-making process of the reader? These were the first questions that inspired my research, although later, the focus shifted from time to space and motion.

The significance of narratives would be hard to overstate. It has long been an acknowledged scholarly subject in numerous fields, and it has

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become a buzzword from political agendas to self-help books. Roland Barthes, in his seminal study "Introduction to the Structural Analysis of Narratives," which focuses chiefly on the cultural aspects of narrative, states that, "like life itself" (Barthes 1975), it is simply everywhere. Young and Saver discuss the significance of narratives for the individual *homo narrans* and claim that "[t]o be without stories means […] to be without memories, which means something like being without a self" (Young and Saver 2001, 74). The findings of neuropsychologists also support the view that human experience, in general, is strongly affected by the production and comprehension of narratives (Mar 2004, 1415).

However, there is less agreement on what exactly it is that makes narrative so significant in our collective and individual lives. Regarding the latter, David Herman proposes a more precise question:

> What is it about narrative (viewed as a cognitive artifact) that explains its multi-situational serviceability, the richness and long-lastingness of its processes and products, its power to organize thought and conduct across so many different domains of human activity? (Herman 2003, 163)

It would take many books to provide an exhaustive answer to this question. Indeed, the consumption and mental representations of stories are arguably still "the least understood dimension of narrative" (Bortolussi and Dixon 2003, 3). The aim of this book is to begin to address a specific formal aspect of narratives, namely, to trace how processes of certain perceptions take part in the construction and interpretation of storyworlds. While I believe neuroscience has a lot to offer to narrative studies, my approach is heavily connected to the discipline of embodied cognition, which claims that the body and the environment have a vital role in the functioning of the brain and, through that, in the emergence of consciousness.

Embodiment is a very complex concept in literary theory. In fact, focusing on human embodiment could lead me to write numerous different books. A book with a contextualist, for instance, a feminist or corporeal narratological approach, or a psychoanalytic approach could all claim to theorize the role of human embodiment in storytelling. The reason why this has to be mentioned here is that in the complex processes of making sense of a narrative social, cultural, historical, and gendered aspects have important roles. In many cases, they play the dominant role in our interpretation of a narrative.

There have been various experiments that were intended to tackle the relationship between human embodiment and narratives. If we are to imagine these experiments as forming a spectrum, at one end of it, one will find corporeal, feminist,[1] and postcolonial narratologies, which chiefly focus on social issues of embodiment, such as the social

significance and appearance of bodies. At the other end of this spectrum, I believe one would find neuro-narratology, where human embodiment is understood through neurology and neuropsychology. The concept of movement on one end of the spectrum might mean the mobility of a minority group in a society, for instance, the problem of women being "confined" to private spaces, while at the other end, researchers might be interested in the conceptualization of movement in language comprehension, or, considering this book, that of the representations of problematic, deautomatized perception of space and motion in literary works.

A comprehensive model of narrative comprehension should be imagined as described in Walsh' study, "Beyond Fictional Worlds: Narrative and Spatial Cognition" (Walsh 2017). He explains that narrative comprehension feeds from numerous more or less intertwined cognitive processes, which all have their individual way of meaning construction. Roy Sommer assumes that narrative theories could never explain everything that needs to be explained in connection with narratives (Sommer 2017, 603). Since it is arguably as complex as human consciousness itself, narrative and storytelling cannot be fully investigated by one discipline. The aspects of the narrative's and the reader's social context are crucial for narrative as much as neuropsychological ones. But in this book, with an admittedly partial view, I focus on the latter. I return to the concept of embodiment in the first chapter to elaborate on its conceptualization in second-generation cognitive theories.

Narrative (cognition)

Narrative in this book is to be understood as a fundamental structure of human cognition, which is anchored in our embodied experiences and has a neurophysiological background. It is a "biocultural hybrid," not unlike language, that evolves through the interaction of culture and the biological makeup of the brain (Armstrong 2019, 416). In the works that I analyze, I trace the ways the strongly embodied subjective experiences of space and motion (of narrators or focalizor characters) contribute to the construction and, therefore, the effect of the narratives and attempt to gain a deeper understanding of readerly experience with the help of the theories and findings of cognitive science and the neuropsychology of perception. My hypothesis is that in narratives, information can be organized according to structures of embodied experiences, for instance, the fundamental experience of living in a body that navigates in space almost constantly.

Theorists of cognitive narratology most often focus on the processes of narrative understanding, the comprehension of narratives in other words, and the objects of its study are the narrative structures, components, and storytelling strategies that influence the understanding of narratives.[2] This approach has also been described in other words as

"the investigation of mental processes and representations corresponding to the textual features and structures of narrative" (Bortolussi and Dixon 2003, 24) or as the study of "the way specific discourse patterns trigger narrative experiences" (Herman 2013, 105).

Richard Walsh calls attention to the fact that the concept of narrative cognition is ambiguous (Walsh forthcoming). Besides the above-mentioned conceptualizations, according to Walsh, narrative cognition is to be understood as a cognitive faculty akin to spatial or visual cognition; therefore, it is to be understood as "a certain kind of sensemaking […] that is very elementary and consists in the grasp upon experience afforded by basic narrative form as such" (ibid). Brian Boyd understands narrative as a basic pattern, or "the default task orientation of the human mind" that enables us to comprehend information around us (Boyd 2017, 95). Seymour Chatman claims that it is in the nature of the human mind to be constantly searching for structure, which is, Paul B. Armstrong points out, also one of the fundamental principles of neuroscience (Armstrong 2020, 12).

Walsh also adds that the world is not inherently organized in narrative terms; it is our mind that makes sense of the world in such terms (Walsh forthcoming). Researchers of neuropsychology provide another definition of narrative: "in part, a coherent causal-temporal ordering of select information" (Mar 2004, 1425). David Herman also describes narrative as "a tool for thinking" that functions in various ways, for instance, often as "a problem-solving strategy" (Herman 2003, 163) and a "basic human strategy for coming to terms with time, process, and change" (Herman 2010) while Roger Schank simply states that "storytelling and understanding are functionally the same thing" (Schank in Young and Saver 2001, 73). A similar view, inspired by phenomenology, is that "it is the human mind that organizes into discrete entities a world which is otherwise continuous and fluid. Discreteness is thus assumed to be a property of our categorization skills" (Popova 2015, 20). The nature and especially the problems of such organizational acts, if investigated in narratives, may allow us to learn more about the relationship between the human mind and brain.

Through this approach, a natural mode of organization in narratives becomes traceable in narrative discourse. This mode of organization is important because it can contribute to the production of meaning, however, possibly on a presymbolic level. In other words, I trace the ways patterns of neuropsychological processes are translated into narrative patterns, which are eventually translated into (a part or an aspect of) the readerly experience. The argumentation is based on the premise that there is no specific neuropsychology for constructing and interpreting stories because the process involves different mental faculties developed for other purposes. Among these, the focus of this book is the neuropsychology of nonvisual spatial perception.

Roman Jakobson famously argued for interdisciplinary research in 1960 and claimed that poetics is an integral part of linguistics. According to Turner, it is a mistake to separate literature from other modes of cognition (Hamilton and Schneider 2002, 648) since "literature is cognitive and the mind is literary, and the boundaries between them are artificial" (653). Narrative is therefore a structure that is partly responsible for organizing human consciousness. Moreover, Mark Turner claims that human cognition is intrinsically of a literary character (Turner 1996), and some theorists even view narrative as a distinctly human trait, not unlike language (Abbott 2002, 1). Turner, although he has theorized literature in general and not narratives specifically, asserts that "the capacity to think in stories or narrative imagining, and the projection of one 'story' to another" are fundamental for human cognition (Hamilton and Schneider 2002, 652). Hamilton and Schneider summarize the approach by stating that

> everyday communication and literary expression spring from the same principles of thought, which in turn derive from very basic interactions of the human body with its environment. Thus, the study of literature is – or ought to be – fundamentally similar to the study of how the human being (defined by Turner as "a mind in a brain in a body") thinks. (647)

Without second-generation cognitive narratology, there is no neuronarratology. As Jens Eder claims, "[n]arration implies communication, communication implies reception, and reception implies cognition" (Eder 2003, 282). Although the path between cognitive science and narratology is probably not as smooth as he makes it appear in this quote, the connection is indeed very strong between them; hence cognitive narratology has been an extremely successful part of cognitive poetics. However, there is a last "step" that Jens did not mention in his description: cognition implies neurobiological activity.

Nearly 60 years later, neuroscience supports Jakobson's theory, namely that from the point of view of neuroscience, we cannot differentiate between artistic and non-artistic experiences. Our aesthetic experiences are based on the same neurobiological processes that the most regular and mundane experiences are (Armstrong 2015, 215–6). Consequently, neuroscience does not seem to be a useful field for those who want to determine what is and what is not art, but the investigation of works of qart and aesthetic experiences can be beneficial for neuroscience (216).

Narratological roots

Narratology has become a highly complex field in the first decades of the twenty-first century. In parallel with the rise of genres such as

introductions and handbooks" (Sommer 2012, 145), the state of art has become increasingly hard to survey (144) as there has been a considerable expansion of the corpus and the objectives, and in what Sommer interprets as a transitional phase of the field (Sommer 2017, 600). According to Nünning, "[n]arratologies' recent bunch of offspring includes a wide range of approaches, many of which at first glance look like curious hybrids" (Nünning 2003, 247). The term "hybrid" refers to the numerous interdisciplinary endeavors, one of the most successful of which is cognitive narratology, which, according to some, was overtheorized already over 15 years ago (256). The reason why this branch of postclassical narratology is so popular among academics is that it seems to be an especially useful approach for research not only on literary narratives but on language as well as the human mind. On the other hand, research is very active in the field of cognitive narratology because one cannot claim that its basic questions – how do we understand a narrative, and what are the roles of narrative structures in human cognition? – have nearly been exhaustively answered.

The term "cognitive narratology" was coined by Manfred Jahn in 1997 (Jahn 1997), but the relationship between literature, language, and cognition has become an important subject of research earlier, in the 1980s and 1990s. Cognitive narratology chiefly investigates the production of meaning, with the hypothesis that literary works are necessarily influenced by the architecture of the human brain and consciousness. Cognitive narratology has already developed several approaches, some of which compete with each other,[3] while others simply investigate different issues and rarely engage each other in dialogue. One of the themes that have been proven most fruitful in cognitive narratology has been that of embodiment. The approach within cognitive narratology that combines the investigation of storytelling with the post-Cartesian alternatives of cognitive theories is known as *second-generation cognitive narratology*. According to the post-Cartesian accounts, "[c]ognition is embodied insofar as it emerges not from an intricately unfolding cognitive program, but from a dynamic dance in which body, perception, and world guide each other's steps" (Shapiro 2011, 61). In other words, the elements of this system consisting of the consciousness, the body, and the world are interdependent and determine each other. Hence, the new basic unit of analysis for cognitive theorists becomes the mind-body-environment system. The analyzed literary works in the second part of this thesis can all be understood as illustrations and contemplations of this principle.

Cognitive theories with a focus on embodiment are largely inspired by theories of perception of phenomenology and by second-generation cognitive science. Neuro-phenomenologist Alva Noe's claim, "[i]n order to think like us, you must have a body like ours" (Noë 2004) is based on the premise that certain formal aspects of cognition as well as

many of our abstract ideas depend on our embodiment, first and foremost, its sensorimotor capacities. Richard Menary, discussing the narrative self, proposes a similar statement by claiming that "[i]t is not narratives that shape experiences but, rather, experiences that structure narratives" (Menary 2008, 79). Language is also anchored in our embodiment on the level of single expressions and sentences, but a narrative theorist faces even more complex questions in this regard. This is partly due to the fact that narratives also often show resemblance to processes and elements of cognition other than verbal language, not to mention that storytelling is not exclusively tied to language; it exists through numerous mediums. The idea that narratives and the human body are deeply intertwined is nothing new. On the other hand, what one means by "narratives," "human body," and the exact nature of the relationship between the two are topics of lively debates.

Second-generation cognitive science conceptualizes all forms of cognition as inherently embodied, often placing special emphasis on sense perceptions, which "link" human consciousness through the body to its environment. Cognitive literary theories regard the reading and comprehension of fiction as a process rooted in brain functions; therefore, it is to be investigated in the context of other skills of the human mind in connection with them (Horváth 2012, 6). However, as Erzsébet Szabó points out, cognitive poetics is not primarily an empirical endeavor, either in its object or in the tools of its investigations. It seeks to construct theoretical explanations and models about the processes at work in the interaction between the human mind and narrative texts (Szabó 2012, 117; Horváth and Erzsébet 2013, 142).

Monika Fludernik, in her monograph, *Towards a Natural Narratology* (1996), began to "ground the study of narrative in a sophisticated description of cognitive experience" (Bortolussi and Dixon 2003, 12). On the other hand, many postclassical narratologists agree that Fludernik's theory, in which the "notion of experientiality subsumes the ways in which narrative taps into a background of cognitive-level schemas and predispositions" (Caracciolo et al. 2017, 436), is useful to explain the construction and different forms of narratives, yet it is unclear and underdeveloped (Bortolussi and Dixon 2003, 13). Fludernik's natural narratology feeds from the theories of reception, and by understanding narrativity "as mediated human experientiality"[4] (Fludernik 2002, 26), it creates a new conceptualization of narrative that is in line with Walsh' conceptualization of narrative cognition. Instead of focusing on plot or events, Fludernik states that in her definition "there can […] be narratives without plot, but there cannot be any narratives without a human (anthropomorphic) experiencer of some sort at some narrative level" (13). The definition seems to imply the hypothesis that representations of embodied experiences such as sense perceptions and emotions may function as the backbone of a narrative, for which Murakami Haruki's short story,

"Sleep," an engaging narrative with barely any tellable events in the diegetic world, is an excellent example.

Relying on theories of embodied cognition, Wojciehowski and Gallese have set out to outline the concerns and methods of what they termed "embodied narratology," which offers an explanation of a "more direct and less cognitively-mediated access to" fictive worlds (Gallese and Wojciehowski 2011). Caracciolo, who examines the reading process with an enactive approach, claims that when we read fiction, "we don't just respond to story-level events and existents, we respond to the ways in which they are presented by discourse," which, regarding its structure, can be motivated by embodied experience (Caracciolo 2015, 50), possibly even by various perceptual experiences. As George Lakoff and Mark Johnson have explained in one of the earliest seminal works in the field of embodied cognition, *Metaphors We Live By* (1980), the metaphor is one of the fundamental structures of the way in which we make sense of the world. Narrative is arguably another.

There have been numerous experiments in mapping the significance of embodiment and cognition in literary theory. Michael Kimmel has been examining metaphoric patterns in narratives. He is He is one of the few theorists who claim that metaphors can be extended beyond figurative language to the level of whole paragraphs or even whole narratives (Kimmel 2009, 171). Conceptual metaphors and probably other aspects of embodiment (tension, rhythm, etc.) can motivate a narrative's more complex, higher-level structures, and they may be responsible for the whole logic of a story (173). Raymond Gibbs argues "that reading, of all sorts, involves our imaginative, embodied engagement with texts, and that this engagement does not just constitute our reactions to literature, but shapes the very process by which linguistic meanings are interpreted" (Gibbs 2017, 219). Considering narrative film, Miklós Kiss explains that embodied image schemas have a "formative role in the initiation of *elementary narrative schemas*, as deeply embodied, internally organized formal gestalts" (Kiss 2015, 43). Hilary Dannenberg analyses metaphors such as CONTAINER and PATH as the chief patterns of stories (Dannenberg 2008). Embodied experience of stories can also be explained by a given (focalizer) character's perspective (Caracciolo 2011, 118) or significant narrative structures organized by embodied rhythms, such as the heartbeat in Poe's "Tell-Tale Heart" (Caracciolo 2015, 62), which is claimed to cause simulation through a "spill over" effect. As another study claims,

> [a]t the boundary lines of language and logic, rhythm and the unspeakable take over: it is *the heart* that is narrating here. The sound of the heartbeat that tells the heart's story is in a way invisible but still present throughout the text as a sound. (Alber et al. 2010, 127, emphasis in the original)

As Marisa Bortolussi and Peter Dixon explain in *Psychonarratology*, "an abundance of evidence on the nature of inferences drawn during reading suggests that inferences are drawn in the service of what is termed a 'search for meaning'" (Bortolussi and Dixon 2003, 13). Yanna Popova explains that "meaning in any human endeavor is only constructed by and through experience" (Popova 2015, 4). Experience means embodied experience in her account as well. Therefore, one seems to construct symbolic meaning through an extremely complex process of comprehension that is built as a result of the workings of several mental and neurophysiological processes.

One of the latest endeavors within second-generation cognitive narrative theories is Karin Kukkonen's model built on predictive processing (2020), where readers make sense of narratives by continuously making (occasionally mistaken) predictions during the process of reading (Kukkonen, 2020, 13). Kukkonen's model assumes a "designed sensory flow" in the process of reading (5) that culminates in "a seemingly effortless sensing in an embodied fashion" (7).

Caracciolo et al. describe the approach termed "embodied narratology" in more detail. Theorists of embodied narratology attempt to bridge the gap(s) between approaches with different conceptualizations of human embodiment. They explain that an

> embodied narratology takes cultural aspects of embodiment into account but considers them always in connection with the ways in which human thinking is anchored in the bioevolutionary make-up of the human body, guided by bodily experience and shaped by our physical engagement with natural and cultural environments. (Caracciolo et al. 2017, 436)

By accounting for cognition in the individual as well as for social and cultural issues, embodied narratology "places an emphasis on bodily experience as the meeting place of bodily states and perceptions (both conscious and pre-conscious) *and* the body's cultural reflections and images" (437). A synthetizing endeavor is highly beneficial in a discipline such as narratology where theorists are more likely to produce newer and newer taxonomies and categories; however, embodied narratology so far does not seem to be more than the sum of its parts, which are already established narrative theories. The fact that it acknowledges and attempts to combine theories, which usually ignore each other despite having a very similar object of study, is immensely important. It is impossible to overemphasize the complexity of human embodiment and to understand it, an interdisciplinary approach is necessary. Yet "embodied narratology" seems somewhat redundant as a "new" approach that yields yet another narratology and possibly produces a new, unnecessary "curious hybrid."

Sommer situates cognitive narratology in a group of new narratologies together with psycho- and affective narratologies (Sommer 2012, 152); however, psycho- and affective narratologies also seem to be subfields of cognitive narratology rather than independent approaches, in a similar way as language comprehension and emotions are parts of human cognition in general. Dan Shen simply mentions psychonarratology as a part of cognitive narratology (Shen 2005, 157). This categorization seems reasonable since, on the one hand, the approaches of psychonarratology, affective narratology, and neuro-narratology are probably not strong and substantial enough (yet) to be considered as individual research programs; on the other hand, they are not different enough to be clearly separated from either each other or from cognitive narratology. Research projects within cognitive narratology are probably best understood as a group of loosely connected projects than a clearly defined framework for inquiry, not unlike the $4E^5$ approaches of cognition, which roughly hold the same system of principles and theories, but each of them puts the emphasis elsewhere in this system.

The emerging study of neuro-narratology can be understood as the approach of second-generation cognitive narratology taken one step further in the direction of neuroscience. My research attempts to contribute to these endeavors by examining the roles of nonvisual spatial perception and spatial experience in the workings of narratives, especially narrative understanding. I reconsider the workings of narratological concepts through the theories and findings of the neuropsychology of spatial perception and experience.

Interdisciplinary work: humanities and natural science

Siri Hustvedt, who lives a "double life" (Louisiana Channel 2018) as a writer of fiction and of scholarly papers on neuroscience, claims to see more and more conversation between science and arts, which she welcomes and finds necessary. On the other hand, she also explains that our culture seems to view science in masculine terms, being more serious and reliable, and the arts and the humanities in feminine terms, as being "fluffy" and "imaginary" (ibid). This view apparently results in a problematic and unfair state where science is valued more at the expense of the humanities (ibid). Elena Gomel also calls attention to the fact that it is impossible to clearly differentiate between these types of knowledge: "There are no two cultures of science and the humanities, there is only one culture in which mathematical formulae and narrative templates feed on each other" (Gomel 2014, 9). It is probably impossible to have an accurate model of any part of human cognition without adopting the view Gomel refers to. The literary works that I examine in the second half of the book are equally interesting for the natural sciences and literary theory as well therefore, they are ideal subjects for interdisciplinary work.

Inter- and cross-disciplinary research can be quite complicated due to the different perspectives and views of different disciplines, and it often causes great difficulties in narrative theories as well. For instance, findings of cognitive narratology are rarely applied in cognitive science, and as several narratologists lament, genuine interdisciplinarity is hardly ever observable in postclassical narratological endeavors (Heinen and Sommer 2009, 1; Bortolussi and Dixon 2003, 3). However, Emily Troscianko and Michael Burke remind readers that any new insight can be an important development. As they explain, "[t]hat should not be forgotten when we tell ourselves that one-directional 'borrowing' isn't enough; it is already a lot" (Burke and Troscianko 2017, 2). Troscianko and Burke even state that cognitive scientists make as much use of the work of humanities scholars as humanities scholars do of theirs; the two parties are just not quite aware of the value of their findings for other disciplines (3). While few literary theorists share the optimism of Troscianko and Burke – Richard Walsh observes that "the interdisciplinary dialogue is notably asymmetrical" and "the work of narrative theory rarely offers to inform research into the relevance of narrative for cognition" (Walsh forthcoming) – Alan Richardson reminds literary theorists of the borrowings of cognitive scientists and computer scientists from rhetoric and poetics, such as the concepts of "metaphor," "script," "story," or "stream of consciousness" (Richardson 2002, 2). Psychologist Hubert Hermans has constructed the theory of the dialogical self partly based on Mikhail Bakhtin's criticism of Dostoevsky's novels. Therefore, in spite of the conceptualization of the humanities as less rigid, less objective, and therefore less valuable than science, the insights that literature and literary theory may have to offer to the natural sciences should not be underestimated. Truly interdisciplinary work may be rare but there seem to be a growing number of research projects in this direction both in literary theory and in literature. When it comes to the latter, the so-called neuro-narratives are a sterling example. In the following section, I provide a brief description of these works to illustrate a strong interdisciplinary tendency involving literature and neuroscience, and I argue that most stories that I analyze in the second half of this book belong to this category.

Neuro-narratives

> It is one thing to have a nightmare, it is another to write like Kafka. (Padgett 1997, 54)

I see neuro-narratology as a means to examine narrative comprehension. However, the investigation of narrative fiction is an important part of this endeavor. Although narratology was originally intended to come up

with universal truths about narratives and storytelling, I believe that not all narratives are equally suitable as objects of study for literary theory that is inspired by neurosciences. Jens Eder makes an important claim about modern narratology that needs to be considered:

> narratology should be concerned with more than just the elements and structures which constitute the necessary and sufficient conditions of a narrative (or the conditions of possibility of a narrative), or which all narratives, and only all narratives, have in common. (Eder 2003, 280)

To briefly give away the punchline, to examine neurological and cognitive processes, narratives that are concerned with subjective experience lend themselves better to analysis. Some of the works that I investigate in this book belong to a type of the *neuro-narrative*, in which the author puts a neurologically or cognitively "atypical" person in the position of the protagonist. Some other works that I examine, portray cognitively "normal" characters put into circumstances that make normal perception impossible, such as abnormal spatial conditions. In her study on the considerable interest of contemporary literary fiction in medical science in general, and in neurological and psychiatric disorders in particular, Patricia Waugh claims "The Age of the Syndrome" began in 1980 with the creation of the DSM-III, the third issue of the Diagnostic and Statistical Manual of Mental Disorders (Waugh 2013, 19). Waugh terms the result of the naturalistic turn, the contemporary medicalization of cultural phenomena, and everyday life in general "neurobiological materialism" (ibid).[6] Prose fiction built around contemporary research on the human brain and cognition has become popular since the decade of the brain, the 1990s.[7] These works, which are usually about characters who live with specific neurological or psychiatric disorders, are known as neuronovels or neuro-narratives (Roth 2009; Ortega and Vidal 2013; Gaedtke 2012). They are also referred to as neurologically informed fiction, neuro-narratives, syndrome novels, or neo-phenomenological novels, and they can be thought of as part of the larger category of illness narratives (Lusting and Peacock 2013, 1–16). In these novels, the consciousness of the character who lives with a specific neurological or psychiatric disorder becomes the focus of the work. Through this strategy, a character type, which traditionally has been used as a minor character, becomes the protagonist, the focus of the story (Roth 2009). Roth provides a great illustration of the peculiarity of this strategy by considering what William Faulkner's *The Sound and the Fury* would be like if it were narrated solely by Benjy (ibid).

For neuro-narratology, ideal research objects might be the memoirs of authors who have experienced illnesses or examples of *neuro-narratives*, or transcribed interviews with people who live with a psychiatric or

neurological condition. Psychologists also regard the analysis of "autobiographical or soliloquy texts, such as diaries, chronicles, and descriptions or simulations of experience produced by either accomplished or naive writers and speakers" (Díaz 2013, 3) in research on human consciousness "in terms of its neurobehavioral, sensorimotor, expressive, communicative, and enactive nature" (1).

Marco Roth estimates that literary works that can be labeled as *neuro-narratives* started to appear in the 1990s, which is also referred to as Marco Roth explains that neuronarratives replace the psychological novel and other genres that focus on the representations of consciousness and replaces the concept of consciousness with that of the brain. In Roth's view, the appearance of neuro-narratives follows the tendency of "neurobiological materialism" that is observable in the scientific world as well as in culture, due to which empirical methods of the natural sciences have become more and more dominant. In literary theory, this tendency has started to spread in the 1980s, with the "exhaustion" of the linguistic turn and as psychoanalytic schools gradually became discredited[8] (Roth 2009). This tendency in and of itself does not lead to more reliable methods and findings since, as Roth also points out, it results in reductionism, where the functioning of the mind or the consciousness is explained solely with the functioning of the brain (ibid). This methodological mistake in Noë's explanation is akin to that of attempting to find out how a car works through only examining its engine[9] (Noë 2004, 211–2).

However, I find the *neuro-narratives*[10] especially important because in spite of the strong scientific influence they appear to find the balance between natural sciences and the humanities and art. The reason for this is that these works are inspired by medical descriptions of mental states but, since they are fictive stories, their main strategies of representation remain introspection and observation of others, which incidentally are also the methods of the "discredited" psychoanalytical approaches (Roth 2009). Waugh also points out that in spite of their growing interest in a biomedicalized understanding of what we are, authors "remained more interested in *what it feels like* to be an embodied organism in the world" (Waugh 2013, 32, my emphasis). It might seem that – as Marie-Laure Ryan puts it – theoretical and artistic works that build on the combination of cognitive or neurosciences and humanities are "uncomfortably sandwiched" between speculation and interpretation and experimental, empirical approaches (Schneider 2017, 485). However, the use and importance of these endeavors is that they apply the knowledge gathered from more than one field. This fact potentially makes the neuro-narratives valuable for scientific inquiry as well. Clinical psychologists and psychiatrists have admitted that the most effective way to express the subjective experience of mental states and illnesses is through art[11] (Hamm et al. 2014).

It also must be acknowledged that the neuro-narrative probably has a longer history than Roth assumes. According to Roth, the first example of the genre is Ian McEwan's *Enduring Love*[12] (1997), a novel concerned with a character who suffers from de Clerambault's syndrome. Roth explains that the authors of neuro-narratives are strongly interested in the functioning of the brain, and this is the characteristic of the genre with which he sees as the distinctive feature that helps us differentiate between the neuro-narrative and earlier works that concern themselves with mental or psychological processes and problems. Although if one accepts the model of human consciousness that second-generation (embodied) cognitive theories offer, i.e., imagining it as something emerging from the brain-body-environment system, the number of literary works that provide useful representations of human cognitive and neurological problems increases: it is not necessary for such a novel to be concerned with the brain, and in fact, even the novels which Roth refers to often seem to focus on consciousness instead of the brain.[13] The embodied, embedded view of consciousness seems to provide a better common theoretical frame in which these works fit that also allows for the inclusion of more stories. Don DeLillo's short story "The Ivory Acrobat" (1988), in the focus of which we find the descriptions of the perception of space and bodily experiences of a woman who suffers from a pathological fear (of earthquakes), could also belong here. In some of their sections and aspects, one can claim that some of Vladimir Nabokov's works also belong to this category. At least in part, his novels that focus on perception and memory, such as *The Defense* (originally published in 1930), *Invitation to a Beheading* (1935–1936), *Despair* (1934), and *Look at the Harlequins!* (1974) could be good examples of neuro-narratives. If one accepts that the neuro-narrative is not necessarily a new genre, classics such as Gilman's "The Yellow Wallpaper" may also be considered as part of this (larger) category of novels and short stories.

It has to be admitted that neither neuro-narratology nor neuro-narratives is concerned with radically new problems or is proposing new questions. As Ortega and Vidal explain, there has been a long tradition of including cutting-edge neuroscience in literary art (Ortega and Vidal 2013, 333–6). In this respect, the neuro-narrative should not be regarded as a new genre but the descendant of, possibly a subgenre of the psychological novel, and neuro-narratology is a new branch of cognitive narratology. Both can count as new and relevant because they approach older problems and questions with methods and theories which had not been applied in the humanities before. Many of the most important concepts in narratology (e.g., perspective and narration) are deeply implicated in cognitive faculties and processes such as memory formation and recollection, emotional evaluation, attention, and sensemaking in general. While originally these concepts were adopted with little interdisciplinary inquiry, significant interdisciplinary research projects have

lately aimed at revising basic narratological terms and considering the nature of narrative as a cognitive structure (Herman 2003; Fludernik 2002). Narratives and storytelling have been investigated with the help of theories of perceptions, emotions, perspective, and memory drawn from cognitive psychology, neuroscience, and philosophy of mind (Herman 2007, 2013; Hogan 2011; Walsh 2017; Schneider 2017; Kukkonen 2020; Goldie 2012; Armstrong 2020). More integration of the findings of neuroscience is essential since they may shed new light on old problems and questions such as the workings of the human psyche the role of narratives in the production of meaning and in the processes of human consciousness by shifting the focus to the workings of the brain and the construction or interpretation of *storyworlds*.

Although it is important to note that the examination of literary works with the help of scientific methods and theories raises numerous problems. Clinical psychologists Jay Hamm et al. analyze Denis Johnson's short story collection, *Jesus' Son*. The narrator of the stories is a young man, who is a drug addict, but besides that, the reader knows hardly anything about him. Hamm et al. read the work as a fictive psychosis narrative, and they examine the subjective side of three symptoms of schizophrenia,[14] despite the fact that neither Johnson, the creator of the text, nor his protagonist is a person with schizophrenia. Hamm et al. do not claim to have diagnosed the narrator, but the symptoms are definitely detectable, and the psychologists accept the representation as authentic.[15] Ronald Schleifer, who investigates the relationship between Tourette's syndrome and poetic language, also disregards the ontological difference between fictional characters as he analyses Jonathan Lethem's[16] novel, *Motherless Brooklyn* instead of the speech of real patients with Tourette's syndrome (Schleifer 2001), risking the possibility of investigating the relationship of poetic language and poetic language. In the case of works such as *Motherless Brooklyn*, one can never be completely sure of how authentic the representation of a condition is in the work, how authentic the representation of the speech of these people is, let alone the representation of their consciousness in general.

As Ron Padgett puts it as he argues for the importance of the creative talent of artists, "[i]t is one thing to have a nightmare, it is another to write like Kafka" (Padgett 1997, 54). Art in general and literature in particular need to be given the credit that it can grasp and authentically represent a mental condition. Alva Noë explains that "the task of phenomenology, and of experiential art, ought to be not so much to depict or represent or describe experience, but rather to catch experience in the act of making the world available" (Noë 2004, 176), for which the experiments with the representation of deautomatized perceptions, which is often observable in the narratives I analyze, are completely suitable. In this book, I do not debate the authenticity of representations such as the one in Lethem's novel. In the case of Lethem, it is partly because of

the credit that this work already has in its reception and because as I analyze it, it indeed seems to correlate with the neurological and psychological descriptions of Tourette's syndrome. However, in any such analysis, the authenticity of the analyzed representation needs to be considered.[17]

Since neuro-narratives are concerned with the subjective experience of characters, the field of phenomenology is necessary for examining them. First-person narrations of cognitive processes such as emotions, perceptions, and memories are claimed to be "the best expressions and representations of human consciousness available" (Díaz 2013, 1), and they may be useful to examine in the construction of a model of human consciousness (ibid). It is

> [a] fundamental methodological assumption of neurophenomenology […] that subjective verbal reports expressed by people about what goes on in their minds is a critical and necessary source to understand conscious processing and its neural and other bodily correlates. (ibid)

Díaz goes as far as asserting that certain instances of first-person narration can serve as "sources of data" for cognitive neuroscience and neurophenomenology (2), although he claims that the merging of neuroscience and literary criticism can only be fruitful if the methodology of neuroscience is included somehow, not only its theories and findings (4).

Illness narratives and neuro-narratives, due to their problematic narrators and focalizer characters, often show qualities that can be best described as narrative deficits, sometimes turning into dysfunctional narratives in the traditional sense. If one accepts that these works can be read as consciousness representations,[18] their problematic nature, contrasted with the symptoms of the respective mental problem or illness, might cast new light on fundamental narratological terms such as focalization or the functions of discourse patterns or structures. Examining these problems and concepts might help us learn more about the way we comprehend narratives, as well as the role of the human body in narrative cognition.

Similar to the work of numerous narratologists (Caracciolo and Kukkonen 2021), my method of investigation of narratives does not include empirical testing, but my interpretations and the way I imagine narrative cognition are partly inspired by my own reading experiences. The method that I am about to elaborate on in the first two chapters was inspired by the corpus I work with in the second half of the book, where I analyze pieces of prose fiction which, in various ways, tackle the mind-body problem, focus on cognition and consciousness representation, especially when perception becomes deautomatized or otherwise problematic. While the texts I use are all literary works, I analyze novels and

short stories, which, in Siri Hustvedt's words, outline "a focused zone of ambiguity" (Louisiana Channel 2018), containing our neurobiological makeup and our consciousness, therefore addressing important research questions in the humanities and in natural sciences as well.

I am concerned with narratives that involve the representations of mental illnesses and other peculiar mental states. The fact that, as the title suggests, I am interested in the workings of the human body hardly seems odd to anyone who is a bit familiar with the mind-body problem.[19] While the notion of consciousness is still very much debated, to say the least, the theories of embodied cognition have become quite substantial. These theories offer answers to the mind-body problem, which is largely the problem of the ontology of a "thinking thing" as Lawrence Shapiro puts it (Shapiro 2011, 1). In psycholinguistics, researchers often attempt to understand unconscious linguistic processes through investigating the deficits of speech production. It seems reasonable to investigate narratives that employ narrators who live with neurological problems.[20] These narratives are concerned with the lives of characters who live with mental or neurological illnesses, therefore providing narrative representations of problematic workings of the psyche and the nervous system, the representations of deficits of narrative cognition or narrative intelligence. However, the analyses that the second half of the book include could have been performed on autobiographies, texts of interviews, or any other nonfictive stories. I see carrying out such analyses as a potential further step in the continuation and development of this project.

In this chapter, I have described views and theories that led to the possibility of a neuro-narratology. In chapter 1, I explain my understanding of neuro-narratology and provide an overview of narratological endeavors that I see as early steps toward neuro-narratology. Despite being one of the most successful branches of contemporary narratology, one cannot claim that the basic questions of cognitive narratology – how we understand narratives and what are the roles of narrative structures in human cognition – have nearly been exhaustively answered. Research projects that focus on questions like these have lately started to make more and more use of the findings of natural sciences, especially the neurosciences. Neurologically informed literary criticism has existed for decades, and Ralph Schneider began to theorize neuro-narratology in 2017. I attempt to further this endeavor by considering the findings and theories of the neuropsychology of memory and perception, neurophenomenology, and neurobiology in narrative cognition. I regard the way Paul B. Armstrong started to approach and incorporate neuroscience in literary theory as exemplary. His is a neurophenomenological account of storytelling and reading, which "offers a model of embodied neuroscience that incorporates brain-based concepts" (Armstrong 2020, 5).

In chapter 2, I outline the theoretical background of the two major

themes I plan to work with in the literary analyses in the second half of the book: spatial experience (the nonvisual perception of space,[21] in particular), and negative emotions. In other words, I explain how neuro-narratology should start to approach the themes of space and (negative) emotions. While the two phenomena are related, they are often investigated chiefly in themselves; hence they have their separate theorizations, e.g., in cognitive and affective neuroscience, respectively. Theorists of second-generation cognitive science and neuropsychology imagine abstract cognitive processes as being built on and feeding on a lower level, simple cognitive processes. One of these fundamental, low-level processes is arguably the construction of spatial experience and orientation in space. Preverbal conceptual representation is chiefly composed of information derived from the body, so much so that according to the neuropsychology of spatial experience, human mental development fundamentally evolves from spatial concepts. Here, I discuss the perception of space, the role of spatial experience in cognition and language use in general, and the potential underlying neural deficits of spatial perception that may be significant in narrative intelligence and narrative comprehension. I also discuss negative emotions in this chapter. Human emotions have been popular subjects of research in cognitive science, and they have also been recognized as one of the most important phenomena that shape and move narratives. Affective narratology and the theories of narrative empathy consider the empathy of the author and the emotions represented in stories and elicited in readers. What I focus on in this chapter are two negative emotions, fear and anxiety. Spatial perception and navigating in space are fundamental experiences on which our conceptual systems are based. However, human experience of space can be extremely subjective, as it can be influenced by the state of mind, e.g., the emotions, of the experiencer. There are important correlations between negative emotions and brain states and structures. In the stories I analyze in the second half of the book, these emotions appear as dominant and embodied central phenomena that heavily take part in the make-up of the narrative.

The second half of the book is dedicated to literary analyses and the examination of the neuro-narratological concepts of discourse structures, defamiliarization, narrative space, narrativity, and characterization besides narrative cognition in general. In chapters 3–5, I put more focus on the roles of perception and emotion in narrative discourses and in the construction of storyworlds. In chapter 3, "Sense perceptions and representation of consciousness in Vladimir Nabokov's *Invitation to a Beheading* and Poe's 'The Pit and the Pendulum,'" I explore the modes of engaging the sense perceptions of the reader in Nabokov's *Invitation to a Beheading* and begin the discussion of discourse structures and defamiliarization. Several scenes from this novel can be interpreted as representations of experiences of a heavily corporeal nature. Besides the

author's techniques of depicting ordinary and synaesthetic sense perceptions, the patterns of dynamic structures and mechanisms of human perception sometimes seem to structure and motivate the text as well as the plot of the novel. Through a comparative reading with Poe's short story, I will trace and examine possible functions of perception in narratives that are dominated by the feelings of extreme anxiety and fear of death. I argue that these emotions entail distinct structures in perceptions, which, especially in Nabokov's story, organize and influence the narration and defamiliarize the story, which reads like an absurdist work.

In chapter 4, "Storytelling with Tourette's Syndrome in Jonathan Lethem's *Motherless Brooklyn,*" I will examine Lethem's novel, a neuro-narrative and a crime story, which employs a "detective" who lives with Tourette's Syndrome. In the novel, the discussions of the syndrome and the symptoms that concern high-level processes of consciousness, such as language use, are often discussed through the processes of the somatosensory system. It is possible because the storyworld of *Motherless Brooklyn* is constructed through the consciousness of the "detective," who is the narrator and only focalizor character of the novel. The syndrome leads the investigation and the narration on side-tracks from time to time, and it results in a peculiar interplay between different modes of narration; hence, the condition of the narrator produces a pluralization of the narration. I will argue that the narrative discourse is (dis)organized by the nervous excess of energy that characterizes Tourette's Syndrome, which is stopped from time to time then jumps ahead in a random direction, while at the same time, it also embodies the compulsive logic that keeps returning to certain points. Therefore, the narrative discourse can be best described as a specific kind of motion in space, carrying the potential of enriching the meaning of the story on a formal level.

In chapter 5, "Narrative Space and Motion(lessness) in 'The Ivory Acrobat,'" I will analyze a short story about a music teacher who suffers from a pathological fear of the aftershocks of an earthquake. I will focus on the construction of the narrative space of the story. Narrative space in "The Ivory Acrobat" consists of the representation of the egocentric spatial experience of the protagonist, which keeps narrowing as her anxiety gets worse and worse. The short story can be read as the "fictional expression" of an unstable psychological state, which is enacted through the body of a character. Here, by concentrating on characters' bodies, DeLillo is "abandoning meaning," reaching beyond symbolic systems. I will argue that due to this, while the effect is created at the expense of symbolic, narrative meaning, DeLillo's writing strategy largely contributes to the reader's experience of (the pace of) the story.

In chapters 6–8, I will also investigate the roles of perception of space in narratives, but I will put more focus on theorizing the reader's

experience of the analyzed narratives. Chapter 6 is titled "Narrative experience as *kinetosis*" for the reader: Spatial perception in *The Body Artist,* and in this chapter, I aim at tracing the possible flow experience of the reader of DeLillo's short novel that is potentially influenced by the narrative discourse, which imitates neuropsychological structures that have been captured in the theories of image schemas and forms of vitality. I assume that there is a strong relationship between the structure and the effect of literary texts and that the experience of having, living, and being a body plays a crucial role in it. The analysis aims at anchoring the textualization of psychological trauma in cognitive and neural processes and at exploring the nature of the organization of a seemingly abstract and disorganized narrative discourse. The disorganized representations of space and the movements are DeLillo's dominant representational techniques in this novel. The representations of space are influenced by inconsistent, fragmented, or partly false impressions of space and motion.

Chapter 7 is "Disorientation, dislocation, and disnarration in Mark Z. Danielewski's *House of Leaves.*" In this chapter, I will examine the ways *House of Leaves* creates a complex experience of uncertainty both with its themes and content, such as fear, anxiety, and other mental problems, and its form and structure. These phenomena are often deeply intertwined with concepts of spatiality. Besides that, the novel seems to construct an especially strong and influential engagement with its reader, which I believe is due to its multimodal nature and its peculiar strategies of narration. In the analysis of this novel, I am interested in the effect disnarration has on the readerly experience. The novel presents an extremely unpredictable story on the level of events, narrative space, and narration as well, and produces a constant and, I believe, uniquely complex uncertainty in the reader. During interpretation of the story, this dynamism plays an important role as it deprives the reader of *epistemic control* on nearly all levels of the narrative.

Chapter 8 is titled "Representation of dissociation and negative emotions in Haruki Murakami's 'Sleep.'" This chapter is about Murakami's short story in which the narrator is unable to sleep due to a severe case of dissociation disorder. As a first-person narrator, in relating her story, she attempts to remain honest and share her negative emotions while forcing a positive perspective. Due to this, as the story unfolds, her narration becomes more and more unreliable, distorted, and inconsistent. In "Sleep," the content of the story allows us to associate disnarration with the phenomenon of mind-wandering, which is a capacity of the mind that I assume to be the origin of the literary tool of disnarration. The effect the story may have on the reader is due to the formal elements as well as the peculiar representation of emotions. The discourse of the short story is arguably organized by the structure of a specific cognitive process, dissociation. Dissociation is characterized by a

"lack of normal integration of thoughts, feelings, and experiences into consciousness and memory" (Giesbrecht et al. 2008), and emotions have a significant influence on our attentional focus as well; hence a first-person narrator with dissociation disorder can be expected to deliver a problematic story. My hypothesis is that the representation of emotions is what provides the narrativity of the story, which otherwise consists of phenomena that traditionally decrease or work against narrativity (e.g., disnarraton and negation). I plan to investigate more precisely the dynamics and the roles of the disnarrated, the distorted, the negated, and the omitted expressions of emotions in "Sleep" and the possible neural and cognitive responses they elicit from the reader.

Notes

1 For an approach that infuses feminist and corporeal narratology, see Anna Kérchy's book, *Body-Texts in the Novels of Angela Carter. Writing from a Corporeagraphic Point of View*.
2 Undeniably, this is still an important question not only for readers in general but for narratologists as well (Caracciolo and Kukkonen 2021, 149).
3 For instance, the cognitivist and the embodied approaches.
4 *Experientiality* is a term constructed by Fludernik that she defines as "the quasi-mimetic evocation of real-life experience" (Fludernik 2002, 12). The term was later refined most notably in the works of Marco Caracciolo, for instance in his contribution to *the living handbook of narratology* (Caracciolo 2014b).
5 Recent, post-cartesian approaches to human cognition are often referred to as "4E cognition." These are the approaches of embodied, embedded, extended, and enactive cognition. These can be viewed as a "package deal," but they are far from a homogeneous set of theories (Ryan 2012, 174).
6 Roth refers to these works as neuronovels, but I will use the term neuro-narratives as it is more inclusive. Choosing to deal only with novels seems to be an arbitrary decision. There are pieces of poetry and drama, which concentrate on mental problems, and might be fruitful to examine along with prose fiction.
7 In the US in this period great efforts were made to support brain research and to raise public awareness of the achievements of such research.
8 Although it is also wise to treat findings of empirical tests skeptically, the reason for this discrediting is that, unlike the research methods that are currently accepted in natural sciences, for the findings of psychoanalysis it is usually impossible to find proof. While some of Freud's theories do stand an empirical testing, when it comes to many of his famous works, such as *The Interpretation of Dreams* (1899), and theories which build on it, such as Lacan's understanding of the signifying process, a method of empirical testing is quite unimaginable.
9 In the case of a car, we all know that its workings are heavily influenced by the rest of its "body," as well as its environment: a car will not function without wheels, or under water, neither when it is turned upside down. In the case of the human mind (or brain), due to a long history of different conceptualizations of the phenomenon, this kind of logic seems much less obvious (Noë 2004).

10 However, choosing to deal only with novels seems to be a somewhat arbitrary decision. There are pieces of poetry and drama, which concentrate on mental problems, and might be fruitful to examine with similar methods.
11 Hamm and Lysaker are researchers. There is no evidence that the majority of practicing psychologists follow this idea. On the other hand, it is not an entirely new approach either: besides case studies and dreams, Freud liked to analyzed numerous literary and other works of art because he regarded them as excellent expressions of those complexities and heterogeneities of the human psyche and its working that are otherwise very difficult to observe or study.
12 Enduring Love is a novel that is often discussed as a neuro-narrative, however, it allows only very brief instances of the perspective and the thoughts of the man who lives with the syndrome. The novel is *not* about the condition itself but about someone who suffers from the advances of a person with de Clerambault syndrome. It employs the perspective of and probably leads the readers to empathize with the healthy protagonist.
13 For instance, the narrator of *Motherless Brooklyn* compulsively keeps giving descriptions of the way his imagination, memory, and attention function. These are fundamental cognitive psychological phenomena and at no point do we learn anything about the brain functions behind them from the novel.
14 Loss of agency, fragmented consciousness, and perceiving of one's interpersonal environment as unstable and constantly changing.
15 The lack of a diagnosis is possibly not a methodological problem since currently no specific symptoms of Schizophrenia have been discovered, which means that its symptoms can manifest in numerous "combinations," they might also change over time in the case of the same patient, and all of them can be found in other mental illnesses as well (American Psychiatric Association 2013, 87).
16 He is also a mentally and neurologically healthy person.
17 An additional issue regarding the authenticity of representations of mental states and/or illnesses is concerned with the first half of Padgett's statement: "it is one thing to have a nightmare." It is by no means certain that someone suffering from a mental or neurological illness, therefore having a genuine subjective experience of the given condition, will be able to find the appropriate words to describe it.
18 Especially when they operate with first person narration or internal focalization.
19 See more about the mind-body problem in *The Embodied Mind: Cognitive Science and Human Experience* by Francisco Varela et al. (1993, 28), or in Siri Hustvedt's *The Shaking Woman or A History of My Nerves* (2011).
20 Examining what is symbolic in their narration, i.e., what does *not* require a neurological approach could be the topic of another book. On the other hand, it would be very difficult to develop an approach to this issue, since different mental conditions entail the problems of different functions and skills. For instance, in the analysis of Lethem's *Motherless Brooklyn*, I do not devote special attention to the expression and representation of emotions (which are among the most popular research topics in cognitive poetics) since the narrator of the novel in this respect does not seem to differ at all from neurologically healthy people.

21 An overwhelmingly large percentage of literary works and analyses focus on visual perception. Regarding the importance of visual culture in our lives, it is hardly surprising, nevertheless the theme seemed too over-theorized. This tendency is also observable in philosophy and cognitive science as well, where researchers also tend to focus too much on visual perception and much less on other modes of perception (Chemero 2009, 154). When it comes to literature, the importance and popularity of visual arts within it is often thought of as a contemporary trend, although there are much earlier literary works of art that concern themselves with visuality, such as Edith Wharton's writings (Kovács 2012).

1 Neuro-narratology

When it comes to the investigation of the area between neuroimaging and subjective experience, one is confronted with many theories, a lot of speculation, and very little undisputed evidence. The disciplines that seem to tackle the most important questions concerning this problem called "the hard problem of consciousness" are neuropsychology and neurophenomenology. The hard problem is relevant in the study of narratives as well: people look at black marks printed on a page, and in the course of processing them, they construct a story (plot) in their imagination. According to the processes of narrative cognition, the constituents of the story are always ordered in specific ways. In other words, the story always has a structure, which has long been regarded as an abstract formal aspect of a narrative. However, lately, plot structures have been assumed to be motivated by structures of our embodiment. One of the goals of this book is to describe these embodied structures as they ought to be conceptualized based on relevant theories of neuroscience and post-Cartesian cognitive theories.

One of my goals is to find and investigate constituents and formal characteristics of narratives, which may be organized by structures that emerge from lower levels of cognition and, therefore, potentially connect subjective experiences to mechanisms in the brain. These structures have been examined by cognitive neuroscientists, philosophers of mind, and cognitive linguists as well. They have been theorized in slightly different ways, and they were given different names: they have been referred to as "image schemata" in cognitive linguistics, as "forms of vitality" in Daniel Stern's work, and these may be what Freud had referred to as "psychic energy" (Stern 2010, 36). Starting with the discussion of knowledge production in interdisciplinary research, I will summarize and synthesize the findings of neurophenomenological, neuropsychological, and narratological endeavors on which I base my understanding of narratives and which can be regarded as the theoretical roots of a neuro-narratology. One of the fundamental issues of interdisciplinary research in the case of disciplines that are traditionally quite

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far from each other, such as literary theory and neuroscience, is that the way they accumulate knowledge and what they regard as satisfactory findings and results are quite different. I will address this issue in the following section.

Knowledge production

"What is human cognition if not symbol manipulation?" It used to be a rhetorical question during the cognitivist reign but became a genuine one as it gradually turned out that symbol manipulation as an explanation cannot account for most of what happens in the human mind (Szokolszky 1998, 275). An approach that attempts to account for the neurobiological and neuropsychological roots of narrative cognition is a strictly interdisciplinary one, involving most notably neuroscience, neuropsychology, and embodied cognition. Since much of human cognition is narratively organized, as memory studies and personality psychology, such as the theory of the narrative self testify, the answer to this question has to be relevant for narratology as well.

In 2003 Bortolussi and Dixon observed that while there is a growing interest in medical and cognitive science among humanities scholars, and "there is intuitive agreement among promoters of interdisciplinary studies that it is in the boundaries between disciplines that new and exciting insights can emerge, contact between the humanities and natural sciences is still avoided" (Bortolussi and Dixon 2003, 25). Some proponents of "old-school," traditional narratology are skeptical, to say the least, and understand contemporary interdisciplinary projects as mere "contamination that infects 'pure' and 'neutral' description and poetics with the ugly taint of ideology and relativism" (Nünning 2003, 255) as well as a natural science with which, for some, narratology may seem simply incompatible. This issue is still observable; however, there are several research projects led by both literary theorists and researchers of neuroscience that attempt to further genuine dialogue between literary studies and scientific research.

One of the most important aspects of an interdisciplinary research project like neuro-narratology is the production of knowledge, which includes methodological issues as well as the nature of the knowledge that is produced. Projects of proto-narratology, such as Vladimir Propp's *The Morphology of the Folk Tale,* had originally focused on the analysis of literary works; however, when it comes to the production of knowledge, the discipline has a heritage that is not strictly and exclusively tied to the humanities. Tzvetan Todorov, one of its founding fathers who had coined the term "la narratologie" in 1969, associated it with the word "science" when he conceptualized it as "the *science* of stories," and narratology has always leaned, at least in part, or at least in attitude, toward natural sciences. Todorov assumed that

> [t]he nature of structural analysis will be essentially theoretical and non-descriptive; in other words, the aim of such a study will never be the description of a concrete work. The work will be considered as the manifestation of an abstract structure, merely one of its possible realizations an understanding of that structure will be the real goal of structural analysis. (Todorov 1969, 2099)[1]

Putting the content of the narrative aside, its analysis indeed appears to have the rigidity and strictness that one usually attributes to science. Moreover, as Sommer emphasizes, "[n]arratologists have often pointed out that the term narrative is linked etymologically not only with storytelling but also with knowledge" (Sommer 2017, 594). Hayden White explains in *The Content of the Form* "that the word 'narrative' goes back to the ancient Sanskrit 'gna,' a root term that means 'know,' and that it comes down to us through Latin words for both 'knowing' ('gnarus') and 'telling' ('narro')" (Abbott 2002, 11). In H. Porter Abbott's interpretation, it shows that the "etymology catches the two sides of narrative. It is a universal tool for knowing as well as telling, for absorbing knowledge as well as expressing it. […] But […] narrative can be used to deliver false information; it can be used to keep us in darkness and even encourage us to do things we should not do" (ibid). Besides showing the noble as well as the ethically unacceptable uses of narratives, it is an especially convenient conceptualization for cognitive narratology, which claims that narrative and narration as cognitive structures are essentially bound up with processes of collecting, organizing, and storing knowledge about the world.

Intuitive knowledge has been traditionally associated with the arts and the humanities, while abstract and systematic knowledge characterizes hard science. Subjective experience is not regarded and valued equally in the two cultures:

> The philosophy of science acknowledges that intuition may play a key role in scientific discoveries, a stage in scientific research that is traditionally referred to as context of discovery. Scientific intuition has no value of its own, but is only considered as an initial, and somewhat mysterious, stage in the germination of new hypotheses, theories or methods. From a literary perspective, however, the aesthetic experience is valued independently from the knowledge it may help to produce. There is always an element of *l'art pour l'art* in narratological abstractions, since such abstractions are drawn in part from intuitive knowledge. (Sommer 2017, 596)

But "narratology has always sought to reconcile intuition and abstraction in a systematic way" (598), which enables it to be an especially suitable discipline for interdisciplinary research. However, even the

narratologists who are the most enthusiastic about making use of the findings and methods of natural sciences, such as Paul B. Armstrong, who has done pioneering work in tracing the potential neurobiological background of reading and the comprehension of narratives, claim that scientific rigor, methodology and empirical research could never replace the intuition, and the subjective experiences of humanities scholars, which have always played significant roles in the development of narrative theories. Science, according to Armstrong, will not provide answers for narratologists, but it can be very useful for filtering out the interpretations that are inconsistent with the functioning of the brain (Armstrong 2015, 215). The findings and views of neuroscience cannot be disregarded in the study of any cognitive process; therefore, its inclusion is a logical step for cognitive narratologists to take. The question of what shall be preserved from classical (and even post-classical) narratology in the study of neuro-narratology and what should be included from the neurosciences is a crucial one. As Armstrong explains, much of the formalist and structuralist terminology and conceptualization, including any rigid taxonomy or concepts such as the script and the frame, is insufficient in the description of how narratives work (Armstrong 2020, 25). Narrative cognition emerges from neurobiological processes, and both consciousness and the human brain are notoriously changeable, flexible, dynamic, and constantly interact with the individual's environment. Therefore, by nature, the way narrative cognition operates is incompatible with anything that can be described as static and inflexible. This is an observation that is fundamental to second-generation cognitive narratology where, in Armstrong's words, "a quest for structures and rules has been displaced by an emphasis on the interactions between embodied minds, stories, and the world" (Armstrong 2019, 408). In this book, I will attempt to look for structures that enable and provide an explanation for how this interaction works.

Embodiment

By embodiment, the post-Cartesian alternatives of the theory of cognition mean neural events, the processes of the cognitive unconscious,[2] and also subjective, phenomenological experience (Gibbs 2005a, 10), while bearing in mind that the environment of the body is important in cognitive processes as well. To understand how abstract and simple (low) levels of cognition are connected, one must see that mental states, functions, and processes are "supported by the same processes that are used for physical interactions" (Pecher and Zwaan 2005, 1). Therefore all complex and abstract cognitive structures emerge from lower levels of cognition, such as bodily movements and perception (ibid).

Embodied cognition attempts to imagine embodiment and environment as a context of reason to understand the mind as dynamic, natural,

contextual; to go beyond the dualism of lifeless matter and non-material reason with a fundamental discontinuity imagined between them (Szokolszky 1998, 276). For instance, in this sense, seeing does not only mean a sense of perception. Noë claims that "[seeing] is to have visual sensations that are integrated in the right sort of way, with bodily skills"[3] (Noë 2004, 4). As perception and action become essential to more abstract levels of cognition, the human body and the environment become parts of the human cognitive system (Pecher and Zwaan 2005, 2). According to the theory of embodied cognition, reason and the overall organization of human cognition and consciousness arise from and are restricted by our everyday, embodied functioning in space (Lakoff and Johnson 1999, 4). Reason is neither transparent nor always rational, because it is "metaphorical and imaginative, and emotionally engaged" (ibid).

Empirical research in embodied cognitive science becomes largely problematic, though with the realization that "we can't have direct access to most of what is going on in our minds" (22). The lion's share of language comprehension, perception, or motion – among many other processes – happens below our conscious awareness (9–15). Introspection, the method of phenomenology, is useful, although not nearly satisfactory in and of itself, if we want to learn more about the way human cognition works (Johnson 2005, 21), which is why the findings of neuroscience may be vital. As Francisco Varela et al. point out in *The Embodied Mind: Cognitive Science and Human Experience*, "[m]ost of Continental philosophical discussions have proceeded without taking into consideration scientific research on cognition," with the exception of Maurice Merleau-Ponty, who carried out the kind of research in his time which would count as (embodied) cognitive science today (Varela et al. 1993, 150), not to mention that Merleau-Ponty belonged to a generation that had received a sufficiently interdisciplinary education that allowed him to be a philosopher and do scientific experiments with injured war veterans who suffered from major cognitive and neurological deficits due to their acquired brain injuries.

It seems as though consciousness, and therefore narrative cognition, are not in the brain, and not even in the body only – they are to be understood as interfaces or "webs encompassing brains, bodies, and the world" (Gibbs 2005c, 66). The world, and in it the global mind-body-environment systems are undoubtedly too complicated for us to thoroughly model and understand, yet the basic principles of its complicatedness are possible and necessary to observe and understand (Szokolszky 1998, 290). This is the goal that neuro-narratology can also set for itself.

Reading in the brain

Besides neuroscience, a phenomenological approach to the reading experience is necessary since "there are fundamental continuities in how

the brain reads that extend across the several thousand year span during which our species has interpreted written texts" (Armstrong 2015, 201). Neuroscientist of reading Stanislas Dehaene points out the fact that "we take delight in reading Nabokov and Shakespeare using a primate brain originally designed for life in the African savanna. Nothing in our evolution could have prepared us to absorb language through vision" (Dehaene 2010, 4). Reading simply has not existed long enough for us to develop genetic changes in the brain as a result of our evolution as a species (Armstrong 2015, 202).

Besides being able to transform over hundreds of thousands of years, the human brain has another amazing trait, which is its plasticity, whereby, in response to stimuli, an individual's nervous system can re-organize itself over a rather short period. Empirical research shows that reading as a skill had to emerge by "neuronal recycling"[4] (206) i.e. making use of cortical systems that had originally evolved for a different role, namely, the recognition of visual forms (205). Armstrong explains that "'visual word form area' (VWFA) dedicated to reading came in the late nineteenth century […]. Modern brain imaging technology has located an area of the lower left hemisphere that is activated in response to written signs (but not to spoken words, which trigger a different area)" (205).

Narrative neuroscience has also provided evidence that

> the responsiveness of the brain to imagined action and even to action words suggests that the brain is primed to respond to linguistically staged configurations of action, and these can have a profound effect on our cognitive processes because perception in many different modalities depends on embodied action. (Armstrong 2019, 402)

Numerous brain regions are likely to take part in narrative cognition as they habitually show activity during the comprehension of stories (Mar 2004, 1429), according to Raymond A. Mar's research on the neuroscience of literacy, including the ones responsible for language, perception, and memory (1417). The fact that narrative (and therefore narrative cognition) is beyond language is illustrated by the neuroscientific findings showing the significance of the right hemisphere of the brain during the comprehension of stories, "in sharp contrast to the traditional portrayal of left lateralized language processes (i.e., Broca's and Wernicke's areas)" (1429). Similar to research in the fields of psycholinguistics and neurolinguistics, valuable information can be gained about narrative cognition through the examination of patients with brain lesions. A study with patients suffering from damage to the frontal lobe has shown that these patients also suffered from "impairments in episodic narrative structuring and macro-level story abstraction, even in comparison to the average performance of the remaining participants

who all had severe injuries" (1423–4), further supporting the hypothesis that this area is essential in the production and comprehension of narratives (1424).

Broca's area is an especially good example of the interconnectedness of language and different cognitive functions in narrative cognition.

> Action seems to perform a fundamental role in coordinating different modalities of cognition, and this organizing role is crucial not only for language but also for narrative and our ability to construct and follow plots. The anatomical region of the brain central to these interactions is Broca's area […] Impairments in Broca's area have long been known to result in difficulties producing and comprehending grammatical sentences. […] musical syntax is processed in Broca's area and that listening to musical rhythms activates the motor cortex […] A recent experiment by Patrik Fazio et al. (2009: 1987, 1980) revealed that "a lesion affecting Broca's area impairs the ability to sequence actions in a task with no explicit linguistic requirements. (Armstrong 2019, 402–3)

Patients with Broca's aphasia show impairments that also make it obvious that this area of the brain is strongly involved in narrative cognition, and its role far exceeds that of language production. These patients were able to determine the sequential order of certain events, but in the case of actions performed by humans, they have demonstrated great difficulty. "Their ability to remember and compose a sequence of represented actions was impaired," in other words, they were unable to create plots (403). As Armstrong explains, "[t]his capacity for organizing action into meaningful sequences makes the brain ready for language, but it also prepares the brain for narrative. Broca's area is vital for language as well as a narrative because both entail the structuration of symbolic action" (ibid).

Various cognitive functions have been implicated in the prefrontal cortex, such as memory, attention, perceptions, and even language and speech. If we were to locate narrative cognition in the brain, this part would probably be the most logical place for it, since the cognitive functions that the prefrontal cortex is associated with are also vital for the construction and comprehension of narratives. Dehaene sees the prefrontal cortex as a "neuronal workspace" whose main function is to assemble, confront, recombine, and synthesize knowledge" (Dehaene 2010, 318) which is a list of tasks that narrative cognition can be involved in. Unfortunately, this is far from a precise hypothesis, which is, on the other hand, due to the fact that there is a lot that we do not know about the prefrontal cortex, on the other hand, to what we do know. The prefrontal cortex and related areas are different from other parts of the brain because "they emit and receive much more diverse cortical

signals, and therefore tend to be less specialized. Their transversal connections break the brain's modularity and massively expand the cortex's transmission bandwidth" (ibid).

The processes of production and comprehension of narratives are proven to be strongly connected at the level of narrative organization. As Mar and his colleagues explain, "[t]he ability to organize the meaning of connected sentences in order to form a holistic representation for either understanding or communication seems to be a shared necessity. It is proposed that selection and causal-temporal ordering may underlie this construction and commonality" (Mar 2004, 1424–5), in particular, the lateral prefrontal cortex seems to be responsible for causal-temporal ordering processes (1426).

> Recent advances in cognitive neuroscience suggest that the creation of narrative in the human central nervous system is mediated by a regionally distributed neural network. Fundamental components of this network include 1) the amygdalo-hippocampal system, where episodic and autobiographic memories are initially arranged; 2) the left peri-Sylvian region where language is formulated; and 3) the frontal cortices and their subcortical connections, where individual entities and events are organized into real and fictional (imagined) temporal narrative frames. (Young and Saver 2001, 75)

There seems to be a considerable overlap between the domains of imagination and memory (Goldie 2012, x), which also implies a connection between imagination and the processes of perception. The interrelations of episodic memory, imagination, and narrative cognition will be discussed in more detail in the next chapter and in the analysis of disnarration, mainly in the chapters about Danielewski's *House of Leaves* and Murakami's short story, "Sleep."

Neuroscientific findings also show that even the comprehension of single action words or short sentences elicits from us what is most often referred to as (embodied) resonances, which is often interpreted as "evidence that embodied simulations may underlie our understanding of metaphorical meanings" (Gibbs 2017, 226). The theory of image schemas is among the most acknowledged examples of how it is possible for us to employ the logic of our sensorimotor experience to perform high-level cognitive operations (Johnson 2005, 26). Image schemas are dynamic, presymbolic structural phenomena, which are "psychological entities, not only linguistic fictions" (Gibbs 2005, 114). According to Raymond Gibbs, they are "best understood as experiential gestalts that momentarily emerge from ongoing brain, body, and world interactions" (115). They remain embodied, too, in the sense that they "provide a kinesthetic feel" (119), and they are "continually recreated and re-experienced during cognitive and perceptual activity" (132).

A great example of the working and the nature of image schemas is provided in Tim Roher's study, where he discusses the empirical evidence for these mental structures. It is worth quoting at length:

> *I want to hand you an idea that at first may seem hard to grasp, but if you turn it over and over again in your head until you finally get a firm handle on it, it will feel completely right to you*. Now, if I could make a movie of what your brain was doing as you read that last sentence, it would most likely look very similar to a brain movie of you turning an unfamiliar object over and over again in your hand until you found a way to grip it well. Your primary motor and somatosensory cortices would be active in the areas mapping the hand and the wrist, and the premotor and secondary somatosensory hand cortices would also be active. (Roher 2005, 166, emphasis in original)

Roher's explanation is important because it shows how symbolic meaning emerges from simple embodied experience and how the comprehension of the example sentence involves parts of our brains that were traditionally believed to have nothing to do with language comprehension. Indeed, one of the most important results of such experiments is the finding that "language makes much more use of the brain's processes of spatial, visual and mental imagery than previously thought" (166). However, image schemas are mostly observed and investigated in the form of expressions or sentences, but rarely in more lengthy texts.

Quinlan and Mar explain that one of the most significant leaps in research on the neuropsychology of reading was when it was discovered that

> text comprehension is not merely the sequential decoding of words, but rather the construction and maintenance of what these words represent as a whole, across words, and across sentences. In order to comprehend complex discourse, such as stories, we construct mental models […] that represent at a larger scale what is being represented by the text. (Quinlan and Mar 2020, 467)

This means that the comprehension of any part of a story is influenced by "the nature of its representation within a mental model, as opposed to its mere presence, absence, or even position within a text" (ibid).

On the one hand, the realization that we do not understand verbal stories through understanding words is nothing short of revolutionary. On the other hand, considering the theories of second-generation narratology and embodied cognition, this can be understood as empirical evidence that cognition is indeed a set of holistic processes that includes both higher and lower-level cognitive faculties. Chow and his

colleagues point out that "[e]xamining functional connectivity is particularly important for the understanding of higher-level cognition such as narrative comprehension because these complex functions are generally assumed to emerge from interactions between regions with specialized functions" (Chow et al. 2014, 292). Chow and his colleagues, in an experiment involving narrative comprehension, found that "[a]ctivity of neural systems associated with visual-spatial, motor, and affective processing were selectively modulated by the relevant story content" (279). Consequently, the situation model of the narrative includes the activation of areas responsible for affective, perceptual, and motor representations, the model, therefore, is multimodal and highly dynamic (293).

Theoretically, the explanation for this phenomenon can be that more abstract, higher forms of cognition always feed on lower levels, which emerge from activity in the brain; hence, arguably, even the most abstract cognitive structures and concepts can be traced to a neurophysiological basis. This does not exclude another theory of neuroscience that is usually associated with the processes of simulation, namely the theory of mirror neurons (Gibbs 2017, 225).

Mirror neurons

Immersion in a narrative happens when the reader imagines its story-world and, within it, the characters and events. As Armstrong explains, "imagining is a form of simulation – a mental simulation of action or perception, using many of the same neurons as actually acting or perceiving" (Armstrong 2020, 126). We do not have specific neurons responsible for dealing with fictional phenomena, which make up a large part of the contents of our consciousness. Fictional phenomena cannot be restricted to the contents of literary works, movies, and the like, since, except for what is happening to us and that we are doing at a given moment, everything exists only in our imagination. Reading literary works makes use of the same neural networks that are responsible for all our memories of the past as well as dreams and plans for the future.

These neural networks always include the mechanisms involved in processes of perception and action, "because imagined actions are indeed actions in their own right: they involve a kinematic content, they activate motor areas almost to the same extent as executed actions, they involve the autonomic system as if a real action was under way" (Armstrong 2019, 402). The most common explanation for this is developed from the theory of so-called mirror neurons. In an experiment with macaques, a group of neuroscientists noticed that some neurons in the motor cortex of the monkeys fire not only when the monkey performs an action but also when it sees someone else perform it.[5] Further research

also evidences neuronal activity, and therefore embodied resonance can be elicited by the linguistic presentation of directions, motion verbs, and body parts as well (Kukkonen 2020, 62). Consequently, readers may produce embodied responses to certain parts and maybe certain aspects of literary narratives. These neurons may operate below our conscious awareness, but in some cases, for instance, when an action is heavily foregrounded, a reader "may feel indirect but nevertheless bodily resonances with others through a whole range of artifacts, from tools to works of art (including books) that are part of the human motor repertoire" (Armstrong 2015, 212).

Toward neuro-narratology

In psychology, both Freudian psychoanalysis and behaviorist psychology noticeably lost their popularity "in the 1980s and 1990s, when neuroscience[6] finally managed to advance beyond the Bronze Age" (Ramachandran 2012, xi). Today we have disciplines called neuromarketing, neuropolitics, and neuroarchitecture, some of which are merely "neurohype" (ibid), but in literary theory, where cognitive science seems to have paved the way for the application of more natural science, and where more and more focus seems to be placed on the processes of the body on the level of neurons (Ryan in Schneider 2017, 484), neuroscience might indeed prove useful.

Succeeding in connecting narrative cognition with neurological processes would mean bridging the gap between the mind and the body in this area. I need to admit that this book will not do the work. What it hopes to do is to begin to design that bridge by synthesizing knowledge from where its two ends would be one day. Paul Armstrong provides an excellent description of the human brain, and one of its greatest achievements: the creation and reception of (literary) art:

> The brain is a peculiar, at times paradoxical, but eminently functional combination of constancy and flexibility, stability and openness to change, fixed constraints and plasticity, and these contradictory, paradoxical qualities are reflected in the workings of literature and aesthetic experience across history and cultures. (Armstrong 2015, 213)

The emerging new branch that we could call neuro-narratology is closely tied to cognitive narratology,[7] and sometimes it is regarded as a part of it.[8] Ralf Schneider defines this approach as a new part of postclassical narratology, although he states that it cannot be understood as a subdiscipline or a unified method yet (Schneider 2017, 479). As Armstrong claims, the neurological grounding of narrative is the neurological grounding of language (Armstrong 2019, 395), and when a narratologist

examines the phenomenological experience of reading a story with the help of the theories of embodied cognition and neuroscience, they are examining the relationship of narrative, cognition, and language (396), in other words, investigating how structures of verbal narrative emerge from the structures of different modes of cognition.

Schneider is skeptical about the potential of this approach in explaining what the exact role of the nervous system is in the construction and the comprehension of narratives any time soon (Schneider 2017, 479). It would indeed be too high of an expectation since the most important problem of brain research is that there is no overarching model of the human brain, which could account for even such fundamental processes as the emergence of mental images. Schneider refers to this problem by stating that we do not yet understand the correspondences between the neurobiological and the conscious processes of the brain (482). According to him, the fundamental question is whether the present neurobiological models of the physiology of perception or the recalling of information help answer the questions of narratologists (Schneider 2017, 483), the most important of which is how meaning emerges (485). Hence Schneider refers to the hard problem of consciousness, which, in the case of narratology, means that

> [t]o look at the activation of brain areas in the processing of individual words, for instance, is a laughably inadequate route to a better understanding of the complex mental processes triggered by so much as a single sentence in a more complex narrative. (ibid)

However, the accumulating knowledge about the neurology of literacy is reaching an amount that narrative theory can be built on.

Schneider also points out that "at this time in the development of brain sciences […] no stringent method can be derived that would provide narratology with a truly neurological toolkit" (488), and neuro-narratology should be understood as "a general attitude according to which some concepts of literary studies, and particularly those of cognitive narratology, may come under review" (ibid). As for the future of neuro-narratology, Schneider assumes that

> neuro-narratology can have a future if narratology adopts a general attitude of thinking about the human being inspired by concepts from the neurosciences in order to reconsider some of its assumptions, categories and methods; and no, nothing will come of neuro-narratology in the foreseeable future if anyone expects explanations on how exactly neural activity affects the production and reception of narrative. (479)

According to the embodied approach, neurobiological investigations would not be sufficient means of learning about human consciousness even if neurologists were able to measure with perfect precision, and to make the most elaborate conclusions about the construction of meaning since these investigations and measurements would be restricted to only one component of the mind-body-environment system. In fact, it has been a common potential mistake to reduce cognitive science to neuroscience when it comes to research on human consciousness (Chemero 2009, 167). Schneider adds that the goal of neuro-narratology "can only be to enrich hermeneutics by integrating findings of brain research" (Schneider 2017, 483). This idea is consistent with the assumption that the process of narrative understanding must contain neural as well as social and cultural levels, and therefore it takes an extremely interdisciplinary approach to model. However, what we can make use of among the findings of the neurosciences are not primarily concepts but the neurophysiological bases of complex models and structural mechanisms in cognition. Marcus Hartner points out that neuroscience does not offer a unified theoretical framework for narratological research, therefore in literary theory, "a variety of equally loosely defined subfields such as cognitive poetics, cognitive narratology, and neuroaesthetics have emerged, each offering a diverse set of topics and approaches" (Hartner 2017, 19–20). This kind of interdisciplinary background is what tends to be very attractive to some scholars and very suspicious to others (20). Neuro-narratology is currently not more than a subfield of cognitive narratology, and it is certainly in its infant phase.[9] Whether it develops into a unified field or stays a subfield of cognitive narratology would probably still be early to tell; however, the contemporary popularity of neuroscience gives it a special emphasis.

In the remaining part of this chapter, I will describe approaches and theories that I regard as steps that brought cognitive narratology closer to neuroscience. The means of a mutual step forward for narrative and neurological studies could potentially be provided by the theories and findings of disciplines such as neuropsychology that investigates the relationship between the brain and the mind; hence, it might help contribute to the bridging of the gap between the two.

Richard Walsh's approach to narrative understanding shows an exciting direction, as he concludes, as a result of investigating narrative understanding, that the process of the production of meaning builds substantially on nonverbal, somatosensory processes (Walsh 2017). He claims that "narrative always functions interdependently with other modes of cognition" (461). As he explains, "narrative discourse may foreground narrative meaning, but […] [in and of itself] [n]arrative sense-making is partial, provisional, and interdependent with other modes of sense-making," which often belong to lower levels of cognition that are often presumed to be simpler than the highly complex issue of

language production or comprehension (473). This view of narrative understanding is in line with the model of the narrative self in phenomenological psychiatry, which emerges from and is influenced by "lower" levels of the self and consciousness (Parnas 2003, 219; Martin 2014, 2). There exist phenomena in texts and storyworlds that heavily influence the production of meaning and which are possible to map with the help of the models of neuropsychology, such as narrative space and narrative discourse patterns, which I will discuss in detail in the second half of this book.

Second generation cognitive narratologists' such as Yanna Popova's, Marco Caracciolo's, and Karin Kukkonen's theories enable them to chiefly theorize the act of interaction between narratives and their recipients as opposed to the traditional, representationalist tendencies of narratology (Caracciolo 2014a, 9), which seems to be in line with the aims of neuro-narratology. Popova is an important figure of contemporary, second-generation cognitive narratology who has theorized narratives through the theory of enactive cognition. Her understanding of narratives, which is very similar to Fludernik's, is quite broad, and it is in line with those of narrative psychology and reader-response criticism as well (Popova 2014, 3). According to it, narrative is to be imagined not as a text type or a literary work with given characteristics, but as a cognitive phenomenon in a much more general sense, and it "is approached […] less as a structure or a system, divorced from the processes of its production and reception, and more as a cognitive process with specific manifestations in experience" (ibid). Popova claims that "the key aspect of understanding narrative is to stop treating it as an abstract structure, as a representation in the manner of classical narratology, and seeing it, instead, as a pattern of experiential and intersubjective sense-making" (6).

Although in this book I am concerned with literary narratives, as for the general conceptualization of narrative intelligence and narrativity, due to having a foundation in post-Cartesian cognitive theories, still in line with Popova, I do not see these phenomena as tied exclusively to language.[10] Popova explains that "[n]arrative, grounded as it is, by my definition, in perception and cognition, cannot be studied as a mere linguistic artifact" (8). While verbal language, just like visual art, music, or dance, is also believed to be grounded in lived embodied experience, as cognitive linguists have pointed out,[11] narrative as a cognitive tool still cannot be understood thoroughly with the examination of language.

One of the most important problems of the definition as well as the investigation of stories is that there are no easily definable units of narratives "comparable to the words or phonemes of language" (Ryan 2007, 24). Mary-Laure Ryan explains that "[e]liminating syntax from the definition of narrative means that narrative discourse cannot be described as a specific configuration of purely formal elements" (ibid).

"'Narrative semantics,'" she continues, "is not a fixed relation between so-called 'narrative signs' and their meanings, but the description of a certain type of cognitive construct" (25). Herman has created a definition with similar logic, claiming that "stories form *Gestalten*, psychological wholes, textual sequences whose coherence is supported by interpreters' inferences about participants engaged in activities over time, with a view to accomplishing particular goals" (Herman 2002, 268–9). The wholeness of these "psychological wholes" arguably depends on overarching phenomena such as the spatial or temporal dimension of the narrative. The unity of the story of *Time's Arrow* lies heavily in the fact that time is reversed in the storyworld constructed by the narrator.

Narrative space, motion, and (the construction of) the narrative world will be important in my literary analyses. As Elena Gomel puts it, "the basic concept of narratology is not story but 'narrative world'" (Gomel 2014, 28). In this regard, I rely on David Herman's popular theory of the *storyworld*, which is the most well-known conceptualization of what the reader constructs on the course of rading in cognitive narratology. Herman explains the concept of the storyworld in the Introduction of his seminal work, *Story Logic* (2002), as a concept that "[captures] what might be called the ecology of narrative interpretation" (Herman 2002, 13). The theory of the storyworld is connected to that of *recentering*, *immersion*, or the *deictic shift,* which refers to the power of stories to transport interpreters from the here and now to the "then" and "there" of the given story. Storyworld is a very broad category compared to the traditional concept of story, and its definition is chiefly tailored to the approaches and concerns of cognitive narratology. When interpreting a narrative, readers do not only follow what happened and how in a story, but they also reconstruct "the surrounding context or environment embedding existents, their attributes, and the actions and events in which they are more or centrally involved" (13–4). Herman stresses that although it has been long overlooked, this environment in any story is "perspectivally filtered" and "spatiotemporally structured" (14), and storyworld applies to fictive narratives and non-fiction alike (16). Storyworlds are basically mental models, or

> mentally and emotionally projected environments in which interpreters are called upon to live out complex blends of cognitive and imaginative response, encompassing sympathy, the drawing of causal inferences, identification, evaluation, suspense, and so on. (16–7)

This conceptualization makes it somewhat more difficult to approach narratives as objects of study, as there are numerous phenomena that seem inaccessible through the text,[12] for instance, parts of the storyworld that are not explicitly put into words in a literary narrative, yet might play an essential role in the production of meaning. Marissa Bortolussi's

and Peter Dixon's method of investigation seems rather useful in this respect. Their theory of psychonarratology assumes that there are two types of phenomena that can be examined in narratives, "textual features," which "refer to anything in the text that can be objectively identified," and "reader constructions," which are the results of the interaction between the text and the reader (Bortolussi and Dixon 2003, 26). According to Bortolussi and Dixon, textual features are directly accessible to the researcher through "a suitable, objective analysis of texts" (33), while reader constructions are to be researched and assessed through empirical research[13] (ibid). In my analyses, I rely on textual features which are accessible through close reading, as well as structural and formal phenomena that the recurrent use of these features produce.

Herman describes stroyworlds as "perspectivally filtered," which refers to the perspective of either the narrator or another, focalizer character. The term "focalization" was constructed in structuralism, and it has remained one of the oldest and most important concepts in narratology (Herman and Vervaeck 2005, 70). "The term refers to the relation between that which is focalized – the characters, actions, and objects offered to the reader – and the focalizer, the agent who perceives and who therefore determines what is presented to the reader" (ibid). It is strongly connected to the concept of the storyworld because it cannot be restricted to the problem of what is "seen by whom," since it involves all the senses, moreover all other cognitive faculties of the focalizer character "such as thought and judgment" (ibid).

Naturally, the mental state of the focalizer character heavily influences both the content and the form, i.e., the organization of information in a story. Narrative spaces are largely constituted by the focalizer's experience of it, especially when the emphasis is on the representations of abnormal circumstances or abnormal ways of perceiving. "The Ivory Acrobat," a story with a focalizer who becomes obsessed with her experiences of space, is a sterling example of this. I will analyze stories that employ internal focalization or first-person narration, where the narrator is the focalizer. Mental states of a heavily corporeal nature such as panic, anxiety, or mental illnesses which entail the use of peculiar mental structures, such as Tourette's syndrome, can significantly influence narration.

Motor resonance

According to the theories of embodied cognition, the processes of cognition emerge from the interactions of the body and its physical as well as sociocultural environment. Human consciousness would not exist without the body and the world around it. This is the reason why a literary representation can be regarded as an element of the environment that the reader's consciousness interacts with. Cognitive narratologists

have made numerous attempts to describe how a literary work becomes (part of) the environment of the reader's mind through the construction of the storyworld and the events within it.

The interaction includes the processing of single words, scenes, specific experiences of a character, or, as Caracciolo and Kukkonen also observe, the processing of the plot altogether (Caracciolo and Kukkonen 2021, 106). Being transported into a storyworld or getting immersed in it are metaphors for this phenomenon, and there are also explanations of this experience offered by researchers of psycholinguistics and the neuroscience of reading. Raymond Gibbs explains that embodied simulations make up an essential part of the reading experience, which "helps structure people's interpretations of allegorical messages" (Gibbs 2017, 229) and also play an important role in the construction of situation models since these models feed on "'experiential traces' left by prior embodied interactions with the world" (Caracciolo and Kukkonen 2021, 6). This embodied cognitive process is described as "motor resonance," and it emerges during the comprehension of single words as well as longer pieces of text. In this sense, the motor system seems to take part in language use. This is how perception, action, and cognition are intertwined, which is the result of the type of brain activity that neuropsychologists observed, for instance, in the Broca's area. Besides the interrelatedness of different brain areas and cognitive functions, one of the important characteristics of the human brain is that, as a part of its inherently messy nature, different processes in the neural network can take radically different amounts of time.

The human brain is a complex system that "can be changed by taking in molecules, as in drinking a glass of wine, and by external stimulation, like listening to exciting news. Some neuronal events happen over a thousandth of a second, while others take decades" (Baars and Gage 2010, 3). When we look at something, we do not register everything about it at the same time. We perceive location before color and color before motion (Zeki in Armstrong), the integration of processes like these to the point where they rise in our consciousness can take as long as a second (Armstrong 2019, 398), and this sort of asynchronous functioning entails that "consciousness is inherently out of balance and always catching up with itself" (ibid). The feeling of uncertainty is connected to being out of balance, and while it can clearly reach pathological levels, as in the case of severe anxiety, it seems to be a functional aspect of consciousness. "[A] typical cortical region is activated by tasks in nine different domains. What a particular anatomical region of the brain is doing depends not only on its own physiological characteristics, then, but *also on the areas it is linked with*" (124, my emphasis). These characteristics of the functioning of the brain are essential for narrative cognition. According to neuroscientific research, the comprehension and the production of language is "the most widely scattered

domain of those tested," more widely than memory, mental imagery, or action in themselves (124), which illustrates the complexity of language tasks in the brain.

Armstrong argues that the "decentered temporality" of human cognition is the most fundamental phenomenon in the neurophysiological background of narrative cognition because "disjunctions in the timing of intracortical and brain-body interactions [...] not only make possible but also actually require the kind of retrospective and prospective pattern formation entailed in the narrative ordering of beginnings, middles, and ends" (Armstrong 2020, 12).

The "retrospective and prospective pattern formation" describes much of the operation of human consciousness in general, and this is also the process Kukkonen explains through what she calls the probability design of a narrative and the predictive processing of the reader. Kukkonen's probability designs are meant to model "how readers' grasp of the overall structure is continually reconfigured in the course of the narrative and how it lets an overall 'direction of the intent of meaning' emerge" (Kukkonen 2020, 13). Predictive processing is originally a theory of perceptual psychology and neuroscience that Kukkonen adopted for cognitive narratology, and it is a useful model for neuro-narratology as well because it takes into account the dynamic and messy nature of the brain and human consciousness.

Caracciolo and Kukkonen argue that the embodied responses elicited in the reader through motor resonance are significant parts of the comprehension of the given story (Caracciolo and Kukkonen 2021, 10). Describing the immersion of the reader, they "suggest that fictional worlds reflect an illusory feeling of experiential thickness and not an objective distinction between moving in and out of a fictional world" (16). Hence the reader is not necessarily aware of these experiences or able to reflect on them, which does not mean that the experience of the "experiential thickness" and the embodied resonances of the reader do not influence the interpretation of the narrative they read.

Kukkonen suggests that the concept of being "immersed" in a narrative is described better with the metaphor of the "flow," which shifts the emphasis from space to time (Kukkonen 2020, 80). The concept of the flow, therefore, also implies motion that immersion does not. Instead of a shift from space to time, it is rather a coupling of space and time. Mikhail Bakhtin emphasized this coupling with the concept of the chronotope, or space-time, developed in his study, "Forms of time and of the chronotope in the novel" (1981) and Elena Gomel also follows this logic when she claims that "[t]here is no separate space and time at all but only spacetime, a unified medium of the universe" (Gomel 2014, 3). According to Greimas, narrative space "involves quite complicated inferencing techniques and [...] plays a crucial, not a weak or derivative, role in stories" (Herman 2002, 268).

Spatiotemporality is immensely important in narrative cognition because it is an essential aspect of any embodied experience. Besides being based on the experience of motion, the "sense of flow is closely connected to the sense of agency (the illusory notion that one somehow is actively involved in the narrative) and the sense of presence (the illusory notion that one is 'there' in the fictional world)" (Kukkonen 2020, 86).

In the following chapter, I will attempt to connect the flow of narratives that the reader joins to the findings and theories of neuroscience and neuropsychology of space and motion. In chapters 3–5, I will focus on aspects of narratives, which are "closer" to the text, and, therefore, to the concept of representation than to readerly actions while acknowledging that readerly interaction is required for these aspects to exist. In chapters 6–8, I will also theorize the readerly experience of the interaction between certain narratives and their readers.

I will concentrate on the representations of the embodied experiences of characters of neuro-narratives and stories about characters with altered processes of perception and cognition due to strong emotions such as Cincinnatus in *Invitation to a Beheading* or to an environment that cannot be navigated in a normal way such as Navidson's house in *House of Leaves*. The reason why these "perspectivally filtered" storyworlds allow me to theorize narrative cognition is that representations of literary characters' experiences potentially share the structures and patterns of real people's experiences. I also agree with Bortolussi and Dixon, who claim that "even though literary characters and real people are ontologically distinct, they are processed in much the same way. In other words, literary characters are processed as if they were real" (Bortolussi and Dixon 2003, 140). The literary characters one has the most access to are the first-person narrator and the focalizer character. I will discuss narratives that operate with such characters, in line with the idea of Bortolussi and Dixon, who "believe, […] that it is not useful to conceptualize narrative as communication between the author and the reader, and that hence it is more appropriate to think of these communicative inferences as pertaining to the narrator" (16).

Notes

1 It is worth mentioning that semiotics (largely inspired by Saussure's semiology) aimed at achieving the same: it was not examining simply meaning but the logic of the production of meaning.
2 The cognitive unconscious is the sum of mental processes that are inaccessible to conscious awareness because they are too automatic, fast, and, in fact, usually unnecessary to follow consciously, such as the majority of perception, language comprehension, or the functioning of implicit memory (Lakoff and Johnson 1999, 10–11).

3 Perfectly healthy eyes and optical nerves are not sufficient in and of themselves, not even for a single visual stimulus to enter our consciousness, let alone the construction of a complex visual experience that most people constantly have.
4 Neuronal recycling is not characteristic of reading alone. Dehaene assumes that from mathematics to religion, numerous domains are defined by "our primate brains" (Deheane 2010, 301).
5 For more on mirror neurons, see *Mirrors in the Brain – How Our Minds Share Actions and Emotions* by Giacomo Rizzolatti, and Corrado Sinigaglia (Oxford: Oxford UP, 2008).
6 Which appears to be the most popular approach in dealing with the mind today.
7 Besides cognitive science cognitive poetics and within it, cognitive narratology borrows terms from a number of scientific fields such as neurology, psychology, and research on artificial intelligence.
8 As Monika Fludernik explained in her lecture at the beginning of ENN's 2017 doctoral seminar [Prague, Prague, September 11. Preconference Doctoral Seminar "Cognitive Narratology Today"].
9 Because of the presence of the other subfields, it is better to conceptualize as a fetus in an early stage of a multifetal pregnancy that may be later absorbed by one of its siblings.
10 In the sense of textual, verbal narratives.
11 See for instance, the volume entitled *From Perception to Meaning: Image Schemas in Cognitive Linguistics* edited by Beate Hampe (2005).
12 In the sense Mieke Bal uses it in her categorization of the levels of narratives, referring to any medium (Bal 2009, 15).
13 Researchers are to approach these phenomena "indirectly by synthesizing a variety of observable signs such as verbal reports, response latencies, and degrees of accuracy in the performance of specific tasks" (Bortolussi and Dixon 2003, 26).

2 Spatial perception, negative emotions, and narratives

Narrative space has been a neglected category[1] in the earlier phase of modern narratology, as it was judged to be an aspect inferior to time. It had been traditionally regarded as an intranarrative component: the spatial characteristics of the narrative world where the story is set. However, it has been recognized as being more relevant in the construction of narratives than it was previously assumed (Herman et al. 2010, 712).

In this book, I apply a very broad definition of space and, especially, motion. In the analyses of narratives, these phenomena are to be understood literally and in more abstract terms as well. The experience of narrative space I investigate means the experience of character(s) that the narrator reports and the reader's body resonates with. Motion is important in a more abstract sense as well due to the conceptualization of narratives as having a rhythm, a pace, and of reading as a flow experience. Narratives and stories, in particular, have very often been described with motion words (the plot goes forward toward the end, it twists, slows down, speeds up, and sometimes stops temporarily), which also has to do with the way the reader comprehends narratives.

This book builds on the theory that language and our cognition, in general, are fundamentally bound up with the embodied experience of motion and navigating space, and the neurobiological roots of these processes are fundamental in narrative cognition as well. The concept and the experience of balance and imbalance are also very strongly tied to the embodied experience of space, one's own body, and the phenomena of motion and motionlessness. The concept of uncertainty and the emotions that it entails in the narratives that I analyze are also based on the experience of imbalance and the uncertainty of spatial experience and motion. What I plan to examine in the second part of this book is the constitution of space and movement on the story level as well as traces of spatial experience in discourse structures. The embodied experience of space and movement is a central theme in neuropsychology, while it is also an important concern of narrative theory. In the following section,

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I briefly overview some findings of neuropsychology, which might help reconsider or enrich some concepts of narrative cognition.

Narrative cognition and spatial cognition

Narrative cognition is often our dominant cognitive function, and it seems to be in a very close connection with other modes of cognition; however, it does not include them. Different domains of cognition seem to be interrelated as there is an overlap between the brain areas that they make use of. Richard Walsh points out that narrative cognition itself does not entirely cover our experience of the world. Other domains of cognition, such as spatial cognition, take part in it, and while they often contribute to a narrative interpretation of the world, they do not necessarily do so (Walsh, forthcoming). Based on the study of the neuropsychology of space, the following section aims to briefly describe the nature of human spatial perception and experience because this domain of human cognition seems to be significant in the processes during which we make sense of narratives as well.

Human perception is constructed by essentially multisensory processes, and according to *The Handbook of Multisensory Processes,* "our senses are designed to function in concert and [...] our brains are organized to use the information they derive from their various sensory channels cooperatively" (Calvert et al. 2004, xi). Whether or not we are aware of it, most of our experiences of perception are the result of the coordination of different sensory modalities (ibid). If we accept that cognition is strongly influenced by our embodiment and its interactions with the environment, the above view must be considered by narratologists as well. For neuro-narratology, the investigation of the experience of space and movement, which are among the most fundamental senses, is unavoidable, and due to their assumed significance in the emergence of human cognition, which I describe in this chapter, they must be given primacy over other senses.

As experimental psychologist Susanna Millar points out, the principles of spatial coding are extremely difficult to trace (Millar 2008, 3) partly because there are diverse sources from which we gain information as regards to space. On the other hand, understanding the way we gain and process information about space and movement (12) is important in more fundamental ways than we have previously assumed, as it has become apparent in Gibson's ecological theory of vision. Vision is important when it comes to the construction of spatial experience, but it is only one of a number of sources that contribute to the sensing of space. I chose not to focus on vision because it already seems to be highly overemphasized at the expense of the other senses. On the other hand, from the point of view of neurophenomenology, it can even be claimed that it provides a false metaphor for perception altogether.[2]

What I wish to focus on is nonvisual perception. Besides vision, spatial judgments are made based on inputs coming chiefly from touch and hearing among the five senses, and lesser-known ways of sensing such as receptors in our muscles and joints also contribute (Lackner and DiZio 2004, 409). These experiences are important but overlooked contributors to the construction and representation of narrative space and narrative discourse as well. They should be emphasized more because these experiences, if they belong to the first-person narrator or the focalizer character, are crucial for the construction of the storyworld. As Fludernik points out, there is no narrative without a human experiencer, through the consciousness of whom we have access to the narrative world. This is in line with Barbara Tversky's conceptualization of mental spaces, which "[subserve] thinking in many other domains" (Tversky 2005, 24), such as emotion, language, or other forms of interpersonal interaction. Hence, they are potentially vital for narrative cognition as well.

There are numerous kinds of experiences that contribute to the spatial experience and that are observable both in the constituents and formal aspects of narratives. The vestibular system, which is located in the inner ear, collects information about balance, chiefly by monitoring the position of the head, and it is "the dominant system with respect to sensory input about our movement and orientation in space" (Evans and Chilton 2010, 26). This sense can be regarded as primary because it "is, in phylogenetic (evolutionary) terms, one of the first systems to have developed. In ontogenetic (developmental) terms it is the very first to fully develop, by six months after conception" (27). The experience of balance is involved in the very emergence of consciousness. The important abstract concepts of harmony and symmetry are based on the embodied experience of balance and being out of balance. Being out of balance, as Armstrong explained, is an important characteristic of consciousness in general, and it possibly plays an important role in language and narrative comprehension as well. The haptic system, another contributor to spatial experience, is a complex system of perception, which "includes the combined sensory input from the receptors for touch in the skin and proprioception receptors" (28). Proprioception is the sensing of one's own body. It is such an essential sense that, in fact, we tend to experience it as an ability,[3] which allows one to be aware of the position, posture, and location of different parts of one's body even without seeing them. "To get a sense of how it functions, close your eyes and then touch your nose with a fingertip. Your ability to do this comes from proprioception" (29). Proprioception is strongly connected to the sensing of allocentric space (the space around one's body), and in literary works, information concerning proprioception is especially important in characterization. In DeLillo's novel, "The Ivory Acrobat," Kyle's sensing of the limits of

her own body plays a large role in the representation of the ever-shrinking narrative space. The narrator, and due to her, the reader of *The Body Artist* also has a problematic perception of her own body and immediate environment. While she is heavily preoccupied with the practicing of simple movements during her meditative sessions, she is often confronted with the problem of not being able to tell if there is (literal or metaphorical) movement in the narrative world or not.

Since different sensory modularities contribute to the construction of spatial experience, even if most of the time all modularities contribute "more of the same" information about space, as well as the position and movement of our bodies, space for humans is not a seamless unit in which individuals exist. When it comes to embodied experience, spatial processing can be classified into two categories based on the origin of the information from which the experience is built. Egocentric space is made up of information that comes from our bodies, for instance, proprioception or touch, while the information making up the broader category, allocentric space, comes from external sources that one senses through hearing or seeing (Kállai et al. 1998, 83). Egocentric representations are constructed from the position of the observer; in such a representation, everything gains meaning based on its position related to the observer's, while allocentric representation is less connected to the position and experience of the observer (Smith and Cohen 2008, 184). As for literary representations, egocentric spatial knowledge is a feature of a first-person narrator or internal focalization, and allocentric spatial knowledge is characteristic of a third-person narrator. Arguably, for neuropsychological reasons, since this experience is tied to our subjective experience, similarly to first-person narration in general, the representation of egocentric spatial knowledge in literature allows for an experience of a more direct spatial experience, and therefore a more intense immersion and flow experience for the reader.

Naturally, egocentric and allocentric spatial experiences do not exclude each other, but there is a dynamic relationship between them: the structure of the allocentric space, which is one's immediate environment, is understood and constructed constructed through the egocentric filter of the individual through his or her egocentric filter (Kállai et al. 1998, 84). These are the parts that make up the cognitive map, which is to be imagined as a constantly monitored, map-like representation, the main function of which is to maintain the conceptualization of the current spatial position of the individual and their environment (Kállai 2013, 46). Another significant characteristic of spatial perception is that the cognitive map constantly includes the perceiver as well as his or her environment (58). In line with the way second-generation cognitive theories imagine embodiment, there is no clear distinction between the self and the world in this scheme (Kállai 2013, 59; Kállai et al. 1998, 99). This is why Kyle, the narrator in "The Ivory Acrobat," does not differentiate categorically between her body and

the environment; moreover, the more obsessed she becomes with her perceptions of sound and motion due to her pathological fear of earthquakes, the less access she has to allocentric space through her perceptions. Not unlike numerous other cognitive processes which have long been imagined as unified and consistent,[4] cognitive maps "appear to be fragmented, schematized, inconsistent, incomplete and multimodal" (Tversky 2005, 9). Millar points out that the "perceptual systems have evolved to detect information actively" (Millar 2008, 16). According to this thought, "dynamic" is indeed a keyword in understanding spatial experience; moreover, there are cognitive processes and states that can modify, and in some cases, distort our spatial experience, such as events heavy with emotions.

In literary theory, the concept of the cognitive map was introduced by Richard Bjornson in 1981, and it referred to a mental representation that is incomplete and potentially subjective (Ryan 2003, 214–5). Ryan defines the cognitive map as "a mental model of *spatial* relations" (215), although she points out that the form and content of the model are yet to be investigated (Ryan 215–6). However, the map of the given story is usually not what the average reader pays the most attention to, since, as she explains, "people read for the plot and not for the map" (239). Readers of literature construct mental models of the narrative space of the given story only to the extent it is needed to construct a storyworld to be immersed in (ibid). However, in neuro-narratology the plot and "the map" (i.e., the spatial dimension of the storyworld) should not be understood as two completely isolated domains. From a structural aspect, the two seem to have an influence on each other due to the role of the conceptualization of space and its role in the emergence of consciousness in general and language in particular.

Space, conceptualization, and language

Our spatial experience is claimed to be largely responsible for cognition on a formal and structural level, and if narrative is to be understood as a cognitive structure, spatial experience must also be traceable in its form and structure too. There is undoubtedly a strong relationship between language and thought, but instead of imagining lower-level cognitive processes working according to the complicated principles of abstract ones, theorists of second-generation cognitive science, who place emphasis on embodied experience, imagine abstract cognitive processes as being built on and feeding on more simple, lower-level cognitive processes.

These fundamental, low-level processes arguably include the basic construction of spatial experience and orientation in space. The working of "the first sense" plays an important role in cognition before the development of symbolic language both in evolutionary and in individual

development (Evans and Chilton 2010, 27), because according to neuropsychology, infants start thinking before they start to learn to speak (Kállai 2013, 59). Preverbal conceptual representation is chiefly composed of information derived from the body[5] (ibid). Importantly, as Kállai explains, the role of spatial understanding in preverbal representations is not to verbalize the concepts of spatial experience, but to make a foundation for the mental structures of linguistic organization, such as the logic of the concepts of "before" and "after"[6] which are basic organizing elements of our mental processes (ibid). Among other roles, sensorimotor schemas organize perception and direct action, take part in switching perspectives, and adaptation (ibid). Symbolic representations such as language are built on these schemas. Concepts of mechanic motion, collision, touch, and many more (60) are basic underlying principles of logic for symbolic language as well. In this sense, human mental development fundamentally evolves from spatial concepts; therefore, our first concepts are not of objects but of spatial expressions such as "move" or "contain," which are not yet propositional[7] (60–61).

Freudian psychoanalysis usually focuses on the workings of high-level, symbolic representations and, on the other hand, on content instead of form or structure.[8] The theories of psychoanalysis are also highly interpretative and often impossible to test. Consequently, it is usually understood as an epistemologically entirely different approach from other branches of psychology, for which empirical testing and repeatability are essential (Kállai et al. 1998, 168). However, Daniel Stern's approach examines the development of the human psyche with a focus on the form of mental activities instead of their content (ibid). Stern introduced the concept of dynamic forms of vitality[9] which are, like most concepts of the preverbal, presymbolic psyche, not completely clearly defined. The dynamic forms of vitality are recognized in the neuropsychology of perception as well. As János Kállai explains, they are imagined as non-reflexive, embodied experiences, chiefly understood as spatial and temporal structures, intensities, or forms such as crescendo, decrescendo, leaping, etc. (ibid). Stern also provides minimal descriptions of the forms of vitality in the form of a list of words such as "exploding, surging, accelerating, swelling, bursting, fading, drawn out, disappearing, fleeting," etc. (Stern 2010, 7). These words, mostly adjectives, describe

> the felt experience of force – in movement – with a temporal contour, and a sense of aliveness, of going somewhere. […] They are more form than content. According to these theories of psychoanalysis, the development of the self is characterized by these preconceptual, experiential, embodied experiences instead of the traditional approach focusing on objects and contents of early memories. (Kállai et al. 1998, 168; Kristeva 1984)

To understand the types of experiences that the forms of vitality refer to, avant-garde experiments in painting that attempted to deconstruct the essential forms and structures of cognition, such as cubism or futurism, are good examples. These are claimed to be the best and most authentical representations of these (pre)constructs (Kállai et al. 1998, 168).

Paul B. Armstrong asserts that human "understanding is always a process of seeing-as" (Armstrong 2020, 2), which is an important observation that is supported, for instance, by the conceptual metaphor theory of cognitive linguistics. Interestingly, when it comes to brain functions, the process of "seeing as" that Armstrong argues for "is not localizable in any particular region of the cortex but extends across the brain, the body, and the world" (19) which is in line with the observation of the multisensory operation of the brain where the work of different areas and different cognitive faculties overlap. Just like Armstrong's conceptualization of the "seeing as" process, "vitality forms have no specific sense organ or brain locus. They would appear to arise from many parts of the brain simultaneously" (Stern 2010, 26). They are also to be imagined as holistic, dynamic, multisensory concepts, and further investigation of this domain may help us connect neuroscience to the higher, abstract levels of cognition, such as the interpretation of art (15).

The way neuropsychology explains the formation of episodic memories also implies that higher levels of cognition are supported by lower ones and that formal aspects of embodied processes may be preserved in abstract thinking as well. One of the most significant findings of psychology about memory has been that it does not work like a storage space in the brain. This view of memory has been adopted in various disciplines, including narratology (Schneider 2017, 489). The most important part of this finding is that "[a] memory does not exist in its own separate storage location – its residue in the brain is distributed over many synaptic connections, whose values have also been shaped by many other experiences" (McClelland 2011, 139). While it may not seem crucial at first, the formation of episodic memories, the building blocks of our autobiographical memory, are deeply entwined with sensory-perceptual experiences. According to Martin A. Conway, episodic memories consist of so-called episodic elements, which he regards as "the fundamental units of the cognitive system as a whole" (2009, 2311). The episodic elements are "non-verbal and sensory-perceptual in nature," and they are to be understood as the basis of all conceptual knowledge, since the autobiographical knowledge base, which is also built on these elements, is always, at least partially, active in the brain (Conway and Loveday 2015, 575); therefore they are significant not only in our autobiographical memories but in narrative cognition in general.

Conway's description of episodic elements is important in the reconceptualization of the roles and workings of narratives in human

cognition. Importantly, these findings concur with the theory of narratologist Richard Walsh, who claims that narrative as a form and other domains of cognition are always mutually dependent (2017, 461). These other domains "would appear to be more fundamental and more primitive than language, initially bound up with the emergence of consciousness, and a primary determinant of the parameters of any conceivable system of values" (473). This view of narrative understanding is not only in line with the phenomenological model of the narrative self but also with the neuropsychology of spatial experiences and Sternberg's theory of the forms of vitality.

Sternberg's concept of vitality, arguably on a lower level of human mental processes, provides form to higher ones. This is not surprising considering that the forms of vitality are determined by motion in space: The forms of vitality are strongly connected to intentionality, time, force, space, and directionality as well (Stern 2010, 4). These concepts are also crucial for narratology as well, as Caracciolo and Kukkonen also observe: "narrative rhythm of embodied language prepares plot events and shapes readers' perception. This rhythmicity, we argue, contributes to readers experiencing 'flow' in narrative" (Caracciolo and Kukkonen 2021, 17). As Stern explains, vitality is "a mental creation, as a product of the mind's integration of many internal and external events, as a subjective experience, and as a phenomenal reality. However, vitality must have a basis in physical action and traceable mental operations" (Stern 2010, 4). Just like perception and movement, vitality has a lot to do with the overall foundation of cognition, traces of which may be observable in artworks other than modernist paintings. Stern also explains that the forms of vitality belong to episodic memories "and give life to the narratives we create about our lives" (11). In my interpretation, "giving life" in this context means contributing in a crucial way to the meaning of narratives (our life stories and other narratives as well) despite the fact that the forms of vitality are not concerned with the content of memories or other narratives. Importantly, the forms of vitality were previously referred to as "proto-narrative envelopes" (17), a term that placed perhaps even greater emphasis on the role of the forms of vitality in autobiographic memory and narrative cognition.

As Stern explains, the forms of vitality are natural Gestalts that "[apply] to the inanimate world as we observe it, to interpersonal relationships as we live them, and to the products of culture as we experience them" (7). Stern uses examples of music, dance, and cinema to illustrate the way "expressions of vitality [...] resonate in us" (3–4), Vitality dynamics, according to him, is what all different forms of art have in common: "[i]t is their 'esperanto'" (21). Literary narratives thus can be understood as one of the cultural products that are, perhaps partly, based on these natural gestalts. Importantly, the forms of vitality are not phenomena of content but of form. Stern explains how the forms

of vitality can be concerned with form but not with content in the following way: "[a]nger can appear on the scene explosively, or build progressively, or arrive sneakily, or coldly, and so on. So could happiness and its smile" (23). In this example, "explosively," "slowly," etc. are to be interpreted as the forms of vitality. In other words, their investigation answers the question "how" instead of the "what" and the "why" (20). In this sense, they are ideal tools of investigation for narratology. I argue that in narrative, the "how," i. e., the organization of the story, is not a part of the content of the narrative, but it can contribute to its meaning.

The concept of image schemas is very similar to (although somewhat narrower than) that of the forms of vitality.[10] These early spatial experiences play a vital role before and during the development of symbolic language. While he is not directly building on them, Stern acknowledges embodied cognitive theories. Image schema theory is one of the most successful areas of research in cognitive linguistics. As Mark Johnson claims, in general, "there's no thought without a brain in a body in an environment," and it "applies to all forms of symbolic human interaction and expression" (Johnson 2005, 16), which renders the conceptualization of space and the role of spatial understanding in conceptualization a primary aspect of cognition.

As explained in *From Perception to Meaning* (2005), image schemas are one of the most important embodied anchors of the human conceptual system. Image schemas are "directly meaningful, highly schematic gestalts, continuous and analogue patterns beneath conscious awareness, prior to and independent from other concepts; internally structured and highly flexible" (Hampe 2005, 1–2). They are mental structures "between perception and conception" (Hampe 2005, 7), they are below our conscious awareness (Johnson 2005, 21); however, they are often traceable in directly available mental processes as well, for instance, in the structures of a written paragraph as Kimmel has argued (Kimmel 2009). Or on the level of larger pieces of narratives, and perhaps in complete narrative discourses, as I attempt to demonstrate.

Space and time – the experiential dimensions of which cannot be wholly separated – have become important objects of narrative theory. The two are intertwined and presuppose each other, and, as Teresa Bridgeman observes, they are to be understood as essential constituents of the "fabric" of narratives as they fundamentally influence our understanding of fictive worlds (Bridgeman 2007, 52–3). Peter Brooks, inspired by psychoanalysis, detects dynamics and movement in narratives in his study,[11] *Reading for the Plot: Design and Intention in Narrative* (1984) when he claims that the reading of a plot brings about a "narrative desire" that drives us onward toward the end of the story. In second-generation cognitive narratology, cognition, and thereby storytelling, is deeply influenced by processes of perception, which is largely our way of exploring space around us. In Herman's

conceptualization, doing research on narrative space means examining "the role of space in narrative, as well as the role that narrative plays in helping create mental representations of space" (Herman 2002, 263). During the reading process, readers "spatialize storyworlds into evolving configurations of participants, objects, and places" (263). The task of the narratologist is to examine the way this spatialization is carried out. According to Hilary Dannenberg, the bodily experience of space is an underestimated but crucial factor in literary works. As she begins her explanation,

> the bodily experience of negotiating and perceiving space underlies many sense-making operations, including the comprehension of time. The negotiation of space is one of the first orientational steps in life any human being must undertake; this knowledge is used to make sense of or metaphorically "map" other experiences. (Dannenberg 2008, 65)

Caracciolo and Kukkonen explain that "plot is grounded in our physical engagement with the world" through the experience of space and movement (Caracciolo and Kukkonen 2021, 105).

Spatial imagery has inspired the work of Hilary Dannenberg, who studies the theories of image schemata as skeletons of plot patterns; for instance, she considers the metaphors of PATH or CONTAINER in terms of plotline or the setting of the story. Dannenberg has examined "the ability of narrative texts to re-create the schemata of real-world orientation learned and performed by the human mind and body in its cognitive interaction with space" (Dannenberg 2008, 75). Dannenberg also claims that spatial schemata have a vital role in the reader's immersion in the text (65). This view seems not to place enough stress on the fact that image schemas are extremely flexible and dynamic. Caracciolo and Kukkonen outline a very similar conceptualization of plotlines, claiming that a "more abstract level of narrative sequences (and readers' experience thereof) are organized by image schemata" (Caracciolo and Kukkonen 2021, 143).

Since "image schema reasoning in narrative comprehension seems to involve the construction of embodied simulations" (Gibbs 2005b, 130), considering their role in narrative understanding is primary. The theory of image schemas may also be crucial in the project that Schneider recommends, namely the reconsideration of the conceptualization of schemas in narratology so that we may understand them as more dynamic (Schneider 2017, 489) and more directly connected to embodied experience. Although Schneider mentions only genre schemas, which are closer to hermeneutics than cognitive science or neuroscience, mental structures on different levels of narrative understanding also have to be considered.

Disorders in spatial experience

To understand the role of spatial experience in narrative cognition, in general, is important to see the significance of the potential deficits that may occur in the perception and processing of spatial information. Besides the obvious medical consequences, these deficits may potentially involve problems of cognition in general and possibly narrative intelligence as well. The construction of the spatial experience and the cognitive map is also crucial to understanding the ways they can become disordered and problematic in narrative cognition. Spatial representation is a complex web of different, more and less abstract systems that are normally all interconnected (Kállai 2013, 43). However, since the mental image of our own body and its environment is built of elements, they are prone to falling apart, and functions that are normally synchronized might become dissociated (ibid). If such a thing happens, besides the disorders of the visual representations, it is not uncommon that the body schema and the body image become deconstructed as well, for instance, sensing one's own body may change radically (68). This may be the reason why Lauren, the mourning performance artist in DeLillo's *The Body Artist*, hears the noises she makes as she walks on the stairs as though they are coming from other parts of the house.

Space can become subjectively distorted due to problematic mental states or illnesses. The problem can be the inability to acquire new information from the allocentric space, which means the inability to update one's current cognitive map or the structuring of a new one (ibid). For instance, serious anxiety may cause asymmetry in the construction of the egocentric reference system (72). Panic attacks entail a radically narrowed attention, which focuses less on the environment and more on one's own body, and simultaneously, a lack of exploration (Kállai et al. 1998, 122). The consciousness of a person suffering from a panic attack is chiefly filled with spatial information derived from their own body and their egocentric space. The deficits of spatial experience are traceable in various linguistic, visual, motoric, and proprioceptive perceptual types of deficits, disorders of representation, and in the inability to switch spatial frames of reference (Kállai 2013, 70). János Kállai et al. have done research on the neuropsychology of the perception of space and have coupled specific mental states, anxiety, phobias, and other mental illnesses with peculiar patterns of the perception of space. The authors also call attention to the metaphors of psychosis that exist in everyday language. We often understand problematic mental states through concepts of motion or different organizations and experiences of space e.g., people can "collapse" or "fall apart" mentally (Kállai et al. 1998, 170).

Many of the phenomena that are potentially influenced by the problems of spatial experience are fundamental concepts in narratology

such as perspective, (narrative) space, or the overall system of interconnected mental functions that is behind a coherent experience. The phenomenon that seems to be unavoidable and equally crucial for narratives, as well as embodied cognition in general, is movement. It is so fundamental that we regard it as equivalent to life itself; after all, motion, both physical and mental, is constant in our lives (Stern 2010, 9). Its dynamic flow is another important characteristic of motion; according to Stern, this is what differentiates between the movements of organic and digital beings (10). Husserl regarded "movement to be the mother of cognition" (20) altogether. Spatial experience is inconceivable without sensing motion, therefore it is also a crucial theme in the analyses in the second half of the book.

Embodied emotions: fear and anxiety

The stories that I analyze are largely concerned with strong fears: irrational fear, fear of death, and panic. These emotions appear as dominant and embodied central phenomena that heavily take part in the make-up of the narratives. In this part, I outline the way they should be conceptualized in neuro-narratology.

Our conceptual systems are based on experiences such as navigating in space and the feeling of gravity holding us in a vertical position. However, this process of structuring works the other way around as well: the human experience of space can be extremely subjective, as it can be influenced by the state of mind of the experiencer. On the other hand, fear and anxiety are often connected to space. For instance, "agoraphobic fears," which include fear from large open spaces as well as claustrophobia (Öhman 2008, 711), are among the most important factors of fear in general. But space is also important when our conceptual frames automatically get reconsidered in the presence of danger due to which places that were previously occupied safely become "mentally tagged" as dangerous, and places such as closets are suddenly regarded as safe places to be (Tooby and Cosmides 2008, 118). Therefore, spatial experience and the experiencer's state of mind mutually influence each other.

"Fear and its close ally, anxiety" (Öhman 2008, 709) are similar but distinct emotions. Both are anticipatory[12] emotions concerned with danger or some kind of threat (Miceli and Castelfranchi 2015). Both are parts of a healthy life, yet pathological forms of these emotions exist, such as post-traumatic stress disorder or phobias. Compared to healthy fear and anxiety, their pathological version is "more recurrent and persistent; […] its intensity is unreasonable, given the objective danger or threat; […] it tends to paralyze individuals, making them helpless and unable to cope; and […] it results in impeded psychosocial or physiological functioning" (Öhman 2008, 710).

While the object of fear is danger, which may or may not be uncertain, in the case of anxiety, the core of the emotion is the contemplation of an event or a situation that can lead to an indeterminate threat (Miceli and Castelfranchi 2015) therefore in this case the threat is even more uncertain. The two emotions are very strongly connected on the level of neurophysiology, as neuroimaging shows "the regions recruited during the anticipation of Certain and Uncertain Threat are colocalized in several key regions" (Hur et al. 2020, 7958). Importantly, in anxiety, there is "a mixture of, and conflict between, fear and hope [as] anxious people […] anticipate both positive and negative experiences, and typically 'oscillate' between them" (Miceli and Castelfranchi 2015). The narrating character in Murakami's short story, "Sleep," is a master of this phenomenon. She embodies the oscillation as she simultaneously reports being carefree and depressed in various ways. From an evolutionary perspective, undetected danger is a very costly thing; hence it seems that "it is likely that perceptual systems are biased toward discovering threat" as early as possible (Öhman 2008, 712). This bias for threat may be responsible in some cases for having anxiety for an extended course of time (718).

Fear may entail different reactions, such as escaping, fighting, or becoming paralyzed. As for anxiety, "the nature and location of the threat remain more obscure and thus are difficult to cope with by active defensive maneuvers" (710), and it can be argued that in general, "when coping attempts fail […], fear is turned into anxiety" (ibid). Another general assumption is that "if one doesn't know what he or she is 'afraid' of, he or she is experiencing anxiety, not fear" (Miceli and Castelfranchi 2015). Kyle in "The Ivory Acrobat" is a character paralyzed by fear; her consciousness is overwhelmed with sensory perceptions as her attention is fixed only on sounds and tremors, and like a deer in the headlights, she even becomes literally motionless whenever she expects an earthquake to hit.

Losing one's health (either physical or mental) is probably among the things that most people are afraid of. Many medical conditions cause or involve anxiety, and there are conditions such as illness anxiety disorder that are defined by excessive anxiety about falling seriously ill. Fear and anxiety are, quite understandably, important phenomena in illness narratives and in neuro-narratives. The classic "happily ever after" closure is not characteristic of this genre, and even if their end is not tragic, throughout the narrative, there is a great amount of negative emotions. One of the goals of the neuro-narrative is to educate readers about a certain condition; therefore, the aim to learn (rather than to be entertained) seems to be one of the motivations of the readers of neuro-narratives. However, there are numerous other genres, such as horror, that operate with strong negative emotions where the reader cannot necessarily expect to learn something and is more likely to read the narrative solely for the reading experience.

The roles and interpretations of negative emotions within narratology are disputed. Kukkonen, in her account of probability designs, associates narrative progress with positive emotions. She describes a new event in a narrative as an "aha experience" for the reader that is "marked by suddenness, ease of understanding after the experience, positive affect, and a feeling of confidence" (Kukkonen 2020, 45). The sense of flow itself that the reader experiences in the course of reading a narrative is connected to the pleasure of reading (86), which in turn, is associated with "readers' confidence that they can (be guided to) place attention where it is most beneficial and the expectation that this feeling will continue as they pursue their explorative reading of the text" (88). Prediction errors that occur when the reader does not succeed in predicting the next event are also to be understood as sources of information instead of having a sense of failure or involving any other negative emotion (3). Even when we read about negative experiences and emotions of characters, for instance, in a tragedy, according to Kukkonen, "the experience of negative emotions, as they arise from the characters' emotions and the audience's experience of the unhappy, fateful ending of tragedy, is modulated by the positive affect of fluency" (54). I return to the discussion of this issue in the Conclusion.

As I try to demonstrate, the emotions of fear and anxiety and the spatial experience that they are accompanied with have a strong influence on narratives, which is observable and also influential in the reading process in characterization, narrative techniques, and on the level of discourse structures as well. Overall, I believe the stories that I analyze are particularly potent in engaging readers emotionally, and they may even have an effect on a bodily level through their mode of narration and discourse structures. On the other hand, these significant aspects and parts of stories do not affect the reader in and of themselves, but in interaction with other characteristics of the story, such as length, as well as numerous reader variables such as age or gender.

I discuss the elements and aspects of narratives, which seem to reduce their narrativity. Considering the model of predictive processing, I examine phenomena that seem not only to cause prediction errors but that hinder the making of predictions, and make its process less smooth, therefore arguably breaking the reader's experience of flow. Since the phenomena that I discuss in the analyses are strongly connected to preverbal and presymbolic levels of cognition, it is very likely that they only provide what we can call a "raw material" for meaning, a feeling of atmosphere rather than a clear symbolic meaning or easily reportable opinion about the given literary works, which are quite ambiguous and confusing on the level of topic and events as well. These components of the production of meaning, in fact, may contribute to the meaning in a negative way: hindering the construction of symbolic meaning or making it impossible to construct a clear plotline even in retrospect.

Notes

1 Although space itself was a very popular object of study in the second half of the twentieth century. See more on this topic in Löw (2016) and Lotman (2005).
2 It is one of the main tenets in Alva Noë's monograph, *Action in Perception* (2004).
3 Although it is possible to lose this sense, an important account of such a case was written by Oliver Sacks in *The Man Who Mistook His Wife for a Hat* (1999) under the title "The Disembodied Lady."
4 Such as the processes of memory.
5 Kristevan psychoanalysis or Kaja Silverman's theories (Silverman 1988), although often along different tracks, arrives at the same conclusion.
6 This is also a good example for why space and time are inseparable concepts.
7 Kristeva also theorizes spatial and corporeal foundations of symbolic systems, (acceptance) and projection (rejection), which also incorporate a spatial aspect through the concept of directionality, are the foundations of affirmation and negation in language (Kristeva 1982).
8 Lacan famously stated that the unconscious is structured like a (foreign) language. Therefore, he did theorize the structure of language and the structure of the psyche, although he referred to structures understood by structuralist linguistics, which are quite different from the structures of embodied cognition.
9 The concept has gone through some changes over the years, and it has been referred to by different names such as vitality affects, or temporal feeling contours, and Stern has connected these phenomena to narrative forms as well by calling them "proto-narrative envelopes" (Stern 2010, 17).
10 The fact that psychologists and linguists independently constructed very similar models for the emergence of cognition (forms of vitality and image schemata, respectively) can be understood as further proof for the validity of this conceptualization.
11 Although his is a psychoanalytical approach which originally probably did not conceptualize these phenomena with spatial cognition in mind.
12 This means that we typically experience these emotions *before* an event or action as opposed to e.g., shame that we usually feel *as a result of* something.

Part II

Sense perceptions and storyworlds

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3 Sense perceptions and representation of consciousness in the storyworld of Vladimir Nabokov's *Invitation to a Beheading* and Poe's "The Pit and the Pendulum"

In this chapter, I analyze a relatively early Nabokov novel and a short story by Edgar Allen Poe, focusing on sense perceptions and the embodied experience of anxiety and fear (of death). I am interested in the way these phenomena take part in the construction of the storyworld. Nabokov's oeuvre could be of special interest in such an investigation. Reading his works is an experience for all the bodily senses. For instance, the quote from *Invitation to a Beheading,* "to breathe the dust of this painted life" (Nabokov 2010, 68), engages vision and smell, as well as the sense of the movements of breathing, not to mention physical pain. Martin Amis has claimed that Nabokov's prose is "[t]he nearest thing to pure sensual pleasure" (Nabokov 2010). One has the impression that Nabokov's texts are always colorful, dense, alive, and moving. Nabokov was an exceptional reader as well: he was a well-known synesthete: he experienced, for instance, a plethora of colors and textures when he read a text.

I plan to explore the modes in *Invitation to a Beheading* (first publication, in Russian: 1935–6) that engage sense perceptions and create the peculiar nature of his storyworlds. This novel can be read as social criticism, although Nabokov repeatedly claimed he never had the intention to tackle any problems on a social level, as a representation of a surreal world, but several of its scenes can also be interpreted as representations of experiences of a heavily corporeal nature, such as anxiety. Besides the author's astonishing techniques of depicting ordinary and synesthetic sense perceptions and his extraordinary vocabulary, the patterns of dynamic structures and mechanisms of human perception sometimes seem to structure and motivate the whole of his texts as well as the plots of his novels. My aim is to examine where sense perceptions are traceable in Nabokov's prose and what their function can be in a narrative when it comes to the formulation of *storyworlds* and the production of meaning.

One of my claims is that besides the author's techniques of representation of sense perceptions and the vocabulary of his works, the

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patterns of dynamic structures and mechanisms of perception may occasionally structure and motivate his stories even on the level of the plot, thereby contributing to the entirety of the production of meaning a reader carries out when reading his stories. I also investigate the role of sense perceptions in the formulation of the characterization and the diegetic world of the novel by examining vocabulary and figurative language and what may be beyond them. In the second half of this chapter, with the help of a comparative analysis with Poe's "The Pit and the Pendulum," I examine how the understanding of the representations of Cincinnatus' sense perceptions and consciousness influences the way we make sense of the story, with special regard to its genre, which is, due to certain scenes, assumes to be absurd.

Embodiment, sense perception, and consciousness in Nabokov's works

Nabokov stories are obviously the result of very conscious writerly organization, planning, and styling. However, due to the topics of several of them, such as the problems of memory, fear, and anxiety, and their strong focus on the consciousness of their protagonists reflect or represent universal characteristics of these states of mind, such as their temporal or spatial structure or their embodied experiences of the represented events of the *storyworld*. As I attempt to show, the representations of sense perceptions of the focalizing characters of these stories are sources for examining these narratological problems.

As for the reading process, during the interpretation of literary works the reader constructs a series of simulations. Even if we do not directly experience things when we hear, see, or read about them due to their mediated nature, according to empirical evidence, we embody them through the simulation process (Barlassina and Gordon 2017). Cognition, and therefore language and narratives, are profoundly and meaningfully tied to sensory and motoric bodily processes and the environment. Several aspects of embodiment can motivate the construction of narratives and their interpretations. When it comes to sense perceptions, Marco Caracciolo's theory of understanding the "dynamics that [supposedly] tie together readers' familiarity with perception and their imaginative responses to stories" (Caracciolo 2014a, 93) explains that "people's imaginings can take on a sensory aspect, resulting in what is commonly known as mental imagery and sensory imagination" (ibid). Therefore, performing a mental simulation involves simply "imagining undergoing an experience" (94). As for the process of this phenomenon, as empirical evidence shows, the structure of sensorimotor patterns is the same in perceptual and simulated experience (95).

At the beginning of *Speak, Memory,* as he tries to recall his earliest experiences, Nabokov explains that memory, which, in his view, works

the same way as imagination, is built on and guided by perception: "In probing my childhood (which is the next best to probing one's eternity) I see the awakening of consciousness as a series of spaced flashes, with the intervals between them gradually diminishing until bright blocks of perception are formed, affording memory a slippery hold" (Nabokov 1999, 10). It shows that supposedly abstract and disembodied cognitive processes, such as imagination, memory, or even the interpretation of a text and sense perception, a typically low-level cognitive process can be strongly intertwined. In fact, as has been mentioned, according to cognitive theories, narrative itself is an organizational principle for human experience. This is one of the occasions where embodiment and cognition visibly cooperate. After a brief discussion of the role(s) of embodiment and sense perceptions in Nabokov's prose, I examine *Invitation to a Beheading* to see which parts of a story can be capable of eliciting a reaction in the reader and therefore contribute to the production of meaning possibly on a presymbolic level.

It is useful to have an overview of the way Nabokov used the themes of embodiment, sense perceptions, and consciousness in his works. In Nabokov's stories, embodiment is an immensely important element in many respects. Themes related to sexuality or the problematization of identity through characters' bodies, among many others, are recurring in the *oeuvre*. Representations of sense perceptions, especially visual ones, are important and characteristic of his stories. Different images of reflections in water, in puddles, or patches of light that break through the foliage of a tree leave strong impressions on the readers and have an influence on the whole process of the production of meaning.

In the posthumously published protonovel, *The Original of Laura* (2009), text, narrative, (mental) image, and corporeality are strongly intertwined: The bone structure of Flora is claimed to provide the structure for a novel (Nabokov 2011, 8) and her figure is repeatedly confused with literary text (11–2). The image a character named Delling creates of himself in the course of representing, remediating, and obliterating his body is an intriguing mixture of text, image, and corporeality (D3–4 (160–2)). The mental image constructed, incidentally on the blackboard of the back of his closed eyelids, becomes a combination of text, picture, image, and body. Therefore, interestingly, in the creation of the narrative meaning of Nabokov's texts significant roles are played by phenomena other than language, or the symbolic meaning of words.

It is crucial that Nabokov is always interested in the individual, in the representation of the consciousness of a character. He strongly rejected social or political connotations, as he claims in *Strong Opinions*, "I have no social purpose, no moral message; I've no general ideas to exploit, I just like composing riddles with elegant solutions" (14). Brian Boyd seems to explain this statement when he describes the nature of the "average" Nabokovian story.

> A Nabokov novel always intimates that the narrative is also something else, a strategy as much as a story: an image or a metaphor, a joke, a problem, a design, a playful puzzle, or a series of interlocking puzzles prepared by the author for us somehow to solve. The riddling strategy nevertheless arises out of the particular circumstances of the story, out of some special constraint or situation in the story, rather than being imposed on it arbitrarily, and is therefore different from work to work. (Boyd 2011, 161)

Boyd also notes that each of Nabokov's novels is driven by a character (ibid) as the writer "constructs his stories to reflect the unique, unpredictable rhythm of an individual character's mind" (174). Thus, Nabokov tends to build stories around the dramatic experiences that go on in a person's consciousness, apparently through very conscious narrative composition, but embodiment also has a crucial role in shaping the narrator's consciousness, hence the storyworlds.

Focusing on the reader with the evolutionary cognitive poetics' approach, Brian Boyd claims that we have an "avidity for pattern," stating that in general, the human mind delights in finding patterns (324), moreover, the very act of getting engaged in reading (for example by finding patterns) matters before the creation of the meaning of a particular piece of fiction (325). But, as I argue, the discovery of a pattern can also be understood as contributing to the production of symbolic meaning.

The patterns of consciousness are also easily observable in another Nabokov novel, *The Defence*. As Caracciolo explains, this novel gets readers *to* "*engage* with [Luzhin's] consciousness," as opposed to simply understanding or categorizing it, as he submerges himself in the "chess world," a virtual reality that restructures his consciousness as he internalizes it. It is only possible through the representations of Luzhin's experiences, among which his perceptions, e.g., what he sees and how he interprets it play an important part. Luzhin's story can be read as "an allegory of the relationship between narrative patterns and experience" (Caracciolo 2014a). I am currently looking for different roles for these patterns in a Nabokov story. Through sense perceptions, one can have access to the consciousness of the protagonist, which, in my analysis, may organize the whole narrative world for the reader to engage with. It is important to keep in mind that there are always more than one sense engaged at a time, and that there are more than five senses (such as the sense of balance or pain). In the following section, I examine how senses and perceptions contribute to building the storyworld, and narrative meaning in *Invitation to a Beheading*.

Liquidity, current, and "the idea of revolution"

To show how sense perceptions can become significant in a story, I examine examples from the vocabulary, characterization, the construction

of the time and space of the *storyworld*, as well as the narrative dynamics of Nabokov's novel. I also aim at tracing the potential experience these phenomena may elicit from the reader. For this, plot structures have to be imagined as dynamic and changeable, which in fact, fits the way Nabokov saw reality: as an elusive and unattainable thing.[1]

In *Invitation to a Beheading*, through 20 chapters and 20 days, we follow the experiences of the protagonist, Cincinnatus, who is sentenced to death. We witness his last days, or, I should rather say, the last days he spends in the (seemingly) absurd, theater-like, nightmarish world where he does not belong. In my analysis, I attempt to examine what different representations of sense perceptions allow the reader to learn about the consciousness of the focalizer character and how they contribute to the overall readerly experience of the narrative. In the second half of the chapter, through a comparative analysis of the protagonists' sense perceptions and other embodied experiences in *Invitation* and Edgar Allan Poe's "The Pit and the Pendulum," I claim that the scenes of the novel, which are traditionally interpreted as absurd, can be understood as defamiliarized representations of quite ordinary embodied experiences.

Sense perceptions

The importance of sense perceptions in the story is considerable throughout the story. The passage where Cincinnatus is led to a terrace on the top of the tower to look around is a sterling example. As they march up, the narrative space around the characters is entirely built by the descriptions of the light or the lack of it:

> Here and there it was necessary to turn on a light; a dusty bulb, up above or at the side, would burst into bitter yellow light. Sometimes, also, it would burn out, and then they would shuffle on through dense darkness. At one spot, where an unexpected and inexplicable sunbeam fell from above and glowed mistily as it broke on the eroded flagstones […]. (Nabokov 2010, 26)

The sight (or the lack) of rays of sunlight, the light of sunsets, and the moon repeatedly appear and take part in forming the atmosphere, the mood, and the overall meaning and experience of the story. The novel also repeatedly drives our attention to the perceptions of different kinds of the sight and feel of water and other liquids. Besides water, vaporized and melted liquid "qualities" are extremely important on different levels of the story. For instance, when the Tamara Gardens and the sight beyond them are first described as Cincinnatus is taken for a walk to a terrace, the reader is mainly given descriptions of lights and water in the scenery:

> […] *an amethystine shimmer* at the end, where the famous *fountain* played; and still farther, towards the hazy folds of the hills that formed the horizon, there was the dark stipple of oak groves, with, here and there, *a pond gleaming like a hand-mirror*, while other *bright ovals of water* gathered, *glowing* through the tender mist, over there to west, where *the serpentine Strop* had its source. (27, my emphases)

As for its vocabulary, like most Nabokov texts, it engages the reader by incorporating into the text various, often unusual, somatic cross-modal or synesthetic experiences. A good example can be found at the very beginning of the novel. The narrator calls the unread part of the novel "untasted" (1), inviting the reader to be conscious of yet another sense indirectly. Another memorable example is when Cincinnatus imagines his execution in terms of an intriguingly vivid, painful, and tense bodily experience. Not an actual beheading, but the removal of an aching tooth: "the wrenching, yanking, and crunch of a monstrous tooth, his whole body being the inflamed gum with his head that tooth" (52). The horrific scene is a fantasy of his future execution, while the "inflammation" metaphors and the pain attempt to render his present experience. This description of the execution is bound to make a strong impression, but the fantasy also reveals a lot about Cincinnatus's present condition, which is one of the chief motivators of the *storyworld*, namely that psychologically he is in a painful, "inflamed" state. In yet another scene, at the beginning of the third chapter, Cincinnatus hears noises from the corridor. Voices of various depths "whizzed," "surged up," there was a "hubbub," "bass," "bustle," "whining," "muttering," as well as "cracking," "booming," "huffing," and "clattering" sounds. All of these expressions are crowded on about half a page, which makes this part dense with voices and noises (20), and potentially triggers an intense series of simulations in the reader. Therefore, the text repeatedly takes up a strongly corporeal quality, which invites the reader to embody sense experiences in the form of mental simulations.

Waiting for his execution, the protagonist spends his free time writing a journal to himself about himself, and the process is crucial partly because it is also an important source of anxiety as he does not know whether he will have time to put everything he wants to into words before he dies. In the eighth chapter, Cincinnatus deeply suffers from the difficulties of expressing himself and explains that "brought up in the air, the word bursts, as burst those spherical fishes that breathe and blaze only in the compressed musk of the depths […]" (70). This image contains representations of experiences of vision, movement, as well as a sense of pressure, and the anguished struggle of a fish that has been yanked out of its natural environment. Regarding the embodied experience of pressure, the fear of an unknown threat[2] and an inability to

escape the situation, it can be interpreted as the representation of the state of mind of someone who suffers from severe anxiety. Cincinnatus is not only afraid of death: what seems to torture him the most is that he does not know the time of his execution.

The sight and feeling of evaporated and liquid qualities are also foregrounded when it comes to characterization. Already at the beginning, when the judge announces the sentence to Cincinnatus, his movements resemble the image of a sticky, dense liquid: "he was moving as though ungluing himself" (1) from Cincinnatus. As for evaporation, characters sometimes simply disappear, vanish, for instance, the director when he is introduced "in spite of his majestic solidity, he calmly vanished, dissolving into the air" (4), or Cincinnatus when he takes off his body parts as if they were items of clothing:

> He stood up and took off the dressing-gown, the skullcap, the slippers. He took off the linen trousers and shirt. He took off his head like a toupee, took off his collarbones like shoulder straps, took off his rib cage like a hauberk. He took off his hips and his legs, he took off his arms like gauntlets and threw them in the corner. *What was left of him gradually dissolved*, *hardly colouring the air*. (19, my emphasis)

As for liquids and melting, M'sieur Pierre's first description is also remarkable with regards to the material he is "made of":

> Seated on a chair, sideways to the table, as still *as if he were made of candy*, was a beardless little fat man, about thirty years old, dressed in old-fashioned but clean and freshly ironed prison pyjamas; […] a limpid aquamarine sparkled on his auricular finger, his *honey-blond* hair was parted in the middle of his remarkably round head, his long eyelashes cast shadows on his cherubic cheek, and the whiteness of his wonderful, even teeth gleamed between *his crimson lips*. He seemed to be all *frosted with gloss*, *melting just a little* in the shaft of sunlight falling on him from above. (40–41)

This description, crowded with metaphoric vocabulary, such as candy, honey-colored hair, or red lips,[3] plays with the sight of a person and a piece of the confectionery product. M'sieur Pierre even appears to be melting in the sunlight. Emmie, in another scene, is "splashed out" by Rodion from the cell to the corridor as though he was emptying a water bucket (81), and, when getting out of the prison through a tunnel, Cincinnatus "oozes out" of the fort like a drop of water (131). In all of these examples, characters "behave" or appear as liquids; therefore these instances of characterization also evoke the sight and feel of liquids in the reader and contribute to the general nature of the work.

The quality of the body of Cincinnatus is a problematic question, as it is rather undefinable, as he evokes different sense impressions in different people. His figure is unstable and quite difficult to imagine for the reader due to the oscillation of the descriptions. He is described as being "light as a leaf" (3), small, and skinny, with light complexion for the reader, and we know that he is opaque in the eyes of others. Therefore, when compared to other characters in the storyworld, sometimes it is him who appears heavy, dark, and unusually thick: "he was impervious to the rays of others, and therefore produced when off his guard a bizarre impression, as of a lone dark obstacle in this world of souls transparent to one another" (11). "He seemed pitch black to everyone else as though he had been cut out of a cord-size block of night" (13).

Narrative space and motion

The instability of Cincinnatus' character also contributes to the overall nature of the novel, which is mainly shown through sense impressions. Throughout the story, the reader encounters confusing changes in the density of things and characters: they melt and turn into air or water. There is an overarching process of unstable and unreliable motion on almost every level of the story. Eventually, the whole storyworld collapses and disappears into a cloud, but it already operates completely unpredictably even before this happens. In this nightmarish world, the reader repeatedly sees Cincinnatus wandering the corridors of the fort, seemingly getting farther and farther from his cell, but eventually, it always turns out that the corridors never lead him away from his cell; in fact, they always take him back there.

The unstable stream of events also shows how the narrative time is conceptualized and constructed. As it has been suggested, narrative time does not exist independently from narrative space (Gomel 2014, 26). *Invitation* is a sterling example of this since narrative time seems to "follow" the nature of narrative space in this story. Time is quite regular in a sense, as each chapter contains the events of one day, but it is subverted as well, as we know that the clock in Cincinnatus' cell is quite unreliable. The story, therefore, does represent a very forceful motion, a current one might say, flowing in circles regarding the chapters – each one begins with a new day, but with a similar scene: Cincinnatus inquiring about the time of his execution, or his torturers showing up in his cell with various enthusiastic ideas of activities, constantly dismissing Cincinnatus' questions, wishes, and demands. Considering the plot, it is just as whimsical, and seemingly unmotivated as the whole *storyworld* is to Cincinnatus, who feels out of place and alien all his life.

The events are unpredictable, exactly like the perceptions and thoughts of Cincinnatus, due to his tormented state of mind. He is running in circles, sometimes metaphorically, sometimes almost literally:

he involuntarily ends up back in his cell each time he thought he had left it. The unreliable, unstable state of things, from objects to places, to characters, might reflect the unstable mental state of Cincinnatus, who perceives and attempts to make sense of his environment. This impression is strengthened by the continuous representations of everything melting, evaporating, or moving similarly to water. As I demonstrated, these events and behaviors are characteristic of the narrative on the level of vocabulary, metaphors, characterization, and the temporal and spatial nature of the storyworld. This nature of the storyworld, and all of its elements, might contribute to the overall understanding of the narrative. While narrative comprehension is a very complex process, one can and has to observe its parts, which are available to our conscious examinations even if the whole process is always more than the sum of its parts. This chapter is meant to be such an attempt. In the following section, I explain how my approach to these representations entails a different process of the production of meaning, which might shed new light on the genre of the novel that is traditionally deemed absurdist and thereby renders certain scenes meaningless.

Embodied experience and the absurd

A typical Nabokov story usually unfolds in a European or American location and follows the life story of an aristocratic or intellectual (usually *émigré*) protagonist, often starting with an account of the protagonist's childhood. *Invitation to a Beheading* is an unmistakable but not quite typical Nabokov story. It seems to abandon realistic representations for the sake of creating abstract and absurd scenes (Hetényi 2015, 385) in an uncanny fictional world. The parallel between the dictatorial system of this world and the soviet regime might seem obvious (401). The novel has also been assumed to have a strong connection with Kafka's nightmarish world, although Nabokov had rejected the idea and claimed that he did not even know about Kafka's works when he created *Invitation to a Beheading* (Nabokov 2010, vii). As I have mentioned, the author has also rejected the idea of discussing social or political issues altogether.

Without an interpretative frame of some kind, this novel truly remains extremely elusive. If we accept Nabokov's claim that he is interested in the experiences of the individual, the absurd scenes gain a mundane meaning, i. e. they are representations of the embodied experiences of Cincinnatus' anxiety and fear, and the distorted, and sometimes hallucinatory sense perceptions are caused by his psychological state. This way, what is usually understood as absurdity becomes an emphasizing force in a representation of the processes of cognition of an individual, who is sentenced to death but not told the time of this certain and untimely death.

The beginning of the first chapter of the novel could be interpreted as a full-blown absurd scene:

> In accordance with the law the death sentence was announced to Cincinnatus C. in a whisper. All rose, exchanging smiles. The hoary judge put his mouth close to his ear, panted for a moment, made the announcement and slowly moved away, as though unglueing himself. Thereupon Cincinnatus was taken back to the fortress. […] He was calm; however, he had to be supported during the journey through the long corridors, since he planted his feet unsteadily, like a child who has just learned to walk, or as if he were about to fall through like a man who has dreamt that he is walking on water only to have a sudden doubt: but is this possible? […] Cincinnatus took off his silk jerkin, put on his dressing-gown and, stamping his feet to stop the shivering, began walking around the cell. […] Who was becoming sea-sick? Cincinnatus. He broke out a sweat, everything grew dark, and he could feel every rootlet of every hair. (1–2)

How does one move away from someone else "as though unglueing himself?" What makes Cincinnatus "sea-sick" in his cell? While scenes such as this leave a lot to the reader's imagination and are easy to interpret symbolically, since Cincinnatus is the focalizer character in the story, I believe that besides a description of his physical condition, these can be understood as representations of his state of mind and his ability to perceive what happens around him after learning what his sentence is. He walks unsteadily because all his strength leaves him as fear takes over his mind. The description of the way he was, "like a child who has just learned to walk, or as if he were about to fall through like a man who has dreamt that he is walking on water only to have a sudden doubt" is an excellent example of Nabokov's skill of creating an artistic representation of an ordinary feeling, therefore the absurd scenes can be understood as instances of defamiliarization.

When contrasted with the beginning of another story, Poe's "The Pit and the Pendulum," which employs first-person narration, but which is remarkably similar to *Invitation* in its topic, namely that it is about a character who is sentenced to death and then kept locked in a cell until their execution, it is easy to observe that the embodied experiences of the protagonist are the same as Cincinnatus'. Poe's short story helps attributing meaning to the absurd parts of Nabokov's *Invitation*. The following are the first sentences of Poe's short story.

> I WAS sick – sick unto death with that long agony; and when they at length unbound me, and I was permitted to sit, I felt that my senses were leaving me. The sentence – the dread sentence of death – was

> the last of distinct accentuation which reached my ears. After that, the sound of the inquisitorial voices seemed merged in one dreamy indeterminate hum. […] presently I heard no more. Yet, for a while, I saw; but with how terrible an exaggeration […] then, all at once, there came a most deadly nausea over my spirit, and I felt every fibre in my frame thrill as if I had touched the wire of a galvanic battery […] I had swooned; but still will not say that all of consciousness was lost. What of it there remained I will not attempt to define, or even to describe; yet all was not lost. (Poe 1951, 231–2)

What Poe's narrator does not even attempt to describe, Nabokov's does at the beginning of *Invitation*. Nabokov's descriptions are rather indirect, though. The difference between the two strategies of storytelling is the difference between showing something or telling something in a story. Nabokov shows where Poe tells, and this arguably makes the Nabokovian story more impulsive.[4] Cincinnatus' sea-sickness is Poe's protagonist's nausea, and when he feels "every rootlet of his every hair," he probably feels what Poe's unnamed narrator puts into the words, "I felt every fibre in my frame thrill as if I had touched the wire of a galvanic battery."

All through the novel, Cincinnatus' consciousness is almost as unstable as that of Poe's narrator's, who suspects that he is drugged by the Inquisition, although it is not spelled out, probably because Cincinnatus is not aware of it, at least not to a point where he could reflect on it. In Nabokov's novel, each chapter contains the events and experiences of one day in Cincinnatus' life. Therefore, the beginnings and the ends of each chapter show the first and last significant event, or the first and last memory Cincinnatus has of the given day. Hence, abrupt, awkward endings and beginnings without introductions might reflect processes in Cincinnatus' consciousness such as fainting, especially in chapters five and eight, which end with "it" becoming dark. In chapter eight, it means that the lights went out in the cell while in chapter five it possibly means that senses Cincinnatus was losing his consciousness, especially considering that at the beginning of chapter six he is very confused, and wakes up slowly. Chapter six begins with a description of a state of mind, the happiness entailed by the promised visit of his wife, Marthe, slowly forming after Cincinnatus wakes up:

> What was it – through everything terrible, nocturnal, unwieldy – what was that thing? It had been last to move aside, reluctantly yielding to the huge, heavy wagons of sleep, and now was first to hurry back […] swelling, growing more distinct […]. (Nabokov 2010, 48)

Chapter nine ends midsentence, with the words, "The door slammed with a crash. It was hard to believe that in this cell, only a moment ago –" (81).

A possible explanation for this is that throughout the novel, the perceptions of Cincinnatus are reported, switching to internal focalization occasionally, which results in awkward stops in storytelling, such as the ending of chapter nine, when Cincinnatus probably loses consciousness.

One of the most absurd scenes of the story can be found in the first chapter after Cincinnatus's sentence is announced when Rodion comes to Cincinnatus's cell after the sentence was announced and they start to waltz around in the fortress. Considering that it ends with the statement that it was a brief "swoon's friendly embrace" (3), the waltz is a delusional vision that Cincinnatus sees as he swoons, which, in the English translation, is incidentally the same word that Poe's narrator uses for when he faints after learning his sentence. There is another potential example of fainting and the sense perceptions that accompany it, this time represented as a feeling of getting tangled and sinking in water after the cell had "turned into" water:

> Here the walls of the cell started to bulge and dimple, like reflections in disturbed water; the director began to ripple, the cot became a boat. Cincinnatus grabbed the side in order to keep his balance, but the oarlock came off in his hand, and, neck-deep, among a thousand speckled flowers, he began to swim, got tangled, began sinking. Sleeves rolled up, they started poking at him with punting poles and grappling hooks, in order to snare him and pull him to the shore. They fished him out. (39)

This is arguably the description of a scene of Cincinnatus fainting in his cell and the others helping him up. The description of the cell turning into water and the sinking feeling in this sense are descriptions of Cincinnatus' altered experiences of space and his own body and movements.

When characters disappear or turn into air in Nabokov's story, it is deemed absurd because these scenes lack an explanation. Poe's narrator also remembers that the judges "magically" disappeared after the sentence was announced: "the figures of the judges vanished, as if magically, from before me; the tall candles sank into nothingness" (Poe 1951, 232), but right after telling this, adds that the experience was due to him swooning at that moment. This explanation fits all the disappearance and transformation experiences of Cincinnatus. With this view, the above scene related in the third person could describe Cincinnatus collapsing and the people around him helping him up. The novel ceases to be absurd if we accept that in these scenes, it is not the diegetic world that collapses, changes, and works completely unpredictably, but Cincinnatus' perceptions and understanding of it.

These scenes in my reading are the defamiliarized representations of the mental and embodied experiences of the protagonist, who goes

through the extraordinary, yet natural feelings of the fear of death, and extreme panic and anxiety, which is especially visible when compared to Poe's short story. Nabokov's strategy of representing these feelings results in what can be interpreted as sheer absurd, but actually, it may be an artistic, metaphoric representation of the embodied consciousness of a person who is sentenced to death without the knowledge of the time of his execution.

Conclusion

Human consciousness is heavily shaped by perceptions. What I attempted to show in this chapter is that a story that is built around a consciousness might also share the nature of its perceptions. Nabokov's *Invitation to Beheading* is such a story, and besides placing a special focus on the representations of perceptions in its vocabulary and also in its descriptions of the narrative space, the novel thematizes the perceptions (mainly through vision and touch) of liquids in characterization and in the description of Cincinnatus' experiences of metaphoric or literal scenes of swimming, sinking, or evaporating. Through representing the movements of water in its structure and the advances of the narrative itself, I claimed that the story pulls the reader into the current of its plot and contributes by providing this arguably embodied experience, contributes to the reader's construction of the meaning of the novel. A narrative that is constructed through a consciousness that is mainly characterized by anxiety, panic, and fear, follows the nature of this consciousness, which in *Invitation* is manifested metaphorically in the unpredictable and unstable movements of water and other liquids.

The reader, who is evolved to be sensitive to patterns, to the basic structure of the things he or she encounters and to engage with them on a mental as well as on a corporeal level may feel the familiar structures of his or her perceptions and the experiences they build – even if they are not constructed in an experience in the real world, but with a mediated experience of a *storyworld*. The reading process of this Nabokovian story, which is full of patterns of nature and human embodiment on several levels, is an exceptionally good example of such an experience. In the *Invitation*, space and time become unpredictable, instability and fluidity dominate on the level of the novel's vocabulary, its representations of events and characterization, and even in its discourse.

As for the process of the production of meaning, I believe this method of interpretation helps the reader gain an understanding of scenes in the novel, which are assumed to be meaningless and interpreted as sheer absurd. If one investigates the patterns of sense perceptions in the novel and accepts that Cincinnatus' consciousness is represented in the story, the absurd scenes can be understood as representations of the anxiety and the fear that the protagonist goes through. Edgar Allan Poe's

description of the experiences of another person who had been sentenced to death in "The Pit and the Pendulum," helps one adopt an interpretative frame to the absurd scenes in *Invitation to a Beheading* with which the absurd becomes the defamiliarized representation of subjective embodied experiences of fear and anxiety, with the help of the distorted sense perceptions of one's own body that they entail, and the scenes where characters vanish, places transform, and the world falls apart actually become not only meaningful in their own right, but reasonable and logical.

Notes

1 In *Strong Opinions* he explains the different views of reality and the problem of its imitation (Nabokov 2011, 101–02) and points out that "[w]hatever the mind grasps, it does so with the assistance of creative fancy" (Nabokov 2011, 131), therefore dismisses the idea of a unified, objective reality in favor of subjective, unstable versions of reality.
2 Hence his inability to express himself.
3 In the Russian original and in the Hungarian translation (which is based on the Russian) his lips are claimed to look like a cherry, which further strengthens the mental image of a confectionary product.
4 This part is also an example of free indirect discourse, which is a very effective mode of storytelling.

4 Storytelling with Tourette's syndrome in Jonathan Lethem's *Motherless Brooklyn*

The following chapter contains the most abstract analysis of this book because, on the one hand, its topic is quite different from that of the previous ones as there is no focus on the emotions of fear and anxiety in it, and the embodiment is less foregrounded in this story than in the others I analyze. I attempt to show that *Motherless Brooklyn* still includes phenomena that are traceable and worthy of examination with the help of a method built on the theories of embodied cognition and neuroscience. Embodiment and spatiality in this section are to be understood as the organizers of discourse structure. In the discussion of the aspects of the plot, embodiment is less of a direct experience in *Motherless Brooklyn* and more of a structuring principle, contributing to the "raw material" of meaning rather than symbolic meaning. Instead of the experience of one's egocentric space, especially one's own body, it is concerned with the narrator's and the readers' processes of navigation and exploration in a more metaphoric sense. On the other hand, the discussions of the syndrome and the symptoms that concern high-level processes of consciousness, such as language use, are often discussed through the operations of the somatosensory system.

Jonathan Lethem's *Motherless Brooklyn* (1999) is a detective novel and a neuro-narrative. The two genres are not difficult to merge; in fact, the traditional protagonist of the detective story, the detective, is often depicted as a person with a peculiar mental state, for instance, the figure of Sherlock Holmes. *Motherless Brooklyn* is a crime novel, the protagonist of which is a young man named Lionel Essrog, who lives with Tourette's syndrome. Lionel tries to find his boss's murderer as a self-appointed detective. Since he is the first-person narrator of the story, it is possible to read it as a representation of his consciousness. In the novel, the investigation and the consciousness of a person with Tourette's syndrome are described in parallel, and I examine the structure and the relationship of them. Lionel is a so-called unreliable narrator who often uproots the traditional steps of the investigation involuntarily. He is characterized by compulsive physical actions and mental processes and uncontrollable thoughts and movements. For instance, he obsessively

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repeats certain expressions while he strives to get ahead with his investigation, which lends the story a peculiar form and rhythm and makes the result of his work as a detective quite predictable.

I am interested in the narration of the story, with special regard to the way the narrator's perceptions become alienated due to his neurological disorder and the way it affects the process of the investigation. For people with Tourette's syndrome, motor and language functions become problematic simultaneously and interdependently. Since, in my view, both of these functions are strongly connected to narrative intelligence, I hypothesize that it is crucial to examine the effects of these symptoms[1] in the organization of the narrative. I aim to describe the characteristics of different narrative levels of a storyworld created by and through the consciousness of a person who lives with Tourette's syndrome. I chiefly focus on the way information is collected and organized, the way the reader's attention is led, and how the "Tourettic logic" influences the story's narration.

Tourette's syndrome. "'I consist of tics – there is nothing else'"

The most famous description of Tourette's syndrome can be found in Oliver Sacks' work entitled *The Man Who Mistook His Wife For A Hat and Other Clinical Tales* (1985). Lethem also references Sacks' essays when he talks about his novel in an interview (Köves 2011). Sacks describes Tourette's syndrome as a condition that is in opposition with "neurology's favourite term," (Sacks 1999, Introduction of Part 2) deficit. While neurological disorders usually entail the loss of a skill or a function, Tourette's syndrome is understandable as "an excess or superabundance of" (ibid) certain functions.

> Tourette's syndrome […] is characterized by an excess of nervous energy, and a great production and extravagance of strange motions and notions: tics, jerks, mannerisms, grimaces, noises, curses, involuntary imitations and compulsions of all sorts, with an odd elfin humor and a tendency to antic and outlandish kinds of play. (Sacks 1999, "Ticcy Witty Ray")

Besides these symptoms, people with Tourette's syndrome often also suffer from obsessive-compulsive and attention deficit disorders (Takács et al. 2017, 33). These conditions are also observable in Lionel's narration. His environment does not even try to hide that they view him as funny, annoying, pathetic, or all three. He is often referred to and even addressed as "Freakshow" or "free circus." Even if involuntarily, Lionel is used to playing the role of the "Tourettic clown" (Sacks 1999, "Ticcy Witty Ray") in social situations.

Tourette's syndrome versus storytelling

Motherless Brooklyn is an unconventional detective story. Its protagonist and "detective," Lionel Essrog is a man in his early 30s who suffers from Tourette's syndrome and lives in Brooklyn in the 1990s. He works with three other men, called the "Minna men," with whom he was raised in an orphanage. Their boss, idol, and father figure is Frank Minna, who started "employing" them occasionally in his hazy businesses when they were teenagers. Minna, who has a fun-loving and easy-going side, due to which he develops a unique relationship with Lionel, is, in fact, an insignificant mobster in the Italian-American mafia circles of New York. At the beginning of the story, Lionel and the other men work for the so-called Minna Agency, a detective agency disguised as a car service business. At least, that is what Lionel, and therefore the reader, believes initially. From their errands, such as monitoring people or buildings, one could indeed conclude that. These errands never require creativity or responsibility. As Lionel puts it, "Agency Men were the markers – like Monopoly pieces [...] to be moved around [the] game board" (Lethem 2011, 3).

Although he understands their position clearly, Lionel does not realize that what they assist is not detective work but the mafia's business. At the beginning of the first chapter, Lionel and another Minna man, Coney, sit in a car in front of a building. Minna ordered them to do that with no explanation. He shortly shows up and enters the building, and the only direction he gives to Lionel is to follow them if they come out and get into a car. The tailing fails, Lionel and Coney lose the vehicle they are supposed to follow. They find Minna later in a dumpster with several stab wounds, and he dies shortly after they take him to a hospital. Lionel is determined to find the man who murdered him. His mission is not easy, though due to his powerless position, he has little information about what happened, and his neurological disorder also hinders him considerably.

The plotline of the crime is not too complicated, but the investigation often falls out of the narrator's focus. What makes the novel engaging and unique is the representation of the syndrome, which is captured in the narration. There is a constant interplay between the way Lionel attempts to tell a story and what his "Tourettic brain" wants to do. Lionel refers to his condition as another self of his, not unlike a different narrating voice. Lionel is a good listener, and he can read people's behavior very well, which are the characteristics of a great detective. He indeed may be one, if it was not for his condition and the powerless position in which it casts him.

The most striking thing about Lionel's condition is his linguistic creativity. His linguistic tics, while they are unintentional, regarding their rhythm and associational logic, often take poetic forms (Schleifer 2001).

The protagonist unexpectedly bursts into utterances such as the one below, often in the most embarrassing moments:

> I gritted my teeth while my brain went, *Guy walks into the ambulance ramp stabs you in the goddamn emergency gut says I need an immediate stab in the garbage in the goddamn walk-in ambulance says just a minute looks in the back says I think I've got a stab in the goddman walk-in immediate ambuloaf octoloaf oafulpoe.*
>
> "*Oafulpoe*^{2}*!*" I screamed, tears in my eyes. (Lethem 2011, 27, emphasis in original)

This instance of logorrhea can be found in the scene at the hospital where Lionel and Coney take Minna after they finally find him. "Guy walks into" and "says" are parts of a joke Lionel was telling Minna on the way to the hospital to divert his attention from his wounds. The made-up words toward the end are partly made of the word "octopus," which was also a character in the joke. These are mixed with other expressions and phrases, most of which Lionel has recently heard in the hospital, finally making up an incoherent monologue, the last word of which is finally pronounced, making Lionel feel even worse. This is an instance of what he calls the Tourettic language. It does not only come to the fore in emotionally charged situations. Sometimes it intrudes the most mundane conversations: "Any calls? See that *homosapien, homogenize, genocide, can'tdecide, candyeyes,* homicide cop?" (124), he asks, later on, succeeding in pronouncing the word "homicide" on the sixth try. There are countless similar examples in the novel, which have a strong influence on the overall style of the narrative. Besides these, the reader gets numerous examples of the subjective experience of having Tourette's syndrome. One gets a glimpse at the structure of the condition since Lionel often tries to explain how his experiences are constructed. On the other hand, these parts show the dramatic side of the condition that may often appear creatively playful or comical, but that causes suffering to the individual.

In Lionel's consciousness, language itself appears to have agency. For example, in the hospital scene, as he remembers a joke, he cannot resist telling it, although the timing could hardly be worse. "The bargain had been struck, at a level beyond my control. The joke would be told. I was only a device for telling it" (32). His mind gets distracted by the most insignificant details, for instance, in the middle of a conversation, without him having a chance to act in any other way: "the power window had seduced my magpie mind and now demanded purposeless raising and lowering" (11). Languages, often along with compulsive movements, are forces, which Lionel can only resist for a brief time, and even during that time, they cause tension and suffering for him.

As he puts it, "my brain sizzled with language, my body with gestures" (140). In another situation, Lionel explains with another metaphor, "jabber was building up in the ocean of my brain like flotsam, and soon a wave would toss it ashore" (138).

Linguistic tics come like seizures, as he puts it, "I squeezed my eyes shut to interrupt the seizure of language" (175), sometimes causing Lionel considerable mental and even physical suffering: "I kept my tongue wound in my teeth, ignored the pulsing in my cheek, the throbbing in my gullet, persistently swallowed language back, like vomit. It burned as hotly" (48). In the following instance, language itself distracts the narrator's attention: "Barnamum Bailey. Like Osmium, Cardamom, Brainium, Barnamum, Where'smymom […] Not now, I begged my Tourette's self. Think about it later" (22). It is the Tourette's self that Lionel sometimes experiences as something entirely separate from him, that is in control of language (and therefore the narration) in these instances.

The constant distraction of attention and the reflection on the attention disorder both belong to Lionel's symptoms. Tourettic narration often wanders and "forgets" the investigation for a brief time and starts focusing either on the condition itself or on some insignificant detail. The syndrome is described and illustrated with more and more examples, and these descriptions visibly take the place of the building of the plot. There are more than enough similes and metaphors in the text explaining the syndrome. This is due to the fact that the attention of the narrator compulsively gets focused on his symptoms again and again. The Tourettic self is responsible for this by aggressively intruding Lionel's storytelling.

> Here's the strangeness of having a Tourette's brain, then: no control in my personal experiment of self. What might be only strangeness must always be auditioned for relegation to the domain of symptom, just as symptoms always push into other domains, demanding the chance to audition for their moment of acuity or relevance, their brief shot – coulda been a contender! – at centrality. Personalityness. There's a lot of traffic in my head and it's two-way. (131)

At other times, he projects his condition on various kinds of phenomena:

> *Conspiracies are a version of Tourette's syndrome*, the making and tracing of unexpected connections a kind of touchiness, an expression of the yearning to touch the world, kiss it all over with theories, pull it close. Like Tourette's, all conspiracies are ultimately solipsistic […] (178, my emphasis)

> *[T]here is a vaguely Tourettic aspect to the New York City subway*, especially late at night – that dance of attention, of stray gazes, in which every rider must engage. (237, my emphasis)

> *Insomnia is a variant of Tourette's* – the waking brain races, sampling the world after the world has turned away, touching it everywhere, refusing to settle, […] as though if it were to blink, then doze, the world might be overrun by some encroaching calamity, which its obsessive musings are somehow fending off. (246, my emphasis)

As I have mentioned, there is quite an impressive number of examples, such as the ones above in the novel. They are very loosely connected to the investigation as usually they are associations inspired by minor details of the story. Lionel is aware of this, and he leaves no room for speculation about it:

> Have you noticed yet that I relate everything to my Tourette's? Yup, you guessed it, it's a tic. Counting is a symptom, but counting symptoms is also a symptom, a tic plus ultra. I've got meta-Tourette's. Thinking about ticcing, my mind racing, thoughts reaching to touch every possible symptom. Touching touching. Counting counting. Thinking thinking. Mentioning mentioning Tourette's. It's sort of like talking about telephones over the telephone […] (192)

The concept of "meta-Tourette's" is probably the best illustration of the logic of the condition and the irresistible outbreaks of movements and language, which appear in the narration of *Motherless Brooklyn*. The following example shows how the syndrome leads Lionel's investigation and narration on the side-tracks from time to time. Lionel watches Tony, another Minna Man from a car, and tries to collect his thoughts by composing questions based on what he knows already and what he is currently observing. "What was the giant waiting for? What did Tony want to find in Minna's files? Why were his sandwiches in the car? Why had Julia flown to Boston? Who was Bailey anyway?" (246). The first four questions are relevant, since the answers to them would help the investigation. But the fifth is perfectly irrelevant: Bailey is just a name Lionel uses in his compulsive cursing. Lionel thinks a lot about how he started using this name since he never knew anybody named Bailey. This problem has nothing to do with Minna's death, but being put on the list of questions above this thought dislocates Lionel's thinking about the case as well as the reader's attention. Although, this can be understood as a narrative function: the reader is forced to question every statement of the narrator with regard to relevance. Therefore the narration guided by the logic of Tourette's syndrome may call the reader's attention to what actually would be the proper next step or important piece of information in the investigation. Lionel's missions both as the narrator and as a detective are doomed to failure. These "missions" indeed get only a secondary role behind

the – sometimes voluntary and sometimes involuntary – representation of his condition. Although his behavior is unique on the level of his tics and other symptoms, behind them, the general pattern of his self-centeredness and obsessive-compulsive way of thinking is quite predictable.

In the light of the above examples, it is hardly surprising that in the course of his investigation Lionel, who is constantly interrupted by his own Tourette's self, keeps missing the majority of the important events and fails to collect enough relevant information. In fact, due to his ineffectiveness, he is partly responsible for Minna's death when they lose track of the car they were supposed to tail, and by the time they find Minna, it is too late to save his life. On the other hand, despite his disadvantages, Lionel is not an entirely hopeless detective, moreover, his obsessive nature proves quite helpful in some situations:

> Coney and the other Minna Agency operatives loved doing stakeouts with me, since my compulsiveness forced me to eyeball the sight or mark in question every thirty seconds or so, thereby saving them the trouble of swivelling their necks. A similar logic explained my popularity at wiretrap parties – give me a key of list of trigger words to listen for in a conversation and I'd think about nothing else, nearly jumping out of my clothes at hearing the slightest hint of one, while the same task invariably drew anyone else toward blissful sleep. (4)

Besides his rare instances of successful concentration, he is talented at reading people's behavior and tone of voice. When Tony, another Minna Man, tries to question Lionel about what he had found out, he reads his behavior perfectly. "'Where?' But Tony's eyes said he knew perfectly well where, only needed to measure what I knew. He looked a little panicked, too" (180). Eventually, "with his questions Tony was telling [Lionel] more than [Lionel] was telling him" (183).

Unfortunately, despite these skills, due to his condition and insignificant position in Minna's businesses, he does not get ahead with the investigation. Lionel eventually does not solve any mysteries because he cannot take up someone else's perspective. Insignificant events get stuck in his mind, often simply because a phrase or a word sounds interesting to him, and he keeps thinking about these, making the reader question which pieces of information count as a clue and which do not. There are numerous important details that Lionel notices either too late or not at all. He takes the traditional steps of investigation: he goes to the important scenes of the crime, talks to people who might know something about it, etc., but the logic of Tourette's syndrome subverts all his efforts. He keeps thinking about obviously irrelevant events, while he does not even attempt to find out anything, for instance, about Minna's past, which would help the investigation.

Investigation can be understood as interaction with one's environment. But in Tourette's syndrome, it does not work. Besides the verbal tics, Lionel reacts to his environment by touching and poking at everything, including people. From strangers, it elicits distrust and suspicion, and the people who know him look down on him and try to exclude him from the case. He is often told that he does not understand the situation, and in fact, everyone around him is convinced – not quite mistakenly – that he does not know anything important.

Narrative organization

Lionel mentions several times that he sees the world and (the workings of) his brain as the same thing. This means that by describing the world, he describes his consciousness. The above examples of representations of the condition are observable not only in the dialogues and the distinct steps of the investigation. Tourette's syndrome as a neurological disorder is relevant for literary theory not only because linguistic tics have poetic forms. Lionel's tics intrude the narrative organization. They break it, stop it, hijack it on every level of the narrative. In the narration, irrelevant details keep coming up, such as the octopus in the hospital scene and on higher levels of organization, for instance, in the titles of chapters. The first chapter is titled "Walks into," which is the beginning of the joke with the octopus that starts with the cliché joke format: "a guy walks into a bar …" This can also be understood as a manifestation of Tourette's syndrome: the title of the opening chapter is the opening line of a joke that is repeated several times compulsively, and behind which there is a terrible, traumatic meaning since it is the joke Lionel tells Minna before he dies in an attempt to divert his attention from his wounds. The titles of chapters usually serve the organization of a narrative or at least emphasize a significant event in it, but here, this function is overwritten by Lionel's nervous excess of energy and inability to focus.

Motherless Brooklyn is a great example of Marco Roth's observation, according to which in neuro-narratives, characters who were previously given only minor roles become central, moreover, it is emphasized throughout the novel. Lionel mentions several times that he is in an isolated, unimportant position even among the Minna Men, who are all treated as board game pieces by the gangsters. By the end of the novel, it becomes clear that Minna's death was due to his conflict with more powerful mobsters. But the readers learn it not through Lionel's investigation but through the telling of Julia, Minna's widow, who eventually feels sorry for Lionel seeing how he struggles to find out what happened and tells him everything. This choice of revealing the actual crime story also suggests that the content of the story is secondary to the structure of the narration.

As for the mobsters, the Minna Men have met them earlier, and the businesses they had with them are good illustrations of the whole "investigation" Lionel was trying to carry out. "The Clients were discontinuous too. They were fractured stories, middles lacking a clear beginning or end. […] we were only tools, glancing off the sides of stories bigger than we understood, discarded and left wondering at the end" (167).

Lionel's knowledge due to his position is extremely limited. The concluding thought of the investigation is merely the following: "Then somewhere, sometime, a circuit closed. It was a secret from me, but I knew the secret existed" (304). The homicide detective to whom the case is officially assigned is not motivated to solve the case, and the incident is eventually sorted out by the mafia: the official and the Tourettic detective both fail. Lionel is unable to come close to understanding the important events, let alone influence them. Throughout the story, he narrates the events from a position where he cannot see them clearly. He finds this out only when he learns what had happened and realizes how far he was from solving the case.

The closing sentences of the novel are further examples of his work as a narrator:

> The world (my brain) is full of dull men, dead men, Ullmen. […] I can't feel guilty about every last body. Ullman? Never met the guy. Just like Bailey. They were just guys I never happened to meet. To the both of them and to you I say: Put an egg in your shoe and beat it. Make it like a tree, and leave. Tell your story walking. (311)

The work closes with two puns and a simple slight insult, all inherited by Lionel from Minna. This can be understood as closure, as a last tribute to Frank Minna. Still, regarding narration, these sentences work the same way the joke does in the first chapter: they are funny but otherwise insignificant thoughts that burst out of Lionel in place of coherent and concluding ones. Hence, yet again, the Tourette's self takes over the narration.

In the light of the phenomena I have discussed above, it seems important to consider the neuropsychological and cognitive characteristics of a condition in the analysis of certain literary works. As I had pointed out, due to the early stages of neuro-narratology, it would be difficult to draw a general conclusion or to build a comprehensive model for the construction or comprehension of narratives in this field. In the present case, since the narrator's condition seems to organize the whole of the *storyworld* he creates, the narrative organization itself can be understood as part of the protagonist's characterization.

One of the basic principles of cognitive narratology is that narratives are to be understood as structures that play an essential role in the

organization of our consciousness. Considering second-generation cognitive narratology, this means a structure that operates dynamically and flexibly as a part of the mind-body-environment system. Lethem's narrative "embodies" the nervous excess of energy that characterizes Tourette's syndrome (Schleifer 2001, 565). The plot seems to be the manifestation of the excess of energy, which is stopped from time to time and then jumps ahead in a random direction. At the same time, the narration also embodies the compulsive logic that keeps returning to and getting stuck at certain points.

The plot is far from linear, but its construction is not arbitrary either. It cannot be modeled as a (slow or fast) linear movement because, at each point, it is more like a set of movements in several directions due to the problematic strategy of the narration. Therefore, it can be another example of the "plot model in motion" that I have described in the analysis of DeLillo's *The Body Artist*. As for structure, these plot models are always to be imagined as models of embodied experiences. Narrative structures are traditionally conceptualized as high-level, abstract cognitive structures. In this sense, they are based on nonverbal, sensorimotor patterns. This theory aligns with Martin A. Conway's studies about imagination and memory. Conway sees the base of all conceptual knowledge in these patterns (Conway and Loveday 2015, 575). The forms of vitality may be especially significant to explain the possible effect of this narrative. The excess of energy that it conveys is more connected to the concept of vitality, and the sudden, forceful outbursts that the narration is teeming with are organized by the forms of vitality. Such quality of structural phenomena in narratives is usually unreflected, although it can contribute to the process of the production of meaning. It would be an overstatement to claim that these phenomena are equally present in all narratives, but in the case of neuro-narratives, they are often observable and worthy of further analysis.

Conclusion

This chapter contains the examination of a narrative and a *storyworld* that is constructed through the consciousness of a narrator who lives with a neurological disorder. The development of the theories of neuro-narratology may be especially fruitful through the analysis of a neuro-narrative since these narratives, not unlike neuro-narratology, apply the findings of neurology and neuropsychology. Besides these novels, it can be fruitful to examine any literary work that focuses on a character who has a problematic neurological condition, or a character put into an unusual environment that deautomatizes and problematizes the processes of perception and cognition.

Jonathan Lethem's *Motherless Brooklyn* is narrated and focalized by a character with Tourette's syndrome. Mechanisms of specific symptoms

of this condition, especially the excess of nervous energy, obsessiveness, and attention disorder, are embodied in this narrative on the level of dialogues, plot, and discourse. Besides what the reader would normally predict because of the expectations elicited by the genre of the crime story, one is confronted with the struggle caused by the interplay between Lionel's attempt of narrating and the intrusions of his Tourette's self, largely influenced by an inability to focus. When it comes to Lionel's condition, the story is very predictable, moreover, it is overwritten and repetitive. But regarding the crime story, it is impossible to make predictions, because there is not enough information based on which one could make precise predictions. Motherless Brooklyn, therefore, is an unusual reading experience that, on the one hand, according to the theory of predictive processing is potentially boring, and on the other hand, frustrating due to the lack of information.

Notes

1 Such as tension, obsessiveness, and outbreaks both in cognition in general and in speech, and in physical movements in particular.
2 Throughout the novel the italics mark the language of the "Tourettic self" of Lionel.

5 Narrative space and motion (lessness) in "The Ivory Acrobat"

The critical reception of Don DeLillo has been focusing on the recurring themes in his *oeuvre*. It has been addressing questions of American history and culture, the roles of (visual) arts and artists, as well as those of language and fiction. When discussing his style, DeLillo scholars usually agree that the author's prose is slow (Karnicky 2009, 5–18, 10–11; Osteen 2005, 64–81, 68; Boxall 2009, 190). Few movements of plot, still images, "slow time," and the suspension of time all seem to be prominent features of his novels. In fact, he has been criticized for creating too little plot development in his novels. As recent theories in cognitive poetics would argue, when we talk about speed or rhythm, we talk about embodied experience, since we conceptualize these phenomena through our bodies (Caracciolo 2015, 49–73, 59), even in such abstract forms as the "rate of motion" of a literary work. In this chapter, I examine the construction of the narrative space of a story by Don DeLillo. I aim at explaining how the perceptions, especially hearing, of the protagonist organize the narrative space and I explain how it affects the overall character of the slow narrative, which is still a largely unexplained notion in the DeLillo reception from a narratological perspective.

A discussion of DeLillo's prose with a focus on embodiment can be a significant new area in the reception. In what follows, I examine the role of sense perceptions in the constitution of his short story, "The Ivory Acrobat," and define their role in creating a "slow narrative." There are a number of ways for slowing down and suspending narrative time in the DeLillo *oeuvre*. My present concern is corporeality, the experience of the lived physical body and its influence on human cognition, and narrative space(s) and movement(s). There are complete stories built around it in DeLillo novels, *The Body Artist* (2001) is very similar to "The Ivory Acrobat" (1988) in this respect. In these texts, subjective bodily experience often seems to overwrite the importance of all other possible themes, to the extent that the conceptualization of the time and space of the narrative world is regulated by such experiences, be it Lauren Hartke's traumatized experience of time and space, or Kyle's constant,

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obsessive listening for the rumbles and tremors in the walls. I investigate the dynamics of the construction(s) of spatiality and (the lack of) movement in DeLillo's "The Ivory Acrobat" through body-centered sense perceptions of the story-level phenomena and the level of narrative discourse. I claim that the dynamic of this narrative is structured by certain cognitive processes of the sensing of space and the human body, resulting in what we call a slow narrative.

What I address in the following is the constitution of space and movement on the story-level as well as in the narrative discourse. Narrative space is recognized as one of the most important dimensions of narrative in the construction of *storyworlds*. Time and space are inseparable, which is obvious when it comes to discussing (narrative) movement. Narrative spaces are largely constituted by the focalizer's experience of it, especially when the emphasis is on the representations of abnormal circumstances or abnormal ways of perceiving. "The Ivory Acrobat," a story with a focalizer who becomes obsessed with her experiences of space, is a sterling example of this. While DeLillo's narratives are often concerned with visuality and the visual arts, especially film, occasionally other bodily senses become significant in his works as well, for instance, hearing in the egocentric representations provided by the focalizer of "The Ivory Acrobat," who claims to be reduced to an animalistic level of sense perceptions. Before discussing "The Ivory Acrobat," I briefly outline how embodiment becomes significant in DeLillo's prose.

Cognition and embodiment DeLillo's fiction

Recently, a significant part of the DeLillo reception reads him as an author who represents a "quality or a value that survives postmodern depthlessness and offers some kind of an opposition to it" (Boxall 2006, 12). As Peter Boxall points out, David Cowart sees language as the vehicle of redemption in DeLillo's work, while Mark Osteen claims the same thing about the role of art in his novels. What these two undoubtedly important themes have in common in DeLillo's work is the human body. It is the artist's body that is foregrounded in *Falling Man* or in *The Body Artist*, to mention only two of the numerous examples. As for language, DeLillo often reflects on it (especially its power and its limits) and embodiment simultaneously, regularly highlighting the relationship between the two. For instance, it is often the body that becomes the signifier on the threshold of language, as the following example from his novel, *Players* shows: "They waited for [Lyle] to say something. He sat, moving slowly as possible. His nose started bleeding again. This became the joke, of course. It was funnier than anything he could have said" (DeLillo 1991, 83). When Lyle becomes speechless, his body comes into the fore and "speaks for

him," carrying on the conversation. An even more striking example of the same technique can be found in the much-quoted lines from the beginning of *Falling Man*:

> [After the suicide bombers' attacks] the survivors, the people nearby who are injured, sometimes, months later, they develop bumps, for lack of better term, and it turns out this is caused by small fragments, tiny fragments of the suicide bomber's body. The bomber is blown to bits, literally bits and pieces, and fragments of flesh and bone come flying outward with such force and velocity that they get wedged, they get trapped in the body of anyone who's in striking range. […] They call this organic shrapnel. (DeLillo 2007, 16)

This is a powerful scene of the physical violation of the skin, literally by the body of another (albeit dead) human being. At this point, the narration of *Falling Man,* which was previously describing the scene of the 9/11 terrorist attacks as the protagonist had experienced it in detail, is suspended and replaced by a dramatic image of injured bodies. The personal trauma of the protagonist[1] is not spelled out, only implied by the extremely aggressive corporeal image of the "organic shrapnel." The influence of character bodies on the stories' discourses is not a completely new concern in DeLillo reception, either. In the analysis of *The Body Artist*, Cowart focuses on temporality, and he claims that "DeLillo emphasizes the body […] in which time literally pulses" (Cowart 2002, 207). Boxall observes that the suspension of narrative time is caused by the suspended body of the artist in *Falling Man* (Boxall 2009, 175). What I examine is a partially similar manipulation of the narrative stream, but one of a different nature: that of lived experience. I also try and attribute significance to this in the larger context of DeLillo's *oeuvre*. There is a shared belief in DeLillo criticism that his prose often seems to reach for something beyond symbolic systems, to a spiritual or otherwise intangible dimension. As Boxall elegantly puts it, "DeLillo's fiction moves constantly beyond itself. The rhythm and the shaping of his sentences produce a kind of a poetic excess; his sentences lead to a kind of deathly beyond that is secreted in language itself" (16). What I claim is that a possible source of this quality of his text is the way it foregrounds how language is intertwined with embodiment. His works are often called meditative. Just like in the case of meditation, in DeLillo's prose the spiritual and intangible dimension might have a lot to do with physicality and the human body. In an interview with Jonathan Franzen, DeLillo was asked "How important is meaning to your writing?" And he answered "Meaning? It is not the primary force at all. I think of myself as a writer of sentences and I will always follow language and will sometimes yield meaning to words, just to words […]." In his short story, "Midnight in Dostoevsky," one of the

main characters claims the same thing when he says that they should "abandon meaning to impulse" (DeLillo 2011). In my view, this notion may be connected to the "beyond" in DeLillo's fiction, since beyond symbolic systems, we find materiality and human corporeality in his works. The author also explains that he often starts the construction of a story by imagining a consciousness, around which he builds an environment: "I just start writing and *through a character* arrive at a sense of an overarching scheme, perhaps, under which he moves [...] It frequently happens that I begin a novel with just a visual image of something, a vague sense of people in three-dimensional space" (Binelli 2007). His explanation of the creation of *The Names* (1982) is rather thought provoking:

> In *The Names* I spent a lot of time searching for the kind of sun-cut precision I found in Greek light and in the Greek landscape. [...] I mean there were periods in Greece when I tasted and saw and heard with much more sharpness and clarity than I'd ever done before or since. And I wanted to discover a sentence, a way of writing that would be the prose counterpart to that clarity – that sensuous clarity of the Aegean experience. Those were my conscious goals [...] (DeCurtis 1991, 60)

Here DeLillo states that prose can have the same nature or structure as an embodied (sensory) experience, therefore bodily perceptions potentially organize the structure of the narrative. It is important to note that the short story that I am about to examine is also set in Greece, and although it was written a few years later (*The Names* was published in 1982 and "The Ivory Acrobat" was written in 1988), it potentially feeds on the strength of the above-described sensory experiences.

Sensing and constructing space in the "The Ivory Acrobat"

The story of "The Ivory Acrobat" revolves around an earthquake and its aftershocks, and therefore the problems of movement and space are fundamental in it. What makes it exceptional is that instead of the sense of vision, it concentrates on what is called "body-centered" or "egocentric" spatial processing, where the source of information about space is the body itself and its immediate environment (Millar 2008, 44). The story is driven by the protagonist and sole focalizer of the short story. She is a music teacher named Kyle, who lives in Athens. The area where she lives is stricken by an earthquake, and while the possibility of serious danger is gradually disappearing during the days following the quake, Kyle's fear is constantly growing. Anxiety and fear gradually take over and restructure her consciousness as she becomes obsessed with the fear of aftershocks.

The story is slow in the traditional sense: it is rather uneventful, and relatively long passages are devoted to the representation of perceptions, which is typical of slow sections in narratives (Bal 2009, 107). The narration is closing in on the (embodied) focalizing consciousness, and eventually not much of the *storyworld* remains available outside Kyle's own body. Slowing down the narrative stream works like a magnifying glass (ibid), as relatively little actual time and space gets "stretched out." The fashion in which the story is told is rather significant. Most of the scenes are slow and sparse, the characters usually move either slowly, or are completely motionlessness. Simple actions and the processes of perception, for instance, listening to rumbles in the walls, appear several times on almost every page, along with the act of standing still, paralyzed. Suspense is created and maintained both on the level of events, by the lack of movement, and, regarding the discourse, by the repetitive representations of constant fear of aftershocks.

Since narrative space is constructed and understood through Kyle's embodied consciousness, it is important to point out that her body and cognition are not quite ordinary. Kyle is a music teacher, her sense of hearing is very sophisticated, and throughout the story, it becomes increasingly sensitive. Slowing down and suspending time and movement is due to her experience of tense listening and hearing that is extended to her whole body in the form of muscle tension and paralysis. The organs of the sense of hearing and that of proprioception and balance are all in the ear, which is Kyle's primary source of sensory experience in the short story, along with her skin and muscles.

There are several recurring themes of unstable spaces and unpredictable, dangerous movements in the short story. They provoke motionlessness, which embodies a state of suspense, of being "on the verge" of a disaster, as an embodied experience that might look similar to, but which is in fact in opposition to, balance. This results in an increasingly slow pace and, eventually, pauses in the narrative. The embodied experience of suspense influences the representation of space and movements of the whole narrative. For instance, earthquakes are natural disasters that often entail unpredictable consequences, where the physical world literally collapses, or falls apart. There are also rather unclear concepts of "inside" and "outside" in the story concerning different categories of space. For instance, each time Kyle senses an aftershock approaching in her apartment, she stands under the lintel, on the threshold, because that is the most stable, thus safest part of a building during an earthquake. Conceptual shifts such as this are common in one's mental activity when one experiences fear. These include "the automatic imposition of categories such as 'dangerous' or 'safe'" (Tooby and Cosmides 2008, 118), even if they overwrite previously existing categories. That is what happens to Kyle, who obviously never spent time standing motionless on the threshold earlier. In her world, where an

earthquake may hit anytime, the concept of inside comes to mean danger, and outside means safety. The threshold between the inside and the outside is a crucial motif in the story, which can also be associated with suspense. This categorization gets generalized in her psyche and invades her body later in the story.

In the first scene of the story, we see the streets of Athens after the first wave of the earthquake. It is a description of a panicking crowd, strangely full of words and expressions that suggest an uneasy stillness:

> The horns grew louder in a kind of cry, an *animal awe*. The panic god is Greek after all. […] The long lines of cars, knotted and bent, made scant gains forward. *Paralysis*. She thought *the scene resembled some landscape* in the dreaming part of us, what the city teaches us to fear. (DeLillo 2011, 55–6, my emphases)

It quickly turns out that Kyle's whole life can be described as being in a state of constant suspense. She is away from her home, in a transitory place; even in her flat she uses a sofa for a bed with an airline pillow, both objects suggesting that she would only stay for a short time, even though she does not plan to leave soon. As she is introduced, the narrative places a swiftly narrowing focus on her bodily experience of fear and anxiety. She starts listening and waiting for the nearing aftershocks more and more often, and when she focuses on these perceptions, she freezes into whatever position she happens to be in, as the following description illustrates:

> *She lived inside a pause*. She was *always pausing*, alone in her flat, to listen. Her hearing developed a cleanness, a discriminating rigor. She sat at the small table where she ate her meals, listening. The room had a dozen sounds, mainly disturbances of tone, pressures releasing in the walls, and she followed them and waited. (60, my emphases)

Kyle is often described in the act of listening, being statue-like, motionless, and eventually, her character is reduced to sensory experiences:

> "[…] *I used to have a personality*. What am I now?"
>
> "Try to understand it's [the disaster] over."
>
> "I'm down to *pure dumb canine instinct*."[2] (62, my emphases)

Kyle's pathological obsession is obvious at this point. Her fear remains even though she is conscious of her isolation, and she is repeatedly confronted by the fact that the danger is most likely imaginary. Constantly listening to the rustle in the buildings becomes her chief activity. Her bodily movements are more and more reduced, and simultaneously, her sense of hearing is sharpened.

When one experiences fear, changes in perception and attention are, in fact, to be expected. For instance, "[one] may suddenly hear with far greater clarity sounds that bear on the hypothesis that [one is] being stalked, but that ordinarily [one] would not perceive or attend to, such as creaks or rustling" (Tooby and Cosmides 2008, 118). Kyle's problem is the persistence of these changes in her attention and perception, which are characteristic of clinical anxiety. Since she has "difficulties disengaging attention from threatening information," she is "getting stuck on *ruminative worry*" (Öhman 2008, 718, my emphases). As a result of that, Kyle is preoccupied with obsessively imagining over and over again what she would do in case of an emergency:

> She rehearsed her exit mentally. So many steps from the table to the door. So many stairs to the street. She thought if she pictured it beforehand, it might go more smoothly. The lottery man cried, "Today, today." (DeLillo 2011, 61)

The last line of the above quotation, the otherwise innocent words of the lottery man, sound clearly threatening after the preceding lines, implying that "today" may be the day she has to escape running from the earthquake. Soon every event and conversation in the story gets infected by Kyle's paralyzing anxiety. As Kyle's state gets worse psychologically, she becomes isolated from others, while somatically the border between her body and her environment becomes less and less clear in terms of subjective experiences. At the beginning of the story, Kyle is part of a crowd. Later, as the crowd refuses to panic when the aftershocks hit, she is alienated from others, and a colleague named Edmund remains her only companion. Toward the end of the story, he leaves the city and Kyle is left alone with the tremors and the rumbles. The borders of her self become problematic, as she is folding in onto herself in the repetitive routine movements and losing connection with other people.

After a while, due to the repetitious, convulsive acts of listening, Kyle feels that the tremors become a part of her body. In fact, they become essential constituents of her body. At this point, the mental categories of the inside, the outside, and the threshold enter her body. The aftershocks intrude and gradually invade her corporeal frame. They blur the border between her and her environment: "[T]he tremors entered her blood stream," they "lived in her skin and were part of every breath she took. She paused over her food. A rustle. An easing reedy tilt. She stood and listened, alone with the shaking earth" (61–2). This experience seems to exemplify a state where the experience of space invades the perceiver's body. The confusion and invasion of related but different spatial experiences and the experience of the focalizer's own body is indicative of a dysfunctional cognitive, and possibly neurophysiological mechanisms.

The consciousness of psychiatric patients suffering from panic attacks is almost exclusively filled with information from their own bodies and their egocentric space (Kállai et al. 1998, 123). While she does not show any other symptoms of panic attacks, Kyle's spatial experience is very similar to the description above. The following part is worth quoting at length:

> *She was deprived of sentiments, pretensions, expectations, textures.* The pitiless thing was time, threat of advancing time.
>
> *She was deprived of presumptions, persuasions, complications, lies, every braided arrangement that made it possible to live.*
>
> Stay out of movies and crowded halls. *She was down to categories of sound, to self-admonishments and endless inner scrutinies.*
>
> She paused, alone, to listen.
>
> She pictured her sensible exit from the room.
>
> She looked for something in people's faces that might tell her their experience was just like hers, down to the smallest strangest turn of thought. […]
>
> *She heard everything.* […]
>
> *She was deprived of the city itself. We could be anywhere*, any lost corner of Ohio. […]
>
> Take the stairs everywhere. Take a table near the exit in cafés and tavernas.
>
> And everything in the world is either inside or outside. (DeLillo 2011, 69–70)

The changes in Kyle's condition clearly show in her attitude and her appearance as well. Before the earthquake, she had been a graceful woman, but later she is lumbering, as her friend, Edmund, observes. When he runs out of arguments to convince her that the danger is gone, he gives her a gift, a small ivory statue of a Minoan bull-leaping acrobat, a "young woman […] in the act of vaulting over the horns of a charging bull" (65). The figurine, the eponymous ivory acrobat, is meant to be an attempt to remind her of her old self: lithe, flexible, and full of life. Kyle cannot identify with bull-leaping acrobats, although the parallel between her and this particular figurine is obvious. The statue is broken and the bull, the signifier of danger, is missing, just as real danger is not present when Kyle's fears it most of the time: we only know from the position of the figure that she is bull leaping, and similarly, the reader only knows from Kyle's bodily position (when she freezes) that an aftershock may be approaching.

Later, at her workplace, she comes across the ivory acrobat that she had forgotten about. The problem with the figurine, as Kyle realizes, is that "she didn't know what to do with it, how to underpin or prop it. The body was alone in space, with no supports, no fixed position […]" (71). The following are the closing lines of the story:

> [the statue of the acrobat] was a thing in opposition, defining what she was not, marking the limits of the self. She closed her fist around it firmly and thought she could feel it beat against her skin with a soft and periodic pulse, an earthliness. She was motionless, with tilted head, listening. […] She looked toward a corner of the room, concentrating tightly. She listened and waited. Her self-awareness ended where the acrobat began. Once she realized this, she put the object in her pocket and took it everywhere. (72)

The boundaries of Kyle's self have been intruded by the environment, especially by the tremors of the earth. Her perception of the world is problematic, her self-awareness ends at the surface of her body, which means that she seems to have lost the dynamic relationship with her environment that is an essential part of normal spatial perception and navigation in space. When she grabs the figurine, she finally seems to reclaim balance. She takes the figurine with herself everywhere, as though her balance depended on it, as it is "the thing in opposition" with her instability. All in all, this scene seems to describe the first step in her healing process, where she manages to redefine her lost vitality. Despite this silver lining, by the end of this short story, the reader is left with an extremely subjective and narrow focus through which the *storyworld* is to be interpreted and, due to the increasingly slow pace and pauses in the narrative, with a feeling of suspense that is not actually eased. Due to Kyle's obsession, the space of the *storyworld* is reduced to her body, more precisely the parts of her body that take part in the sensing of danger, the necessities of the "pure, dumb, canine instinct."

At the beginning of the argument, I stated that this story is not eventful in the traditional sense. But in terms of bodily experience, it is extremely rich and dense. It might remind one of Lauren's opinion about her own performance in *The Body Artist*:

> I know there are people who think the piece was too slow and repetitious, I guess, and uneventful. But it's probably too eventful. I put too much into it. It ought to be sparer, even slower than it is, even longer than it is. (106)

For Lauren, "event" obviously means embodied human experience. Both *The Body Artist* and "The Ivory Acrobat" are focused on the protagonist's embodied consciousness therefore, they rely on representations of

subjective, often bodily experience for their stories to unfold. That is what makes them dense and engaging. The embodied experiences are so emphasized that narrative time and space move with the character's body: when Kyle freezes, so does the time of the *storyworld*, and the narrative space shrinks to her body. This happens when DeLillo builds his story around a character's consciousness, an act that results in the narrative organized in accordance with a lived bodily experience. Suspense means the suspension of time, which is here due to the representations of the embodied experience of fear and anxiety of the aftershocks, which, on the level of the story, slow the narrative pace and (re)structure the discourse.

Conclusion

In this chapter, I have examined DeLillo's stories and scenes with a focus on nature and the process of building narrative space and movement. I have investigated the possible roles of embodiment in DeLillo's prose by way of narrowing down my focus on the short story, "The Ivory Acrobat." I have found that in the story, the representations of consciousness and of certain cognitive processes are placed in the foreground, and the structures of embodied consciousness motivate narrative composition and emplotment. DeLillo himself also claims that his texts are frequently created through a character's consciousness, who is occupying a three-dimensional space. I have examined "The Ivory Acrobat" with a special emphasis on the representation of the protagonist's bodily experiences, which seem to have an influence on the way the *storyworld* as well as the plot structure are built. The short story itself is based on tropes of unpredictable motion (the earthquake or the raging bull) confronted with motionlessness (the paralyzed protagonist or the ivory figurine) as well as problematic, unstable concepts of space, which results in a state of being on the verge (in the story, symbolically, on the threshold), a state of suspense concerning elements and existents of the *storyworld* as well as the nature and the making of the plot. Through the protagonist's body-centered perceptions of space and motion, the rumbles and the tremors, the "dull-witted terror," in DeLillo's words, of the impending disaster and its bodily experience, overwrite any other possible themes, and the suspense they create gradually takes over all aspects of the narrative. With regards to narrative space, it means gradual shrinking until no space remains in the story besides the body of the focalizer character, Kyle. "The Ivory Acrobat" can be read as the "fictional expression" of an unstable psychological state, which is enacted through the body of a character. Here, through concentrating on characters' bodies, DeLillo is abandoning symbolic meaning for the sake of impulse, therefore reaching beyond symbolic systems. He creates slow prose that is called the "fiction of momentum" through following the

structures of human embodiment. This description may remind one of Stern's concept of the forms of vitality, which also consist of a force and a form. These fundamental structural elements of a story always become foregrounded as the focus is shifted from events and actions to the experiences of the characters.

Notes

1 He is a survivor of the 9/11 attacks, who manages to escape from the towers with minor injuries but sees one of his friends and numerous strangers die.
2 It is mentioned in the story that dogs sense, and therefore can escape, earthquakes before they hit.

Part III

Sense perceptions and readerly experience

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6 Narrative experience as kinetosis for the reader: spatial perception in *The Body Artist*

One of the reasons why popular art is popular is that it relies on its power to stir feelings and emotions. In film studies, well-known theories describe the mechanisms of reception. For instance, porn, or sentimental film (a.k.a. the "tearjerker"), characteristically cause calculated effects on the viewer, usually because the reader identifies with the characters on screen (Williams 1991). All forms of art have powerful, if not adequately recognized, somatic potential and can elicit bodily reactions in their audience because all experience, as Merleau-Ponty has asserted, is embodied experience, and the very process of the production of meaning is anchored in our physicality. Such mechanisms of the reception of literary texts have largely remained unreflected. In this chapter, I describe an aspect of these mechanisms, which one can grasp with the help of the theories of image schemata and the forms of vitality, and which potentially enrich the definition, especially the function of narrative discourse.

A systematic explanation is still needed for the relationship between the structure and the effect of literary texts (Szabó 2012, 115). The views of embodied cognition also entail the consideration of the physical body as a component in the process of the production of meaning, and the examination of the possible somatic effects that a text can have on its reader. In the following sections, I attempt to conceptualize discourse structures with the incorporation of the human body and its neuropsychological experiences as active participators in the processing of narratives.

Norman Holland explains, leaning on neuropsychology, that when we are immersed in a story, "prior, memory-based knowledge [is] outweighed by … one's current involvement in the narrative" (Holland 2009, 65). I assume that in this situation, which Holland likens to a "trance," and Marie-Laure Ryan (2012) calls "immersion," narrative structures and representational techniques can contribute to the process of interpretation, which may result in bodily experience. This process is similar to the one of embodied resonances we have when we as we process certain expressions, but it is concerned with longer pieces of text, and possibly with whole narrative discourses. I focus on representations

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of space and the characters' experience of it, both in vocabulary and on the level of the whole discourse. I trace spatial metaphors in their patterns, which may have an effect on the reader's body. As for the analysis, I am particularly interested in the representation, (the protagonist's) perception, and (the reader's) interpretation of space and movement in Don DeLillo's novel *The Body Artist* (2001).

In line with the theories of second-generation cognitive science, I understand the (narrative) text as a part of the environment of embodied human consciousness, which is in a dynamic interaction with it. I hypothesize that spatial metaphors, which are abundant in all languages, have a crucial role in constructing plots and influencing the reader's experience. In my view, besides serving as the skeletons of plots, as Hilary Dannenberg argues in her monograph Coincidence and Counterfactuality (2008), they enter into a dynamic relationship with the cognitive activity of the reader, and the two mutually influence each other. Based on this relationship, I adopt the reading model of second-generation cognitive narratology, which includes the text as well as the mind and the body of its reader as active participators in the reading process. Through examining DeLillo's novel, I elaborate on the working of this model: in particular, I attempt to trace the spatial imagery that possibly motivates certain plot patterns, as well as the reading experience of the interpreter of the novel.

Image schemas and conceptual metaphors in literature

Alva Noë claims that when we apply abstract mental structures in cognition, we are aided by our experience of embeddedness in the world and also by our embodied abilities to explore the material reality of which we are a part (Noë 2004, 24). Like Gibbs, Noë also refuses the idea of modeling perception as something that takes place only inside the brain, for it "directly involves not only the brain but also the animate body and the world" (30).

Conceptual linguists and philosophers, notably George Lakoff, Mark Johnson, Mark Turner, Gilles Fauconnier, and Zoltán Kövecses, have developed the theory of image schemata and conceptual metaphors, which can provide an account for one of the basic sense-making patterns in linguistic, and other cognitive categories. Metaphor, as Johnson states in *The Body in the Mind* (1992), is "one of the chief cognitive structures by which we are able to have coherent, ordered experiences" (Johnson 1992, xv). Similar to Stern's conceptualization of the forms of vitality, "[s]chemata are typically thought of as general knowledge structures, ranging from conceptual networks to scripted activities to narrative structures and even to theoretical frameworks" (19). Stern's conceptualization of the forms of vitality and image schemas seem to have a lot in common, however, the forms of vitality include an

additional force, since they are strongly connected to the arousal system (Stern 2010, 24). Narratives, which are also described as having their "own" pace, arguably draw on this fundamental sensation of force. It is important to emphasize that these cognitive patterns precede symbolic concepts, and that we use them unconsciously (Hampe 2005, 1) in the course of "explor[ing] the experiential embodied nature of human rationality" (Johnson 1992, 100). Johnson explains that "we are dealing with preconceptual levels at which structure emerges in our experience via metaphorical extensions of image schemata" (85). Image schemata and forms of vitality, therefore, seem to have a lot to do with bodily experiences, and they prove to be the organizer, the engine, of a number of structures in language.

One of these structures is what linguists call conceptual metaphors, due to which we are able to comprehend certain ideas in terms of others: for instance, we understand quantity in terms of directionality when we say "prices rise," or we can conclude that in our conceptual structures "difficulties are impediments to motion" which we see when we say "He got over his divorce" (Kövecses 1998, 66). We know that prices do not actually move in any direction, and that the concept of divorce has little to do with spatial perception, yet that is the way we conceptualize them: in terms of being and living (in) a body. Moving along a PATH, or BALANCE are also typical cognitive metaphors with the help of which one can easily understand the logic behind an argument or a narrative (Turner 1996, 16).

Conceptual metaphors, image schemas, and forms of vitality are not ends in and of themselves. While they still generate debates among linguists and psychologists, they are regarded as significant tools for understanding the human cognitive system. Although the theory of image schemata and conceptual metaphors is usually examined on the level of words, phrases or sentences, and forms of vitality are understood as the formal aspect of certain experiences such as the sudden outburst of anger or happiness, it is assumed that the larger, higher, macro levels of a text might also have the same underlying, organizing systems and get their dynamic nature as they draw on what Stern terms vitality. Hence, plot patterns might get constructed in the same unconscious manner as cognitive metaphors. In the course of a close reading of DeLillo's *The Body Artist* I attempt to explore the nature of this constructing process and see how it relates to the body of the reader. According to the theory of embodied cognition, literary texts can be understood as the environment of the human consciousness. In what follows I attempt to describe how the presymbolic level of cognition, fuelled by neurophysiological mechanisms, may have significance in the construction of symbolic meaning in the process of reading a literary work.

A key concept in the question of experience and mental imagery is simulation. Simulation is a process accompanying the comprehension of language, during which lived, experiential, sensorimotor patterns get

activated (Szokolszky 2011, 4) through the phenomenon of resonance. It is an example of the finding which has been mentioned, namely that the brain makes use of its spatial and other mental structures tied to embodiment more often than what was previously assumed. Forms of vitality, image schemas, and cognitive metaphors therefore might have a role in the workings of the abstract, complex levels of narratives.

Kimmel chiefly detects the significance of embodiment in language on the level of words, and he is less interested in the effect these may have on the reader. Marco Caracciolo connects the construction of readerly experience to characterization and explains the ways one identifies with the perspectives, feelings, and experiences transmitted by the characters (Caracciolo 2011, 118), and later he theorizes the embodied experiences that seem to be overarching phenomena in certain narratives, such as the rhythm of the heartbeat in Poe's short story, "The Tell-Tale Heart," where the beating of the heart becomes foregrounded in a way that, over a "spill-over" effect, seems to provide structure to the text and the simulation process of the reader (Caracciolo 2014a). Hilary Dannenberg attempts to include the theory of image schemas and cognitive metaphors in narrative theory (2008), by understanding image schemas as the "skeletons" of narratives. For instance, Dannenberg imagines plots as PATHS we move along as we read them and rooms serving as narrative spaces as CONTAINERS. Following her idea but viewing image schemas as more dynamic and flexible structures, and also considering Stern's concept of vitality as the source of the flow experience readers may have, I imagine plot structures are motivated by presymbolic, embodied experiences. These structures are potentially able to influence the reader's simulation process, since, as it has been theorized in cognitive poetics, during reading, knowing that since even dangerous situations can be experienced without the actual risk of danger – although indirectly – we experience feelings and sensations unintentionally more intensively (Keen 2006, 220; Gallese and Wojciehowski 2011).

In the remainder of this chapter, I analyze Don DeLillo's novel *The Body Artist* to trace the bodily experience of space and movement on which the spatial imagery of the novel is based and to further elaborate the mechanism I have outlined. I examine the topographical level of the novel's narrative world, and the protagonist's experience of space and movement as well as the overall design of the narrative. I elaborate on how forms of vitality and image schemata might be projected into the plot patterns of DeLillo's novel and provide an example of the functioning of these phenomena in the plot structure.

Plot model in motion in DeLillo's *The Body Artist*

DeLillo thematizes language and human embodiment in several of his novels.[1] According to David Cowart, he often problematizes signification

and the roles of signs from several aspects. Besides language, he thematizes the signifying potential of images, culture, and mass media (Cowart 2002, 2) and the body, and, in the case of the latter, its subversive potential in symbolic systems. *Great Jones Street* (1973), *The Names* (1982), or *Falling Man* (2007) are great examples of that. The simultaneous thematization of the human body and language probably reaches its peak in *The Body Artist* (2001), where the protagonist, a performance artist, processes a psychological trauma and creates a performance chiefly through experimenting with motion and motionlessness as well as speaking and silence.

The Body Artist is an enigmatic work. Its protagonist and focalizer character is the eponymous performance artist, Lauren Hartke, who is left psychological traumatized after her husband's suicide. After the tragedy, she stays alone in the large country house they had rented together to cope with mourning alone. However, she shortly finds herself in a new company: a mysterious man of undefinable age and appearance shows up in her house, in one of the rooms upstairs. The man, whom Lauren names Mr. Tuttle, is incapable of normal dialogues. His speech is incomprehensible, disorganized, although, as Lauren notices after a while, he repeats parts of the conversations she had with her husband, word by word, he even imitates their voices and gestures. After a while, the man disappears as simply and abruptly as he had appeared.

His character can be interpreted in various ways. He may appear to be a homeless man, a mentally challenged person, or the ghost of Rey, the husband. Considering my approach, the most convincing interpretation is that Mr. Tuttle is the projection of Lauren's trauma (Cowart 2002, 205). Tuttle embodies the experience of trauma with his disorganized speech, his constantly being in the present (he has problems with the use of tenses), and his resistance to motion (he is usually depicted sitting still).

The novel is seemingly disorganized and fragmentary both on the level of the text and of the plot. For its reading, the "moving along a path" metaphor definitely cannot be applied. The reason for this is that, as Laura DiPrete points out, the novel shows the quality of the traumatized consciousness, where the fabric of time and space are disintegrated and become disjointed (DiPrete 2005). The novel, therefore, represents a psychological trauma and the process of mourning, where the problem of the psyche often manifests on the level of the body, in problems of processes of perception and motion.

The word "body" is in the title, and, through the art and the problems of Lauren her body is strongly emphasized throughout the novel, hence the attention of readers might automatically shift to their own body. There are a number of descriptions in the novel, where embodied experience is heavily emphasized. For instance, at the beginning of the story, when Rey is still alive, and has breakfast with Lauren, the

narration devotes a long description to the smell of soy, which is interpreted as *the* smell:

> The smell of the soya was somewhere between body odor, yes, in the lower extremities and some authentic podlife of the earth, deep and seeded. But that didn't describe it. […] Nothing described it. It was pure smell. It was the thing that smell is, apart from all sources. […] it was as though some, maybe, medieval scholastic had attempted to classify all known odors and had found something that did not fit into his system and had called it soya […] (DeLillo 2002, 16)

There are examples of crossmodal sensing in the novel, for instance, when Lauren tears the wax paper and "hears" it along her spine (34). Descriptions of Lauren's stretching and breathing exercises are also recurring in the story. During the breathing exercises, the protagonist's life becomes one with the process of breathing, be it steady or heavy breathing, or panting.

The novel is short, however, the pace of the storytelling is slow, and from time to time, when Lauren's exercises are described, narrative time nearly stops. The reader's attention is directed toward Lauren's movements; therefore the narrative time follows the rate of the protagonist's extremely slow movements. Lauren usually stretches her body slowly or gets into contorted positions and holds still for a long time. As the following quote illustrates, when this happens, Lauren slips into a meditative trans-like state:

> Her bodywork made everything transparent. She saw and thought clearly, which might only mean there was little that needed seeing and not a lot to think about. But maybe it went deeper, the poses she assumed and held for prolonged periods, the gyrate exaggerations, […] It made her go taut and saucereyed, arteries flaring in her neck, these hours of breathing so urgent and absurd that she came out the other end in a kind of pristine light, feeling what it means to be alive. […] and her slow-motion repetitions of everyday gestures, checking the time on your wrist or turning to hail a cab, actions quoted by rote in another conceptual frame, many times over and now slower and over, with your mouth open in astonishment and your eyes shut tight against the intensity of passing awareness. (57–8)

As for the narrative space, readers do not get much information about it, passages that would describe it are short and few. They can only explore space through Lauren's experience, which is distorted by her trauma. The following passage is an example of the way Lauren experiences

egocentric space, feeling her own body as alien, and occasionally sensing it "from the outside":

> She climbed the stairs, hearing the sound a person makes who is climbing stairs, and she touched the oak grain of the newel when she reached the landing. […] Her body felt different to her in ways she did not understand. Tight, framed, she didn't know exactly. Slightly foreign and unfamiliar. […] (33)
>
> She climbed the stairs, hearing herself from other parts of the house somehow. (37)

These descriptions are ambiguous. They are representations of abnormal perceptions. Lauren senses her own movements and the sound they make from the outside. It is possible that in the old house, the floor creaks at several places as Lauren walks on it, and that is why she hears "herself" from other points of the house, although this is also an unusual condition. The interpretation of such situations is left to the reader entirely, but Lauren certainly has problems with sensing her own body:

> In the first days back she got out of the car once and nearly collapsed – not the major breakdown of every significant function but a small helpless sinking toward the ground, a kind of forgetting how to stand. (33)

The novel is largely dominated by the inertia of Lauren. Narrative space and its experience are often foregrounded and often get problematic. In Lauren's consciousness, there are often more than one cognitive maps active simultaneously, and the differences between them may be responsible for the above-described loss of balance. The phrase "here and there" is mentioned quite often in the narration meaning that Lauren (or Tuttle) is "present" at two places simultaneously, therefore, she has two different experiences of space at the same time.

In the opening scene of the novel, Rey and Lauren are having their last breakfast together. Lauren is reading a newspaper, and the story that started in a linear manner suddenly gets disrupted by the actions and the places that Lauren reads about in the paper, the places and the characters get pluralized from time to time in the remainder of the first chapter. In the following scene, Lauren is involved in two entirely different situations, the one she is actually in and the one she reads about, and she experiences them as equally real.

> She sat over the bowl of cereal. She looked past the bowl into a space inside her head that was also here in front of her. She folded a section of newspaper and read a line or two and read some more or

> didn't, sipping tea and drifting. […] She read and drifted. She was here and there. The tea had no honey in it. She'd left the honey jar unopened by the stove. He looked around for an ashtray. She had a conversation with a doctor in a news story. (23)

Throughout the scene real events and the news that Lauren reads about randomly get confused. The reader also gets a glimpse of what Lauren experiences, narrated in the second person.

> when you look at a page and distinguish one line from another it begins to gather you into it and there are people being tortured halfway around the world, who speak another language, and you have conversations with them more or less uncontrollably until you become aware you are doing it and then you stop, seeing whatever is in front of you at the time, like half a glass of juice in your husband's hand. (19)

The protagonist often sinks into reveries, but at the beginning of the description of these scenes, it is often unclear whether these scenes actually take place or not. In some cases, it turns out that Lauren, who has been described as walking, has actually been sitting or standing still. These scenes turn out to be unreal in retrospect, but to some extent Lauren – and due to the internal focalization, the reader – experiences it.

Therefore, the traumatized protagonist cannot construct a unified and reliable cognitive map from Lauren's cues. She experiences space, time, and her body as alien, unpredictable, and fragmented. The reader is confronted with different, unexpected conceptual frames. The most visible and radical among these is the uncertainty of the narrative space. The reader gets limited, partial, and occasionally false descriptions of space, which makes it impossible to process space and motion in the usual topographical sense.

Other problematic parts of the story may not always represent difficulties in Lauren's perceptions but make it difficult for the reader to interpret the story. For example, when it is impossible to tell what happens as Lauren "looked, half looked, not looked in expectation but something else – a meaning so thin she could not read it" (35). A similar situation is described later in a scene where Lauren gives Mr. Tuttle a bath, "wordlessly naming" his body parts (68). At this point, it is not clear whether Lauren speaks or not. A multiplicity of possible meanings is observable again at the beginning of chapter five, where we find Lauren doing her exercises in the morning. "She stood nude in the workout room, bent left, eyes shut, checking the time on her wrist. *Or sat cross-legged*, back straight, breathing dementedly. […] *Or went about on all fours*" (73, my emphases). Due to representations like these, the reader might start asking questions: Does she move here? Or is she

standing still? The process of interpretation might be similar to the experience when one sits on a train and for a second cannot tell whether it is their train that started moving or the one next to it. Apparently, as for the above exercise scene, it is possible that Lauren takes one position after the other, but the conjunction "or" makes the interpretation, and the simulation uncertain. These parts could be understood as disnarration,[2] however, since the reader can hardly be sure whether the events and actions narrated this way happen or do not happen, this strategy of storytelling entails even more uncertainty than disnarration as Prince (1988) understands it.

The disorganized representations of space and its movements are DeLillo's dominant representational techniques in this novel. Experiences of space and motion are built from inconsistent, fragmented, or partly false impressions. Inconsistencies of both the representation of space and the reading experience are traceable to the uncertainty caused by the situations where we do not know whether (metaphorical or literal) movements actually take place. Occasionally representations of actions or events are questioned or "taken back," for instance, when during the breakfast scene, Lauren "folded a section of the newspaper and read a line or two and read some more or didn't" (23). The text and the logic of the narrative are also fragmented and inconsistent in the traditional sense. Toward the middle of the story, there are numerous short paragraphs, with spaces between them, which makes the text visibly fragmented as well. Moreover, many of these paragraphs could be read in any order, they would not make up a coherent, linear whole either way. It is difficult to illustrate this nature of the narrative with quotes from its text since looking at only certain parts of it has a very different effect than looking at the whole narrative, and hence experiencing its underlying structure has. The pattern of the whole of the narrative can be understood as its *megametaphor*. This is the level of the story that we only see when we look at a wider context, therefore, as Kimmel points it out, this is a part of the reading process which does not correspond with a particular part of the text (Kimmel 2009, 188).

The Body Artist represents uncertainty and a loss of balance due to which readers potentially do not understand what it is that they do not understand. This experience is not unlike the loss of balance that Lauren reports. This is caused partly by the overarching structure of the narrative. Behind the confusing nature of the text, a bodily experience of a similar nature should be detected. The novel shows a trauma, which can be understood as psychological loss of balance, which is often represented by the descriptions of problems with sensing one's own body and environment.

The embodied experiences of the characters, the events of the *storyworld*, and the text and the plot itself are characterized by the same fragmented quality: undecidable or incompatible events and impressions.

Such a phenomenon might contribute to the whole reading process. This experience may be similar in structure to the experience of incompatible sense impressions. There are not many bodily experiences of this kind since different senses usually contribute to the same, more or less unified experience. But there are exceptions, most notably the condition called motion sickness or *kinetosis*. The sensing of space and motion is built from diverse sources (Millar 2008, 3), and therefore discrepancy in spatial processing is possible. One of the most accepted explanations of the condition is that it is caused by incompatible cues[3]: a conflict occurs between the visual and the vestibular systems, which are in connections with each other physically as well, the eye does not sense motion, and the inner ear does, or vice versa. A similar condition is cyber-sickness, where the condition is due to the visual stimuli of motion while the body does not move (LaViola 2000, 47).

In the light of the above analysis, it can be said that the condition called *kinetosis* can serve as the structuring element of the narrative built on mutually exclusive forms of vitality, and image schemas. The megametaphor of the story in this sense can be the following: TRAUMATIZED EXPERIENCE SPACE AND MOTION IS KINETOSIS. This may manifest in the reading experience through making it difficult for the reader to feel a flow in the course of reading. While I do not believe that the narrative would have the same effect on any reader, it is conceivable that the reader – since, similarly to the focalizer character, he or she cannot simulate narrative space in the usual sense – becomes somewhat disoriented. The effect, in other words, the physical reaction is apparently much less than that of a direct experience of *kinetosis*, but it may show similarities in structure.

Conclusion

This chapter was an attempt in grounding the process of reading in embodied experiences. I was looking for patterns in the process of interpretation that are motivated by our embodiment, and in the light of embodied cognition, might be able to cause embodied experiences in the reader.

The analysis is based on the presupposition that the literary text can be understood as the environment of the reader's mind. The comprehension of literary texts is imagined as the comprehension of language, where the reader experiences a series of simulations. Our interactions with our environment leave traces of experiences in us, which are reactivated in the course of creating mental simulations. Symbolic language and presymbolic bodily dimension work together, interdependently in this process with the help of image schemas and forms of vitality, which are responsible for the overarching structure and "vitality" of the narrative.

The constructions of the representations of narrative space and its

experience Don DeLillo's *The Body Artist* are problematized and thematized through the story of a performance artist who strives to cope with a psychological trauma. In the novel, the reader is confronted with unusual, deautomatized representations of spatial experience, the lack of such representations, as well as disnarration. Due to the focalizor character, the reader experiences several incompatible inputs on the level of the text, on the level of the cognitive map of the narrative, and concerning the focalizer character's own body. In my analysis, the fragmented, disorganized narrative is grounded in a fragmented and disorganized embodied experience by having the same structure. The condition named *kinetosis* seems to be suitable regarding its structure.

If we accept that simulations of literary narratives are influenced not only by the vocabulary, characters' perspectives, and the pace ad rhythm of the text, but by the overarching structure of the plot, in *The Body Artist,* we find incompatible impressions, which make the simulation of narrative space and therefore spatial experience, and which are similar to *kinetosis* in structure. No consistent experience of space and movement can be constructed from the text, not even in retrospect.

Incompatible sense impressions have a similar (even if not the same) effect regardless of being experienced directly or simulated. Therefore, unlike image schemas, the narrative seems to be grounded in a preconceptual dimension, structured by embodied experiences. A strong relationship between environment, human embodiment, and consciousness is observable in this narrative, which probably has an effect on the reading experience. This effect in and of itself is insufficient to explain the whole of the reading experience; however, it should be a part of a complex reading model where social and cultural aspects of the experience are also taken into consideration.

Notes

1 Especially in his later works. See: Sári B. László (2021). 66–77.
2 The storytelling strategy of disnarration is discussed in more detail in the analyses of Danielewski's *House of Leaves* and Murakami's "Sleep."
3 Hence it is not a pathological state. Nonetheless, the symptoms of *kinetosis* may be feelings of disorientation, lethargy, or nausea.

7 Disorientation, dislocation, and disnarration in Mark Z. Danielewski's *House of Leaves*

In this chapter, I examine the ways *House of Leaves* creates a complex experience of uncertainty with its themes and content, and its form and structure. These phenomena are often deeply intertwined with concepts of spatiality. Besides that, the novel seems to construct an especially strong and influential engagement with its reader, which I believe is due to its multimodal nature and its peculiar strategies of narration. I am interested in the ways the novel construct the narrative world and create meaning through the examined phenomena. The analysis is inspired by the findings of neuropsychology, according to which I believe, discourse structures may be motivated by cognitive structures, which are often organized by spatial experience rooted in neural mechanisms.

The narrative of *House of Leaves* is not built around a specific illness, but the descriptions of different symptoms as well as structural phenomena are foregrounded in the novel. Consciousness, the nervous system, and various syndromes they may suffer from are often present in neuro-narratives mainly as topics; however, it has been noted that these works can also "make use of neo-phenomenological insights at a formal level" (Waugh 2013, 26). Stephen J. Burns also points out that "[s]ome of the most revealing syndrome novels are those that do not foreground cognitive models at the level of the plot but instead offer suggestive hints of their neural narrative through an author's formal and rhetorical choices" (Burn 2013, 36).

House of Leaves

I examine the ways the novel creates a complex experience of uncertainty both with its themes and content and with its style and structure. While *House of Leaves* is usually not examined as a neuro-narrative, it contains the representations of numerous pathological conditions such as phobia, psychosis, paranoia, and extreme anxiety. Several of these phenomena are often deeply intertwined with concepts of spatiality concerning narrative space as well as the abstract aspects of spatial cognition.

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It would not be possible to speculate about the exact effect *House of Leaves* has on its readers, yet it is crucial to assume that the phenomena that I examine are potentially the parts and aspects of a story that engage the reader and influence the (predictive) processing of the narrative.

The novel is not easy to describe or summarize. It is fiction, but it exists in its diegetic world as a nonfiction book, although its authenticity is questionable. It is based on the manuscript of an academic monograph dedicated to the reception and analysis of a documentary film titled *The Navidson Record,* which is about the exploration of a house, the interior of which violates the laws of physics and, seemingly, any logic. However, it is possible that *The Navidson Record* does not even exist as no character in the novel can find a copy of it. The novel starts with an introduction written by Johnny Truant, a young tattoo shop apprentice, who obtains a large pile of notes and printed text that later turns out to be a manuscript written by a recently deceased old man, Zampanó. Johnny starts adding footnotes to the manuscript, which are occasionally relevant to the main text, but most of them are his personal journal entries. He starts organizing and finalizing the manuscript, and by the end of the book, he slowly seems to go insane in the attempt, the process of which one can witness in his footnotes. The revised and completed manuscript is later titled *House of Leaves* and published. In my analysis, I mainly focus on Johnny's footnotes and the descriptions of *The Navidson Record*, especially the space it attempts to represent.

As this summary shows, Danielewski's novel is a complex book composed of different text types and styles. The "main text" of the novel mainly consists of lengthy discussions of mythology, physics, and philosophy in an academic manner. These sections often focus on space, perception, and a monster figure which nobody encounters directly. The characters only feel its presence in an abstract way. It is assumed to be the source of a constant, menacing, growling sound that is often present in the house, though, at one point, it is suggested that the "persistent growl is probably just a sound generated when the house alters its internal layout" (Danielewski 2000, 95). Hence a parallel is drawn between the monster and the narrative space of the novel. As Nicoline Timmer observes, due to its presentation of different texts and unstable characters, it "becomes difficult to disentangle the different levels and experiential domains in the book" (Timmer 2010, 260). "[T]he ontological status, in the fictional realm of the book, of many figures is unstable or ambiguous to say the least" (248).

Johnny Truant is probably the most significant character and narrator in the novel. Unlike the main characters of most neuro-narratives, Johnny does not have a specific diagnosis, though he has symptoms that suggest a pathology. He frequently suffers from strange fits, he was traumatized as a child, and he seems to have alcohol and drug addiction. Lacking a diagnosis may help successfully textualize his subjective

experience since, in the course of interpreting his character, readers cannot lean on their knowledge of a syndrome but always need to focus on Johnny's specific experiences; thus, the reader's interpretative process is potentially less generalized.

The Navidson Record starts as a home movie that turns into a documentary about a failed attempt to explore a house. The film is created by a Pulitzer Prize winner photojournalist, Will "Navy" Navidson, who moves into the house with his partner and two young children. In the beginning, Navidson only intends to document how his family settles in their new home. Soon after moving in, they notice that the house is slightly bigger on the inside than on the outside. After this, the interior of the house starts to change abruptly and disturbingly. New doors and an empty hallway appear. They are unreasonably dark and cold and have an utterly menacing atmosphere. Navidson, famously attracted by danger, eventually cannot resist entering the new hallway. He soon gets lost because the hallway turns out to be much larger than expected, moreover, it is constantly in motion. It narrows, expands, and reorganizes itself seemingly unpredictably. Later, expeditions and rescue missions are sent "into the house." Everyone who spends some time there changes dramatically, and always in a negative way. Some suffer psychologically, some get seriously injured, and some die.

Engaging and dislocating the reader

House of Leaves is a strongly visual and interactive multimodal novel that constantly calls attention to its materiality. There is "an elaborate engagement with the shape and meaning of the narrative," as stated on the novel's back cover (Danielewski 2000). When characters enter the hallway, the text gets fragmented, and there is usually little text on each page, which takes unusual shapes, for instance, that of a gradually narrowing tunnel that a character must crawl through in the story (443–61). Thereby the form of the text contributes to the creation of the narrative space of the novel. This way, the text and the graphic design often seem to enact or perform the ideas represented (Taylor 2012, 113) and take part in creating the meaning, which, in the case of multimodal novels, is usually not exclusively a result of "natural human language" (Hallet 2009, 139).

The content and the style of the novel may have an especially strong effect since, through specific strategies, the novel creates an unusually strong engagement with the reader. The first time Johnny describes a scene where he suddenly gets sick is a sterling example. He experiences brief fits which border on psychosis, involving psychological and physical agonies. During the first fit, Johnny feels the monster's presence that he never actually sees. He does not simply describe his feelings but encourages the readers, whom he addresses in the second person, to

imagine what he experiences with the help of the book that the readers are supposed to hold in front of them:

> To get a better idea try this: focus on these words and whatever you do, don't let your eyes wander past the perimeter of this page. Now imagine just beyond your peripheral vision, maybe behind you, maybe to the side of you, maybe even in front of you but right where you can't see it, something is quietly closing in on you […] Right at this moment. But don't look. Keep your eyes here. Now take a deep breath. Go ahead take an even deeper one. Only this time as you start to exhale try to imagine how fast it will happen, how hard it's gonna hit you, how many times it will stab your jugular with its teeth, or are they nails? […] (Danielewski 2000, 26–7)

Through this "exercise," guided by the narrator, readers are expected not only to imagine but to enact Johnny's experience. Moreover, readers are also expected to creatively participate as Johnny partly guides their imagination with questions instead of descriptions. Hence, readers are responsible for constructing the scene where they are attacked.

The first-person perspective, which is potentially the most personal way of storytelling, is probably exceptional due to its role in one's everyday mental activity, where it is "generally associated with the mental states of one's own person; mental states of another person cannot be experienced in first-person perspective" (Northoff 2003, 42). Therefore, it may also trigger identification in the reader in an unreflected process. Empirical testing has shown that compared to external focalization, internal focalization significantly increases readers' sympathy with a character, although reader variables such as age can easily overwrite this effect of stories (Hakemulder and Koopman 2010, 44). *Free indirect discourse*, the equivalent of Dorrit Cohn's *narrated monologue* (Cohn 1978), which is also present in *House of Leaves,* also appears to have a special effect on readers. Through *free indirect discourse,* characters' mental states, speech, and thoughts are presented through and together with the narrator's voice, principles, and other psychological characteristics. This narrating technique is assumed to elicit empathy from readers (Hakemulder and Koopman 2010, 42) and possibly entail identification with characters (43).

Despite getting involved in the story, the reader frequently gets disoriented or dislocated. For instance, throughout the book, the reader is confronted with different text types and led to skipping from the main text to footnotes and later back to the main text. There are also switches between perspectives. For instance, after reading Zampanó's manuscript written in an academic style, the reader visits a footnote that discusses one of Johnny's memories in a very informal style that is often not connected to the previous train of thought. Hence, while readers are

strongly engaged, they constantly get unexpectedly dislocated from their position throughout the reading process, leading to general uncertainty created by the style, structures, and techniques of storytelling in the novel.

Uncertainty, anxiety, and the functioning of cognitive schemas

Uncertainty and the fear it generates are present on multiple levels of *House of Leaves*. In Zampanó's text, they are provided by the space in Navidson's house, which keeps altering its interior, causing the literal disorientation of the characters. This part of the novel consists of descriptions of *The Navidson Record* written by Zampanó in the third person, but occasionally it employs Navidson as focalizer character. Except for one scene, the movements of the house can never be seen, but motion within the house is constant. Once someone enters the hallway and goes somewhat deeper into the empty, dark rooms, it becomes a question of luck when and whether they can find their way back. It seems to be of no use to remember which turns one took because the design of the house would always be different on the way back. Due to this, the narrative space of *The Navidson Record* (and therefore of *House of Leaves*) becomes impossible to map, even in retrospect.

The characters occasionally get motion sickness in the house, possibly because it continually moves.

> Navidson speculates Reston's sea sickness […] may have something to do with the changing nature of the house: 'Everything here is constantly shifting. It took Holloway, Jed, and Wax almost four days to reach the bottom of the staircase, and yet we made it down in five minutes. (Danielewski 2000, 165)

There seems to be little logic in the way the house keeps redesigning its interior, but it is suggested that the space in the house always alters itself according to the psychological state of the character who occupies it. On a similar note, it is assumed that the terrible experiences characters go through in the house are the manifestations of their troubled psyche (21). This idea is supported by the claim that the space of the house operates as an "interactive Rorschach test"[1] (197). Although the narrative space of *The Navidson Record* is fictional, its logic is in line with the principles of neuropsychology, according to which humans' spatial experience can be heavily influenced by their mental states.[2]

Numerous existents of the narrative seem to share the nature of the narrative space. The reader never finds out whether such essential parts of the story as *The Navidson Record* and the monster actually exist within the diegetic world. A similar kind of existential uncertainty is

present in the storyworld on the level of simple objects. Holloway Roberts, a "professional hunter and explorer" (80), organizes an expedition in the hallway with two colleagues, and the group spends several days exploring it. They place neon markers at certain places to help them find their way back later. The markers are later found in pieces. Moreover, they are not the only things that get "destroyed."

> […] Jed also begins to notice how more than a few of his buttons have vanished. Strips of velcro have fallen off his parka, shoe laces have shredded forcing him to bind his boots together with duct tape. Amazingly enough, even his pack frame has 'crumbled' - the word Jed uses.
>
> "It's kind of scary" Wax mutters in the middle of a long ramble. "*Like you stop thinking about something and it vanishes*. You forget you have pocket zippers and pow they're gone. Don't take nothing for granted here. (126, my emphases)

The issue of not taking the most fundamental things in life for granted is tackled throughout the novel. Toward the beginning, Navidson observes that "the floor begins to assume a new meaning. It can no longer be taken for granted. Perhaps something lies beneath it. Perhaps it will open up into some deep fissure" (67). Later Navidson wanders in the hallways alone and gradually gets more disoriented and eventually loses what is probably the most fundamental perception in life on Earth: gravity. He claims, "I'm no longer sitting on anything. The slab, whatever it was is gone. I'm floating or falling or I don't know what" (468). This confusion and loss of direction become even more severe when he later claims to have "no sense of anything other than [himself]" (471). After this, he runs out of film, and, although he survives, it is never revealed what happens to him, if actually anything happens. It is possible that Navidson only hallucinates.

Disnarration

Recounting events that do not happen plays a crucial role in *House of Leaves*. For instance, it is often used as a technique for creating disorientation in Johnny's journal entries. Regarding this storytelling strategy, instead of alternative spatial designs, here, alternative actions and events appear almost in parallel, and it is occasionally impossible for the reader to decipher what really happens, what does not take place, or whether the narrator even knows what happens.

The narration of phenomena that do not occur in a diegetic world is called disnarration. As a storytelling strategy, it describes various alternatives to what actually happens in a story. This technique pluralizes the narrative world, which can create temporary or lasting uncertainty.

Disnarration causes complications in Kukkonen's theory of predictive processing as well. According to her, "unfulfilled possibilities, or to put it more dramatically, the hypotheses that die with each transformation in a plot event, stay with the probability design" (Kukkonen 2020, 117), and such parts of a narrative take part in the process of interpretation as well.

Prince explains that

> [s]ince [disnarration] frequently consists of hopes, desires, imaginings and ponderings, unreasonable expectations and incorrect beliefs, since it depicts what is not or what might be and is often linked to carelessness, ignorance, or limitations resulting from insanity, delirium, an obsession, a psychological trauma, it can function as a characterization device. (Prince 1988, 4)

Prince argues that the disnarrated is not essential to narrative (ibid), which is evident if narrative is imagined as a series of events that took place in the past. But considering narrative cognition, anything that is told, as well as the organization of information and the form it assumes can be of great importance besides the actual content or truth-value of the recounted events and experiences. In Danielewski's *House of Leaves*, the disnarrated is not less important than any other part of the narration since it emphasizes the overall importance of plans, imagination, and even the miscalculations and other deficits in human cognition, which accompany the experiences represented in the novel that strongly influence the reader's predictive processing.

Through disnarration, the diegetic world of *House of Leaves* gets pluralized; however, the newly opened possible worlds, just like the hallways in Navidson's house, usually do not lead anywhere. If the disnarrated can be identified, it is always only in retrospect, hence in the course of reading, the reader never knows what is going to prove false eventually. The disnarrated parts sometimes turn out to be Johnny's fantasies. Such descriptions of events mostly directly concern Johnny's condition, especially his perceptions. His journal entries describe the people he meets and works with and his relationships with them. But as his condition gets more serious, he starts to focus more and more on it and on himself, and other characters gradually disappear from his stories. The outside world does not get excluded by him; it becomes unavailable for him as it did for Kyle, whose pathological fear limited her ability to engage with her environment and interact with others. At the same time, Johnny devotes long descriptions to egocentric contemplations; for instance, the reader is presented with a lengthy report on the "mutilated" inside of his cheeks, which he chews on when he grinds his teeth in his sleep (Danielewski 2000, 179).

His fits seem to occur randomly, since nothing seems to be triggering them. The disnarrated plays a crucial role in the descriptions of them. In the following quote, Johnny discusses his experience of one of the fits:

> I started to taste something extremely bitter, almost metallic. I began to gag. I didn't gag, but I was certain I would […] I started to throw up, watery chunks of vomit flying everywhere, sluicing out of me onto the floor, splashing onto the wall, even onto this [the manuscript]. Except I only coughed. I didn't cough. I lightly cleared my throat and then the smell was gone and so was the taste. (43)

Hence, the event that started as a violent fit of vomiting turns into a coughing fit first and then into a slight clearing of the throat, thereby creating three possible narrative worlds. To increase the uncertainty, Johnny sometimes confuses his perspective with that of others.

> I stub my toe. I'm falling down the stairs, tripping over myself, […] The wind's knocked out of me. It's not coming back. *Here's where I die, I think*. And it's true, I'm possessed by the premonition of what will be, what has to be, my inevitable asphyxiation. *At least that's what they see*, my boss and crew, as they come running to the back […] (72, my emphases)

The assumption that Johnny is dying does not only turn out to be false, it is not even clear whose assumption it was. Perhaps the most dramatic use of disnarration is in the following scene(s) where Johnny has a seemingly extraordinary and perplexing experience as he is leaving his house:

> I even momentarily blacked out, but came to just in time to watch the truck, still hurtling towards me until it was actually slamming into me, […] all that steel was grinding into me, instantly pulverizing my legs, my pelvis, the metal from the grill wedging forward like kitchen knives, severing me from the waist down.
>
> People started screaming.
>
> Though not about me.
>
> Something to do with the truck.
>
> It was leaking all over the place.
>
> Gas.
>
> It had caught fire. I was going to burn.
>
> Except it wasn't gas.
>
> It was milk.
>
> Only there was no milk. There was no gas. No leak either. There weren't even any people. Certainly none who were screaming.

> And there sure as hell wasn't any truck. I was alone. My street was empty. A tree fell on me. So heavy, it took a crane to lift it. Not even a crane could lift it. There are no trees on my block. (108)

In this scene, getting hit by a truck and being crushed by a tree are potentially Johnny's hallucinations. Another possible interpretation is that Johnny is in control of the narration, and the accidents with the car and the tree are metaphorical descriptions of a state Johnny is in, and he decides to express it in a defamiliarized manner. In this sense, he narrates the above scene(s) instead of simply stating that he feels as if he had just been hit by a car or a tree had fallen on him. The narrative becomes pluralized at these points, and the reader is always unprepared for the various versions of the event. Each possible world is considered, and soon after, most of them have to be discarded, which makes all of the following events that Johnny narrates suspicious and uncertain.

As for its content, *House of Leaves* shows an unpredictable narrative space that is impossible to map. On the other hand, the themes of insanity, pathological fear, anxiety, and possible hallucinations all represent a state of mental instability. Due to the style and the form, the reader often gets dislocated and forced to take a different position to be able to interpret the novel. What the reader is dislocated from in these instances seems to be the "flow" experience that Kukkonen describes in her explanation of predictive processing. The constant dislocation, I believe, leads to a peculiar reading experience that is also rooted in spatial experience, which underlies the book's effect due to which it is sometimes categorized as horror.

Although one of the genres that the novel is associated with is horror, the novel seems less concerned with fear than with pathological anxiety. If one cannot define the subject of one's fear, the experience is not fear but anxiety (Miceli and Castelfranchi 2015, 132). The mysterious monster figure is a great illustration of this. It is always assumed to lurk around the characters and drive some of them insane, but it is never visible or tangible. Similar to the cause of anxiety, it is an unspecified, indefinite threat. The narrating voices and different styles of narration can also be confusing and disorienting and as a result, they constantly increase the uncertainty in the meaning-making process the reader is engaged in.

Uncertainty, anxiety, and the functioning of cognitive schemas

Uncertainty is also a keyword in the definition of anxiety. There is a "strict relationship between anxiety and need for control" (135) as well. Having anxiety means the fear of lacking control over a possible

future situation. The type of control that is relevant in this analysis of *House of Leaves* is similar to "epistemic control."

> [T]he need for epistemic control is a need to know with the highest degree of certainty "how things are" and, as far as the future is concerned, how things will be (good or bad as they may be), rather than a need to adjust one's perception of the world, oneself, and one's own skills and capabilities so as to protect one's perception of control over events. In functional terms, epistemic control is of course instrumental to pragmatic control. (137)

Having epistemic control during reading seems to be a key element in the predictive processing of a narrative. *House of Leaves*, through its storytelling strategies and content, sxeems to be systematically playing with the reader's need for epistemic control. As for the effect this narrative can potentially have, it is useful to consider the way the experience of surprise has been conceptualized with the help of cognitive schemas. According to Rainer Reisenzein, experiences of surprise

> begin with the appraisal of a cognized event as exceeding some threshold value of unexpectedness or schema discrepancy, continue with the interruption of ongoing information processing and the reallocation of processing resources to the investigation of the unexpected event, and culminate in the analysis and evaluation of this event. (Reisenzein 2000, 264)

The schema-discrepancies and the "mental interrupts" (274) are of crucial importance in this process, but for the experience to be complete, they have to be followed by a revaluation or replacement of the schemas that previously proved useless. In the case of the narrative structures of *House of Leaves*, certain events often get either discarded or questioned, creating complete uncertainty by making it impossible for the readers to gain epistemic control. The reader only encounters the interruption or the schema-discrepancy, in the form of a prediction error, but without the chance to replace the previous schema (or prediction) with one that helps to advance the process of the interpretation. As for cognitive processes, *House of Leaves* seems to challenge predictive processing. It seems to confront the reader with the moment when a schema is deconstructed, and the construction of a new one is not complete or not possible. This mechanism, which is supported by the storytelling strategies and the discourse structure of the novel, is present throughout the narrative and potentially influences the readers' cognitive process of meaning-making, although certainly not in a constructive way.

Conclusion

As Mark Z. Danielewski's *House of Leaves* illustrates and as the neuropsychology of spatial experience explains, many of our most fundamental conceptualizations are built on our understanding of spatial structures. Neuro-narratives are potentially adept at showing this by representing mental disorders or problematic cognitive processes. *House of Leaves* thematizes perceptions and emotions in conditions and situations when they become deautomatized and problematized. The novel often performs and embodies them on the level of its narrative space or its techniques of storytelling. The reader of this work encounters metaphorical and literal unpredictability and instability in several forms. This way, the novel seems to be thematizing and problematizing predictive processing itself. The "horror" of the novel seems to lie in the experience of the moment when no suitable cognitive schema is at hand (yet) for one to have a firm grasp on the world. In this sense, the novel seems to manifest the very essence of crippling anxiety. The phenomena I have examined in *House of Leaves* may stand without symbolic meaning but certainly not without effect (Danielewski 2000, 60) or significance. However, they may contribute to the production of symbolic meaning negatively by creating an atmosphere of complex uncertainty and instability through the deconstruction of cognitive schemas of space and events in the narrative.

Notes

1 In my understanding the fragmented narrative space in DeLillo's *The Body Artist* functions in a similar way.
2 For instance, panic attacks entail a radically narrowed attention, which focuses less on the environment and more on one's own body, and simultaneously result in a lack of exploration (Kállai et al. 1998, 122). The consciousness of a person suffering from a panic attack is chiefly filled with spatial information derived from their own body and their egocentric space.

8 Representation of dissociation and negative emotions in Haruki Murakami's "Sleep"

The nameless protagonist of Haruki Murakami's short story, "Sleep," is unable to sleep, probably due to a severe case of dissociation disorder. Her life is hopelessly dull and uneventful, and to make her life more interesting for herself, she seems to be developing an unhealthy coping mechanism. In her description, her life is dull, monotonous, hopeless, yet she concludes that she has no reason to complain. As a first-person narrator, in relating her story, she attempts to remain honest and share her negative experiences while constantly trying to give them a positive evaluation. Due to this, as the story unfolds, her narration becomes more and more unreliable, distorted, and inconsistent until a point where the emotional arc of the story takes a sudden turn, and the narrator gets immersed in negative emotions.

In this chapter, I investigate how a specific cognitive process, dissociation influences the narration and the representation of emotions in Murakami's short story. Dissociation is characterized by a "lack of normal integration of thoughts, feelings, and experiences into consciousness and memory" (Giesbrecht et al. 2008). Emotions have a significant influence on our attentional focus as well[1]; hence a character who lives with this disorder can be expected to deliver a problematic story. Furthermore, in this narrative, the experience of dissociation is not only present on the level of the story, but it can also be instrumental in understanding the way the short story's storytelling techniques operate. "Sleep" is teeming with phenomena such as negation, disnarration, and gaps, which are traditionally understood to be reducing narrativity. I hypothesize that the representation of emotions – in the case of the main character of "Sleep," fear, anxiety, and happiness as well – provides the narrativity of the story. With a cognitive narratological framework, I plan to investigate more precisely the dynamics and the functions of disnarration, negation, and omission, with particular respect to the expressions of emotions in "Sleep," and I also consider the potential effect this story may have on its readers.

The definition of narrative that I build on in this book is similar to Monika Fuldernik's, which puts less emphasis on events and more on

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experience. In this understanding, the most crucial element of a narrative is a human(like) character who experiences what happens.[2] The question "what is the point of disnarration?" will be answered in this context. In narratology, it has become a vital issue to define the function of disnarration and how specific narrative strategies operate in this dimension of narration (Lambrou 2019). I investigate these issues in light of cognitive and neuropsychological theories, particularly the theory of the *default network*.

"Sleep"

Murakami's "Sleep" was translated into English by Jay Rubin and published in the *New Yorker* in 1992. While its style is unmistakable, it is quite different in several aspects from many of the author's most famous stories, such as *The Wind-up Bird Chronicle* or *1Q84*. It cannot be categorized as magical realism since, unlike in many of his other works, in "Sleep" there are no magical creatures or parallel spirit world. It does not even feature a cat, which is an iconic detail in many Murakami novels. "Sleep" is a first-person narrative, though, like Murakami's other works. The narrator is a 30-year-old woman, a Japanese housewife, who has a little son, and whose husband is a dentist. None of their names are mentioned in the story. She has a remarkably normal life; moreover, her life probably sounds miserably normal to the reader as she describes it in more and more detail.

The short story starts with the narrator's statement that she has not been able to sleep for 17 days straight and her claim that what she is experiencing now is *not* insomnia. She knows that because she had been an insomniac in the past once. As a university student, there was a period in her life when she could not properly sleep for a whole month. The difference between the two situations is that the lack of sleeping in the past was an awful experience for her. As she describes, "[i]n any case, what I have now is nothing like that insomnia, nothing at all. I just can't sleep. Not for one second. Aside from that simple fact, I'm perfectly normal" (Murakami 2003, 76). Moreover, she later adds that the lack of sleep makes her feel energetic, focused, and more beautiful than before. She experiences the exact opposite of everything that a lack of sleep is supposed to make her feel. Her life seems so hopelessly dull and uneventful that it makes her develop a condition that makes her perception of reality quite problematic. The narrator does not seem to be aware of it, but she provides descriptions of her experiences that are very similar to how psychologists describe the condition of dissociation.

The narrator is a housewife, and for her, each day is exactly like the one was before: monotonous and eventless. She repeatedly mentions that she cannot complain, though. She is a practical and unproblematic wife and mother, but she speaks in an emotionless manner about her husband

and child. After a lengthy description of her boring and repetitive days, she concludes:

> So that's my life – or my life before I stopped sleeping – each day pretty much a repetition of the one before. […] I'd sometimes wonder what kind of life this was. Which is not to say that I found it empty. I was – very simply – amazed. At the lack of demarcation between the days. At the fact that I was part of such a life, a life that had swallowed me up so completely. At the fact that my footprints were being blown away before I ever had a chance to turn and look at them. (81)

She admits that her life is dull and hopeless, but she refuses to pair these conclusions with negative emotions as she evaluates her life. The description of her present life contains few expressions of negative emotions, but this is perhaps due to the disciplined personality of the narrator.

After providing a summary of her everyday life, the protagonist describes the experience that she sees as a starting point of her present sleepless period. Although she does not find her condition problematic, she admits that it has started with a strongly negative experience, a nightmare, and, following it, a frightening sleep paralysis. After waking up, the narrator feels upset and stays up until morning reading Tolstoy's *Anna Karenina*. In the morning, her life continues normally, and the protagonist does not talk to anybody about her night. The only change is that from this night on, she does not sleep.

During the first week, her condition worries her somewhat, but as time goes by and she does not start to feel tired, she becomes more confident and carefree. Interestingly, she is happy about her condition since the lack of sleep makes her feel energetic and able to concentrate better. However, after a while, without a transition, her mood suddenly changes, she feels gloomy and gets preoccupied with frightening thoughts about death. She assumes death may be similar to her current state, which she previously described as ideal. During most of the narrative, the lack of sleep has the opposite result of what the reader would predict about a character who has not slept for several days. This can be explained by a dissociation disorder, which she seems unaware of, although she describes it several times throughout the story.

In the closing scene of the story, emotions become very significant. She goes out alone at night to drive around the city. Then she parks her car and thinks about her life and her past. Eventually, she gets lost in her thoughts until suddenly, two strangers she describes as "dark shadows" attack her car. She cannot start the vehicle; hence she is trapped in it,

panicking. The situation gets tenser and tenser, and the strangers are about to turn the car over when the story ends abruptly.

Dissociation, disnarration, cognition

One may expect that in this story, the narrator becomes more and more disorganized throughout the story as more and more time passes without her sleeping, not unlike the narrator of the "Yellow Wallpaper," whose journal entries start to show formal signs of a disorder, for towards the end of the story it becomes increasingly difficult to tell whether the narrator talks about herself or the woman she sees behind the wallpaper. But in "Sleep," the narrator describes her sleepless period only in retrospect. By the time the story starts, she claims not to have had any sleep in the last seventeen days. The first paragraph is worth being quoted at length.

> This is my 17th straight day without sleep. I'm not talking about insomnia. I know what insomnia is. I had something like it in college – something like it because I'm not sure that what I had then was exactly the same as what people refer to as insomnia. I suppose a doctor could have told me. But I didn't see a doctor. I knew it wouldn't do any good. Not that I had any reason to think so. (74)

The paragraph contains an impressive number of negations, contradictions, and expressions of uncertainty.

The first few sentences already show some contradictions in the way this narrator thinks. She claims she knows what it is like to have insomnia. However, in the following sentence, she admits that she is not sure what the condition is like. She reports that she "knew" that seeing a doctor could not help her, but after claiming this, she adds that this belief is not reasonable. She seems to be aware of some of the contradictions in her narration, for instance, her idea of not seeing the doctor. She points out herself that her decision was not reasonable. On the other hand, she is unaware or in denial of other contradictions, such as the fact she does not really know what it is like to have insomnia. Therefore, for the reader, she appears as an unreliable narrator already at the beginning of the story.

The first two sentences are especially significant. In a sense, they are a minimalistic version of the story: the narrator has some mental, cognitive, or neurological problem that she denies. On the other hand, these two sentences exemplify the storytelling strategy that readers can observe throughout the story: the narrator makes a statement that the reader is very likely to interpret it in one way and then claims or explains that the statement means the opposite of what the reader could expect.

The emphasized parts in the above quote mark the negations. Most sentences contain at least one. These are examples of a technique of

disnarration: through negation, the narrator tells about the things that did not happen. Marina Lambrou interprets this method of storytelling as foregrounding, where negated phenomena are emphasized and repeated, especially if they are not in line with readerly expectations (Lambrou 2019, 23). The first paragraph of the short story is also a sterling example of what Geoffry Leech has termed *negative uninformativeness* (1983). Negative uninformativeness is a concept in pragmatics. It is a sub-maxim of Griceian Maxim of Quantity. Leech explains that negative statements should only be used when they are more informative than the positive ones that we could use in their place (Leech 1983, 101). According to the Maxim of Quantity, whenever we can, we communicate with positive statements. Therefore, when somebody expresses something with negation, that elicits more interest and attention from the listener (Giovanelli 2003, 126). Relying on Text World Theory, Lambrou also claims that negation always results in pluralization, since to negate an entity or an event, it first has to appear in the reader's imagination (Lambrou 2019, 92). On the other hand, just like in conversations, negation used this way possibly elicits more attention from the reader as well.

One can assume that the condition of the narrator is abnormal. The vehement denial of a logical reaction we may have to something, and the denial of the fact that we need sleep, in particular, are elements of narratives that have been used to represent insanity. Hungry Joe in *Catch 22,* who is distressed when he is supposed to be relieved and vice versa, and Eric in *The Wasp Factory,* who states that it is a lie that humans need sleep, are not described as sane, in fact, they are clearly referred to as "crazy" in their respective storyworlds. What is peculiar about the narrator of "Sleep" is that she does not look insane: she seems to function perfectly, and nobody notices that she has not been sleeping for a long time.

She speaks about her life and her family in a detached manner, barely expressing emotions, which is often a sign of being objective and consistent. But in her case that is a misleading first impression because her narrative strategies, in other words, her storytelling techniques are far from disciplined and ordered, which can lead the reader to question the validity of her claims. Interestingly, for the reader, the absence of emotional imbalance and the lack of complaints may maintain the appearance of sanity and reliability at the beginning of the story despite the confusing meaning of what is narrated. On the other hand, as has been mentioned, the narrator of "Sleep" does not appear to be a problematic character in her own storyworld, since she functions perfectly as a wife and as a mother, even her family members do not notice that she has not slept for weeks. The reason for this may also be her function in the story. She is the sole (unreliable) narrator of "Sleep," therefore her version of the events is the only version readers have access to as they never see her from another point of view. Hungry Joe and Eric Cauldhame are only

supporting characters in their respective stories, they do not function as focalizers and are always shown through the perspective of other characters. But despite the disciplined personality of the narrator of "Sleep," readers may soon find out that they face a very disorganized consciousness through the narration. There are several hints in the first two subsections of the narrative, for instance, the narrator explains that the insomniac period she has had in the past came and later went without any apparent cause.

> *I have no idea* why I became an insomniac then nor why the condition suddenly *cured itself*. It was like a thick, black cloud brought from somewhere by the wind, a cloud crammed full of ominous things *I have no knowledge* of. *No one knows* where such a thing comes from or where it goes. I can only be sure that it did descend on me for a time, and then departed. (Murakami 2003, 76, my emphases)

She understands this period in her life as one over which she had no control and describes her current situation similarly. The only control she seems to have is over what she does at night instead of sleeping. Another complex hint is when she says that sometimes her car would not start. She says, "[i] t's not bad enough to have the thing fixed. […] Oh, well, everything-everybody-gets out of whack once or twice a month. That's life" (79). The reader may have the impression that the narrator does not necessarily see problems as problems even if they are quite clear, mechanical ones, let alone complex, subjective, psychological issues.

There are barely any tellable events on the level of the plot, for simply nothing interesting happens. The housewife does her everyday chores by day and reads by night. Whenever she describes what she does during the day, including taking care of her child when he is sick and having sex with her husband, it serves as an example of how insignificant the event is. The story can be understood as an antinarrative since the narrator keeps referring to her *lack* of sleep as the most important thing in her present life, and she keeps repeating that she does *not* feel tired. What makes this story interesting is what does *not* happen: it is a short story about the narrator's *lack* of sleep which *does not seem to have any effect* and which *nobody notices*. This is why I regard the emotional arc of the story as the element that provides the narrativity of the short story.

One cannot diagnose a literary character, but the narrating character of "Sleep" certainly has serious problems. Her description of her condition allows us to believe that she is prone to a more or less defined dissociative disorder. As she describes it, "[i]t was easy once I got the hang of it. All I had to do was break the connection between my mind and my body. While my body went about its business, my mind floated in its own inner space" (95-6). The narrator talks about this as a normal,

balanced, practical way of thinking. The narrator never sees a doctor; hence she is never diagnosed with a specific condition. However, it is useful to understand it as a neuro-narrative, the narrator of which struggles with an unspecified mental, cognitive, or neurological problem that the narration *shows* instead of naming or describing it. Similar to *House of Leaves*, where Johnny also has no diagnosis, the lack of a diagnosis is a very productive gap in the narrative as it does not allow readers to make generalizations about the narrator's condition. The reader needs to actively interpret everything the narrator experiences instead of automatically seeing instances of strange behavior as a symptom of a specific condition. Such stories with problematic narrators or focalizor characters may let us theorize narrative cognition in a way that other stories would not.

In the storytelling strategies, the reader may observe systematic problems, which become understandable with the help of cognitive theories. These strategies are disnarration, negation, and omission, which traditionally do not contribute to the narrativity of a story. Yet, in this story, these are not additional but critical elements. I mainly concentrate on disnarration, coined by Gerald Prince and defined as "terms, phrases, and passages that consider what did or does not take place" (Prince 1988, 3). Negation and omission are techniques of disnarration.

"Sleep" is very rich in disnarration. The nightmare, the sleep paralysis, and the closing scene, which are all significant scenes or events in the story, are all disnarrated. A story that focuses on the consciousness and subjective experiences of a character and heavily features disnarration can be important from a cognitive narratological perspective. Since disnarration often involves beliefs and hopes, Prince also points out that it can be understood as characterization. Seeing it as a representation of a character's psyche is also very reasonable considering cognitive science.

Numerous instances of disnarration seem to take the form of what cognitive and neuropsychologists call the *default network* or *default mode network*, which is active when our attention is not focused since there is no task at hand to focus on. Daydreaming (or mind-wandering), or any self-generated content of the mind, which we produce when we do not do anything, involves thinking about the future, reflections on the past, and how the past might have been. We can say that in those moments, humans do the disnarration parts of their life story and of simply their everyday narrative thinking. Daydreaming is a healthy version of dissociation when our consciousness gets disconnected from "the here and now." In other cases, dissociation serves as a coping mechanism to deal with an unpleasant or traumatic situation. In the narration of "Sleep," a lot of information seems to be similar in nature to the contents of consciousness that default mode network produces.

Lambrou explains that "Prince was able to theorize the imaginary as significant" by developing the concept of disnarration (2019, 22). The

imaginary may become significant in a specific way both in literary fiction and in everyday human cognition. As psychologist Martin Conway explains, the brain region where we can find the default mode network overlaps with the brain region where the network that generates memories is located. Probably due to this, imagined experiences and memories can become interlinked in narrative thinking. Things that we only imagine can become memories later. It is often a symptom of a pathological condition resulting from brain damage, but less extreme examples are widespread in healthy people, too, for instance, among early childhood memories.[3] According to Conway, the processes of the default network and narrative cognition are always interlinked (Colegiul). Therefore, considering the way the default network operates may be helpful for narrative theories, in particular, in understanding the function of disnarration.

As has been mentioned, the narrator of "Sleep" often presents disnarration through negation, which results in the pluralization and therefore enhances the complexity of the narrative. This is especially visible in the following quotes.

> "I'd sometimes wonder what kind of life this was. *Which is not to say that I found it empty*. I was – very simply – amazed." (Murakami 2003, 81, my emphasis)
>
> "I couldn't recall how long the article said it took for the madness to set in, but it couldn't have been much more than three days or four. In my case, a whole week had gone by. This was simply too much. *Still, my health was not suffering*. Far from it. *I had more energy than ever*." (97, my emphases)
>
> "[m]aybe someday in the future I'll have to pay back the debt I'm building up by continuing to do this biologically abnormal thing. Maybe life will try to collect on the expanded part – this "advance" it is paying me now. […]
>
> Honestly, though, I didn't give a damn, even if I had to die young. […] Here I was – *alive, and I could feel it. It was real. I wasn't being consumed any* longer." (81, my emphases)

The narrator often makes claims that in and of themselves imply negative emotional evaluation and immediately adds a positive evaluation to explain what she means. This strategy seems to create disconnection for the reader between the initial interpretation and the updated (although very questionable) one offered by the narrator. There is a similar disconnection between the narrator's experience and the diegetic reality the narrator is partially aware of. She admits that sometimes she drifts far from reality, but she does not always seem to be able to distinguish between reality and other contents of her consciousness.

As Maria Lambrou explains, "disnarration is expressed through comparators such as negation, modality, and hypothetical clauses, and while some devices are explicitly stated, others rely on the reader's ability to infer and interpret what does not happen" (Lambrou 2019, 22). An essential aspect of the disnarrated in "Sleep" is that these parts do not appear as alternatives to "real" events in the storyworld. There are no references to other possible worlds since other experiences are unavailable for the narrator due to her perspective, which is limited by her condition. This characteristic of the story illustrates how isolated the protagonist is from other people, and hence from different perspectives.

Disnarration is not always recognized as disnarration by the narrator. However, it is easy for the reader to recognize. One of the storytelling strategies that enable disnarration in this short story is the omission of information. The best example of this is in the closing scene of the short story. In this scene, the narrator is trapped in her car being attacked by strangers she describes as "dark shadows."

> The men – the dark shadows – keep shaking my car. The swings get bigger and bigger. They're going to tip me over!
>
> *There's something wrong*. Just calm down and think, then everything will be O.K. Think. Just think. Slowly. Carefully. *Something is wrong*.
>
> *Something is wrong*.
>
> But what? I can't tell. My mind is crammed full of thick darkness. It's not taking me anywhere. My hands are shaking. […] I fall back against the seat, cover my face with my hands. I'm crying. All I can do is cry. The tears keep pouring out. Locked inside this little box, I can't go anywhere. It's the middle of the night. The men keep rocking the car back and forth. They're going to turn it over. (Murakami 2003, 108–9)

Lambrou mentions the possible significance of "the indefinite pronoun word 'something' when it is stated but not retrospectively filled" (2019, 28). "Something" is used in the last scene of "Sleep" repeatedly. As the narrator describes her horrible experience and her reaction of fear and panic, she also points out that "Something is wrong." This is an almost comical observation in a highly distressing situation, yet it seems so significant that she states it three times. The statements "Something's wrong" are surrounded by expressions with which the narrator tries to make her own cognitive activity more intense. But the phrases "Think. Just think. Slowly. Carefully." may be read as instructions for the reader as well. This is the only example of narration in the second person in this short story; therefore, these instructions may seem to address readers and

instruct them not to interpret the scene in and of itself automatically but to interpret it in the light of the whole story. With such a strategy of understanding, the reader may easily see that "what is wrong" with this scene is that it is not a description of a real event in the diegetic world. The narrator, limited by her condition, feels it, but she cannot ascribe a meaning to this feeling. The scene is understandable as a hallucination or nightmare induced by a lack of sleep. Moreover, the ending is very abrupt. It seems to represent the experience of waking up from a nightmare before the worst thing happens. This also echoes a previous memory of the narrator. Before her sleep paralysis, she had experienced such an awakening from a nightmare.

Dissociation and negative emotions

The expression of emotions, especially negative ones, has a significant role in the short story. Dissociation is deeply intertwined with and influenced by emotions. In the following section, I present how this phenomenon is observable on a formal level in the short story and analyze some further aspects of the representation of emotions.

On the level of the contents of the story, dissociation is observable in the disconnection between the protagonist's body and mind. She describes the way she functions daily as mechanical, automatic in practice, while in her mind, she gets further and further from "the here and now." The narration also represents the discrepancy between the narrator's experience and the diegetic reality the reader expects to find in the story. This is shown in the narration in the form of shifts between positive and negative emotions, which represent the emotional instability of the narrator.

The logic of dissociation guides other aspects of the emotions expressed in "Sleep" as well. As I have mentioned earlier, many of the narrated events and actions are not accompanied by an emotional evaluation, probably because the narrator tries to appear disciplined and objective. But as her current sleeplessness starts, the style of her narration changes. She devotes all her emotions to the time she spends alone instead of sleeping, and for a while, she feels very intensive positive emotions. She is energetic, carefree, and confident. These emotions are isolated from her day-to-day life, where her behavior does not show any changes. However, after a while, without transition, she begins to get anxious, depressed, and starts thinking about her death. The condition she had praised before is suddenly accompanied by dark thoughts without any explanation, which presents a fragmented narrating consciousness to the reader.

When it comes to the representation of emotions, the two most intense scenes of the story are that of the narrator's sleep paralysis and the closing scene. In these scenes, unlike in other parts of the story, where

she appears collected and disciplined, the narrator expresses fear and panic with all the imaginable strategies of expressing emotions. She names and describes her feelings, and she also reports bodily reactions such as sweating, shaking, and heart-pounding.

As a result of the disconnection the narrator describes between her mind and body, her emotions often seem to be stuck within her body, seemingly isolated from her mind. This may be due to the bodily reactions accompanying strong emotions that may lead one to think that emotions are connected to our bodies instead of the mind, which generates rational thoughts. This decoupling of the mind and the body is observable in cognitivist theories, where cognitive processes are categorized as parts of lower or higher levels of cognition. In this categorization, emotions are understood as low-level cognitive processes besides others that had more obvious connections to the human body[4] than (seemingly) abstract, rational processes such as reasoning or memory, which were considered high-level cognitive processes. This idea of decoupling the mind and the body may help understand another critical event in the story that the narrator experiences during her sleep paralysis.

> I closed my eyes and let out a scream so loud it took every ounce of strength I had. But it never left my body. It reverberated soundlessly inside, tearing through me, shutting down my heart. Everything inside my head turned white for a moment as the scream penetrated my every cell. Something inside me died. Something melted away, leaving only a shuddering vacuum. An explosive flash incinerated everything my existence depended on. (83)

Therefore, what seems to be a turning point and the real traumatic experience for the narrator is not the frightening scene she sees in sleep paralysis but the scream that cannot leave her body. She later remembers this moment as the one where irreparable damage was done to her. In this scene, the reader's attention is focused entirely on the bodily experience of the narrator. At the same time, her mind is empty, as she explains, "[e]verything inside [her] head turned white."

This is one of the most emotionally intense scenes of the short story, although it is not an event in the diegetic world. In the light of Conway's understanding of the default mode network, this is probably the product of the imagination of the main character, which appears to be a genuine memory for her. The scene is an example of disnarration; however, the emotions depicted in it are real in the diegetic world as well. According to the definition of narrative by Monika Fludernik, the emotional reactions of a character to various events are important part of a narrative. In the case of some events within fictive storyworlds their truth value is only of secondary importance if their effect[5] is significant for the story. Considering the default network theory, the importance of imaginary

contents of human consciousness is also undeniable in everyday narrative thinking, therefore possibly also in narrative cognition in general.

As for the reader, the processing of a narrative such as "Sleep" probably entails a significant amount of interaction with the text and requires a very active participation in the construction of the interpretation. The unreliable narrator's opinions and actions can all be questioned based on common knowledge about sleep deprivation,[6] which is not known as an energizing condition. For the reader, this short story is probably not only inconsistent due to the disorganized manner of storytelling, but it may also elicit various complex emotions as well. The parts of the story where the problematic condition of insomnia is portrayed in a positive light may evoke the feeling of suspense in the reader through an excessive amount of doubt about what exactly happens in the story. One of the reasons why people report enjoying reading narratives that make them experience negative emotions, even if the reading experience is uncomfortable to an extent, is "due to our anticipation of a happy or uplifting ending and the positive feelings associated with it, like relief" (Maslej et al. 2020, 16). However, due to the unreliability of the narrator the reader may not hope for a happy ending, but regardless of the ending, artworks that are rich in negative emotions such as fear tend to be highly popular. There are numerous other potential explanations for this, that Márta Horváth takes into account (2020), but what is likely in the case of Murakami's story is that through operating with alternating emotions, it provides a dynamic, extremely intense, and exciting experience for the reader (Horváth 2020, 81). The reader may also delve into a complex negative experience because, as psychological research on reading assumes, "by experiencing and resolving a manageable version of a negative emotion, readers might gain control over the emotion and feel a sense of mastery" (Maslej et al. 2020, 15–6). In the course of trying to predict what will happen to this narrator, the reader's predictive processing is difficult and uncomfortable due to the great number of disnarration, negations, and omissions in the story. The reader has little "flow" experience, which Karin Kukkonen describes as a "sense of agency, presence, and flow" (Kukkonen 2020, 7) in her account of the reading process as predictive processing.

Conclusion

This chapter attempted to investigate the functions and cooperation of disnarration, omission, and negation in a fictive story, where they seem to be responsible for constructing the majority of the storyworld. My goal was to understand disnarration and negation as dimensions of narrative cognition. Considering the functioning of the default mode network, disnarration and dissociation are not only unconventional storytelling strategies but also essential parts of our everyday thinking

unless they reach a pathological degree. The story of "Sleep" barely contains any events, and due to the way disnarration, omission, and negation operate, they increase the complexity of the narrative by generating alternative events and uncertainty in the reader's interpretation. Prince claims that "[t]he hallmark of narrative is assurance. Narrative, which is etymologically linked to knowledge, lives in certainty […], and dies from (sustained) ignorance and indecision" (Prince 1988, 4). However, in the above context, indecision and lack of information, which in stories like "Sleep," create complex emotions in the reader, and pluralizations in the story are quite productive elements of a narrative, moreover, due to the presence of the uncertain, pluralized alternatives of events, however unconventional it is, the strong emotional arc seems to be the backbone of the narrative.

Notes

1 Strong emotions can distort our cognition in various ways. For instance, panicking and extreme fear can make the scope of one's attention very narrow, thereby making it difficult to perceive and explore one's environment (Kállai et al. 1998, 122).
2 And, in the case of "Sleep," also what does not happen.
3 The is also an important positive side of mind-wandering. Removing ourselves from the here and now arguably allows more freedom to the individual, which nurtures creativity. This may even be a significant evolutionary adaptation of the human consciousness (Smallwood and Andrews-Hanna 2013, 1). Kukkonen connects the phenomenon of mind wandering to the reading process in general, where it can also be associated with the beneficial side of mind-wandering (Kukkonen 2020, 123).
4 Such as somatosensory processes.
5 Here: their effect on the emotions of the narrator.
6 On the other hand, although it requires a reader who is familiar with the works of the author and therefore has a more defined horizon of expectations before reading the work, in the story of an author who is often associated with the genre of magical realism, supernatural elements may be additional phenomena to consider each time a reader has to interpret an exceptionally ambiguous or uncertain event.

9 Conclusion and afterthoughts

This book aimed to contribute to narrative theories with the help of narratology, cognitive science, and, eventually, neuroscience. The first two disciplines have a longer history of cooperation, and the addition of the third – while there is still a lot of work to be done to make it an equal participant in a unified theory we can call neuro-narratology – is a necessary step in the journey to the understanding of narratives in our life. It has to be pointed out that there are numerous different aspects and constituents of narratives that could be investigated with the help of neuro-narratology, that I did not address. This book has a restricted scope as it attempted to begin to address a formal aspect of narratives, namely, to trace how processes of certain perceptions take part in the construction and interpretation of storyworlds, which is strongly connected to the question of how meaning is constructed. It seems that formal characteristics of narratives are organized by structures that emerge from lower levels of cognition and, therefore, potentially connect subjective experience to mechanisms in the brain. The lower level of cognition that I focused on is spatial experience. There are several problems and difficult questions in interdisciplinary research that combines such supposedly opposing fields as literary theory, cognitive science, and neuroscience, yet, narrative as a form is undoubtedly connected to the capabilities of our brains. For neuro-narratology, the investigation of the experience of space and movement, due to their assumed significance in the emergence of human cognition, is unavoidable.

Second-generation cognitive narratology is the discipline that has paved the way for neuro-narratology. It has already enriched several key concepts of narratology with the help of cognitive sciences, but we may still gain a better understanding of older concepts, which, due to the changes in the field of literary theory (and numerous other fields of study), became important to reconsider in the light of relevant new findings and theories. Second-generation cognitive narratology, combined with the neuropsychology of spatial experience, forms the backbone of this book.

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While it needs to be mentioned that our visual system is largely responsible for reading itself due to the neuronal recycling process, when it comes to narrative cognition at large, the nonvisual perception of space seems to be of vital importance. The reason why I primarily focused on spatial experience in my analyses is that it appears to be of exceptional significance in our processes of cognition. Spatial experience, which includes perspective, navigation in space, motion, and other body-centered experiences such as balance, subserves other domains of human cognition such as emotion, language, and other forms of interpersonal interaction, including narrative cognition. I have examined narratives that are either narrated in the first person or employ internal focalization, therefore may be interpreted as representations of human consciousness. Moreover, these narratives emphasize human embodiment and spatial experience, especially the sensing of one's egocentric space and one's own body.

The most influential theories that attempt to explain how language is anchored in our embodiment are those of image schemas and forms of vitality. Both concepts can be defined as presymbolic structures defined by our embodiment and defining more complex contents of our consciousness. Both concepts can be understood as dynamic structural phenomena; however, the forms of vitality – since they are connected to the arousal system – contain vitality, which is, quite simply, what lends life to the structures. Forms of vitality are not simply structures, but they include force and energy that potentially subserve narrative structures as well. Considering the role of these structures in narrative understanding is crucial as it may help us reconsider the conceptualization of discourse in narratology so that we may understand them as more dynamic, therefore, more natural. I find the level of image schemas and forms of vitality crucial in understanding narratives because human cognition always involves such a level. Episodic memories, which we constantly rely on, consist of so-called episodic elements, which are regarded as vital units of the cognitive system in general, as Martin Conway explains. These episodic elements, just like image schemas or the forms of vitality, are "non-verbal and sensory-perceptual in nature." Richard Walsh claims that in the course of understanding a narrative, there are always several modes of cognition involved, such as spatial cognition. I also find the interdisciplinary method necessary because I agree with Sommer, who claims that narrative theories could not fully explain everything that needs to be explained in connection with narratives. For instance, in reading, one constructs symbolic meaning through a highly complex process of comprehension that is built as a result of the workings of several mental and neural faculties.

A more specific hypothesis of this book is that structures of spatial experience might fundamentally influence narrative organization and potentially contribute to the production of the meaning of the given

narrative. Discourse structures are traditionally conceptualized as high-level, abstract cognitive structures. I imagine them as being motivated by presymbolic, embodied experiences based on nonverbal, sensorimotor patterns rooted in neurophysiological mechanisms.

In the narratives that I discussed in my analyses, I traced the ways narrators's or focalizor characters' embodied subjective experiences of space and motion contribute to the construction and, therefore, the effect of the narratives. This way, with the help of the theories and findings of cognitive and neuroscience, we can consider new perspectives in the reader's experience. I believe embodied cognitive structures have a powerful role in the production of symbolic meaning at an early stage of the process of the production of meaning. Structures and functions of embodiment seem to function as the "raw material" of meaning in narratives by contributing form, a sense of a mood or an atmosphere, and, potentially, intensity to our interpretations. These "components" of meaning probably do not always aid the construction of symbolic meaning. Through creating uncertainty and ambiguity, they can make the reading experience richer, however, they may work against and hinder the construction of symbolic meaning.

The majority of the stories that I analyzed in the second half of the book are very similar in that they are concerned with negative emotions, especially different kinds of fear and anxiety. Spatial experience and the experiencer's state of mind mutually influence each other in complicated ways. All the analyzed narratives create uncertainty through the pluralization of possible events due to ambiguous narration (*Invitation to a Beheading*) or disnarration (*The Body Artist, House of Leaves*), and through the representations of narrative space, usually through the focalizer character's embodied experiences. Stories that deal with anxiety and psychological trauma tend to have some similarities on the level of content as well. For instance, the loss of balance is, in general, a rather obvious theme to illustrate these problems,[1] and all the five stories[2] that focus on embodiment have it as an important theme. There is another common theme that is otherwise not very common in literature: motion sickness, which can be found in three[3] of the analyzed stories. I understand such phenomena as expressions of natural cognitive processes instead of simply artistic expression and therefore claim that these link narratives more directly to other processes of cognition and our neural architecture.

Importantly, I do not claim that embodiment and its neurophysiological roots are significant and observable in all narratives to the same extent. I find it crucial in the development of neuro-narratology to choose narratives, the analysis of which is possible with the method of close reading. For this purpose, I believe neuronovels provide excellent material because they tend to foreground deficits in narration,[4] in the case of my analyses, alienated or deautomatized perceptions, which

highlight the way embodiment takes part in cognition and, therefore, in the workings of narrative intelligence.

A book about narrative cognition is not necessarily a book about literary theory. However, I emphasized the significance of one genre that seems particularly fruitful to investigate in an endeavor to theorize narrative cognition: neuronarratives. Examinations of these narratives, which are often built around the representation of a psychiatric or neurological condition, such as Lethem's *Motherless Brooklyn,* may contribute to the revision of certain concepts of narratology connected to perception, attention, or memory, and they can be useful in psychology and medical practice as well, where the subjective experience of patients is hopefully becoming a more and more important aspect. For the general public, stories about illnesses always help raise awareness about illnesses. This way, neuronarratives, besides being literary works of art, have secondary, broader social implications. Important ethical issues are at stake when it is decided how and where we encounter stories about social and political phenomena, especially in the case of such sensitive topics as (mental) health. *Motherless Brooklyn,* a well-known neuronarrative, not only humanizes persons with Tourette's syndrome but, through the explanations of the subjective experience of the condition, educates its readers, which is an additional, potential social effect of neuronovels.

The significant aspects and parts of stories that I investigated in this book do not affect the reader in and of themselves, but in interaction with other characteristics of the story as well as numerous reader variables. In the analysis of Murakami's short story, "Sleep," I have touched upon the question of why we read stories that are full of negative emotions and that are difficult and frustrating to read due to the constant interruption of the reader's experience of immersion, or, as Karin Kukkonen describes it, the flow. Reading stories can be conceptualized as predictive processing, a complex cognitive process in which the reader constantly makes predictions of what may happen in the remaining part of the story. Prediction errors may occur, but overall, the process ideally endows the reader with a sense of mastery as a result of the dynamic series of successful predictions. However, there are stories that are sometimes not rich either in positive feelings or a feeling of certainty about possible predictions that offer quite an uncomfortable position to their readers.[5] We read sad and difficult stories for many reasons. We may just find relief in the difference between ourselves and a very unfortunate literary character, or we may hope for a happy ending despite the suspense and the sad twists of a story (Maslej et al. 2020, 16). Stories that are rich in negative emotions, especially if they are complicated, may be especially exciting due to providing excitement and a feeling of suspense (Horváth 2020, 81). Last but not least, readers may also immerse themselves in a story about a complex negative experience because by

experiencing these emotions and coping with them this way, they may have a sense of control (Maslej et al. 2020, 15–6) and, therefore may gain some experience in dealing with such emotions. Since it is similar to the phenomenon of mind-wandering, whereby we leave the here and now, often in order to plan, evaluate, and interpret different parts of our lives, the very act of reading is a training of our creativity and imagination (Kukkonen 2020, 123), which are arguably among the most important features of our species.

According to narrative psychologists, the significance of negative emotions and sad memories in our life stories is that they make us rethink and reevaluate what we did in the past and what we may do in the future. Nobody contemplates why they are lucky; nobody scrutinizes neurotically their actions that led to happy outcomes. Negative emotions motivate us to develop ourselves, at large, to evolve. In this regard, reading neuronarratives and other stories that are rich in negative emotions and the representations of cognitive and neurological deficits and deautomatizations may be particularly effective in training our cognition and perhaps even our neurological mechanisms. Therefore these stories may make us learn both on the level of content (about a certain disorder or about cognitive deficits) and on a formal level as well by making a reader process an (either emotionally or otherwise) difficult narrative. The brain can be changed with the help of culture. There is no better example and proof of that than the fact that all healthy people are able to learn to read and write despite the fact that reading and writing have only existed for a few thousand years. The wiring of the brain can be changed to a certain extent, and although more empirical evidence is needed to refine the theory, the use, and importance of exposing people to certain kinds of structures, such as narrative structures (not necessarily through reading), we may assume that it can create a feedback-loop training for cognitive faculties such as attention or perception.

Finally, I see two potential further ways of future research regarding this project besides analyzing more literary works with similar methods, which is also needed considering the present (infant) stage of neuronarratology. First of all, the understanding of other aspects of narrative should be enriched with the help of neuroscience such as readerly reactions to different story contents, genres, and other manners of narration among other phenomena. Another important endeavor would be to carry out empirical research to test whether these aspects of a literary work indeed contribute to the production of meaning-making, which would be very difficult due to the fact that the majority of the process of meaning-making is unconscious. Another way to help develop neuronarratology, if one is interested in problematic, in the traditional sense dysfunctional or pathologic ways of storytelling, could be to carry out analyses of (fictive or nonfictive) narratives produced by individuals who live with diagnosed mental or neurological disorders and possibly

contrast these narratives with analyses of literary works such as the ones I have analyzed here. Such research could significantly contribute to our understanding of natural narratives and the ways they function, and through that, a deeper understanding of human cognition.

Notes

1 And, incidentally, it is a fundamental experience of living in a body.
2 "The Ivory Acrobat," *The Body Artist, Invitation to a Beheading*, "The Pit and the Pendulum", *House of Leaves*.
3 *The Body Artist, Invitation to a Beheading*, *House of Leaves*.
4 They also became popular simultaneously with the study of the human brain in the 1990s.
5 The majority of the narratives I have analyzed qualify as such stories.

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