

**Experiencing Literature – Learning from Experience: the Application of
Neuroscience to Literary Analysis by Example of Representations of German
Colonialism in Uwe Timm's *Morenga***

by

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Abstract

Is it probable that a reader can have an empathetic and learning experience of an historical event facilitated through text? Research in neuroscience indicates that the form of a text can trigger mirror neurons, enhancing empathy with the events and characters portrayed and enabling introspective learning through stimulation of the default state network in a reading brain. Narrative elements in historical and fictional literature are analyzed for their potential in facilitating the stimulation of these states.

The historical fiction novel *Morenga* by Uwe Timm is analyzed in order to deduce what a reader neurologically experiences in relation to the text and the historical event portrayed in the novel during the reading process. The probability of the reader experiencing empathy and learning through text so that their perspectives on inter-textual and extra-textual similar events are affected is then developed.

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Dedication

This work is dedicated to my husband, Jeff Allen. He was the only person in my life to encourage me to pursue my passions and dreams. Without his support and love, this work would not exist.

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I. Introduction to Exploring Possibilities of Empathy and Learning Inherent in the Human Brain through Narratives

Until very recently in the course of human history, texts and narratives have been the most common form of storing information about historical events in detail. Despite a plethora of such works, humanity holds a remarkably dismal record when it comes to learning from history to the extent that past mistakes are not repeated. The question of whether or not humans are actually capable of learning through texts involves a number of factors: the ability of the human brain to learn and to read, the form of the text itself, and the type of information which the brain is intended to learn. Recent advances in neuroscience and cognitive science have resulted in a more accurate understanding of the cognitive processes that occur in the reader's mind during the act of reading. This knowledge can shed light on the role these four factors play in determining the relationships between a reader, a text, and the information presented in the text. A series of cognitive processes must take place within the reader's mind for a person to learn through text in a way which does not just increase their knowledge on the subject matter, but creates a personal perspective and emotional relationship to the subject or historical event. Precisely what these processes are and how to affect them are discussed at length in Chapters II and III.

Ideally a reader's perspective on historical events referenced in a text or narrative should undergo a transformation during the learning experience occasioned by the act of reading. The nature of that experience should effect a modification in the decision-

making and reasoning abilities of the reader, to the extent that the possibility and probability of the reader's perspectives on future historical events would be influenced.

In order to explore this issue, certain questions which are derived from the aforementioned factors will be raised and answered. How do the biological structure and neuronal procedures of the human brain influence the reading and learning process for a reader? Do these procedures affect how information processed through the act of reading is perceived by the reader? Can a reader's brain be provoked to build a perceived emotional and empathetic connection or relationship to the historical event presented in the text, or recreate an historical experience in the mind of a reader? What text forms facilitate the creation of this emotional connection and experience? What are the possibilities of such an experience actually affecting a reader's perception of past, present or future historical events? What probable extra-textual consequences of these forms of reader experience can be predicted?

I.1. The Practical Application of the Theoretical Framework

This work initially presents neurological research on the mental and neural processes involved in the act of reading, interpreting and remembering texts. The ramifications of this research on the formation of a more accurate and precise understanding of how a reader's brain interacts with a text will be considered and explored in an analysis of Uwe Timm's historical fiction novel *Morenga* (2000).¹ The probable affects that neurological activities in a reading brain have on the reader's inter-textual and extra-textual empathetic and learning processes will then be discussed in relation to the subject matter of the

¹ Uwe Timm, *Morenga*. München: Deutscher Taschenbuch Verlag, 2000. (Originally published in 1978.)

novel. Morenga is a narrative representation of the Revolt of the Herero and Nama tribes in South West Africa (currently Namibia) from 1904-1907 when the area lay under the colonial jurisdiction of Germany. The systematic and governmentally authorized actions of the German army and colonists taken against the Herero and Nama tribes in retaliation for the uprising have been acknowledged as one of the earliest genocides of the twentieth century² – a truth made more poignant by the fact that the event is often forgotten and sometimes ignored by literature and history alike. An analysis of this work will provide the opportunity to apply the hypothesized influences and affects of historical and fictional forms of text on the neuronal activities of the reader’s mind and further develop an understanding of the interconnectivity and interaction between reader, the reader’s brain, and the text.

As the goal of the analysis of the novel is to understand how the provocation of an empathetic and learning experience in the reader in regard to the historical event of the Herero and Nama Genocide is facilitated, it is important to clarify in general terms what is meant by “empathy” and “learning”. Learning does not simply encompass the processing and memorization of knowledge, but refers to the evolution of personal perspectives and decision-making capabilities on a subject matter, based on textual, extra-textual and neurological experiences. Empathy is a concept that is often confused on some level with that of sympathy, but for the purposes of this work it is imperative

² This statement is not without elements of controversy, as some scholars claim there was no systematic, bureaucratic intent *per se* to eradicate the Herero and the Nama. History reveals these claims to be false, as complicity and approval was given by every political and military branch of the German government. See: Jörg Wassink. *Auf den Spuren des deutschen Völkermordes in Südwestafrika – Der Herero/Nama-Aufstand in der deutschen Kolonialliteratur. Eine literarhistorische Analyse*. München: Martin Meidenbauer, 2004. 300-316.

that the distinction between the two is maintained. Nancy Eisenberg succinctly differentiates between the two concepts as follows: “sympathy is often defined as involving emotion. [It is] an affective response that consists of feeling sorrow or concern for the needy or distressed other (rather than feeling the same emotion as the other person).”³ In contrast to sympathy, empathy is “an affective response that stems from the apprehension or comprehension of another’s emotional state or condition, and that is identical or very similar to what the other person is feeling or would be expected to feel.”⁴ Experiencing a mirroring of a character’s response to situations or events is a neurological function⁵ that allows the reader to personally learn, as it is an internal occurrence. Sympathy on the other hand, does not necessarily involve any form of learning as it is a separate emotion, not connected to the event. It is simply a projection of the reader’s *reaction*, not their parallel experience to the same stimuli the character “experiences” in the text. Sympathy is easily facilitated by textual elements, either historical or fictional, but especially in fiction as it allows for more pathetic descriptions. Empathy requires a crafted text which stimulates the neuronal networks responsible for empathy – the mirror neurons.⁶ The significance of the neurological processes involved in experiencing sympathy and empathy, specifically that of the role of mirror neurons and their connections to textual elements, will be discussed at length throughout this work.

³ Nancy Eisenberg. “Empathy and Sympathy.” *Handbook of Emotion*. Eds. M. Lewis and J.M. Haviland-Jones. New York: Guilford, 2000. 677-691. 678.

⁴ *Ibid.*, 678.

⁵ See Chapter II.3.a. Mirror Neurons: Reflecting and Re-creating.

⁶ Marco Iacoboni. *Mirroring People – The Science of Empathy and How We Connect with Others*. New York: Picador, 2009. 4-5.

I.2. Contexts and Current Research

Whether or not it is possible for readers to learn through texts, and whether or not it is possible for our species to learn from the past well enough to avoid repeating our mistakes has long been the subject of vigorous debate in both philosophical and literary fields. The arguments themselves involve debate concerning the nature of humans and that of texts. What is the nature of the relationship between the human mind and the information embedded in a narrative? What factors in the reading process dictate the forms and results of this interaction? The evolutionary development and biological factors involved in the act of reading are essential to any discussion of what processes a reading brain must undergo and what a reader is capable of experiencing in relation to texts. The state of the reader's mind is not solely created by the text itself, or by the structures of the brain. The brain is not a *tabula rasa*, and the biological procedures necessary for processing information and the developing of a perception of the world around it remain static. What is able to change within the brain are the plastic connections between the neurons that determine how they communicate with each other, and which contexts are encoded on them.

Prior to the recent development of sophisticated imaging techniques, the human ability to observe and evaluate the processes and activities of the mind was restricted to the analysis of fellow humans' behaviors and their written texts – a permanent record of the internal workings of the human mind. Textual interpretations and analyses of text forms such as history and fiction are in a way enquiries into the mind when it is in the

specific condition of being exposed to narrative texts and being able to process them through the act of reading. This work applies recently gained knowledge of the neurological processes of the human brain to the concept of a literary analysis of a work of historical fiction in order to understand more precisely what mental procedures occur in the reader during the processing of the text. Research by such neuroscientists as Stanislas Dehaene (*Reading in the Brain – the Science and Evolution of a Human Invention*), and Steven Pinker (*How the Mind Works*) describe the processes of the human mind in regard to the evolution of the human ability to read, store information, and communicate that knowledge to other humans. Other aspects of reading such as language acquisition,⁷ the assignation of meaning to symbols,⁸ the formation of contexts,⁹ and the experience of texts in the human mind¹⁰ further clarify the significance of the roles these neurological states and occurrences perform in evolving a more precise conceptualization of the interaction of a reader's mind with a narrative or text.

The ability of the human mind to learn and feel is an important factor in changing the functioning of the brain on an individual level in that it can affect when and how certain processes in the brain occur. This influence is created by the mutual encoding of emotions, feelings and experiences into unified neural networks. The evolution and neurology of the ability of the human mind to empathize via the activation of mirror

⁷ The research of cognitive neuroscientist Uta Frith is used in Chapter II of this work to demonstrate the importance of repetition and the gradual build-up of knowledge over time in developing the mental facilities of understanding and accessing complex concepts, such as acquiring language skills.

⁸ Steven Pinker. *How the Mind Works*. New York: W.W. Norton, 2009.

⁹ The works of cognitive scientist and linguist Steven Pinker (previously referenced) and cognitive neuroscientist Stanislas Dehaene (*Reading in the Brain – the Science and Evolution of a Human Invention*. New York: Viking Penguin, 2009.) are heavily relied on to clarify the significance of concepts to the workings of the human mind and the role concepts play in the formation of a reader's experience of a text.

¹⁰ Marco Iacoboni, *Mirroring People*. This book contextualizes the neurology behind the human mind's interactions with words and texts.

neurons are extensively discussed in the neuroscientist Marco Iacoboni's research. The role of mirror neurons in the stimulation of the neurological states necessary for developing rational and logical perspectives and opinions on experiences, situations, events, etc. (specifically the default state network) is especially relevant for the premises of this work. Iacoboni's research is applied along with other pertinent experiments and research to the concept of the stimulation of these neuronal activities through textual elements in Chapters II and III. The implications of their stimulation on the reader's processing of the information embedded in the text and their experience of the events portrayed in a narrative are explored in chapter IV, using the novel *Morenga* as an example. Facts and emotions, history and fiction, while incapable of changing the actual biological processes of the brain, are more than capable of affecting the context in which information is received. Consequently, this insinuates a real potential to influence future behavior and decision making in the reader.

The acknowledgement of the importance of cognitive science and neuroscience to a dissection of a work of literature is not a novel concept. Cognitive narratologists such as Monika Fludernik have, amongst others, developed a comprehensive theoretical approach (informed to a degree by cognitive science) to the interpretation of literature and narratives from the perspective of speculating how the human mind interacts with texts.¹¹ This approach has created a model of a type of open system of theorizing and analyzing, which reacts primarily to specific research questions and contains no encompassing,

¹¹ Monika Fludernik. "Narratology in the Twenty-First Century: the Cognitive Approach to Narrative." *Publications of the Modern Language Association of America* 125.4 (2010): 924-928.

overarching framework.¹² Although this work does not directly analyze and criticize such theoretical approaches, the development of the theoretical framework in chapter II relies entirely on provable and testable theories of cognitive processes and operates within the encompassing framework of neuroscience, as opposed to cognitive theory. The application of this framework to the novel of *Morenga* is restricted to hypothesizing based on those neurological processes known to occur in the human brain. However, due to the limited scope of this work and unavailability of imaging techniques and machinery, any conclusions drawn can only indicate a direction for further research and logical deductions, rather than conclusive evidence.

This thesis attempts to incorporate the four factors of textual analysis, literary and narratological theories, neuroscience and cognitive narratology in a fashion which is simultaneously general and specific. Generally, it is intended to provide a broad overview of the biological processes of the human brain involved in the act of reading and speculate upon the implications of that knowledge within the context of a textual analysis. Specifically, the goal is to describe more accurately and more precisely the relationship between a reader and the information presented to their minds through the mental process of reading, in accordance with the scientifically provable, biological constraints of the human brain. My interest in a close reading and textual analysis of *Morenga* is not to uncover a meaning inherent in the text per se, but by the addition of an application of neuroscience, to understand how the reader experiences any meaning in the text and what extra-textual effect this experience may have for a reader. The theoretical distinctions between historical and fictional text forms are useful in that they provide a

¹² Ibid., 925.

system of categorization which simplifies an analysis of whether or not the reading brain makes a distinction between these text forms. Are they arbitrary designations to the human mind? Or is their distinction related to the neurological processes of categorizing and attaching significance to processed information? Do these various text forms affect a reader's emotional and learning experience when processing information presented in text form? The implications that research in this field hold for the possibility of developing a more accurate, clear understanding of *how* a reader's mind is affected by specific textual elements, and *why* it is affected will provide a foundation for the arguments posited in this work. In light of the developing conclusions, the possibilities for facilitating an empathetic learning experience in a reader to the extent that it actually affects their extra-textual perspectives in relation to the historical events portrayed in a text and to historical events occurring in their non-textual realities will be investigated.

I.3. Structure of Thesis

A neuroscientific and biological construct of the act of reading in the brain and the neuronal activity necessary for this act is initially developed in this work in order to create an accurate concept for arguments which evolve from this foundation. The theoretical framework on which the literary analysis of *Morenga* is founded is developed in Chapters II and III. In Chapter II, research in the areas of cognitive and neuroscience will provide a biological explanation for the role of the reader's brain in the process of reading and details of the neurological processes involved in the act of reading itself. This knowledge will enable conclusions about how certain processes and areas of the brain

involved in reading dictate to a certain extent how a reader will react to information received through text to be drawn. The analysis of the novel will be founded upon the biologically- and neurologically-based concept of a “reader” that emerges from these conclusions. The problem of how a reader interacts with the information presented through the form of a text requires research, analysis and discussion of several factors: the figure of the reader of the text, the act of reading itself, the form of the text, and the information presented within the text. An understanding of two neurological processes of mirror neurons and default state networks which specifically facilitate the creation of a learning experience in the reader and their relevance for the textual analysis of *Morenga* will be discussed. Mirror neurons allow a reader to experience the information processed in the act of reading and default learning states facilitate a process through which a reader is able to learn, rationalize and form opinions and decisions about the information and experience. How these neuronal activities can be affected through words, narrative and textual elements will be explored and explained in reference to a number of neuroscientific experiments which demonstrate their stimulation through language and texts.

In Chapter III, the neurological processes involved in reading, processing and storing information in neuronal networks, creating contexts within the reader’s mind, evoking sympathy and empathy, as well as the stimulation of the learning and decision-making abilities are presented in relation to the various textual elements available in historical and fictional texts. Historical and fictional narratives depend on different textual elements for their categorization and definition as historical or fictional texts. As *Morenga*

combines these forms in the narrative, the various elements of both categories are examined in order to deduce what their effects on the reader's ability to process information is, and consequently what their effects on the reader's experience of the narrative as a whole may be. How historical and fictional texts interact in *Morenga* and what specific elements of that interaction would most facilitate the development of an empathetic and rational relationship between the reader and the information embedded in the text will then be derived from the previously developed theoretical framework on the biological processes involved in reading.

A brief excursus on the history of German colonialism in German South West Africa, the causes of the Herero and Nama Revolts, and the subsequent genocides of those two tribes is given. This provides a reader of this work with some historical context from which to approach the in-depth discussion and analysis of the novel. Additionally, a discussion of the legendary figure of Morenga, a Herero-Nama resistance leader lends relevance to the title and the narrative structure of the novel as a whole.

In order to explore the implications and ramifications of the previous arguments, the historical-fiction novel *Morenga* will be closely analyzed in Chapter IV. The roles of the overall narrative structure, the influences of fictional and historical elements, and the forms of narrative in the novel are discussed in conjunction with the effects the blurring of the boundaries between narrative forms has on the reader's experience of the text. The neurological process of storing information in context nets within the brain, and the effects of the combination of historical and fictional elements on the construction and

contents of those nets is explored. Textual representations of characters and the roles they play in facilitating the interconnectivity between the text and the reader's mind through the stimulation of the neuronal activities of mirror neurons and default state networks is then examined from the perspective of the influence their activation has on the creation of a reader's experience of the text. Finally, the possibility of the development of empathy and the promotion of rational learning and decision-making abilities in the reader is deliberated from an over-arching perspective drawn from the results of the consolidated analysis of the novel as a whole. Close readings of the text and specific applications of the theoretical framework simultaneously bring relevance to both the neurological and literary elements of this work.

By bringing aspects of biology and neuroscience to bear on a theoretical problem of a literary nature, insights as to the nature of the interaction of a reader with a text and the implications of those interactions on a reader's future perspectives on various past, present and future historical happenings emerge. These insights are based more on logic and deductive reasoning than theoretical speculation and argumentation, and could technically even be testable and reproducible in a controlled, experimental form. The goal of these insights is not necessarily to create new theories per se, but to describe more accurately the relationship between reader, text and information. While true, scientific conclusions are not within the scope of this work, the concepts presented could be used to form an experimental framework. This in turn could be used to further the understanding of how history could be taught or presented, in order to affect an emotional relationship

and maximally effective learning experience between the reader and the historical events portrayed in a narrative.

II. The Reading Brain

The reading brain must first be understood for any exploration of how texts may be used as a tool to facilitate cognitive and emotional learning processes in a reader to be initiated. Learning occurs as the result of certain specific characteristics: the ability of the human mind to process and categorize information, to mentally ‘experience’ and emotionally respond to information, and finally to be able to reflect upon and apply reason and logic to information. The possibility of learning and having emotion or empathy evoked via a text is dependent on two factors. This first is the reading brain, which dictates the manner in which data is extracted from the text and processed in the mind. The second is the form of the text that by interacting with the reader’s mind defines the nature of the textual experience for the reader. Brain structures and neural networks used for reading did not evolve in human primate ancestors in order to specifically facilitate the act of reading in future forms of humanity. Evolution is goalless and merely responds to the pressures and selections of the immediate environment. Rather, primal structures that evolved for use in such traits as vision or object recognition are essentially recycled by cultural practices in order to utilize them for actions and tasks which they did not originally evolve to perform.¹³ When a cultural practice such as the storing and sharing of information in symbols is developed, the degree of tolerance and flexibility in the structures and operations of the brain determines the success and propagation or failure and disappearance of that particular cultural practice. In the case of reading, it was and continues to be a successful relationship, as the natural plasticity of the brain’s

¹³ Stanislas Dehaene. *Reading in the Brain – the Science and Evolution of a Human Invention*, 9,150.

neuronal structures and organs allow the brain to visually process and attach meaning to information through the medium of text – thus creating readers.

The concept of a “reader” which will be assumed and referred to throughout this work stands in contrast to the theoretical concepts of “the reader” prevalent in the fields of literary theory and narratology. These traditions have developed theories such as Wolfgang Iser’s *Wirkungstheorie*. Very generally defined, this theory explores the concept of an “implied reader” which does not play an active role per se in the creation of meaning and understanding of the text, but rather acts as the active recipient and participant in the unfolding of the meanings of the work of literature generated by and through the forms and effects of the text.¹⁴ Alternative theories such as *Rezeptionsästhetik* which is championed in the works of Hans Robert Jauss stress that the meaning of a work of literature arises from the interaction between the information imbedded in the text itself and the reader’s previous acquired knowledge and cultural experiences.¹⁵ These two examples serve to illustrate the contrast between common theories of “the reader” and the working definition of a reader developed for the purposes of this work. The concept of a reader (by which is meant ‘the human whose brain and mind are involved in the act of reading, through interaction with text) referred to in this work is rooted in biological and neurological facts, made universally human by virtue of a common evolutionary heritage. The specifics of the brain structures and neurological activities involved in the act of reading will be constructed primarily in order to form an

¹⁴ Wolfgang Iser. "Readers and the Concept of the Implied Reader." *The Act of Reading: A Theory of Aesthetic Response*. Johns Hopkins UP, 1978. 27-38. Rpt. In *Contexts for Criticism*. Ed. Donald Keesey. Mountain View, CA: Mayfield, 1998. 158-65.

¹⁵ Hans Robert Jauss. “A Theory of Reception: A Retrospective of its Unrecognized Prehistory.” *Literary Theory Today*. Eds. Peter Collier and Helga Geyer-Ryan. Ithaca, New York: Cornell UP, 1990. 53-69.

understanding of the constraints and abilities of the reading brain. Upon this knowledge, arguments about the nature of a reader's interaction with the form of the text itself, and the cognitive and emotional relationships between the reader and information embedded in the text will be developed.

II.1. Readers: Unified in Mind and Body

The ability to store knowledge and transmit it across generations without loss or distortion of information conceivably creates a calculable advantage in the struggle for survival. Despite the comparative increase in the expenditure of group resources as well as energy consumption in individual readers and writers, the net benefit of learning, preserving and sharing information in the form of language and writing far outweighs the disadvantages. The ability of one group of humans to share information without having it degrade provides them with preeminence over non-reading groups. Learning by trial and error does not only require more time than reading and learning, but failing to learn from experience potentially results in much more serious consequences such as the death of an individual or the extermination of a group. Information gained through experience that is then recorded, such as the Sumerian clay tablets and Egyptian hieroglyphics can outlast even the civilizations that produce it. The advantages to learning through texts are self-evident, and yet humans are the only known species to do so. How then is this feat accomplished? The answer lies in the actual process of reading within the brain as revealed through recent advances in neuroscience,¹⁶ and in our uniquely human neuronal systems. This is not to say that humans do not share many basic brain organs and

¹⁶ Dehaene, *Reading in the Brain*, 1.

neuronal functions with apes and monkeys. However, the size of the human brain, functional divergence, evolutionary development of new areas and rearrangements within the human brain contribute to our unique usage thereof.¹⁷

Reading occurs in an identical fashion in every reading brain regardless of language or culture, as the ability to read is the result of our common, shared biology. All human beings currently have more or less identical physiologies by which they are identified as a single species. Barring accidents or mutated DNA, all have the same organs in the brain that evolved from primate structures and are which able to be recycled by recently emerged cultural practices (such as reading) in the same fashion. The evolutionary development of the ability to read in human brains demonstrates that reading itself is a universally human biological construct. The concept of reading as a purely biological and mental function of the human brain allows for the drawing of certain conclusions about the interaction between a reader's mind and the text, the effect of reading on the reader's mind, and the ability of a reader to experience empathy and learning. These arguments are reached through a careful examination of the roles that various brain organs, neurons and neuronal functions involved in the act of reading have. It is therefore arguable that there is a sort of base line – a foundational point – in which all readers are alike in that their neurological behaviors and reactions are predictable. They share the same traits, contain the same neurological functions and are equally capable of exercising them or alternatively, having them activated by external stimuli, such as various elements in a

¹⁷ David C. Van Essen. "Surface-based Comparisons of Macaque and Human Cortical Organization." *From Monkey Brain to Human Brain – A Fyssen Foundation Symposium*. Eds. Stanislas Dehaene, et al. Cambridge, MA.: MIT Press, 2005. 3-20.

text. Therefore, assumptions can be drawn, concerning the possibility and probability of reading brains reacting in similar ways to certain forms of text.

II.2. Recycling the Plastic Brain

Humans have the unique ability to process information or data through the senses in such a way that thoughts, opinions, beliefs, dreams and desires that mirror a perception of the world emerge. Those impressions can then be recorded and shared with other humans through the medium of text. Our species owes this ability to two factors of our biology – the plasticity of our neuronal networks and the recycling of primitive brain organs for use in activities which emerged later during the course of human evolution. Cognitive neuroscientist Stanislas Dehaene addresses these two factors in his book *Reading in the Brain*, explaining that while the physical structure of the human brain is limited by, and in a sense “obeys” genetic constraints, some circuits have evolved to tolerate a fringe of variability.¹⁸ He refers to this process as “neuronal recycling”, and in the specific case of the ability to read, human brains recognize the written word using brain and neuronal structures whose abilities have been dedicated to the visual identification of objects for the past ten million years or so.¹⁹ As the brains of primate ancestors of modern humans were not able to foresee the comparatively recent inventions of language, writing and reading, convenient portions of the brain and neural networks did not evolve in order to facilitate these acts. Dehaene clarifies this as follows: “there was neither the time nor sufficient evolutionary pressure for this to occur. On the contrary, writing evolved to fit

¹⁸ Dehaene, *Reading in the Brain*, 7.

¹⁹ Ibid., 125.

the cortex. Our writing systems changed under the constraint that even a primate brain had to find them easy to acquire.²⁰ All learning and acquisitioning of new mental operations (such as reading) rest on fixed innate structures, with only a minute degree of flexibility. That flexibility lies chiefly in how the structure is used and only to a lesser degree in the form of the structure itself. However, there are certain traits which are influenced more by external pressures (or nurture), than innate laws.²¹ The term “innate” is not as rigid as many suppose – biologically speaking, it leaves room for “an infinite range of options for developmental plasticity, adaptive or otherwise.”²² This may intuitively be perceived to be wrong, for if the human brain is so restricted by its inherited biology, how then are the seemingly infinite variety of cultural practices and various skills which have no discernable evolutionary benefit, such as music, the arts, philosophy, the ability to learn, etc. to be accounted for? The answer is found in the number of neurons in the human brain, their plasticity and ability to grow and be recycled for multiple purposes.

Developmental plasticity and the resulting instinctive capability for learning owes much to the synaptic plasticity of neurons, the majority of them (an estimated 95-100 billion) being concentrated in the brain.²³ Whereas brain structures have a relatively constrained degree of plasticity and flexibility (mainly restricted to their overall growth or shrinkage due to use or inactivity) neuronal synapses change shape rapidly and

²⁰ Ibid., 150.

²¹ Peter Marler. “Innateness and the Instinct to Learn.” *Anais da Academia Brasileira de Ciências* 76.2 (2004): 189-200. 193.

²² Ibid., 194.

²³ Bente Pakkenberg, Hans J. G. Gundersen. “Neocortical Neuron Numbers in Humans: Effects of Age and Sex.” *The Journal of Comparative Neurology* 384:2 (1997): 312-320.

frequently.²⁴ Their plasticity is demonstrated in the degree to which the nerve endings are able to grow, create new connections with other neurons or change their responses. A revealing study by Alexandre Castro-Caldas and his colleagues that used PET²⁵ and statistical parametric mapping to compare the reactions of the neural structures of adult illiterate and literate brains to words and pseudo-words, the brains of literates activated more and different neuronal structures compared to the illiterates when exposed to pseudo-words.²⁶ From this experiment it can be concluded that not only are the neuronal structures of the brain inarguably plastic, but also that specifically learning to process texts by reading alters the neuronal structure of the brain. Although the brain did not evolve to read, reading did evolve to use the brain in an ever more efficient and effective manner by recycling certain parts of the brain structure and the neuronal networks already present in the primate brain. Both of these forms of recycling hold significance for the validity of developing a theory of how the reader develops a learning and emotional relationship with the information or event narrativized through text.

As Dehaene indicates, humans began to convey language through vision in a fashion uniquely capable of conveying complex concepts and able to be shared more efficiently than drawings on a cave wall, their idea was met with a reciprocal potential for success already embedded in their brains – the primate visual system.²⁷ Structurally, the recycled parts of the primate brain are found in the temporal lobe, which is situated in the posterior of the brain and is responsible for visual object recognition. Experiments by

²⁴ Dehaene, *Reading in the Brain*, 211.

²⁵ Positron Emission Tomography (PET) produces a three-dimensional image of body processes.

²⁶ Alexandre Castro-Caldas, K.M. Petersson, et al. “The Illiterate Brain: Learning to Read and Write during Childhood Influences the Functional Organization of the Adult Brain. *Brain* 121.6 (1998): 1053-1063.

²⁷ Dehaene, *Reading in the Brain*, 149.

neurophysiologists Karl Pribram and Mortimer Mishkin in 1954 confirmed earlier work by Heinrich Klüver and Paul Bucy, concluding that by removing certain parts of the temporal lobe in primates resulted in “psychic blindness”, or the inability to recognize shapes for what they were, despite being able to see them.²⁸ These regions in the human brain are responsible for semantic recognition in text as well.²⁹ As humans share these regions with fellow modern primates but are capable of performing tasks with them which non-human brains are unable to do, these experiments indicate two significant conclusions. Visual object recognition in both primates and humans is dependent on the ability of specific areas and neural pathways in the brain to function normally. Failing this, reading becomes impossible. Additionally, at the most basic and fundamental of levels, all human brains with the capacity to read and that have been taught to do so, share common and universally human abilities and restrictions as determined by their uniform biological properties.

To summarize, the human brain operates to a certain extent according to predetermined capabilities (use of areas within the temporal lobes for visual object recognition), which are intimately related to and influenced by the actions of the mind (such as the act of reading). It can therefore be concluded that there is a constant communication and interplay between what the human brain physically *is*, which only nature can affect, and how the mind *works*, or how the brain is used, which is affected both by the limitations of nature and given creative freedom by nurture. The relationship

²⁸ For further details on the experiments and their import, see: Pribram, Karl H. “The Neurobehavioral Analysis of Limbic Forebrain Mechanisms: Revision and Progress Report.” *Advances in the Study of Behavior*. Ed. Daniel S. Lehrman. Vol.2. New York: Academic Press, 1969. 297-327. 298.

²⁹ Dehaene, *Reading in the Brain*, 125.

between universally human biological parameters and the infinite variety of culturally developed influences and practices indicates that the existence of the concept of a ‘universal reader’ is legitimized. The hypothesis then emerges that regardless of culture or language, the interactions of all human reading brains with information presented in the text will be performed in an equivalent fashion, with predictable, similar results in the form of their relationships with the narrativized event or information. This universal aspect of the human brain is capable of contributing to the understanding of reading specific cultural signs and semiotics systems, as the combination of the restricted development of uniform brain structures and the flexibility of growth for neural networks³⁰ enables the brain to learn cultural signs of all varieties.

II.3. Reading Structures of the Brain

On an individual level, how and why the brain reacts to certain information is influenced by multiple factors, including how that particular brain was taught to read, what the subject of the information is, and in what context the information is presented in. These variations in reaction to and interaction with texts reveal the complexity of the neurological processes. The experience of the text for each individual reader is guided by static innate brain structures working together with the flexible, plastic learning factors encoded into the brain’s system of neuronal networks. The specific structures of the reading brain and the processes by which neurons encode information and meaning hold

³⁰Ibid., 303-304. “...human cultures are not the vast areas of infinite diversity and arbitrary inventiveness favoured by social scientists. Brain structure keeps a tight rein on cultural constructions. The human capacity for invention is not endless but is narrowed by our limited neuronal construction set. If human cultures present an appearance of teeming diversity, it is because an exponential number of cultural forms can arise from the multiple combinations of a restricted selection of fundamental cultural traits.”

implications for the effects of certain forms of text in the reader's learning experience. In the case of history or historical fiction, these effects may indicate the reader's relationship with the event being portrayed in a narration.

The act of reading is only made possible by the network of neuronal structures stretched over and between every structure within the brain. Additionally, neurons and neuronal networks facilitate the transportation of information to processing centres and encode that information into neuronal networks.³¹ Bits of knowledge and information are coded into individual neurons, as it is processed by the brain (for example, through reading). These bits of data then become part of the data bank each human brain can readily access without having to re-process the information through a new experience. The neurons become connected to each other, forming neuronal networks by virtue of the plasticity of their axons and dendrites, which are fibers that extend from their cores. The axons transmit information electrically across the long separations between the neurons. At the synapse, or junction between neurons, the electrical signal is translated into a chemical one, with no loss of data.³² This enables the information to become more mobile within the brain.³³ Dendrites "perform the basic logical and statistical operations underlying computations", forming a root-like network and acting as input fibers.³⁴ Thus, each neuron is capable of performing multiple tasks simultaneously – communicating with other neurons while computing the information it stores. Each individual neuron activated by the processing of that information forms a context net, connected by the

³¹ Pinker, *How the Mind Works*, 99. For a complete, detailed analysis and description of the processes of neural networks, see pages 99-111.

³² Ibid., 83.

³³ Ibid., 83.

³⁴ Ibid., 83.

series of paths etched as the information was passed from neuron to neuron.³⁵ Networks of neurons are activated whenever information is processed by the human brain and if the information is novel, new ones are mapped out. As no one item of information is stored in isolation, but in neuronal and therefore mental connection with the network it is embedded in, these context nets are what facilitates the construction of a meaningful narrative from the influx of data being processed during the act of reading.

The immense range of the plasticity of neurons used in the encoding process allows the human brain to instinctively and constantly process new information and data from the surrounding environments as it is received through the senses. While outlining the role of neural synapses in learning and storing information, Dehaene specifies that although the number of neurons in a human is finite, their synapses are able to connect and combine them in what for all intents and purposes is an infinite number of ways.³⁶ As the previously discussed Castro-Caldas experiments indicate, it is the *complexity* of the environment which the brain is exposed to that can lead to a significant increase in the density of neuronal connections.³⁷ However, single neural networks alone are not capable of handling the immensely complex human activities of imagination, reading, language, etc. The combining of individual neural networks into programs composed of multiple networks greatly increases the ability to process complex computational activities.³⁸ The neural networks which these programs are composed of must be physically connected

³⁵ See pages 99-111 in *How the Mind Works*.

³⁶ See pages 99-111 in *How the Mind Works*.

³⁷ Dehaene, *Reading in the Brain*, 209.

³⁸ Pinker, *How the Mind Works*, 112-113.

through their synapses, which as was previously described, grow and connect by the increase and addition of contexts and information.

The infinite variety of connections and possibilities of growth in the human brain are the breeding grounds for creativity and imagination, allowing the mind to mentally combine concepts and ideas in new ways and even invent completely new ones. This, for example, enables a person to adapt to new cultural practices, learn new languages, or read a book which presents an entirely different perspective on an event they had previously become familiar with. To relate this to the context at hand, a purely historical textual representation of an event, such as the genocide of the Herero and Nama tribes, can only expose the reader to information through certain forms of narrative. No first-person perspectives may be given, no interiority, thoughts or emotions of the historical personages may be discussed. On a purely numerical scale, this reduces the number of times and variety of contexts through which a reader and their brain can be exposed to information pertaining to the historical event. In contrast to historiographical texts, the use of fictional elements, such as emotions, first-person perspectives, etc. into a narrative immediately expands the possible context nets of the presented information, as well as accessing the additional stimulus of mirror neurons which will be discussed in detail in the following pages. Numerically, this increases the amount of times and variety of ways which the reading brain is presented with information, expanding and strengthening the context nets. In a historical fiction novel such as *Morenga*, the advantages and learning of information are available in the greatest possible variety of textual forms, expanding the size and number of context nets, allowing for a greater amount of information to be

connected to each other with stronger synapses. This in turn increases the likelihood of the reading brain to be able to retrieve that information in again, a wider variety of contexts (such as factual *and* emotional) at a later time.

The neural activities that occur during the processing of information have profound implications for an analysis of the role the form of the text plays in the interaction between the reader's mind and the narrative. Not only does the frequency with which the reader is exposed to the information matter, but the more varied and complex the form of text is, the greater the likelihood that the reader will learn and memorize the information. Understanding how the brain decodes symbols and words is significant in developing a concept of how a reader's brain interacts with text, be it historical, fictional, or historical fictional. The process of reading seems to be an effortless, spontaneous event from an exterior or naïve perspective. This apparent ease belies the truly complex, chaotic system in which a brain decodes symbols, forms words and weaves together narratives from which meanings are derived. The first stage in learning to read is the recognition and identification of symbols.³⁹ The overall shape of the entire word is understood to mean something specific. In the second stage, the larger symbol of the word is understood to comprise of parts – letters and graphemes – which are then recombined into phonemes. During this stage, a constant back-and-forth between graphemes, phonemes and words takes place. As previously explained, every time the mind undergoes this process, the pathway between the neurons which are encoded for the meanings of various parts of the

³⁹ The following stages of reading acquisition are adapted and condensed from: Uta Frith. "Beneath the surface of developmental dyslexia." *Surface Dyslexia: Cognitive and Neuropsychological Studies of Phonological Reading*. Eds. Patterson, K.E., Marshall, J.C., Coltheart, and M. Erlbaum. Hillsdale: NJ, 1983. 301-330.

symbol and the meaning of the word as a whole are reinforced and are embedded into a context net. In the third and final stage, the context nets of neurons are of sufficient complexity and strength to process words in a single flash of neuronal analysis. Because of the dual functions of neurons (communication and computing information), neuronal analysis of a word transmits that information while simultaneously computing meaning and pronunciation.⁴⁰ It is at this point that the word has meaning and can be shared with others.

Traditionally it has been assumed that the process of reading was a linear one on a neuronal level. Information was thought to proceed in an orderly manner throughout the various regions of the brain, each in turn contributing shape analysis, sound, meaning and context to the word, as if it were on an assembly line.⁴¹ There is no orderly, linear process to reading. Rather, visual processing is the initial excitation that triggers a cascade of activities in the brain, causing all regions and neural networks involved in reading to operate simultaneously and in tandem.⁴² Like ripples spreading on water after a pebble has been thrown in, the initial wave of neurons activated by the processed word trigger in turn further context nets to which the initial set of neurons are attached. Additionally, a wide array of regions not involved in processing raw data are activated by these ripples of neuronal context networks as soon as the mind even thinks about concepts conveyed by

⁴⁰ Dehaene, *Reading in the Brain*, 204.

⁴¹ Compare the proven biological process of reading to the theoretical processes espoused by cognitive narratologists such as Ray Jackendoff and Monika Fludernik which attribute interactions between reader and text to “secondary activation of auditory and visual faculties.” Neuroscience delegitimizes their reasons for arguing in favour of their conclusions. (See Manfred Jahn’s article “Cognitive Narratology.” *The Routledge Encyclopedia of Narrative Theory*. London: Routledge, 2005. 67-71. for an overview and references to Jackendorff and Fludernik.)

⁴² Dehaene, *Reading in the Brain*, 64.

spoken words or even images such as symbols and written words.⁴³ This testifies to the peculiarly powerful effect that information gained from text has on mental activity – even in retrospect and without a physical presence. The simultaneous activation of multiple neuronal activities and organs within the brain allows for a vast network of contexts from various categories to be connected in a meaningful fashion to symbols. Information which is presented more often and in a greater variety of ways results in more numerous and diverse neural networks forming.

When considered in context with the act of reading, this connectionist form of learning and encoding knowledge results in the emergence of certain characteristics for the nature of the interaction between a reader and the information embedded in a text. Categories such as “information which is fact” and “feeling of sadness” can logically and biologically be activated at the same time when prompted by the correct symbol or text, provided that contexts have already been programmed into the neural networks or are in the process of being constructed through exposure to information. The brain is able to recreate its initial text-reading experience, simply by remembering one factor of the text and initiating the waves of context nets. Texts that prompt emotional responses are therefore also able to prompt a “shadow” experience in the brain. The same neurons are caused to fire again, and the more they do, the more pronounced and likely to fire they become.⁴⁴ Integrating texts containing fictional elements with those containing historical elements should therefore, on a purely biological, neuronal level, combine that emotion presented in context with a historical event. Upon reflection, that event will be indelibly

⁴³ Ibid., 109.

⁴⁴ Although this is deduced here on a hypothetical level, the role mirror neurons play in the reading process confirms and strengthens this hypothesis and is discussed in detail in Chapters II and III.

dyed with an emotional experience, regardless of whether or not the reader ever personally experienced the event first-hand.

To clarify the significance of the simultaneity of the reading process for an understanding of a reader's relationship to the text, a connection to the relationship between the form of the symbols being read and their meanings which arise in the reader's mind as the result of reading must be further examined. Each word becomes physically attached "by temporal lobe connections, to the many dispersed neurons that give it meaning"⁴⁵ through the constant reinforcement of the connections between graphemes, phonemes, and whole words. Technically, the form of the symbol and the meaning attached to it has no especial, intrinsic relationship – any combination of shapes can be declared to represent any concept. There is no essence of "tree-iness" for example, inherent in the form and shape of the English word "tree". However, some visualization or mental concept of what a "skyscraper" is, whether garnered from a fiction novel, a history book or an architectural plan will never be mistaken for a "whale". Through the learning process, words, whether they are heard or read, actually *do* have meanings physically attached to them biologically and neurologically through neural and context nets. And as reading is a process which simultaneously activates multiple brain functions in tandem, a cascade of thoughts, contexts and meanings provoked by a single word can be held to be true, as well as not true by the reader at the same time, depending on the circumstances.

⁴⁵ Dehaene, *Reading in the Brain*, 113.

The delightful thing about the ability of the human mind to biologically attached meanings and concepts to words and images is that it allows humans to speak in metaphors and similes, to pun, to refer obliquely to things, to be sarcastic, to write allegories and fables, to be poetic, in short, everything that is playful about language. Additionally, the human brain can simultaneously categorize fuzzy and crisp versions of information side-by side in the same head.⁴⁶ What is meant by this is that a single piece of information can be a member of a category (or be encoded into a neural network) in which it is “a kind-of something to some degree” while also being encoded into a neural network that defines it as a member of a very specific category, due to its possessing certain detailed characteristics.⁴⁷ For example, the word “Nama” may belong to a massive, general, historical category of all the genocides the reader knows of, and also specifically refer to a single, fictional character in a specific incident narrativized in *Morenga*. This signifies that a reader is capable of simultaneously recognizing both historical and fictional elements as equally true, equally false, or partially true and partially false depending on the needed context to make sense of the narrative in a historical fiction novel. In the example of *Morenga*, it enables a reader to accept the information and impressions being narrated through a character of the Nama tribe as a form of relative truth, although by having already read historical documents woven into the novel, the reader will know that it is highly unlikely for a Nama member to either survive the genocide or able record their story. The narrative itself does not need to be identified through its form and characteristics as “fictional” or “historical” in order for the reader to comprehend on every level the role which characters, actions, settings, etc.

⁴⁶ Pinker, *How the Mind Works*, 127.

⁴⁷ Ibid., 126-127.

play, or to weave a complete meaning and context out of disparate fictional and historical elements present in the text.

II.4. Interactions and Interconnectivity: The Joining of Mind and Text

The various influences of fictional and historical texts on the reading brain's interactions with a text can be in a sense "observed" in their effects on the reader's experience of the narrative. These effects are the result of the activation of certain specific neuronal activities in the brain such as those prompted by mirror neurons, which influence how a reader perceives information they have gathered from the text and the formation of their opinions regarding that information. These neuronal activities and states are relevant and significant to the question of whether a text is capable of facilitating an empathetic learning experience in a reader. In order to be empathetic, an awareness of the Self (in the reader) must be co-present with an awareness of the Other (the character).⁴⁸

Human brains constantly process information through the senses, collecting knowledge and insight into the world around them. This information is then stored in vast neuronal networks, enabling people to judge future behavior and past memories in light of the new perspectives gained in this processing. Our brains allow us to read people as well – their emotions, moods and intentions. Even if the other person is not "real", appearing for example as a character in a movie, a play or a book, our hearts seem to beat in time with

⁴⁸ See page 4 of this work for Nancy Eisenberg's definition of the terms "empathy" and "sympathy."

them when they are in love, frightened or angry. In these moments, we are not pretending, not imitating, but undeniably experiencing.

What enables the human mind to achieve such a remarkable act of mental interaction with other minds are certain neurons called “mirror neurons”⁴⁹ and various neuronal states closely associated with them, such as the default state networks. The neuroscientist Marco Iacoboni, who extensively discusses the implications mirror neurons have for the common understandings of human behavior in his book *Mirroring People* posits that “mirror neurons undoubtedly provide, for the first time in history, a plausible neurophysiological explanation for complex forms of social cognition and interaction.”⁵⁰ This statement and the years of extensive research which support it hold profound implications for centuries of philosophical struggling with the concepts of human intention and interaction. Determining the role that mirror neurons and related neuronal states play in affecting the relationship between a reader and information in a text requires an exploration of the precise details of what these neurons are, how they work and what factors could influence the development of an opinion or perspective in a reading mind, in regard to the processed text.

⁴⁹ Vittorio Gallese and A. Goldman. “Mirror Neurons and the Simulation Theory of Mind-reading.” *Trends in Cognitive Sciences* 2.12 (1998): 493-501. Although first identified by Giacomo Rizzolatti in macaque monkeys in the early 1990’s, this is the first paper to propose that mirror neurons may be the neural correlate of the simulation process necessary to understand other minds.

⁵⁰ Iacoboni, *Mirroring People*, 5-6.

II.4.a. Mirror Neurons: Reflecting and Re-creating

Briefly stated, mirror neurons are situated in the neocortex of the brain.⁵¹ They unify the processes of perception and action, by coding simultaneously for multiple sensory events and motor acts.⁵² Broadly defined, there are three identified types of mirror neurons. Strict congruent mirror neurons code for a tight correlation between action and perception, broadly congruent mirror neurons fire at the sight of an action not necessarily identical to the executed action but achieves a similar goal, and logically related mirror neurons.⁵³ The first is activated in situations where for example, someone sees another person reach for a book with both hands and also reaches for a book with their own two hands. This is a mirroring of a motor action. The second is activated when for example, someone is reading information on a computer screen, and when they see someone reading a book. This type assists in making the connection between similar actions occurring in different circumstances. The third occurs when for example someone sees a book on a shelf, and sees someone reading a book, allowing them to infer that the book on the shelf can be read as well. The wide range of actions and observations covered by these three types of mirror neurons allow the human brain to divine certain levels of possibility, essentially allowing people to determine intention in other people. This claim is addressed and supported in Leonardo Fogassi's experiments which demonstrated that the pattern of neuronal firing in the experimental subject's brain during observation of an action mirrored the pattern of neuronal firing that occurred while the subject carried out

⁵¹ The neocortex of the brain is the newest part to evolve, and is the top layer of the cerebral hemispheres. It is responsible in humans for sensory perception, generation of motor commands, spatial reasoning, conscious thought, and language.

⁵² Iacoboni, *Mirroring People*, 22.

⁵³ Ibid., 25-26.

the same action.⁵⁴ By simultaneously firing for two different kinds of action, namely production and perception, mirror neurons act as a type of biological code breaker which all humans possess, allowing them to imitate and impute intention.

One of the most important aspects of mirror neurons is that they mirror, or recreate the neural impulses necessary for carrying out the same action or experiencing the same reaction as the observed example of behaviour is demonstrating. As humans are born with them already fully developed in the brain, this signifies that humans do not learn to imitate, but imitate in order to learn. Imitation is fundamental to the learning process, not only for behavior and social interaction, but also for language and speech. A series of experiments executed by Iacoboni on Broca's area (a brain structure necessary for reading), confirmed that the area is not only essential for language processing, but also for imitation.⁵⁵ There is a primary biological connection between processing information through words (as written language) and mirror neurons. Iacoboni recognizes the significance of this discovery in his description of the role of mirror neurons in language processing: “[their role is] to transform our bodily actions from a private experience to social experience, shared with fellow human beings through language.”⁵⁶

This sentiment can be extrapolated to the question of what the nature of the relationship between a text and a reader's mind is. Notably, Fogassi's article “Mirror

⁵⁴ Leonardo Fogassi, P.F. Ferrari, et al. “Parietal Lobe: From Action Organization to Intention Understanding.” *Science* 308.5721 (2005): 662-667.

⁵⁵ Iacoboni, *Mirroring People*, 91. Commenting on the author's experiment published as: Heiser, M., M. Iacoboni et al. “The Essential Role of Broca's Area in Imitation.” *European Journal of Neuroscience* 17 (2003): 1123-28.

⁵⁶ Iacoboni, *Mirroring People*, 95.

Neurons and the Evolution of Embodied Language” discusses evidence which indicates that certain elements of language such as “part of semantics and phonology” are “embodied in the sensorimotor system represented by mirror neurons.”⁵⁷ Marco Tettamanti and his colleagues’ article “Listening to Action-related Sentences Activates Fronto-parietal Motor Circuits” published the first conclusive data providing a direct link between listening to and understanding sentences that describe actions, and the activation of the neuronal circuits necessary for motor action execution and observation.⁵⁸ When analyzed in light of each other these articles seem to indicate that an interactive relationship between the information embedded in the text and the experience the reader has of the text emerges from the combination of three factors: the language elements of a text, a reader who understands sentences, and the mirror neurons present in the reader’s brain. For example, a reader is exposed to a narrative which contains a highly descriptive, action-packed scene using words previously or currently being connected through context and definition to similar actions which the reader has experienced extra-textually. As the language in the text is being processed in the reader’s brain, mirror neurons are simultaneously activated. This causes the same neurons to fire within the reader’s brain and body which normally fire when the reader’s body is in similar or relatable circumstances. On a neuronal scale, the reader does not just experience the scene vicariously, but personally.

⁵⁷ Fogassi, L. and P.F. Ferarri. “Mirror Neurons and the Evolution of Embodied Language.” *Current Directions in Psychological Science* 16.3 (2007):136-141.

⁵⁸ Tettamanti, Marco, Giovanni Buccino et al. “Listening to Action-related Sentences Activates Fronto-parietal Motor Circuits.” *Journal of Cognitive Neuroscience* 17:2 (2005): 273–281.

As mirror neurons primarily stimulate the motor neurons by mutually coding for both imitation and action, only the connection between mirror neurons and either visual or textual representations of action have been discussed at this point. Emotions are prompted by neuronal activity in the limbic areas of the brain; an area not directly related to the mirror neurons areas. During his research on mirror neurons, Iacoboni determined that only one brain region has well-documented connections to both the mirror neurons and limbic regions – the insula.⁵⁹ The result of his experimentation is that it has been determined that the neural mechanisms for empathy take place in three stages. Initially, mirror neurons provide an inner simulation of the observed emotional expression. Signals are then sent through the insula, and on to the limbic system which recreates the feeling of the observed emotion.⁶⁰ Based on this information, researchers developed further experiments that tested empathetic responses in couples, mirroring of emotion mediated by action simulation, and the production of full simulation by the brain – both the motor component, and the emotional – of the observed painful experiences of other people.⁶¹ The results of these and other experiments indicate that human brains are biologically programmed to create a mirroring response to both action and emotion. Through the concurrent firing of neurons, humans feel the thoughts, intentions, actions and feelings of fellow humans within themselves. This supports the claim that the ability to empathize is a fundamental and natural human instinct. Combined with the previously discussed fact that mirror neurons can be prompted to activate through text, it also reinforces the

⁵⁹ Iacoboni, *Mirroring People*, 117.

⁶⁰ Ibid., 119. These results were published in an article titled “Neural Mechanisms of Empathy in Humans: A Relay from Neural Systems for Imitation to Limbic Areas” in the journal *Proceedings of the National Academy of Sciences*. For full details see bibliography.

⁶¹ Ibid., 122-126. For biographical details on the published results of the experiments, see Singer (2004), Hutchison, et al.,(1999), Avenati, A. et al.,(2005).

premise that empathy and understanding for a character or a situation can be evoked in a reader via a text or a narrative. A narrative that expresses sadness in a character will cause the mirror neurons in the reader's brain to activate as the language in the text is being processed. In response, the reader's neurons which normally fire when the reader is made sad by extra-textual events or circumstances fire, causing the reader to experience a sadness which is then tied to the information in the text, through neural context nets.

II.4.b. Default State Networks: Knowledge is Power

In addition to mirror neurons, there is “another neural system in the brain – the default state network – that is concerned with both self and other, in which self and other are interdependent.”⁶² Research about this neural network is yet in its infancy; however it has been conclusively revealed that it is a set of cortical areas which essentially function as a type of “screensaver” for the brain. These areas show high levels of activity when a human is not undertaking any physical or mental activity. When the brain is “awakened” in order to, for example, perform a specific task which requires attention or make a decision, the activity is reduced.⁶³ A series of experiments to discover the role this network plays in decision-making were designed and executed by Iacoboni and his colleagues after the discovery of this system. They tested whether or not the level of education and knowledge already present in a test subject affected their decision-making

⁶² Language which perhaps unconsciously mirrors the Lacanian concepts of Self and Other. (Lacan, Jacques. *The Language of the Self: the Function of Language in Psychoanalysis*. Baltimore: John Hopkins UP, 1968.)

Quote: Iacoboni, *Mirroring People*, 257. Study published as Iacoboni, M., “Failure to Deactivate in Autism: The Co-constitution of Self and Other.” *Trends in Cognitive Science* 10.10 (2006): 431-433.

⁶³ Iacoboni, *Mirroring People*, 252.

abilities when presented with statements in text-form.⁶⁴ The experiments demonstrated that people who prior to the test had little or no knowledge of the subject and people who were already knowledgeable in the subject area had different levels of activity in their default state network when expressing their opinions and decisions on the various subjects. The ‘educated’ people showed high levels of activity, while the lesser versed people had to start up their active cognition in order to think about and make a decision, thus powering down their default-state networks. What they did use to make decisions, were their “executive” functions – the area that prompts decision-making based on whatever knowledge is immediately at hand, without reflection.⁶⁵ Most significantly, the increased activity in the default state networks of the knowledgeable subjects was paralleled by an increase in mirror neuron activity.⁶⁶

The results of these experiments demonstrate that the amount of knowledge or size of a context net a reader has or gains prior to being exposed to the subject matter in text form affects which neural systems are activated during the process of reading. If the reader has a relatively high level of knowledge and exposure to the facts and information needed to understand the narrative, text, character or situation they are reading about, they are more likely to have both their default state networks and their mirror neurons activated. This implies that during the reading process, they are able to develop rational opinions while having a heightened level of empathy and interconnectivity with the subject matter. Less knowledge results in the activation of the executive functions which

⁶⁴ Schrieber, D., and M. Iacoboni, “Thinking about Politics: Results from Three Experiments Studying Sophistication,” paper presented at the 61st Annual National Conference of the Midwest Political Science Association, 2003.

⁶⁵ Iacoboni, *Mirroring People*, 253.

⁶⁶ Ibid., 253.

tend to be more emotional responses, such as the “fight or flight” instinct, or sympathy. More knowledge leads to an increase in objectivity and reflection on the part of the reader and is enhanced by the development of empathy that relies on a consciousness of both Self and Other within the reader. The simultaneous experiencing of narrativized events within the reader through the activation of their mirror neurons expands their knowledge in a personal, internal fashion. Combined with the activation of their default state networks, the reader is then in a position to dissect and analyze that experience with reason and logic, enabling them to understand the implications of the narrative event portrayed on both a personally emotional and from a detached cognitive level.

Mirror neurons fire not only during the actions of the reader, but also when the reader is exposed either through observation or text-processing to the actions of others. When a reader encounters textual representations of emotions and feelings of characters, their mirror neurons start a neuronal chain of events culminating in the activation of their own limbic system and prompting an evocation of the same feelings in the reader. Imitation in the mind of the reader, as facilitated by mirror neurons, plays a fundamental role not only in the learning process of the reader, but also in their expression of empathy and understanding. Ultimately, this culminates in the ability of the reader to evolve rational, empathetic perspectives on the subject matters to which the information embedded in the text refer.

III. The Effects of Reading: Fiction and History

Texts and the narrative elements embedded in them are the medium or interface through which the reader can gain access to and interact with the information being represented in text form. Neural activities and states (such as mirror neurons and default state networks) in the reader's brain can be mobilized by words and narrative elements embedded in the text. The development of empathy and the mental processes involved in the act of learning are just two examples of the possible emotional and physical interactions with a text that a reader's mind may experience in response to such neuronal triggers. Narrative elements vary between texts and genres and some are distinctly more prevalent in particular forms of literature. As the reader's experience of the text is influenced by the neural processes stimulated during the act of reading, it is necessary to discuss what narrative and textual elements a reader is likely to be exposed to and what their particular neuronal influences may be.

Morenga is a novel that amalgamates historical and fictional texts, documents and narrative elements into a cohesive portrait of various perspectives on colonialism in German South West Africa. As this novel combines the narrative elements of both fictional and historical texts, blurring and confusing the line between the traditional textual dichotomies, it serves as an excellent opportunity to explore and analyze a reader's experience of a text. An initial examination of broadly differential definitions of fictional and historical texts provides a general frame of reference from which the specific textual elements in *Morenga* are identified and discussed. The significance of

those fictional and historical elements are approached from the neurological perspectives already defined in the previous chapter in order to evolve a more accurate comprehension of the roles they play in influencing a reader's overall reading experience. This is discussed with special regard to their development of empathy and learning in relationship with the information and narrative embedded in the text.

III.1.a. Fictional Narratives

The ability of the human brain to create fiction is the direct result of the capabilities of the flexible, plastic, neuronal networks. Once information is coded into a context net, the brain can infer, combine and re-arrange that information in an almost infinite variety of ways. This system of playing with data gives rise to ideas and information which may not exist in any hitherto recorded or observed form of reality, or may exist outside of the individual's realm of experience. It is the breeding ground of dreaming, imagination and creativity. The concept of fiction as a literary genre and as an identifying feature of textual elements in a narrative is multifaceted. In order to clarify what parts of a text a reader's mind would conceivably be responding to signals of fictionality in a text are briefly discussed. This provides context for the later analysis of *Morenga*, and more immediately, form a basis for a discussion of which elements of a text activate mirror neurons and their accompanying mental states. As this work is concerned primarily with the various narrative elements found in texts and how they affect representations of information from a reader's perspective, the merits and validity of the various referential and truth-claims of fiction and history will not be discussed. The narrative structure of the

novel itself thoroughly blends the elements of fiction and history, thus rendering any clear concept of a truth factor for the reader meaningless. The concepts of fiction and history will not be approached from a dichotomic angle. Rather, the perspective that both forms of texts reveal “that the understanding of that which is presented is a possible way into understanding that which is absent”⁶⁷ will be pursued. The roles they play as various forms of representing information through a historical fiction text such as *Morenga* are explored for this purpose.

Narrative elements in a text that signal the presence of fictionality may be broadly defined as elements representing information that has been invented, imagined, or thought up by an author, yet always remain operational within an “as if” paradigm in order to remain functional as representations.⁶⁸ In other words, they may have no direct relation to a provable, documented form of reality or existence, but must on some level, remain believably possible. Regardless of the truth factor of the information presented within the text, a clear and accurate relation to reality must not necessarily be present.⁶⁹ As demonstrated in *Morenga*, this allows representations of historical realities to be presented to the reader through fictitious textual elements, such as first-person narrated memories of a fictional character, or fictional diaries. Signals embedded in a text alert the reader to the presence of fictionality, the use of which is determined as much by habit as

⁶⁷ Ann Rigney. *Imperfect Histories – The Elusive Past and the Legacy of Romantic Historicism*. Ithaca: Cornell University Press, 2001. 25.

⁶⁸ Achim Barsch. “Fiktion/Fiktionalität.” *Metzler Lexikon Literatur- und Kulturtheorie*. Ed. Ansgar Nünning, Stuttgart/Weimar: J.B. Metzler, 2004. 181-182.

⁶⁹ “Erdachtes, Erfundenes, Vorgestelltes, mit dem dennoch im Sinne eines “Als ob” operiert wird.” Ibid., 181.

by convention.⁷⁰ The concept of signals as reminders to the reader that what they are reading is imaginary is discussed in Michael Riffaterre's book *Fictional Truth* (1990).⁷¹

The following lists only a few of the textual elements with which a narrative constructs its fictionality, chosen because they are exemplary of the fictional signals present in the novel *Morenga*:

authors' intrusions, narrators' intrusions, multiple narrators, [...] incompatibilities between narrative voice and viewpoint and characters' voices and viewpoints, incompatibilities between viewpoint and verisimilitude, especially omniscient narrative, signs modifying the narrative's pace and altering the sequence of events, [...] mimetic excesses, such as the unlikely recordings of unimportant speech or thought, [...] diegetic overkill, such as the representation of ostensibly insignificant details, the very significance of which is significant in a story as a feature of realism [etc.]⁷²

Fictional elements such as multiple narrators, characters who express interiority, feelings and emotions, etc. are especially suited to the prompting of mirror neurons. Additionally, the emotional, emotive, and imaginative language which fictional elements facilitate, appeals directly to the neuronal impulses which govern those mental activities in the reader. As a reader's mirror neurons fire synchronously with the processing of text during the act of reading, a character's anger or joy is recreated in their own minds and bodies –

⁷⁰ Wolfgang Iser. *The Fictive and the Imaginary*. John Hopkins UP: Baltimore, 1993. 11. (Translation of: *Das Fiktive und das Imaginäre: Perspektiven literarischer Anthropologie*. Frankfurt: Suhrkamp, 1991.)

⁷¹ Michael Riffaterre. *Fictional Truth*. Baltimore: John Hopkins UP, 1990.

⁷² Ibid., 30.

becoming their own. This is an intrinsic experience of empathy. The extreme heights and depths of emotions such as passion and hatred can be triggered, allowing a reader to experience events and situations foreign to their extra-textual realms of exposure, even to the extent of the ‘inexpressible’ experiences such as love, war and genocide.

Fictional “signals” can also reinforce the work’s artificiality, acting as self-proclamations of fictionality and buttressing the truth factor of that story within the textual paradigms of the narrative.⁷³ Fictional truth becomes an accepted form of reality in a narrative by virtue of the creative writing process. Its self-reflective form initially supports the fictional reality of the narrative. It can then be repeated and referred to in the text, becoming rhizome-like in that its origin is so embedded within the text itself that it becomes impossible to discern its point of origin. Riffaterre interprets this effect to signify that in order for the reader to accept the text as fictional, they must then also accept the fictional elements within it as “true” within a fictional world. This argument is based on the perspective that the signals of fictionality within a text “point to a truth invulnerable to the deficiencies of mimesis or to the reader’s resistance to it. They do so by suspending belief, by radically displacing verisimilitude.”⁷⁴ However, as the mind is capable of simultaneously holding two or more thoughts and concepts even if they contradict each other, by virtue of the use of context nets in which those thoughts would be embedded, it is not simply a matter of a reader “displacing verisimilitude.” Rather, it is an instance of “doublethink,”⁷⁵ for the reader does not need to suspend all concepts of

⁷³ Ibid., 1.

⁷⁴ Ibid., 33.

⁷⁵ A Newspeak word invented by George Orwell in his dystopian novel *1984*, it is used to denote the ability to believe two opposing thoughts without any cognitive dissonance.

“true” or “real” in order to accept the concept of “fictional” as equally valid. The reading brain must simply understand that in this instance two or more contexts nets are being simultaneously activated by a textual element: one which encodes for the world constructed by the narrative in the novel, and one which is encoded for a different, more immediate type of reality, where the first is not necessarily always relevant.

III.1.b. Historical Narratives

Histories emerge from the act of using words and writing to construct representations or explanations of actual events which took place in the past that existed independent of, and prior to the act of writing. How a reader’s brain interacts with an historical text is, as in the case of any text, dependent on two factors: the reader’s pre-conceived expectation of the text, and the narrative elements through which the information is presented to the reader’s brain. Whereas a strict dedication to representing a factual form of reality is optional for fictional texts, the reader of history expects a certain degree of veracity and an accurate representation of an extra-textual reality. These pre-conceived expectations determine in what context the information in the text is processed and saved in the reader’s neural networks. The narrative elements determine how that information is initially processed in the reader’s mind.

Precisely what narrative elements are the most likely to be found in historical texts is restricted by the necessity of the adherence of the text to a historical reality. This

obligation is described by Hayden White in his *Tropics of Discourse* (1978) as a defining distinction between historical and fictional narrative elements:

Historians are concerned with events which can be assigned to specific time-space locations, events which are (or were) in principle observable or perceivable, whereas imaginative writers – poets, novelists, playwrights – are concerned with both these kinds of events and imagined, hypothetical or invented ones.⁷⁶

Historical discourse must be operationally truthful, in order to facilitate the construction of a text which most accurately represents the past. Therefore, the characters, plots and events recorded in historical narratives must represent their actual historical counterparts in as similar a manner as the author is capable of reproducing. Historical texts' reliance on accurate representations of extra-textual, non-imagined realities is reinforced by Lubomír Doležel's argument that the creation of a historical world can only be verified through the use of reliable and believable historiographical documents.⁷⁷ "Historical text [...] is constative, a description of a world that preexisted the act of representation."⁷⁸ For example, characters in historical texts are dependent reflections of actual people and are restricted by their actual historical counterparts in how they may be presented, what their dialogue is, the extent to which their thoughts or opinions may be expressed, etc. The author of an historical work only has access to a limited amount of information and

⁷⁶ Hayden White. "The Fictions of Factual Representation." *Tropics of Discourse: Essays in Cultural Criticism*. Baltimore: John Hopkins UP, 1978. 121.

⁷⁷ Lubomír Doležel. "Possible Worlds of Fiction and History." *New Literary History* 29.4 (1998):785-809. 796.

⁷⁸ Lubomir Doležel. *Possible Worlds of Fiction and History – the Postmodern Stage*. Baltimore: John Hopkins UP, 2010. 42.

is unable to invent or record additional, imagined knowledge. Although the main modus of historical writing is constative in that the narrative elements and representations of events, characters, etc. are not the pure products of the author's imagination, historiography has performative power with regard to the reader's experience of the text.⁷⁹ This performative ability is arguably the result of the neurological activities that emerge from any interaction between the reader's mind and the narrative elements in the text.

The constative nature of historical texts influences what narrative elements can be used to construct the text. The application of first-person perspectives, narrations of dreams and thoughts, the expressions of emotions, etc. are restricted in historical texts, as it is challenging or impossible to accurately record them, assign them a specific place in time and space, and verify their happenings. Likewise, only certain representations of an event may be portrayed, which significantly reduces the amount of possible perspectives. Timm confronts this issue in *Morenga* as he addresses the historical event of the Herero and Nama genocide. Very few Herero and Nama perspectives can be designated as historical, as the illiteracy of the general population coupled with the fact that so many of them died resulted in the inability to maintain written records of their experiences and histories. Consequently, the majority of historical documentation available is that which has been recorded by German witnesses to the event or people and events more indirectly related to it, such as supply lists for the army and missionary records. In this specific case

⁷⁹ "The recipient of [a] historiographic narrative can experience different layers of historical experience if the narrative is constructed such that [...] experiencing the experientiality of history [...] is facilitated." (Stephan Jaeger: "Poietic Worlds and Experientiality in Historiographic Narrative." *SPIEL(Siegener Periodicum for International Empiricist Literary scholarship)*. Special issue *Historiographic Narrative*. Ed. Julia Nitz. Ms. Forthcoming Fall 2011.)

and in the case of similar historical events, if the desire of novel is to incite a reader to learn and empathize within the context of genocide with the intent of mitigating the chance of history repeating itself, the lack of a victim's voice leaves a significant gap in the narrative. As exemplified in *Morenga*, historical fiction offers the possibility of integrating voices that have been lost to history – particularly the voices of victims.

When combined or integrated with fictional texts, the constative nature of historical writing with its referential truth-claims about the past no longer acts solely as a restriction on the possible information included in the narrative, but as a significant structural and cognitive connection to an extra-textual reality for the reader – lending an aura of authenticity to the fictional portions of the narrative. Historical elements in a text provide the necessary knowledge and verisimilitude to facilitate the learning process through activation of the default state network, which in turn increases the susceptibility of the reader's mirror neurons to activation through textual stimulation. The reader is exposed to the possibility that the information, opinions and perspectives gained from the reading experience can be applied to other, similar extra-textual situations. This link to an extra-textual reality is not as directly accessible or obvious in fictional texts, and brings the reader into direct confrontation with the problem that the event portrayed in the narrative, be it fictional or historical, *could* be or become extra-textual reality.

III.2. Fiction, History, and Historical Fiction in the Brain

Morenga is a narrative in which the author plays with the concepts of history and fiction on the level of a meta-narrative, through his use of plots, events and characters. The interweaving of historical documents with various fictional narrative “signals” such as non-historical characters, multiple narrators, memories, dreams, and musings plays with the concept that the fictional in the novel *could* be real. As the neurological activities of the reading brain are influenced in several ways by this interconnectivity of history and fiction, this affects the reader’s experience of the text. As an example of a literary text, *Morenga* provides a particularly appropriate possibility for exploring the relationship between the reader and the information contained in a text on the neurological, empathetic and learning levels. The specific structural techniques of the meta-historical fiction novel demonstrate a wide variety of narrative elements a reader may be exposed to during the reading process. These create ample opportunities for analysis, while challenging the reader to confront consciously recognize the nebulous borderline between fiction and history in the novel.

The quality and characteristics of the learning and emotional relationships of a reader with the information or event narrativized through text are affected by the different text forms of history and fiction, as a result of the various neuronal states the textual elements activate within the reader’s brain. The frequency, variety, and complexity of textual exposure to information influence the likelihood that the reader will memorize and

comprehend that information.⁸⁰ A reader who is for example, exposed to the historical events of German colonialism in German South West Africa at the beginning of the 20th century solely through historical texts will of course have the opportunity to learn of events in a specific manner. Only that which is recorded and accepted as verified qualifies as ‘historical’ as those requirements are the basis for history’s claim to representing truth. Fulfilling these criteria often necessitates leaving gaps in histories; moments in time when no verifiable reference or source is available to provide insight into the event. Historical gaps can be closed or filled in with new sources of data, documentation, or the reconfiguration of the relevance of the included facts.⁸¹ In contrast, fictional gaps can be filled more easily, either by the author’s imagination or the reader’s speculation, feelings and opinions. Despite the gaps, histories provide the reader with reassurance that what they are reading is accurately representative, both as a narrative and in their extra-textual world. The historian’s obligation to truthfully relate past events to the reader can also include factors such as the historian’s ability to use conjecture and reflection of hypothetical, logical assumptions to fill the gaps of knowledge, if there is no evidence to the contrary. This reflection breaks the realistic illusion of the text, while reinforcing the authenticity of the historian’s desire to convey a valid representation of the past to the reader. Texts which incorporate fictional elements can give no such guarantee, even though for example, the majority of the information in the text can be proven to be historical and factual. The inclusion of fictional narrative elements in addition to historical ones fosters inter-textual truths which support and propagate the

⁸⁰ See section II.3. in this work for detailed explanation of context nets.

⁸¹ Doležel, *Possible Worlds of Fiction and History*, 795.

narrative, while blurring the boundaries between what can be accepted as ‘true’ or ‘false’ in an extra-textual sense by the reader.

A fictional context within which historical facts are presented allows for the inclusion and expression of emotion. When processed through the act of reading, facts and emotions become enmeshed with each other on a neuronal level. For the reader, any recollection or thought of the historical event will be physically and mentally related to the emotional context it was initially presented in. The strength and permanency of context nets is dependent on the frequency of use and retrieval by the brain. Having both fictional and historical sources of information presented within the same context increases the number of opportunities for the reader’s brain to create connections to the same context net. The probability that the reader’s neurons will forge larger and more permanent neuronal networks devoted to information of this context is also enhanced. This will result in the reader of a historical fiction novel developing stronger, faster context nets related to the subject matter than a counterpart reader who only encounters information in one form of text or the other. The information processed then has a higher rate of permanency and retention in the memory of the reader, and be more likely to be retrieved or recollected in a related context. As the research into default state networks demonstrates, the more sophisticated a reader is in terms of familiarity with a concept or with information pertaining to an event, the greater the prospect of the default state network being activated while being further exposed to material of the same or similar contexts.⁸² This state corresponds with greater activity in mirror neurons, indicating that the reader who has been exposed in the greatest number of ways in the most varied

⁸² See section II.4.b. in this work for discussion of research into default state networks.

contexts to information is also most likely to be in a neuronal state which facilitates imitation (and therefore learning), as well as empathy.

Reading is a powerful form of interaction with information and experiences occurring exterior to the reader, by virtue of the close connection between language processing and activation of mirror neurons. Historical fiction texts do not merely inform or entertain the reader, but cause them to *experience* both connectionist learning and the events described in the narrative on a neuropsychological level. By activating the mirroring of actions and emotions in the reading brain, the reader becomes interconnected with the information in the text, with the emotions and intentions of the characters, and with the actions and events described in the novel. The empathy that can develop within a reader as a result of that interconnectivity and neurological activity is interfaced in the context nets of the readers mind with the historical, extra-textual events represented by the historical elements in the narrative by virtue of the truth factor assumedly inherent in historical texts. The implications of these conclusions are explored further in the detailed analysis of *Morenga*, in order to evolve a concept of the significance of specific historical and fictional narrative elements and their interactions with the reader's mind in forming an empathetic and learning relationship with the information imbedded in the text.

Excursus: A History of the Herero and Nama Uprisings

The narrative in *Morenga* is set within a framework consisting of what can be identified as four distinct compilations of historical events. These took place from approximately 1800-1910 in what was then known as South West Africa and since 1990 is the independent nation of Namibia. Due to various factors, the occurrences of 1904-1905 have been almost completely ignored outside of Germany and Namibia and are not generally known to the average reader. As a result of these circumstances, a brief history outlining these historical events is provided in order to give context to the story and text of the novel itself. An introduction to these events creates familiarity for a reader of this work with the historical framework of the novel and supplies a causal link between the Herero and Nama Uprisings and the role of Morenga as a historical and fictional character. An exegesis of the text *Morenga* within the context of genocide is facilitated, detailed analyses of passages from the narrative will be more relevant and pertinent, and this should assist in delineating fictional from historical textual elements during the discussion of *Morenga* itself.

Excursus. I. Colonialism and the Causes of the Herero Uprising

The Herero are a Bantu-speaking group of people who settled in the north and central regions of South West Africa.⁸³ Their culture was centered around their cattle, for which their love was legendary – rarely eating them but instead subsisting mainly on a diet of

⁸³ Jon M. Bridgman. *The Revolt of the Hereros*. Berkeley: University of California Press, 1981. 14.

sour milk, mixed with blood drawn from the cattle.⁸⁴ As of 1904, it is estimated that the number of Herero totaled around 80,000.⁸⁵ During the nineteenth century, tribal war flared up in South West Africa. Tensions increased due to the migration of tribes from the surrounding area, such as South Africa, who were in turn being pushed out of their traditional lands by colonialism. During the middle of that century, missionary and European trading activity increased in the area, peddling various forms of religion, guns, metal goods such as pots and pans, and alcohol. From all accounts, the traders were far more successful salesmen than the missionaries. However, both parties had far-reaching consequences for the future of the tribes with whom they interacted.

On April 24, 1884 Bismarck declared the general area of South West Africa under the protection of the Reich⁸⁶ and appointed Dr. Heinrich Göring as Imperial Commissioner for South West Africa to complete the signing of treaties the following year, effectively bringing an end to the tribal wars.⁸⁷ A series of forts were soon built across the land and later connected by telegraph and rail lines. In 1892, German settlers arrived and settled at Windhoek, current capital of Namibia.⁸⁸ In January of 1894, Major Theodor Leutwein was appointed governor and military commander of the fledgling colony. Although his mandate was to firmly impose German authority on the colony, his insightful, sensitive attitude and determination to minimize the economic and psychological damage to the

⁸⁴ Ibid.,17.

⁸⁵ Estimation drawn from *Mit Schwert und Pflug* (1904) by Captain Kurt Schwabe, quoted here in Bridgman, pg.26.

⁸⁶ Isaac Goldblatt. *History of South West Africa from the Beginning of the Nineteenth Century*. Cape Town: Juta & Co. 1971. 88.

⁸⁷ Bridgman, *The Revolt of the Hereros*, 41. Note: Dr. Göring was the father of Hermann Göring; Reichsfeldmarschall and chosen successor to Hitler.

⁸⁸ Ibid., 43.

natives would set him apart from his successors.⁸⁹ Near the end of the century, various circumstances coincided to create an unbearable social, economic and political situation for the Herero. In 1897, the *Rinderpest*, a virulent disease with a high death-rate killed the vast majority of the Herero herds and was immediately followed by malaria, typhus, a grasshopper plague and a devastating drought.⁹⁰ While the Herero were losing their lives and cattle to epidemics, they were losing their lands at an even more rapid rate. The practice of giving credit to the Herero, which often turned out to have a higher rate of interest than originally agreed on (payable in cattle), and for which there was no legal redress for the victimized tribe, was a lucrative business for the traders. Soon this situation, combined with the *Rinderpest*, impoverished the Herero, leaving them with only one asset – their land.⁹¹ Tribal land began to be sold with or without the permission of the Herero, sometimes by the missionaries who had only been granted the privilege of living there, but not owning it.⁹² To alleviate the problem and avert a crisis, the German government suggested the creation of reserves – a proposal which served only to further fuel the growing resentment and anger of the Herero.⁹³ These social and economic issues were exacerbated by the endemic racism of the Germans. As David Livingston Smith argues in his book *Less than Human*, dehumanization opens the door to cruelty and genocide.⁹⁴ Germans in South West Africa referred to the native members of that land as

⁸⁹ Ibid., 47.

⁹⁰ Winfried Speitkamp. *Deutsche Kolonialgeschichte*. Stuttgart: Philipp Reclam, 2005. 123.

⁹¹ John H. Wellington. *South West Africa and its Human Issues*. Oxford: Clarendon Press, 1967. 191-192.

⁹² Ibid., 193.

⁹³ Ibid., 198. While this fate did not befall the Herero at this time, their descendants lived in reserves for the entirety of their nation being ruled by South Africa.

⁹⁴ David Livingston Smith. *Less than Human: Why we Demean, Enslave and Exterminate Others*. New York: St. Martin's Press, 2011.

“baboons.”⁹⁵ Native women were considered fair game by white men, the killing of a native was rarely if ever punished, and a white man could enslave and whip them at will. Such racism and discrimination contributed to the Hereros’ decision that “it was better to die than to be treated as dogs.”⁹⁶

Excursus. II. The Herero Uprising and Genocide

On January 11, 1904, Samuel Maherero, leader of the Herero Tribes wrote the following letter:

[...] I have issued an order, a straight word, meant for all my people, that they should *no longer* lay their hand on the following: namely Englishmen, Basters, Berdamaras, Namas, Boers; we do not lay our hands on these. Do not do this. I have sworn an oath to this, that this case does not become open, all not to the missionaries. Enough. I am the paramount chief S. Maharero, Okahandja.⁹⁷

That night the Herero Uprising began, commencing with the destruction of train tracks and telegraph lines and attacks against German farmers on outlying farms. Women,

⁹⁵ “The real cause of the bitterness among the Hereros toward the Germans is without question the fact that the average German looks down upon the natives as being about on the same level as the higher primates (baboons being their favorite term for the natives) and treats them like animals. The settler holds that the native has a right to exist only in so far as he is useful to the white man. It follows that the whites value their horses and even their oxen more than they value the native.” Quoted in Horst Drechsler, *Südwestafrika unter deutscher Kolonialherrschaft*. Berlin: Steiner, 1966. 349. Translation quoted from Bridgman, 62.

⁹⁶ Wellington, *South West Africa and its Human Issues*, 200.

⁹⁷ Jan-Bart Gewald. *Herero Heroes: A Socio-Political History of the Herero of Namibia 1890-1923*. Oxford: James Currey Ltd., 1999. 157.

children and missionaries were not harmed.⁹⁸ During the first months of battle, the Herero proved to be extremely adept at fighting pitched battles and using guerilla tactics. The Imperial German Army experienced the sting of defeat at the hands of a people whom they regarded as less than human. In the wider context of the conflict – one which certainly held elements of the insistence of racial superiority – these defeats convinced military authorities in Berlin that nothing short of total annihilation would be acceptable.⁹⁹ New troops and weaponry were brought in and Leutwein, who received the brunt of the blame for the failure to win a quick and decisive victory, was replaced by General von Trotha¹⁰⁰ who was under no illusions of the type of campaign he was to wage. In letters, he clearly stated that this war was: “der Anfang eines Rassenkampfes” that could only be decided by “Strömen von Blut und Strömen von Geld.”¹⁰¹ The tide began to turn against the Herero and von Trotha had concentration camps erected that summer, in anticipation of Herero prisoners.¹⁰² On August 11, 1904, a battle was fought against the Herero who had gathered their families and flocks together at the mountain of Waterberg. Although the total victory von Trotha desired eluded him, the Herero forces were broken and chased into the desert. The Germans camped along the edge, preventing anyone from reaching the water holes which they also poisoned, condemning the remaining refugees to die of thirst.¹⁰³ Two months later, on October 2, 1904, von Trotha

⁹⁸ Medardus Brehl, *Vernichtung der Herero: Diskurse der Gewalt in der deutschen Kolonialliteratur*. München: Wilhelm Fink Verlag, 2007. 96.

⁹⁹ Bridgman, *The Revolt of the Hereros*, 92.

¹⁰⁰ Ibid., 112. This was on June 16, 1904.

¹⁰¹ Translation: “The beginning of a race war” which will only be decided through “streams of blood and streams of money.” Quoted in Brehl, *Vernichtung der Herero*, 97. From letters from Lothar von Trotha to the Chiefs of the General Staff of the Army and to Theodor Leutwein.

¹⁰² Speitkamp, *Deutsche Kolonialgeschichte*, 125-126.

¹⁰³ Wellington, *South West Africa and its Human Issues*, 209.

issued an order which became known as the “Schrecklichkeitsbefehl” or “the Terrible Order”:

The Herero people must now leave the country, if they do not I will compel them with the big tube. Within the German frontier, every Herero, with or without a rifle, will be shot. I will not take over any more women and children, but I will either drive them back to their people or have them fired on.¹⁰⁴

After this proclamation took effect, the Herero uprising trickled to an end during the last months of that year. A year later, there were virtually no free Herero left in Hereroland. The remaining Herero men, women and children were imprisoned in concentration camps, where it is estimated that nearly every second person died due to the inhumane conditions and treatment.¹⁰⁵

Excursus. III. The Nama Uprising

The Nama tribes¹⁰⁶ were relative newcomers to the region, and over the course of the nineteenth century engaged periodically in warfare with the Herero over cattle and grazing land, until 1904 when they became unexpected allies against a common foe. Originally, the Nama had allied themselves with the Germans against their traditional enemies, the Herero. The arrival of von Trotha, the increase in German troop size and the

¹⁰⁴ Ibid., 208.

¹⁰⁵ Brehl, *Vernichtung der Herero*, 99.

¹⁰⁶ At the time, the Nama were most often called Hottentots, or in German, *Hottentotten*. The term ‘Nama’ is used throughout this work except when directly quoting sources, as the older term is disliked by the people themselves and carries offensive connotations.

excessive violence in their treatment of the Herero made the Nama justifiably suspicious that they would be the next in line for similar treatment. In the beginning of October in 1904, just as the Herero rebellion was beginning to be quashed, the Nama rose up in revolt, persuading about half the remaining tribes in South West Africa to join them.¹⁰⁷ Like the Herero, the superior guerilla warfare skills of the Nama gave them an advantage over the Germans, despite there being only an estimated 1260 Nama soldiers to the 10,000 German soldiers deployed against them.¹⁰⁸ Their rebellion lasted considerably longer than that of the Herero – not until March 31, 1907 could the German government officially declare that their colony of German South West Africa had been “pacified”.¹⁰⁹ Of the approximately 20,000 Nama who had lived in the colony before 1904, less than 10,000 survived, many of whom were imprisoned in the concentration camps.¹¹⁰

Excursus. IV. Morenga

While the Herero and the Nama were carrying out their uprisings, a man whose personage is as legendary as it is historical began attacking troops. His name was Morenga, and as his father was Nama and his mother Herero, he did not distinguish between the two tribes.¹¹¹ His only enemies were the Germans, whose accounts of him emphasize “his Grossmut (magnanimity), his Umsicht (prudence) and his Tatkraft

¹⁰⁷ Bridgman, *The Revolt of the Hereros*, 139.

¹⁰⁸ Ibid., 140.

¹⁰⁹ Ibid., 163.

¹¹⁰ Brehl, *Vernichtung der Herero*, 99. Note: Of the 14,000 German soldiers stationed in South West Africa, approximately 1500 died due to war-related injuries or illnesses.

¹¹¹ Bridgman, *The Revolt of the Hereros*, 137.

(energy).¹¹² His intelligence, civility and multiculturalism contributed to his great popularity amongst his soldiers, who flocked from all the remaining tribes in South West Africa to join him. In contrast to the German policies at the time, Morenga followed strict, chivalric rules of warfare, ordering that no women, children or wounded were to be killed.¹¹³ Morenga delivered the single worst defeat of the German forces in the entire campaign on October 24, 1905. The Germans marched into a trap at a place called Hartebeestmund, and were mowed down by gunfire until nightfall, reportedly without seeing so much as a single one of Morenga's men. Forty-three Germans were killed, wounded or went missing that day. It is recorded that Morenga did not lose a single soldier.¹¹⁴

In December of that year, camels were imported to South West Africa, which finally gave the Germans an advantage when battling in the desert. The campaign against Morenga was renewed by an innovative commander, Colonel von Deimling. Under his leadership and tactical skills he was able to deliver a number of significant defeats against Morenga's fighters over the course of the following year, with a definitive peace finally signed on December 21, 1906.¹¹⁵ Morenga had crossed the British border to South Africa the previous May, after being wounded in the head and neck. He surrendered to police and was killed a year later by a bullet in an altercation with the Cape police.¹¹⁶

¹¹² Ibid., 137. Additionally, he is purported to have spoken at least five languages including Dutch, English and German, and spent 6 months in Europe.

¹¹³ Ibid., 138.

¹¹⁴ Ibid., 152.

¹¹⁵ Wellington, *South West Africa and its Human Issues*, 211.

¹¹⁶ Ibid., 211

IV. Applying Theory to Analysis: *Morenga* as an Example of Representation

Uwe Timm's historical fiction novel *Morenga* (2000) distinguishes itself from a "typical" historical fiction novel in that the historical events do not merely form a backdrop for the fictional actions and characters.¹¹⁷ Historical elements such as actual historical documents, army reports, excerpts from histories, factual accounts, etc. are embedded into the text, forming the content and the structure of the narrative itself. Fictional characters interact with these historical elements, incorporating them into their experiences and story lines and uniting the various pieces of history into a continuous narrative. The specific functions historical and fictional textual elements have in this narrative facilitate an exploration and analysis of the accumulated observations and questions presented and developed so far in this work. Their roles in forming the reading process and experience in the reader will be discussed within the context of the biological processes of reading, the formation and significance of context nets, and the activation of neuronal networks such as mirror neurons and default state networks.

The events in the novel are examined chronologically in order to parallel the experience of a first-time reader of the text. The reader analysis is conducted from two perspectives with an emphasis on the neurological, intellectual and emotional responses the text provokes in the reader's mind. The first perspective explores the manner in which textual elements influence how the information in the text is processed by the reader's brain. This is followed by a consideration of what the implications for the development of the reader's empathy and learning with regard to the historical events may be. Within the

¹¹⁷ Uwe Timm, *Morenga*. München: Deutscher Taschenbuch Verlag, 2000. (First published in 1978.)

scope of this context, the following questions will be discussed: What is the exact advantage to knowing how the brain works with regard to analyzing this novel? What can an analysis from neurological perspectives reveal about the reader experience that may not be apparent in a basic text analysis? Is it possible from a theoretical perspective to prompt a reader to have an emotional and rational reaction to extra-textual historical events referenced in historical fiction novels? Can an interaction and experience be formed in the reader's mind of an event to which they have no personal experience of?

IV.1. Forms of Narrative in *Morenga*

Morenga is constructed from closely intertwined combinations of historical and fictional literature. The narrative is essentially a pastiche of texts; genuine historical sources, primary documents, “excerpts” from a fictional diary and internal musings of fictional characters are woven together into one cohesive story. This narrative blending is a consistent authorial presence throughout the novel. For example, pseudo-historical sources, the authenticity of which cannot be confirmed, are embedded in first-person perspectives of fictional characters, and seemingly fictional accounts refer to historically verified personages. The montage of textual effects results in an overall impression of authenticity by virtue of its narrative fluidity and seamless interweaving of textual forms. Despite the undeniable sympathy for the victims of colonialism and genocide in the novel, as expressed through the fictional elements of the text, the overall impression one

gains from reading *Morenga* is non-emotional.¹¹⁸ This is the effect of the constant injections of historical documentation which temper the emotive and imaginative fictional elements in the text with detached observations. The aura of veracity that historicity is imbued with may affect the reader's perspective on the narrative, despite the strong presence of fictional text forms. Nonetheless, fictional textual elements do facilitate a reader's emotional involvement in the narrative, for example through characters and first-person perspectives. Through authorial use of a range of narrative elements, the reader is forced into a dual reality where fiction and history interact, despite occasionally challenging each other's veracity. This nebulosity on the borders of fiction and history in the novel engages the reader's brain in a fashion unique to the genre, with varying effects on the reader's experience of the narrative.

The function of a narrative in historical fiction is fundamentally different from that in narratives containing solely fiction or historical worlds. The role of Timm as author of *Morenga* becomes enhanced, imbuing him with a specific power to guide and facilitate the reader's exposure to certain historical and fictional events and perspectives. The author of a historical fiction text is free to choose influences from all possible historiographical documents and materials according to their aesthetic taste and ideological goals, combining, interweaving or interspersing them with any fictional element that emerges from their imagination. This intentional blurring of these boundaries anchors the reader's emotive fictional reading experience in an extra-textual, historical reality, extending the boundaries of the novel to include non-textual realities.

¹¹⁸ Jost Hermand. "Afrika den Afrikaner! – Timms *Morenga*", *Die Archäologie der Wünsche – Studien zum Werk von Uwe Timm*. Eds. M. Durzak, H. Steinecke, K. Bullivant. Köln: Kiepenheuer & Witsch, 1995. 47–64. 55.

The gaps and rifts between the patches of history and fiction interwoven in the historical fiction narrative also provide the reader with a singular experience of the text. For a naïve reader, these elements in the text may compromise the veracity of the narrative itself. However, the strong presence of actual historical documents and characters informs and educates the reader while also contributing significantly to the reinforcement of the overall truth factor of the text. This technique gives the reader the opportunity to have an emotional and empathetic experience of a factual, historically inaccessible event, while allowing the author considerable room for guiding and shaping the possibilities of facilitating that experience for the reader.

IV.2. Creating Context Nets through Historical and Fictional Characters

The form of the text and the information contained therein affect the development of the reader's sense of what is 'normal' in the world of *Morenga* from the very advent of the reading process. A reader with prior knowledge of the historical events referred to in the narrative may have their interpretation of the novel itself influenced by their previously acquired information. All additional information processed will be encoded into the primary context net, as opposed to one composed entirely of information gathered from the novel. Nonetheless, the new information will be processed conscious of the fact that its source is a novel and therefore has a compromised level of veracity and historicity in comparison to the historical information originally received. For the uninformed reader, the creation by narrative elements of what is 'normal' in this textual world allows them to lay down a foundational context net to which all other information

and experiences gained from reading this novel are connected and from which their learning experience begins. According to the previously discussed activation of mirror neurons and default state networks in the reader's brain, a knowledgeable reader upon reading this novel would have a higher level of mirror neuron activation, making them more susceptible to the emotional impact of fictional elements in the novel. The possibility of them developing empathy for the characters and by extension, for the historical occurrences portrayed throughout the narrative is then augmented. The advantage this particular novel has for the unknowledgeable reader is the wealth of historical materials embedded in the text, which serves to mitigate any initial lack of knowledge. This decreases the possibility of the reader merely having a sympathetic response and increases the probability of an empathetic learning experience. The use of fictional characters acts as a medium of communication between the reader and the text and binds the historical and fictional elements within the narrative and the reader's mind. Conversely, the fragmentary character and montage elements of the text may also disturb the ability of the reader to create a cohesive narrative, forcing their minds to engage with the text in an effort to determine the narrative reality of the situation.

IV.2.a. Morenga

The first information a reader will process from the novel is the title – *Morenga*. A title informs the reader that the information to be gathered from the coming narrative is likely to belong to a context net organized around the concept of the term 'Morenga'. On a narrative level, the title *Morenga* suggests a central importance to whatever or whoever

'Morenga' is. This initial impression for the reader forms a foundational expectation upon which and through which all other impressions, information and experienced gathered from the text is processed. Within the first two pages of the novel, the reader is introduced to the figure behind the title:

Wer war Morenga?

Auskunft des Bezirksamtmanns von Gibeon: Ein Hottentottenbastard (Vater: Herero, Mutter: Hottentottin). Nennt sich auch Marengo. Beteiligte sich am Bondelzwart-Aufstand 1903. Soll an einer Missionschule erzogen worden sein. An welcher, konnte nicht ermittelt werden. Zuletzt hat er in den Kupferminen von Ookiep im nördlichen Teil der Kapkolonie gearbeitet.

Morenga reitet einen Schimmel, den er nur alle vier Tage tränken muß. Nur eine Glaskugel, die ein Afrikaner geschliffen hat, kann ihn töten. Er kann in der Nacht sehen wie am Tag. Er schießt auf hundert Meter jemandem ein Hühnerei aus der Hand. Er will die Deutschen vertreiben. Er kann Regen machen. Er verwandelt sich in einen Zebrafinken und belauscht die deutschen Soldaten.¹¹⁹

¹¹⁹ Timm, *Morenga*. 6-7. (All translations of *Morenga* are my own).

"Who was Morenga? Disclosure from regional office of Gibeon: A Hottentot bastard (Father: Herero, Mother: Hottentot). Also known as Marengo. Participated in Bondelzwart Rebellion 1903. Apparently received education at a missionary school. Which school could not be confirmed. Most recently worked at copper mine in Ookiep in the northern part of the Cape colony. Morenga rides a white horse that he only needs to water every four days. Only a glass bullet formed by an African can kill him. He can see in the night as clearly as in the day. He can shoot a chicken egg from one hundred metres from someone's hand. He wants to expel the Germans. He can make rain. He changes himself into a Zebra Finch and spies on the German soldiers."

On the level of text form and structure, the reader is presented with information about one character in a cohesive manner – the writing consists of factual points and is written in the style of an official report. The first paragraph is given a source: “Auskunft des Bezirksamtmanns von Gibeon” which strengthens the impression of trustworthy historicity. The semblance of veracity is reinforced in the reader’s mind. These paragraphs present the reader with an opportunity to learn historically accurate (and historically accurate sounding) information about Morenga. This provides context for the rest of the novel, begins to establish a state of ‘normalcy’ for the narrative world, and commences the process of facilitating the activation of the reader’s default state network.

In comparison to the first paragraph, the second one becomes problematic for the reader as they are suddenly confronted with impossible information that contradicts their extra-textual concepts of what is real. Is it actually possible that Morenga makes rain fall and transforms himself into a bird? This information stands in contrast to the plausible initial claims that, for example, he worked in a copper mine. The truth factor of the latter set of “facts” is then cast into doubt, which simultaneously destabilizes the truth factor of the first as they are presented together within each other’s contexts. The veracity with which the historical facts imbue the fantastical claims by virtue of their unified context and text form suggest that these are actual myths, providing the reader with a historically accurate concept of how Morenga was perceived by his followers and members of the regional tribes. This would then play a dual role in forming the reader’s experience of the narrative. However, the relative improbability of these claims being “true” in any real,

extra-textual sense categorizes the information well within the relation of the fictional, thus exciting the imagination of the reader.

By presenting Morenga in this fashion, Timm exposes the inadequacies of both forms of description and challenges the assumptions of colonial concepts of ‘knowing’ the colonized.¹²⁰ The text provides conflicting claims and concepts of who Morenga really is, both as a historical and a textual figure. By placing the reader’s assumption of ‘knowing’ the text in a position of uncertainty, it becomes destabilized. Timm’s use of Morenga in the figurative role of a title, preceding even the narrative itself, is a reflection of the role Morenga’s historically documented person plays in both the extra-textual world of the events which took place in colonial German South West Africa and in the creation of the textual world of the novel *Morenga*. Morenga’s historically documented exploits serve as the unseen force which prompts the actions of the Germans soldiers and colonists; their actions only make sense within the context of ‘Morenga’. Without the personage of Morenga the history of the Nama Rebellion and German colonialism would be significantly different and there certainly could be no historical-fiction novel *Morenga* – it would of necessity be classified as purely fantasy or fiction. Even before the text of the novel begins, the narrative world which Timm develops is placed under the name of a man who exists in a narrowly defined historical space due to the restricted amount of valid documentation confirming knowledge of him. However, Morenga’s very historical existence is interwoven with possibly fictional elements and cast into doubt by the literary transformation from himself as a physical, extra-textual person, to a note in an

¹²⁰ Mary Rodena-Krasan, “Postcolonial Subversions in Uwe Timm’s ‘Morenga.’” *Über Gegenwartsliteratur: Interpretationen und Interventionen*. Bielefeld: Aisthesis Verlag, 2008. 291.

army report or bureaucratic document. All the while, Morenga as a signifier and a character is independent of historiographical constraints and truth-values due to the inescapable aura of myths and legends associated with his name.

Textually, the form in which these paragraphs present information to the reader creates difficulties for the reader's mind, with regard to determining precisely which elements of the novel are actual reflections of a historical reality and which are purely fictional. Arguably, without the narrative pastiche, a naïve reader could simply process the entire novel as a fictional narrative. Certainly such subjects as genocide and concentration camps are extremely difficult to comprehend within the bounds of any reader's personal factual and historical experiences. In a case like this, such naivety would be counteracted by the uninvolved, factual and non-emotional effect the text creates through its use of vocabulary and choice in story-telling. There are no pathetic tales of personal agony and hardship, despite the historicity of the extreme cruelty the Herero and Nama suffered and the recorded barbarity of some Germans towards them. The quiet and factual-sounding narrative tone suggests a historical perspective which contradicts assumptions of pure fictionality. Conflicting concepts of who Morenga is and the role he plays historically and textually are being encoded into the same context net, both restricted by historical documentation and liberated by the imagination. This context net is also larger than it would have been, were it composed solely of the initially given, factual information. The possibility of the information being retrieved at a later date and providing the reader's brain with more nodes upon which further context nets may be built is therefore increased.

IV.2.b. The Reader's Mirror: Johannes Gottschalk

The character of Gottschalk in particular serves as a conduit for the reader into both the historical and fictional aspects of the narrative. He guides the reader through the plot and the African landscape, expressing emotions, opinions and first-person perspectives on the various historical and fictional events he experiences. The growth of a sense of identification between the reader and Gottschalk is thus facilitated. This in turn results in the character of Gottschalk acting as a medium through which the reader is able to access experiences and become exposed to concepts and information which would be otherwise unavailable them extra-textually. Both the reader and Gottschalk begin their journey through the novel in a state of relative ignorance to the actualities of the historical events. The reader approaches the novel from this perspective because although they may have factual knowledge in this regard, they have no way of actually experiencing the historical situation for themselves. Gottschalk is placed in this position, because it is his role in the novel to serve as a mirror for the reader, reflecting how the reader may have experienced or reacted to the situation were they actually able to experience it for themselves.

The story opens with: “Oberveterinär Gottschalk wurde von einem Neger an Land getragen. [...] Gottschalk fühlte die schwitzende schwarze Haut, er roch den sauren Schweiß. Er ekelte sich. Mit einer sanften Drehung wurde er in den Sand gestellt. Gottschalk stand auf afrikanischem Boden.”¹²¹ While the reader is not yet acquainted with Gottschalk and does not know why he is standing on African soil, the text itself is

¹²¹ Timm, *Morenga*, 9. “Head veterinary Gottschalk was carried onto land by a Negro. Gottschalk felt the sweating black skin, he smelled the sour sweat. He was revolted. With a soft turn, he was placed on the sand. Gottschalk stood on African soil.”

highly evocative and addresses the senses. This is precisely the form of text to which a reader's mirror neurons would be highly sensitive. The second quoted sentence particularly encapsulates the multiple abilities of mirror neurons to fire in response to motor actions, sensory activities such as touch, and emotions.¹²² The motor facilities in the reader's mind which replicate the sense of physically feeling the sweat and smelling its sourness, followed by the emotive capacity of feeling disgusted, is evoked in the reader through the stimulus of the text. Although there is nothing in the first sentence to bind the reader's mind to the action in the text – merely a statement that Gottschalk was carried onto African soil – that sentence has a completely different and far more personal context in retrospect once the paragraph has been read to an end. By then, the reader too has known what it feels like to be carried by another man as if by a pack animal and placed onto the shores of Africa. The state of 'normalcy' for the narrative reality has been set for the reader and the novel: it is a world where black men carry European men onto their own land. At the same time, this scene is imbued with a sense of discomfort and unease, as both the Gottschalk and the reader are revolted by the experience. The character of Gottschalk has immediately been pressed into service as a mirror for the reader, serving as an extension or reflection of the reader's physical and emotional reactions to the occurrences in the text.

The reader's reaction to the narrative situation in these sentences is multifaceted. There is the literary experience of the text, in the sense that the reader is aware this is happening to a character called Gottschalk. Additionally, the reader is undergoing a

¹²² See section II.4.a. for references to the dual capacity of mirror neurons to fire for both motor actions and emotions.

personal experience of having their mirror neurons fire synchronously while processing the text. As these sentences are read by the reader, both Gottschalk's experiences as described in the narrative and the reader's own personal neurological reaction to the text are coded into a unified context net in the reader's brain. This is an immediate and total involvement of the reader's mind and body in the reading experience.

After arriving in Africa, the narration retrospectively describes Gottschalk's departure from Germany with great attention to detail – down to the exact time of day and what songs were played by the band standing on the wharf.¹²³ Despite the superfluous details, what is not explained is why Gottschalk has come to Africa. On board the ship, Gottschalk encounters a fellow veterinarian by the name of Wenstrup, who plays a significant role in the development of Gottschalk's understanding of his experiences in colony throughout the novel. Wenstrup asks him why he had volunteered for the South West, which at first seems innocuous but in light of Gottschalk's answer, gains significance. "Gottschalk gab darauf die Antwort: Das habe verschiedene Gründe."¹²⁴ Given the political and social situations in both Germany and the South West at the time, this is a strangely deflective answer to a simple question. Gottschalk is portrayed as a naïve, apolitical person, either ignorant of or blind to the actual realities of life in colonial German South West Africa. This is a reflection of the most likely perspective with which a reader would approach the novel and the historical events embedded in it. From this shared primordial state, Gottschalk and the reader develop a more comprehensive understanding of how they individually perceive their realities, the textual environment

¹²³ Timm, *Morenga*, 9-11.

¹²⁴ Ibid., 15. "Gottschalk offered the answer: There were a number of reasons."

they experience, and their attitudes and perspectives towards the historical events in the novel.

One of the text forms instrumental to the movement of the plot in this novel is Gottschalk's diary – a fictional diary of a fictional character, the content of which is enhanced and expanded by insertions of historical documents and references to facts. Essentially, it is a record of the information processed by Gottschalk through his fictional senses and experiences during his exposure to actual historical events such as the existence of concentration camps for members of the regional tribes.¹²⁵ The diary cannot be considered as a historical narrative perspective despite its historical accuracy, as the frequent references to Gottschalk's fictional childhood memories, dreams of the future and expressions of feeling and emotion are all indications of a fictional world. This diary serves as a conduit through which Gottschalk's personal observations and reflections on the historical occurrences embedded in the novel are conveyed to the reader. The reader is given the opportunity to understand and identify with Gottschalk on an internal *niveau*, facilitating the identification of the reader's mind with Gottschalk's reactions and observations of his experiences. The diary also serves as a reinforcement of the reality of Gottschalk as an individual in the mind of the reader and in the context of the narrative. Its mimicry of a historically authentic form and the appearance of actual historical personages in the diary blur or in some instances even serve to negate the reader's consciousness of Gottschalk as a purely fictional being.

¹²⁵ Ibid., 26. See Excursus for historical references.

The fifth diary entry ‘quoted’ in the novel reads “23.10.04 (Windhuk). Windhuk, die Hauptstadt der Kolonie: Eine Kaserne mit einem kleinen Dorf. General Trotha zu Pferde.”¹²⁶ Throughout the novel, historical personages such as General von Trotha¹²⁷ are woven into the observations or actions of fictional characters. Their historicity is conserved by their textual integrity. The reader is not privy to General von Trotha’s hopes and dreams, how he feels about his work or towards the Herero and Nama. A strong imputation of his historicity is constantly maintained. The appearance of historical personages in Gottschalk’s fictional reality strengthen the reader’s perception of him as a historical and thus perceived to be “real” character, while simultaneously destabilizing the verisimilitude of the historical characters and the role of the novel as some form of a representation of an historical event.

The appearance of genuine historical personages binds a reader’s experience and processing of the text to an extra-textual reality during the encoding process in the brain. If reading historical fiction affects the learning process and real-life decision making abilities of the reader, this connection to actual history may assist in the transcending the border between extra-textual and textual worlds. The emotive aspects of the fictional texts and the activation of mirror neurons are programmed into the same context nets as the historical knowledge the reader processes from the text. Timm’s intentional blurring between fictional and historical worlds and the resulting effect on the perceptions of the reader creates a rich mental environment for the growth of both an empathetic reading experience and a rational learning reading experience.

¹²⁶ Ibid., 24. “23.10.04 (Windhuk). Windhuk, the capital of the colony. Barracks with a small village. General Trotha on horseback.”

¹²⁷ Refer to page 57 for historical reference.

The exact delineation of the fictional and historical worlds in *Morenga* which are woven together by the actions, and interactions of historical and fictional characters is difficult to determine, precisely because of these inter-world interactions. By composing the structure of the novel in this manner, Timm suggests that these boundaries or borders between history and fiction are superfluous in some instances – both in the novel and in the reader’s mind. For the reader, the movement of characters between narrative worlds also affects their perception of the textual and historical realities. In turn, this influences their learning relationship with the text itself. The information processed during the act of reading is coded to be relevant to both the literary world of *Morenga* along with all the emotions and feelings expressed by fictional characters in the novel, and the events of war and genocide which are associated with the roles the historical personages played in the history of the colony in German South West Africa.

Near the beginning of the novel, Gottschalk recalls memories of his childhood which give a hint as to some of the “verschiedene Gründe”¹²⁸ for his volunteering for the South West. Gottschalk’s father ran a store which sold wares from the colonies all over the world. Saffron, dates, figs, dried bananas and almonds lay in glass jars, but he was forbidden to touch them.¹²⁹ The physical manifestations of the existence of those colonies were there in front of him as a child, but they were completely inaccessible – a form of fiction, rather than reality. These fictional memories are interspersed with actual historical references and the inclusion of seemingly exact details, such as the name of the

¹²⁸ Timm, *Morenga*, 15.

¹²⁹ Ibid., 16.

ship they travelled on and the precise times and days on which events occur. “Am 11. Oktober ankerte die ‘Gertrud Woermann’ in Monrovia. Ein Botschaftssekretär kam an Bord mit der Nachricht, in Südwest hätten sich auch die Hottentotten erhoben.”¹³⁰ Morenga, as instigator and leader of the uprising is encountered for the first time by Gottschalk and the reader, although both remain unaware of his role and presence. The indirect reason for Gottschalk’s later experiences in the narrative is initially presented within the context of Gottschalk’s childhood memories of seeing and experiencing the indirect results of colonization in his father’s shop. Morenga’s existence begins to drive the plot and determine the reader’s experience of the novel as well as Gottschalk’s experiences *in* the novel. His role in this instance is a reflection of Gottschalk’s answer to the question of why he had volunteered to serve in German South West Africa in the first place. The vaguely referred to “number of reasons” is a statement of uncertainty and expresses a lack of control or determination on his part. Gottschalk is playing the role of a pawn whose life and reality is dictated by events and powers unknown to him; German political, social and bureaucratic powers, as well the actions of people such as Morenga who are challenging the realities and perspectives that Gottschalk is still unquestioningly accepting. Gottschalk’s lack of awareness concerning the realities which are actually governing his life and experiences is mirrored in the scene where he sees South West Africa for the first time:

Gegen 11 Uhr lichtete sich der Nebel. Eine graubraune Wüstenlandschaft kam zum Vorschein. An der Küste lagen verstreut ein paar Backsteinhäuser, Baracken

¹³⁰ Ibid., 16. “On the 11th of October, the ‘Gertrud Woermann’ dropped anchor in Monrovia. A secretary from the embassy came on board with the announcement that the Hottentots had also risen in rebellion in the south-west.”

Wellblechhütten, Zelte. Keine Palmen, keine Bäume, überhaupt kein Grün.

Obwohl Gottschalk wußte, was ihn landschaftlich erwartete, war er enttäuscht.¹³¹

Although part of Gottschalk is aware of what realistically awaits him, he nonetheless does expect to find *his* concept of reality reflected in what he sees. When he is finally confronted with the inescapable truth of the matter, he becomes disappointed. Regardless of Gottschalk's or the reader's possible expectations of what Africa is to them in their minds, this is the historical and fictional reality of the South West Africa of this novel.

After encountering the reality of the situation he has volunteered for, Gottschalk returns to his childhood memories. He recalls the rare times when his father would go on business trips and his mother would open up the glass jars, allowing him to smell all the aromas:

Zimt, braune Borkenstücke aus Ceylon, Vanille, verschrumpelte braunschwarze Schoten aus Guatemala; Muskat, graurillige Fruchtkerne aus Kamerun, der süße, schwere Duft der Gewürznelken, dickstengelige Blütenknospen, die von den Gewürzinseln in der Molukkensee kamen.

Dieses Wort: Gewürzinseln.¹³²

¹³¹ Ibid., 17. "Around 11 o'clock, the fog lifted. A grey-brown desert landscape came into view. A few brick houses, barracks, tin huts, tents lay strewn along the coast. No palms, no trees, absolutely no green. Although Gottschalk knew what awaited him in regard to the landscape, he was disappointed."

¹³² Ibid., 19. "Cinnamon, brown pieces of bark from Ceylon, vanilla, shrivelled brown-black pods from Guatemala; nutmeg, grey-rimmed fruit kernels from Cameroon, the sweet, heavy scent of cloves, thick-stemmed flower-buds that came from the Spice Islands in the Moluccas Sea. This word: Spice Islands."

The memories evoke the senses in the reader, the sight of strange spices from far off, tropical sounding locales, the familiar yet exotic flavours of cinnamon and vanilla, the sweet, heavy scent of cloves; together with Gottschalk, the reader's mind recalls these scents and tastes. The verifiability of his journeying to the South West and his multi-dimensionality as a character receives an emotional and a fictional reality through this technique of inserting childhood memories into the narration of his current experiences. The factual and documentary styles with which these memories are recounted, and the inclusions of the historical details, combine to create a fictional reality that masquerades as historical truth. A sense of identification with Gottschalk is created in the reader's mind; a concept of shared experience and an understanding of his perspective. The last sentence: "Dieses Wort: Gewürzinseln" exemplifies the power that one word and its associated context nets can wield in shaping and influencing perspective and memory in a person.

Immediately after this precise moment of understanding and identification with Gottschalk, another memory of Gottschalk's is recounted:

Woran denken Sie, wenn Sie Gewürzinseln hören, hatte Gottschalk während der Überfahrt Wenstrup einmal gefragt. Der dachte einen Augenblick nach: ein nach innen gerichtetes Schmecken, dann sagte er: Glühwein, und zu Gottschalk: Ich

glaube, der große Moltke war's, der gesagt hat: Preußens Armee hat keinen Platz für Juden und für Träumer.¹³³

With one word and one sentence, Wenstrup acknowledges the familiar dreams and memories which the words “Spice Islands” evoke, and dashes them by quoting Helmuth von Moltke¹³⁴: “Prussia’s army has no room for Jews and for dreamers.” The colonial fantasy created by Gottschalk and shared by the reader through the fictional textual form of the diary is exposed as just that – as fiction and fantasy – by the reality of one historical quote from a historical personage. This is the inception of a development and a learning experience in both Gottschalk and the reader, as preconceived notions and concepts of what is perceived to be real are acknowledged and then tested by the concrete reality of historically documented facts and events.

The character of Wenstrup, as demonstrated by the incident above, serves as a guide to Gottschalk (and by extension, the reader) forcing them to become aware of new sources of information which contradict previously held perceptions of reality. Gottschalk accesses these sources fictionally through the perceptions his senses process from his surroundings and experiences. Through him, the medium of the text, and the mental processes of the reading mind, the reader also receives access to new sources of information. The narrative character of Gottschalk and the extra-textual reader are

¹³³ Ibid., 20. “Gottschalk had asked Wenstrup during the voyage over: ‘What do you think of, when you hear Spice Islands?’ He thought about it for a moment, an internal tasting: then he said: mulled wine, and to Gottschalk: I believe, it was the great Moltke who said: Prussia’s army has no place for Jews and for dreamers.”

¹³⁴ Field Marshall and Chief of the General Staff of the Prussian Army; he is considered a significant European military leader during the nineteenth century.

thereby presented with the opportunity to refuse to unquestioningly accept externally-created forms of reality and instead, actively evolve their own from their personally collected and processed information and experiences. For the reader, this challenge contains the possibility of questioning the narrative reality that Timm is creating within the novel of *Morenga*. The constant reference to the things which Gottschalk sees, hears, smells, touches, feels, remembers and thinks, all of which are expressed through fictional textual elements, assists the reader in identifying with and conceptualizing Gottschalk's experiences in a way which a recitation of historical facts does not facilitate. The exposure to new information and mental processing thereof leads Gottschalk to question his pre-conceived concepts of reality. Doubting and questioning "official" versions of reality is the beginning of the process of learning and understanding a people, a land and a historical event for Gottschalk, all of which are utterly foreign to him.

In the beginning chapters of this novel, the interaction between historical and fictional elements in the text nurtures the possibility of the reader developing a sense of identification with the character of Gottschalk and the events he is experiencing. Context nets within the reader's mind become programmed with information connecting the fictional experiences, memories and emotions of Gottschalk to a frame of reference that includes actual historical events and people. The repetitious back-and-forth of historical and fictional information and text forms mimics the neurological processes of learning to reader – every connection expands the context nets and engraves the neural connections between factual knowledge and emotional experience a little deeper. The text reflects itself and in so doing, creates a meta-representation of how the reader reacts to the text

during the reading process. This heightens the possibility that the information stored in this context net becomes easier to retrieve from memory and is more likely to stimulate the activation of the default state network in the reader's mind. This in turn, has two significant implications. The connection between the reader's experience of the text and a consciousness on their part of the extra-textual reality of the events portrayed in the novel become stronger. Additionally, an increase in the activation of the default state network is paralleled by amplified activation of mirror neurons in the reader's brain.¹³⁵ This primes the reader's brain for the development of empathy within the context of the events and situations portrayed in the narrative.

IV.3. Contextualizing and Learning in Fiction and History

There are historical events that lie so far outside of the common realm of experience and are of such a profound nature that it becomes difficult to express a true recording or reflection of the event. Facts can be processed, historical information memorized, but that seems at best to only describe certain, external aspects of the event and does not capture the event itself. The author uses Gottschalk to create an initial concept of colonial and historical reality with which a reader can identify and engage their imagination. From that foundation, both the reader and Gottschalk are steadily exposed to an alternative interpretation that challenges both textual and extra-textual assumptions of what an experience of nearly inexpressible historical events could be.

¹³⁵ Iacoboni, *Mirroring People*, 253. Previously referenced on page 38 of this work.

In order to create that first, underlying concept, Timm uses Gottschalk's diary to expose the reader to what is perhaps a fairly common concept of colonialism – the desire to find land, settle down, earn a living and live a peaceful life. It is explained to the reader that Gottschalk's diary was originally lost by him. It was later found and now recounted as an additional third-person perspective on Gottschalk's original first-person perspective. For the reader, this lends additional veracity and trustworthiness to the diary. The third-person narrator reports with a factual tone and in pseudo-historical text form that in Gottschalk's diary are numerous entries containing details on soil conditions, flora of the surrounding area, sketches, and floor plans of farmhouses;¹³⁶ obviously preparations for the development of his personal, colonial life, post-soldiering. From that same authentic-sounding perspective, Gottschalk's intention behind the sketches is revealed: In the evening, before falling asleep, he arranges the furniture in his imaginary farmhouse. Sometimes he decides where the piano will stand and plans which pieces of music his wife and children will play in the warm evenings.¹³⁷ The idyllic scene is reflective of a typical colonial concept – one which is perhaps initially easier for a reader to identify with than the reality of what Gottschalk is actually experiencing. The constant reminders of the fictional nature of Gottschalk's dreams serve to expose them for what they are: a sham which even he can not maintain for long.

In a diary entry marked “21.10.04 (abends, auf den Transportzug nach Windhuk)”, Gottschalk notes:

¹³⁶ Timm, *Morenga*, 21.

¹³⁷ Ibid., 21, 22.

Tr. sagt, das gesamte Stammesgebiet der Herero soll Kronland werden, d.h. für die Besiedlung freigegeben. Angeblich das beste Land in Südwest, gute Weiden und verhältnismäßig viel Wasser. Ein schöner Gedanke, daß es in dieser Wildnis einmal Augen geben wird, die Goethe lesen, und Ohren, die Mozart hören. Die Flüsse heißen Rivier.¹³⁸

There are two images in this entry: one of a people, the Herero, who own the best land in the South West. The second, which stands in juxtaposition with the first, is that this is a wilderness, which will be taken from the Herero in order that (assumed German) eyes will read Goethe, and ears will hear Mozart on those same good pastures. With this quote, a schizophrenic portrayal of colonial lands is clearly exposed.¹³⁹ Gottschalk's peaceful, industrious farm, complete with a dose of domestic bliss in the form of a wife and children, is jarringly contrasted with the annihilation of everything that is domestic bliss for another people. Goethe can only be read and Mozart can only be heard on these lands at the cost of the destruction of another culture. The quote is completed with a detached-sounding note on the regional difference in vocabulary when referring to bodies of running water. This last notation in the diary entry serves to reinforce a portrayal of the longing for the different and the exotic in Gottschalk, only to reveal the dueling desire to destroy the different, in order to reestablish and recreate a picture of German domesticity.

¹³⁸ Ibid., 24. "Tr. says that the collective tribal lands of the Herero will be made Crown Land, which means it will become free to settle on. Apparently the best land in the South-West, good pastures and relatively well-watered. A nice thought that there will one day be eyes that read Goethe and ears that hear Mozart in this wilderness. The rivers are called "rivier"."

¹³⁹ Rodena-Krasan, "Postcolonial Subversions in Uwe Timm's *Morenga*." 282.

This casual expression of the necessity of eradicating another culture in order to establish the one culture Gottschalk prefers is an expression of a lack of empathy for the Herero and the Nama on his part. At this point in the book, neither he nor the reader has had any personal contact with members of these peoples, other than seeing them from a distance as prisoners. Timm repeatedly confronts Gottschalk's character, and through him the reader, with the incompatibility of his colonial daydreams and the historical reality of colonialism.¹⁴⁰ However, the learning process is slow and involves not only all the senses, but also the repeated help from Wenstrup, who, with his straightforward remarks that leave no room for self-prevarications, forces Gottschalk to question his dreams until they fade away in the face of reality.

The reader and Gottschalk's initial introduction to the text and the novel occurs within the context of their arrival in a hitherto unknown place and reality. Just as Gottschalk steps onto Africa carrying memories, pre-conceived notions, and ideals of what he is likely to encounter in the colony, it is likely that the reader approaches the novel with their individual, personal collection of ideas and expectations of what their reading experience of the novel will be like. The reader is encouraged to identify with Gottschalk on a mental and emotional level through the wording, narrative structure and especially the fictional elements of the text in which Gottschalk's thoughts, memories, and impressions of his new experiences are conveyed. Textual facilitation of the activation of mirror neurons in the reader fosters the interconnectivity the reader experiences with Gottschalk. As this connection is established and reinforced throughout the opening chapters, interjections of historical documents and references to historical

¹⁴⁰ Ibid., 282.

personages remind the reader that the narrative world in the novel is not purely fictional but has an extra-textual, reality-based context and application. These reminders are also part of the reading experience and are encoded alongside the information the reader gathers and processes from the text in context nets in the reader's brain.

The slow change in perspective and attitude evolve through a series of paragraphs in which observations and experiences contrast colonial fantasy with colonial reality. The series begins with a previously quoted diary entry from 23.10.04 (Windhuk) which offers a quick, factual description of the capital and mentions the existence of General Trotha.¹⁴¹ This anchors the information gained by the reader through the act of reading from the text which follows this entry in a sense of physical reality, one that can not be dismissed lightly as mere fiction. The second paragraph in this series relates an experience that Gottschalk has on his second day in Windhuk from an authoritative third-person perspective. On his way to report to the commander, he passes a group of Hottentot (Nama) women, who are making explicitly sexual gestures with their hands and mouths.¹⁴² Moll, the veterinarian permanently stationed at Windhuk, observes that the women here have: "keine Moral und darum richtige Schweine, leider seien die meisten syphilitisch."¹⁴³ Gottschalk's first reported, direct encounter with the natives of the colony informs him and the reader that the native women are diseased sexual objects, lacking in morals and therefore comparable to swine in their behavior. No concept of any form of common humanity is acknowledged or even denied.

¹⁴¹ Timm, *Morenga*, 24.

¹⁴² Ibid., 25. "[...] standen geschminkte Hottentottenfrauen, die dem vorbeigehenden Gottschalk Zeichen machten: Mit dem Zeigefiner in die geschlossene Hand fuhren oder die Zungenspitze züngelnd aus dem Mund fahren ließen oder aber mit ihrem erstaunlich großen Steiß wackelten."

¹⁴³ Ibid., 25. "...no morals and therefore are real swine. Regrettably most of them are syphilitic."

This impression is strengthened once more in the third paragraph which begins with a description of a large corral at the edge of the village, full of cattle, sheep and goats which have been taken from the conquered Herero. Gottschalk asks what these animals will be used for, and his fellow veterinarian replies that some will be used as meat for the troops, the rest will just die. Although the German settlers have protested against this waste of possible revenue, General Trotha insisted upon it. The reference to that historical personage once again gives credence to the fictional narration of events while contextualizing the series of paragraphs in an extra-textual reality. Next to the corral of cattle is another corral of barbed wire, in which Gottschalk sees people, more skeletons than humans, mostly naked and huddled together under the blazing skies. In response to Gottschalk's expressed astonishment, Moll states: "Das ist unser Konzentrationslager [...] nach den neuesten Erkenntnissen der Engländer im Burenkrieg errichtet."¹⁴⁴ Gottschalk then observes for the first time that there are women and children in there. Moll comments in reply that they have only recently separated the men from the women and children, because when left together they were always engaging in coital activities, even in broad daylight, and despite receiving almost nothing to eat. He diagnoses this as a boundless drive to procreate. However, since the separation of the sexes, the death rate was finally higher than the birth rate.¹⁴⁵

The growing distance between Gottschalk's perspectives and the official perspectives of the German colonizers on the situation of the prisoners is becoming apparent here. He

¹⁴⁴ Ibid., 26. "This is our concentration camp [...] constructed according to the latest model the English developed in the Boer War."

¹⁴⁵ Ibid., 26.

recognizes them as people, but even after stating that observation out loud, Moll fails to understand his meaning and continues to discuss the depraved and unimaginably cruel situation with professional detachment and a complete unawareness of any moral or ethical connotations which his expressed perspective may have. This third paragraph, when read in the context of the previous two, is where the break in constructed realities occurs for both the reader and Gottschalk. Gottschalk's dreams of spices and music shatter in the face of the naked, starving, dying humans behind the barbed wire. The shared memories and feelings that the reader experiences with Gottschalk through the medium of text are exposed to the textual and historical realities of the concentration camps. This paragraph also creates an awareness of the official colonial reality through the character of Moll, namely that according to the prevailing and official reality, these prisoners of war are *not* women and children, but animals; somewhat less useful than the other animals corralled next to them, because the troops cannot eat them.

The fourth paragraph in this series commences in the style of a geographic report or textbook describing the location of the Spice Islands: "Sie liegen am Äquator, auf dem 130. Längengrad, in der Molikkensee."¹⁴⁶ Their historical, actual existence is firmly stated as a point on the globe, their veracity is confirmed, and this series of impressions and experiences is bound again to an extra-textual form of reality. The spices are then traced on their journey through the jungle, across the ocean. Here the tone changes and becomes decidedly fictional, as they end up in the shop of Gottschalk's childhood memories. There, their scents and tastes are released once more in the mouth of a customer, sensory experiences which were once only the heavy, sweet air of the Spice

¹⁴⁶ Ibid., 26. "They lie on the equator, at 130 degrees longitude, in the Moluccas Sea."

Islands.¹⁴⁷ In light of the previous paragraph, these sentences which are composed of historical accuracy and fictional narration seamlessly woven together are imbued with a bitterly ironic tone. All is cast into doubt, fictional realities falter as dreams face the truth of "...das sind ja Frauen und Kinder."¹⁴⁸ The Spice Islands are never mentioned again in this novel. The concentration camp puts that dream to rest for once and for all, along with all idyllic concepts of life in the colonies. A new state of normalcy is being created to replace the old, previously conceived concepts of reality. What this more accurate reflection of the historical and narrative reality of the situation consists of is revealed in a conversation between Gottschalk and Wenstrup:

Woran die sterben, sagte Gottschalk später zu Wenstrup: Ruhr, Typhus und Unterernährung. Die verhungern. Nein, sagte Wenstrup, man lässt sie verhungern, das ist ein feiner, aber doch entscheidender Unterschied. Gottschalk vermutete lediglich ein Versagen subalterner Dienststellen. Wenstrup hingegen behauptete allen Ernstes, dahinter stecke System. Welches? Die Ausrottung der Eingeborenen. Man will [das] Siedlungsgebiet haben.¹⁴⁹

Gottschalk puts forward every argument that either he or the reader could possibly imagine as to why this is reality; they are dying because of disease, of starvation or incompetence from lower bureaucratic levels. Wenstrup, in his role as a teacher, directs

¹⁴⁷ Ibid., 27.

¹⁴⁸ Ibid., 26. "...but those are women and children."

¹⁴⁹ Ibid., 27. "Later Gottschalk said to Wenstrup: Causes of death: dysentery, typhus and malnutrition. They are starving. No, said Wenstrup, they are being starved, that is a finer but decisive difference. Gottschalk assumed it was due to a failure of some subaltern bureaucrat. In contrast, Wenstrup asserted in all seriousness that there was a system to this. Which? The annihilation of the natives. A territory for settlers was wanted."

Gottschalk's attention to the fact that they are not starving, they are being starved and that there is a fine and significant differentiation there. The existence of the colonial system necessitates the extermination of the natives in order to open the land for settlers. With this last sentence, the reader is reminded of that shared dream of colonial bliss and confronted directly with the utter unsustainability of such concepts in the light of this new, undeniable information.¹⁵⁰ The final scene in this series of paragraphs is only two sentences long. They describe Gottschalk walking by the concentration camp the next morning, on his way to take care of the animals. He sees hands stretching through the barbed wire towards him. Someone had hung a sign most commonly found in a zoo on the fence, which says "Bitte nicht füttern."¹⁵¹ The strongest possible form of the official reality is presented to him and the reader. There are no excusable reasons for these concentration camps. They have been erected because the authorities who determine the official reality of life in the colonial army have deemed these people to be in fact animals.

Both Gottschalk and the reader's preconceived concepts are repeatedly challenged and confronted by the reality of the historical events they experience during Gottschalk's initial introduction to life as a veterinarian in a colonial army. His memories and dreams are initially expressed in the narrative, providing the reader with an expectation of their possible experience of reading the novel. Both Gottschalk and the reader's expectations are then exposed as false, providing Timm with the opportunity to begin to build new concepts of historical and narrative reality. As is demonstrated via the character of Gottschalk, it becomes evident that not only is there a policy of systematic eradication of

¹⁵⁰ Note: In fact, there is evidence that this was a systematic, bureaucratic effort. (Bridgman, *The Revolt of the Hereros*, 168.)

¹⁵¹ Timm, *Morenga*, 27.

fellow humans being perpetrated in the colony, but that sympathy and acknowledgement of the victims' humanity in the face of opposition is not sufficient to prevent further abuses by members of the colonial bureaucracy and military, or by individuals such as Gottschalk and his fellow soldiers.

The establishment of this realization in the mind of the reader enables the next stage of the learning process to begin. Having demonstrated to Gottschalk and the reader that their initial ideas are no longer valid and facilitated the creation of new concepts of reality based on their own observations and experiences, as opposed to trusting an authority to create their realities for them, Timm is able to facilitate their introduction to a different form of mental engagement. As sympathy is demonstrated to be an inadequate response to the situation if change of any sort is to be effected, the narrative exposes Gottschalk to the concept of empathy – a reciprocity of the mind, an experiencing of that which another person or character is experiencing. Empathy is the means by which the gap that naturally exists between Self and Other, German and Nama, colonizer and colonizer can be bridged. The various historical and fictional elements embedded in the text stimulate the neural processes in the reader's mind which are necessary for them to experience empathy as well. In the discussion of the sections of the novel that follow, the identification between the reader and Gottschalk which was created in the beginning of the novel is reinforced and utilized to span additional, larger gaps across cultures, histories and time – connecting the reader in a personal fashion to an experience that otherwise would remain inaccessible for them.

IV.4. Bridging the Gap

Genuinely empathizing with characters in a novel is a distinctly different neurological and reading experience for a reader than merely feeling sorry or sympathizing with them. In many ways, Timm's use of Gottschalk as a conduit through which the reader can gain intimate access to the occurrences and experiences in the text also serves as a reflection or model of how the reader's mind works and interacts with those textual experiences. This is exemplified in a short paragraph reporting a conversation between Gottschalk and a troop doctor from a detached, third-person perspective that raises conflicts surrounding the evocation of sympathy as opposed to empathy in an individual.

So verspürte er beim Vollzug der Prügelstrafe an Eingeborenen (zu den man ihn gern als Viehdoktor abkommandierte) einen Druck im Magen, sogar Brechreiz. Er konnte der Prozedur nur nach einigen Schnäpsen zusehen. Ein langgedienter Truppenarzt versuchte, ihn zu trösten: das alles sei nur eine Frage der Gewohnheit.¹⁵²

As history demonstrates and *Morenga* illustrates, sympathy alone is not enough to prevent the perpetration of such acts – the individual and the mind can become accustomed to them. This results in apathy, as demonstrated in the case of the doctor. At this point in the text, the reader very likely feels sympathy for numerous elements in the

¹⁵² Ibid., 255. “During the implementation of a sentence of corporal punishment on a native (which were often assigned to him as veterinarian) he felt pressure in his stomach, to the point of nausea. He could only attend the procedure after a couple shots. A troop doctor with years in the service attempted to comfort him: it was all a matter of becoming accustomed to it.”

narrative, such as Gottschalk, the situation of the Nama and Herero, etc. The challenge now lies in creating textual possibilities for the transformation of that sympathy into the more effective and permanent evocation of empathy in the reader.

Empathy requires that a reader remains aware of their Self-identity while simultaneously mirroring the Other's experiences.¹⁵³ As previously discussed, this is achieved by the activation of mirror neurons in the reader and results in a personal experience mirroring the character or narrative perspectives used to portray the event, rather than simply expressing feelings of sympathy. On a neurological level, empathy is not a merging of the Self and Other, but the creation of interconnectivity through the firing of mirror neurons – a bridging of the natural gap between oneself and another person.¹⁵⁴ “Thus mirror neurons embody both the interdependence of the self and other – by firing for the actions of both – and the independence we simultaneously feel and require, by firing more powerfully for actions of the self.”¹⁵⁵ The mental process of the maintenance of self-awareness combined with a personal mirroring of the Other ensures that the evoked empathy does not necessarily remain specifically confined to textual perspectives, but can be remembered and recalled by the reader when confronted by extra-textual examples of similar situations, such as other genocides.

¹⁵³ See Eisenberg's definition on page 4 of this work.

¹⁵⁴ “Self-recognition and imitation go together because our mirror neurons are born when the “other” imitates the “self” early in life. Mirror neurons are the neural consequence of the early motor synchrony between self and other, and they become the neural elements that code the actors of this synchrony (the self and the other, obviously.)” Iacoboni, *Mirroring People*, 135.

¹⁵⁵ Ibid., 133.

Regardless if experience is received through a processing of information via a text during the act of reading or by taking in information from the senses such as sight, hearing, etc. in an extra-textual situation, all experience is a processing of information by the brain; the source itself is irrelevant in this case. Whether or not an experience can be deemed ‘personal’ for a reader is dependent on which brain processes the information, fires the mirror neurons, activates the neural networks, and so on. As long as the reader’s brain personally fires in response to textual stimuli and mirrors the actions, events and emotions embedded in the narrative, the same neurons have been activated that would for example, normally fire if they personally were standing on African soil next to Gottschalk. As far as the brain is concerned, the distinction between ‘reading’ experiences and ‘real world’ experiences is nebulous, except for the context in which the information is presented. The context is an individual and arbitrary designation, open to change and manipulation. What this signifies is that in addition to the activation of mirror neurons, any empathy experienced by a reader during the reading process will be encoded alongside the historical information gained from the novel, including the aura of veracity and extra-textual relevance that information implies. Having had an internalized experience in connection with such a situation, similar events would also carry a deeply personal resonance for the reader, which could be transferred to extra-textual events by virtue of mutually encoded and enmeshed context nets. In the case of a reader of *Morenga* this would suggest that the reader would not only develop feelings of sympathy towards Gottschalk or the Herero and Nama victims of colonialism and genocide as they are portrayed in the novel, but having personally experienced aspects of the events

portrayed through the text, they would be able to transfer their personal experiences and apply them to similar historical or perhaps even actual events.

IV.4.a. Creating a Reader's Experience through Words

After being confronted with the inescapable truth of the concentration camp, Gottschalk and the reader find themselves in the position of no longer being able to simply trust any one narrative to realistically reflect the historical event; be it the “official” government perspective on what was happening, namely the opening up of a “Siedlungsgebiet”, or the idyllic, idealistic dreams of colonial life. Their own, personally created perspective must be built from the information available to them. For the reader, Gottschalk continues to act as the conduit between their extra-textual world and the world of *Morenga*. Gottschalk tries to stitch together his own narrative from the ‘historical’ information he processes by observing and experiencing the reality around him and reject the fictions perpetrated by “official” accounts and perspectives. He begins to question the system:

Wie will man ein Land kolonisieren, wenn man sich nicht einmal die Mühe macht, die Eingeborenen zu verstehen, hatte Gottschalk einmal in Keetmannshoop gefragt. Mit Hilfe eines Dolmetschers und einer

Nilpferdpeitsche, hatte Leutnant von Schwanebach geantwortet, einer international verständlichen Sprache.¹⁵⁶

The demonstrated lack of a willingness on behalf of the military authorities to understand and communicate with the colonized combined with Gottschalk's initial experiences of the colony leads him to suspect that the act of colonization can only be done at the expense of the eradication of the colonized, thus eliminating any need for cooperation or understanding between them. The question that guides the bulk of the narrative from this point is one which is relevant for the reader as well: is it possible to understand another people? How does the Self bridge the gap separating them from the Other, and for the reader, can this bridging be achieved through the medium of text alone?

Gottschalk approaches this problem through the medium of communication and develops an interest in learning the language of the people whose land he is in. At first, Gottschalk concentrates only on perfecting his pronunciation, choosing words with the sounds most exotic and strange to him and stringing them into nonsense sentences. This technique parallels the neurological process of learning language, how to read, and attaching meaning to words.¹⁵⁷ Wenstrup is also learns Nama because he is planning to desert from the army and wishes to increase his chances of surviving. However, he only learns a few useful phrases for asking where the next well is located or where he can find something to eat without paying any attention to pronunciation, rendering his useful

¹⁵⁶ Timm, *Morenga*, 110. "How is it possible to colonize a land when no one even bothers to understand the natives?" asked Gottschalk one time in Keetmannshoop. "With the help of a translator and a hippopotamus-hide whip." answered Lieutenant von Schwanebach. "An internationally understood language."

¹⁵⁷ Referring to the gradual build-up of phonemes and graphemes before connecting the sounds to the meanings and shapes of words. See page 25 in this work.

sentences unintelligible.¹⁵⁸ Wenstrup is a character that questions the colonial narratives of what the historical reality of the situation in the colony is and whose response to being forced to live in a reality is to escape. Gottschalk is also beginning to comprehend his reality as it really is, free from personal or colonial fictions. Instead of escaping, he chooses to learn to understand his Self. He also uniquely attempts to understand the alternative form of reality available to him – that of the native perspective, or the Other. A process begins in him that the Germans called “Verkafferung”, or ‘going native’. Historically, this refers to the practice of German men preferring or at any rate, sexually using native women (with or without their permission). This was a serious concern for the German authorities of the time, as it was thought it would lead to the dilution of German blood lines and culture.¹⁵⁹

Three incidences in particular highlight the process and struggle Gottschalk experiences during his attempts to develop something more than just sympathy for the Nama and Herero, to the extent that his decision making and behavior changes in light of his newly gained perspectives. The character of Gottschalk, textual elements and the wording of the narrative combine to give the reader the opportunity to gain both sympathy and empathy for a people and an historical situation outside of their likely available personal perspective. The reader is unable to begin to gain a common understanding with their textual Others (such as Gottschalk, the Herero and Nama, or the historical events) by learning a native tongues as Gottschalk does. What is available is the

¹⁵⁸ Timm, *Morenga*, 59.

¹⁵⁹ Wassink, *Auf den Spuren des deutschen Völkermordes in Südwestafrika*, 68, 69.

universal human trait of developing empathy which transcends the barriers of time, space and language.

In what initially looks like a typical “Verkafferung”, Gottschalk enters into a sexual relationship with a Nama girl called Katharina. The relationship appears to be the ‘usual’ situation in the historical context of the German colonies, in that the girl is merely used for Gottschalk’s physical pleasure with no emotional attachment acknowledged on either side. This relationship is strongly influenced and guided by the effects of language. The reader’s perspective of the relationship between Gottschalk and Katharina, as well as the extrapolation of it as a commentary on the relationship between German colonists and soldiers and the colonized is also naturally dictated by the language and text forms of the narration, for that is the only available access to information for the reader. As Gottschalk and Katharina are lying in each other’s arms after their first encounter, Gottschalk recalls the words of his fellow veterinarian Moll that he used in connection with the native women, in particular his use of the term “Tittenfick.”¹⁶⁰ This memory is a textual example of the power of neurological context nets to influence one’s perspective on situations, in this case both for Gottschalk and the reader. Although Gottschalk attempts to dismiss it, he cannot get the one profane, dehumanizing word out of his head and in self-loathing, he turns away from Katharina. In response, she lays her arm around him and whispers his favorite nonsensical Nama sentence: “Die Mitternachtmaus fliegt durch rote Wolkensteppen.”¹⁶¹ There is no demonstrated mutual understanding in this scene –

¹⁶⁰ Previous reference in this work: page 83. Reference for quote: Timm, *Morenga*, 254. “Tittyfuck”.

¹⁶¹ Ibid, 254. “The midnight mouse flies through red cloud-veldts.” Note: At this time, Gottschalk learns Nama solely according to the aural aesthetics of the words, and not their meanings.

no bridging of the gap between Self and Other for Gottschalk – only incomprehension and language barriers.

As Gottschalk gains new experiences and forms new context nets in connection with Nama women in general and Katharina in particular, Moll's words recede in his memory. However, their contextual influence never entirely leaves him, manifesting as a constant worrying about the danger of getting stung by one of the many scorpions which populate the area. This sense of unease is the result of the mental discrepancies in perspectives which the term “Tittenfick” and Gottschalk's personal experiences with Katharina engender. For the reader, the relationship between these two characters is imbued with disquietude and defined by the use of a certain specific vocabulary. What are notable are not only the words used in conjunction with this relationship, but the words which are *not* used. There is no language of love or romance, not even a description of physical desirability. Gottschalk certainly does not insert Katharina into his original colonial fantasies and imagine her in his planned farmhouse, playing Mozart on a piano while their children sing.

In his diary there is only one allusion to Katharina. It begins with a short description of the weather that day, and then mentions: “Ich gehe zum Hügel”¹⁶² which is his way of referring to the place where he and Katharina meet. He refers to her in the third-person only without acknowledging her name, recounting a dream she had had the previous night: “Sie lag unter einem Rosinenbusch und schlief. Die Sonne schien. Dann kam ein kleines Wüstenfuchslein und trank aus ihrer Brust. Davon wachte sie auf und freute sich,

¹⁶² Ibid., 254. “I go to the hill.”

mußte aber weinen.”¹⁶³ The humanity of Katharina and of her fellow Nama women who so far in the narrative and in colonial reality have been portrayed as sexualized, animalized caricatures becomes undeniable in this diary entry. Regardless of similarities or differences in culture, dreams do not necessarily make sense and are equally foreign to all who hear or read memories of them. Yet in an intimate, personal act of attempting to convey one’s subconscious experience to another person, humans still attempt to share them. In this moment, Gottschalk is experiencing Katharina’s attempt to share her Otherness with him. Despite the incomprehensiveness of the dream, the reader is familiar with the feeling of being emotionally affected by their own dreams – something they share with all humans. Katharina’s joy and sorrow are equally universal human traits, creating a personal, comprehensive bond between the reader and the concept of what previously was an unreachable Other.

Directly after the dream, it is narrated from the third-person that Gottschalk began to worry about a certain question that he knew he would not be able to resolve merely by thinking about it, but would have to eventually act on the matter – namely, “was er tun sollte.”¹⁶⁴

Es war nicht mehr die Frage, ob dieser Krieg Unrecht sei. Das stand für ihn inzwischen fest. Und es gab Augenblicke, wo er das wie einen körperlichen

¹⁶³ Ibid., 255. “She lay under a bush and slept. The sun shone. Then a little desert fox came and drank from her breast. She awoke and was happy, but also wept.”

¹⁶⁴ Ibid., 255. “what he should do.”

Schmerz empfand. [...] Aber gerade dieser Gedanke, daß er sich eines Tages daran gewöhnen könnte, erschreckte Gottschalk.¹⁶⁵

Gottschalk and the reader have come to a point where the common humanity between themselves and the victims of this colony is undeniable – but is the acknowledgement of humanity enough? Gottschalk's sympathy is described here as a physical pain – he is not experiencing what the colonized experience, but “feeling sorrow or concern for the needy or distressed other.”¹⁶⁶ Once sympathy has been established between the perpetrator and victim, is it possible to continue to victimize? Gottschalk is horrified by his realization that it is indeed possible to do just that. Through him, the reader is exposed to the reality that one can become accustomed to almost anything, especially when one does not bear any individual responsibility for the acts but is merely following orders. Gottschalk personally experiences this dilemma when in his official capacity as a veterinarian; he must witness the whippings of native prisoners and tend to them after their punishment has been carried out.¹⁶⁷ The question of “what he should do” is one that follows Gottschalk and the reader throughout the remaining narrative, informing and guiding Gottschalk's actions, as well as influencing the reader's perspective on the incidences narrated in the remainder of the novel.

Shortly after this incident, Gottschalk is stationed elsewhere in the colony. In retrospect, it is recounted that while still in Warmbad, he visited Katharina's parents

¹⁶⁵ Ibid., 255. “It was no longer a question of whether this war was unjust. That had become obvious for him. And there were moments where this realization manifested this in him as a bodily pain. [...] It was precisely the thought that he one day could become used to this that horrified Gottschalk.”

¹⁶⁶ See Eisenberg's definitions of sympathy and empathy on page 4 of this work.

¹⁶⁷ Timm, *Morenga*, 255.

because she had requested him to do so. The father begged for tobacco and constantly mumbled “Gehtinordnung,”¹⁶⁸ the significance of which Gottschalk did not understand until much later. Her mother appeared, with one breast hanging out of her filthy dress. To Gottschalk’s horror, he suddenly saw that Katharina too would become her mother. After the visit, Gottschalk avoided Katharina, but she came to his house one night, calling for him in Nama. Two days after this incident, he received his orders and was glad to leave.¹⁶⁹ Meeting Katharina’s parents is a watershed moment for Gottschalk. Prior to this point, Gottschalk’s perspective regarding his relationship to Katharina and the Nama people is strongly guided and influenced by words and vocabulary – often other people’s words. This visit informs Gottschalk directly through his senses, bypassing the mediating filter of language. He is exposed to a reality which exists outside of the one created by his language. One which indicates that the Nama are not just victims, or colonized, but have homes to which one can be invited to, have fathers and mothers, can have dreams and have their hearts broken, in which they can grow old, become unattractive, and look like their mothers. In short, a reality that is in all essential points exactly like his own.

Even though Gottschalk and the reader have progressed to a point of sympathy with the plight of the colonized, it is not until this scene that it becomes apparent that empathy in the sense that they do not just feel badly, but mirror the experiences of the colonized has not yet been developed. Despite his demonstrated sympathy, he has not fully comprehended the implications of the reality of their humanity – that his actions have consequences in their actual lives for which he is responsible. It is this realization that

¹⁶⁸ Ibid., 331. “That’s alright.”

¹⁶⁹ Ibid., 331.

results in Gottschalk's sense of relief when he is posted elsewhere – his sympathy has become too much for him to bear; mere sympathy alone does not necessarily facilitate action or change in behavior as empathy does.

During this episode, the reader gains access to Gottschalk's personal experiences in the narrative, as he gradually comes to the realization that he himself does not have access to *his* "Other" – Katharina and her people. In order to understand the Other, they must be regarded as equals in every sense of the word. Gottschalk and the reader are still on the outside, looking in, although they have achieved a significant perspective shift, in that the official concepts of colonial reality such as the need for a *Siedlungsgebiet* and the concept that the native peoples are more nearly equivalent to animals than humans is exposed as a fabricated construct. Additionally, Gottschalk's fantasies of an ideal colonial life, of a farmhouse on the veldt and memories of the spices in his father's shop are laid to rest. The acknowledgement of the unrealities of these concepts and of the common humanity which exists between Gottschalk and the colonized people has resulted in the growth of sympathy in Gottschalk. The narrative stimulates in the reader what personal experience has effected for Gottschalk – the facilitation of the development of sympathy in the reader across borders of history and fiction, as well as time and space. What becomes apparent to Gottschalk and the reader during this learning process is that something more than sympathy is needed to bridge the gap between Self and Other, namely the evolution of empathy.

IV.4.b. Building Relationships between Self and Other by understanding the Self

At this point in the narrative, a number of questions are inserted between a diary entry and a third-person narration concerning a specific episode which will be discussed shortly. They are presumably addressed to the reader or are perhaps meta-reflective of both the character of Gottschalk and the reader of *Morenga*: “Sah Gottschalk zu dieser Zeit Alternativen? Glaubte er, daß man das verbinden könne (wengistens er), die Seite der Deutschen und die der Aufständischen, oder ganz allgemein der Afrikaner?”¹⁷⁰ Here, the narrator addresses the reader directly, challenging them to mentally engage in the question of reconciling Self and Other, of gaining and understanding of the inaccessible and unknown. The episode which follows directly after is written in the style of short story, recounting how Gottschalk, together with another soldier under his command by the name of Zeisse, ride out of the camp to the surrounding fields and collect the skull of a cow. They cook off the remaining skin and Gottschalk breaks off two teeth from the jaw. In the gap, he places steel teeth, held in place by a bridge connected to the surrounding teeth. “Dieses Gebiß wird vielen Kühen das Leben retten, dachte er und mußte über diesen Satz lachen. Er bemerkte lachend, wie fremd ihm sein Lachen geworden war, und wurde darüber immer vergnügter.”¹⁷¹

This short episode reflects a profound change in Gottschalk’s perspective. The narrative first asks the reader if Gottschalk thought it possible to somehow bridge the gap

¹⁷⁰ Ibid., 334. “Did Gottschalk see alternatives at this time? Did he believe that someone (probably himself) could bond together the Germans and the rebels, or generally speaking, the Africans?”

¹⁷¹ Ibid., 335. “This denture will save the lives of many cows, he thought, and he had to laugh about that sentence. Still laughing, he noticed how foreign his laugh had become to him, and become yet more amused.”

between German and African, colonizer and colonized. Directly after, the reader is told of an incident in which Gottschalk attempts to do just that. Using “modern” German technologies he develops a device that only the Nama and Herero who treasured their cattle and rarely ate them would value – one which would extend their cattle’s lives by enabling them to continue eating after their teeth had worn down. This is a bridging of the gap in a sense – a binding together of the worlds of the colonizer and the colonized. Gottschalk no longer simply feels sorry for the colonized people, but is using his German education and learned abilities to think and act as they would, in a narrative reflection of the needed ability to consciously recognize both Self and Other in order to empathize. Tellingly, his German companions regard his invention as a manifestation of his growing strangeness, and begin to ignore him.¹⁷² Their behavior illustrates the growing distance between Gottschalk’s new perspectives and the ones he used to hold together with his comrades.

Shortly after, Gottschalk hires a Nama servant who in addition to his regular duties is to teach him to speak Nama properly.¹⁷³ Gottschalk no longer only amuses himself with Nama sounds by stringing them together in nonsensical sentences. He has advanced to the learning stage where sounds must become attached to meanings, which is a shift from information-gathering to comprehension.¹⁷⁴ This development in his language learning reflects the mental and emotional development in the relationship between his Self and the Nama Other.

¹⁷² Ibid., 336.

¹⁷³ Ibid., 346.

¹⁷⁴ See pages 26 and 27 in this work for description of stages in learning to comprehend words and read.

IV.4.c. Understanding the Other through Experience

The interweaving of history and fiction within the text, as well as the varying neurological effects the two forms and their interactions provoke in the reader's brain imbue the non-historical elements in the novel with a sense of authenticity, while simultaneously destabilizing the truth factors of the historical events in the reader's mind. This does not necessarily create difficulties for the reader to genuinely comprehend the significance of the historical events. The novel deals with the weighty subject of genocide – something that is beyond the experience of the average reader. As an issue of such scope and magnitude, its role in the novel mirrors the difficulties of reflecting the emotional and personal perspectives which allow the reader to feel a sense of immediacy or connection while accurately representing a historical event. Achieving a parallel experience in the mind of the reader through exposure to historical, chronological documents can be challenging, as documents alone cannot represent the thoughts and feelings of the characters in the narrative without sacrificing the objectivity and authenticity of the historical record.

The inclusion of fictional elements that interact with and are affected by historical documents and figures in *Morenga* facilitate two significant effects on the reader's experience of the novel. The first emphasizes the role of the author in that Timm is able to influence and guide the opinions, reactions and experiences of the reader with regard to the historical event that is being portrayed by selectively interweaving fictional textual elements through the historical texts. Secondly, as has been previously explored at length

in this work, the reader's mind is presented with a greater volume of opportunities for the stimulation and activation of neuronal activities involved in creating a parallel experience in the reader's mind and in the strengthening of the learning process. By encouraging these processes in the reader's mind through textual stimuli and the effects of the historical and fictional elements, the ability to translate the events portrayed in the narrative to an extra-textual context and form a rational, empathetic opinion about them is enabled.

The following incident is related primarily from an objective third-person perspective, interspersed with diary entries from Gottschalk, ostensibly written during the time it takes place. A Professor Brunkhorst asks Gottschalk to collect the skulls of fallen rebel Nama during patrols with his troops and send them to his institute in Greifswald. He specifically requests the skulls of those who have died fighting. Although there is a superfluity of skulls of women and children who have died of hunger and typhus: "bedauerlicherweise ließen die Aufständischen nur in äußerster Not einen Gefallenen liegen."¹⁷⁵ Gottschalk's diary entry immediately following Dr. Brunkhorst's request expresses the following sentiment: "B. forscht zwar nach Todesmythen und hantiert mit Totenschädeln, die er, um ihr Volumen zu errechnen, mit Senfkörnern füllt. Der Tod lässt sich nicht mit Senfkörnern messen."¹⁷⁶ What Professor Brunkhorst perceives as a matter of scientific interest, Gottschalk comprehends from a more profound perspective. For

¹⁷⁵ Timm, *Morenga*, 351. "...regrettably, the rebels only left the fallen on the battlefield in situations of greatest need."

¹⁷⁶ Ibid., 352-353. "B. explores myths about death and messes around with skulls, which he fills with mustard seeds in order to measure their volume. Death does not allow itself to be measured with mustard seeds."

him, it is an indication that there is a reality beyond the official academic one – one of life and death that cannot be measured or calculated.

In the next chapter, a report by Dr. Brunkhorst is provided for the reader titled “Bericht an die Königliche Preussische Akademie der Wissenschaften über eine Forschungsreise von Dr. Leonhardt Brunkorst, a.o. Professor und der Universität Greifswald in den Jahren von 1903 bis 1905.”¹⁷⁷ The inclusion of this report allows the reader access to information and context that Gottschalk is not privy to and also provides a sense of legitimacy to Gottschalk’s story of collecting the skulls of warriors. Written in a formal, official style, the report discusses the relationship between the Nama and races foreign to them. In it, he specifically describes the problems which the Nama’s social structures present for their colonization and civilization:

Aber es sind gerade diese sozialen Normen, die einer zivilisatorischen Fortentwicklung im Wege stehen. Eine solche Entwicklung beruht im wesentlichen nun einmal auf dem Prinzip der Konkurrenz einzelner Individuen untereinander. [...] Im Stammesverband der Hottentotten aber ist die Konkurrenz durch das Prinzip der gegenseitigen Hilfe außer Kraft gesetzt. Niemand muß für Notzeiten oder Alter versorgen, da er sich darauf verlassen kann, daß andere, sofern sie etwas haben, mit ihm teilen werden.¹⁷⁸

¹⁷⁷ Ibid., 354- 363. “Report to the Royal Prussian Academy of Science concerning a research trip by Leonhardt Brunkhorst, Professor at the University of Greifswald from 1903 to 1905.”

¹⁷⁸ Ibid., 359. “However it is precisely these social “norms” which stand in the way of further developing civilization. Such a development depends strongly upon the principle of competition between individuals. [...] However, in the Nama tribes, competition is substituted with the principle of mutual assistance. No one needs to worry about times of need or old age, as he can rely on the fact that other people, in as much as they are able, will share their goods with him.”

Dr. Brunkhorst's report is a perhaps inadvertent encapsulation of the wide gulf between the colonized and the colonizers. He expresses regret that the social moralities and customs of the Herero create unique difficulties for the development of civilization in the colony. As a colonizer, he understands that civilization is founded on the concept of competition between individuals. This concept is contradicted and frustrated by the Herero principles of mutual assistance according to the need of the individuals – an exactly opposite perspective. Ironically, it should be obvious for the reader that Dr. Brunkhorst's concept of "civilization" is more savage and cruel, less empathetic and less informed by standards of ethics, morals or concepts of common humanity than that of Nama society, which seems to embody in practice, the theoretical standard of civilized, European behavior at the time.¹⁷⁹

Presumably, Gottschalk is never given the opportunity to read Dr. Brunkhorst's report, so this insight belongs exclusively to the reader. This personal mental engagement in developing an independent perspective on the situation and on the Nama as a people enhances and expands perspectives the reader has gained as the result of the empathetic relationship between the reader and Gottschalk. It is notable that the incident being referred to, strange and gruesome as it appears to the average reader, is actually a documented occurrence. One source recorded the practice as follows:

¹⁷⁹ Referring to the "Golden Rule" as expressed in Matthew 7:12 in the King James Bible: "Therefore all things whatsoever ye would that men should do to you, do ye even so to them." As a nominally Christian nation, the philosophy and concept would be standard throughout German society at the time.

Soldaten zwangen kriegsgefangene Frauen dazu, eigenhändig mit Glasscherben die Köpfe ihrer Toten zu säubern, die als Präparate in die wissenschaftlichen Sammlungen und Universitäten nach Deutschland geschickt wurden. [...] Ein Photo [...] dokumentiert eine solche Sammlung von Material: es zeigt drei Schutztruppen-Soldaten, die aufgetürmte Totenschädel in eine Kiste verpacken und trägt die folgende Bildunterschrift: "Eine Kiste mit Herero-Schädeln wurde kürzlich von den Truppen in Deutsch Süd-West Afrika an das Pathologische Institut zu Berlin gesandt, wo sie zu wissenschaftlichen Messungen verwandt werden sollen. Die Schädel, die von Herero-Frauen mittels Glasscherben vom Fleisch befreit [...] wurden, stammen von gehängten oder gefallenen Hereros."¹⁸⁰

Historically, the reality of the situation is actually more appalling than what is portrayed fictitiously in the novel, as the Herero women were forced to clean the skulls of their own men. This is an interesting case of history being almost less believable and relatable than fiction. Despite the historical reality of this incident, whether or not a reader is aware of the historical accuracy framed here as part of a fictional narrative does not affect the facilitation of empathy the narrative sequence has on the reader. The reader will remember a previous incident of skull-gathering – when Gottschalk found and cleaned a cow skull, creating a denture that would save the lives of cows. His actions in that case

¹⁸⁰ Gesine Krüger. *Kriegsbewältigung und Geschichtsbewußtsein, Realität, Dichtung und Verarbeitung des deutschen Kolonialkriegs in Namibia 1904 bis 1905*. Göttingen: Vandenhoeck & Ruprecht, 1999. 97f. Quoted together with a print of the original photo in Wassink, *Auf den Spuren des deutschen Völkermordes in Südwestafrika*, 309-310. "Soldiers forced women prisoners of war to scrape the heads of their own dead with glass shards, which were then sent as biologics to the scientific collections and universities in Germany. [...] A photo [...] documents such a collection of material; it shows three soldiers packing piles of skulls into a box and carries the follows caption: "A box of Herero skulls was recently sent to the Berlin Pathology Institute from the troops in German South-West Africa, where they will be subject to scientific measurements. The skulls, which were freed from flesh with glass shards by Herero women, originate from hanged or fallen Herero.""

demonstrate a respect for and understanding of the Herero and Nama culture and stands in contrast to Dr. Brunkhorst's utter lack of either respect or understanding for the native tribes. This time, Gottschalk's perspective on skull gathering is much more philosophical, but again, reflective of his differing perspective compared to that of the prevalent German colonial attitudes. Dr. Brunkhorst is studying the skulls as representations of a different species. He is utterly detached from any concept of common humanity and only displays a scientific curiosity about their size and shape. He does not mention any interest in the person that skull originally belonged to, the life and dreams that died in order that he might collect his specimens. Gottschalk sees them for what they really are – the last remains of people who are now dead. Although volume can be measured, neither death nor humanity can be. This sentiment echoes the inaccessibility of certain situations such as genocide, which Gottschalk was also witness to and in some ways, participant in. The number of the dead may be counted, but comprehension of genocide cannot be summarized in a table of numbers. It must be found by other means.

IV.5. Inherent Possibilities of Stimulating Learning and Empathy in the Reader

Gaining access to an experience that otherwise would remain unavailable to the reader's mind can be achieved through the interactions of the narrative and the reader's brain. During the evolution of the interconnection between the reader and the text, two aspects of the narrative in particular affect the quality and tenor of the relationship. The first is the interaction between the reader and the textual and narrative elements in the novel. In *Morenga*, both fictional and historical elements contribute to the wide range of

language, information and text forms the reader has access to while forming their reading experience. Fictional elements facilitate the growth of identification between the reader and the events in the novel through representations of characters and emotions. This increases the probability of textual elements such as wording and language will activate the reader's mirror neurons. Additionally, a wider range of contexts than a simple factual recounting of the events surrounding the genocide of the Herero and Nama tribes would provide is created for the reader's mind, through fictional elements such as the characters of Gottschalk (and less significantly Wenstrup), the inclusion of Gottschalk's memories, personal experiences and opinions about historical events and his concepts of reality.

Historical elements such as references and representations of historical events, facts and figures as well as pseudo-historical elements such as documents and diaries increase the reader's knowledge – an important component in the activation of the default state network. They also lend authenticity to the fictional elements, reinforcing the truth factor of the historical fiction novel as a whole. What is particularly meaningful for the purposes of this work is that historical elements create an extra-textual connection in the reader's brain between the knowledge, emotions and experiences processed during the act of reading and concepts and events that the reader experiences external to the reading process. The nebulosity of borders between history and fiction in this novel and the interweaving of the elements create a constant mental interaction with the novel and reinforcement of the knowledge being processed by the reader's brain, which only serves to strengthen and heighten the probability of the default state network being activated. This in turn corresponds with an increase in mirror neuron activity.

The second of the aspects in the narrative that affects the relationship the reader develops with the text is the interaction between their minds and the information embedded in the text via the various narrative elements. In the specific example of *Morenga*, this interaction results in roughly three stages of relationship development and learning for the reader. The initial stage addresses the challenge that every reader brings a unique mind and collection of preconceived concepts to the reading of the novel. No assumption can be made by the author as to their prior knowledge, opinions or perspectives on the subject matter. However, the reader would ideally complete the reading experience of the novel having developed the ability to comprehend the subject matter in an empathetic and rational fashion. In *Morenga*, Timm achieves this through his interweaving of fictional and historical elements. In the second stage, the character of Gottschalk in particular allows the reader to cultivate a sense of identification and interconnectivity with him, which Timm then uses to demonstrate the invalidity of both Gottschalk's and the reader's preconceived concepts about the subject matter and sympathy with the people involved in historical events. The textual facilitation of a relationship between Gottschalk and the reader through various techniques such as Gottschalk sharing his childhood memories, plans for the future, personal perspectives on historical events he witnesses and modes of writing (Gottschalk's diary), exposes the reader to the possibility of developing humanizing perspectives on the Herero and Nama, as opposed to merely intellectual curiosity or interest. The novel contrasts Gottschalk and the reader's personally conceived concepts of the 'reality' of the historical situation (one deserving of their interest and sympathy) and the official colonial perspective that this

was just a bureaucratic matter of creating a *Siedlungsgebiet* for German colonialists. Finally, the reader is confronted with one more perspective on the situation – that of novel itself. These three contrasting views on a single event assist in giving the reader the opportunity to evolve their own opinion on the matter, while making the concept of genocide and the surrounding historical occurrences more readily accessible to them.

The growth of the reader's identification with the character of Gottschalk and the events Gottschalk experiences in the initial chapters of the novel is also a contributing factor to the activation of mirror neurons through the various narrative elements in the text. The initial sympathy the reader feels for Gottschalk and his situation facilitates comprehension in the reader of previously inaccessible experiences such as genocide or even just the concepts of the dynamic between the colonizer and the colonized. Once sympathy is demonstrated to be an inadequate response to the situation, Timm begins to guide the reader through the process of developing empathy using the previously established emotional and mental connection with Gottschalk and meta-narrative elements such as mimicking the learning process in the brain with his interweaving of fictional and historical information. The reader is encouraged to gather information from the various perspectives presented in the novel instead of relying on pre-made concepts bestowed upon them by authoritative sources, assisting them in learning to know their Self. The narrative is then able to guide the reader into independent thought, for example, giving them access to information that Gottschalk is not privy to and that may affect their perspective or challenge Gottschalk's perspective on an event. Having become conscious of their Self and personal stance on issues and matter which arise in the novel, the reader

is able to approach their narrative Others such as Gottschalk, other German officers and the Nama as equals. Here the text again facilitates in forming the potential for the growth of empathy in the reader. No longer does the reader merely react *to* the situation or experience occurring in the novel, but they *mirror* the experiences of the characters. The reader is then presented with the same ethical and moral debates that Gottschalk endures throughout his time in South West Africa.

The initial stage of the reading experience where the reader is encouraged to develop a mental and emotional connection to the character of Gottschalk influences the degree to which historical and fictional elements affect the processing of information. Facts, information, and an expanded body of knowledge regarding the history and stories surrounding the historical events lay the foundation for broad, branching context nets in the reader's brain. The interweaving of fictional and historical elements reflecting and representing the same narrative events reinforces this knowledge. The inclusion of historical elements is significant in that it enhances the authenticity factor of the novel and creates a mental connection to extra-textual history and reality. This connection is also programmed into the same context net as all other information gathered in the novel. The fictional German character of Gottschalk is one of the elements of the text that Timm uses on the level of a meta-narrative. It becomes obvious during the course of the novel that the chances of a genuine Herero or Nama perspective being created is highly improbable due to high rates of illiteracy in the population as well as the unlikelihood of surviving colonialism and genocide. The reader becomes aware that the only authentically possible way for them to access this period of history is from a German's

perspective. In this context, the character of Gottschalk reinforces the overall historical truth factor of the historical-fiction world of the novel, despite (or perhaps because of) his fictionality.

Exposing the reader to historical factual events and fictional emotional events through a single text experience binds the two forms of information and knowledge together in unified and interconnected context nets in the reader's brain, influencing the reader's perspective on both the historical and fictional narrative elements. The combination of the knowledge, information, and personal emotions experienced by the reader during the act of reading (such as sympathy or empathetically mirrored emotions) are processed and stored together in the reader's brain. The development of empathy in the reader during the reading process becomes neurally bound to the reader's concepts of the historical occurrence, affecting their perspective of the event.

By virtue of their own neurological systems, which are capable of interacting with text in a manner that facilitates the activation of their context nets, mirror neurons and default state networks, readers are able to become profoundly mentally engaged with the information in the text. The means to facilitate the development of empathy and learning are inherent within the textual elements of the novel and in the processes of the reader's brain. The probability that the reader will have permanently learned from their experience of the novel and developed a rational, empathetic response to an historical situation which otherwise would remain intangible and inaccessible is dependent on the interaction of these factors during the act of reading.

V. Experiencing through Literature

Developing a concept of the term ‘reader’ based on the biological and neurology of the human brain necessary to the act of reading created a theoretical foundation on which to explore the implications of certain neurological activities such as those of mirror neurons and the default state network. Certain premises regarding the probable narrative and neural influences on the development of a reader’s relationship with the information embedded in a text were then applied to an analysis of the novel *Morenga*, which served as an example of a literary text incorporating a wide range of both fictional and historical elements. Upon reflection of this work as whole, plausible hypotheses concerning the probabilities of a reader’s mind being affected by specific textual elements in such a fashion that desired neurological activities are stimulated emerge. The possibilities for facilitating an empathetic learning experience in a reader are myriad and can be achieved through various forms of narrative and text. The implications of fostering such a reaction are far reaching and will be discussed throughout this conclusion.

The structures and functions of the human brain are universal to all members of the species by virtue of our common evolution.¹⁸¹ It is reasonable to assume that the organs and neural structures of the brain will operate similarly in all humans, according to the functions which they either evolved or adapted to fulfill. This is the logical foundation for the argument that the brains of all humans who have been trained to process information through the medium of text can be expected to react in a similar fashion, according to the

¹⁸¹ Barring of course, any deformities or irregularities in the structures or abilities of the structures to function optimally through genetic anomalies, injuries, etc.

dictates of their neuronal activities when exposed to information via the visual processing and interpretation of words by the brain. The biological structures and neuronal procedures of the human brain influence the reading and learning process for the reader in a variety of ways; a few of which have been explored in detail throughout this work. The combined activities of the static brain structures used in processing and interpreting information gathered during the act of reading and the plastic neuronal networks used to store the processed information guide and determine the reader's personal experience of the text.¹⁸² While the physical structures of the brain and their function remain universal and stable, how they are used, what environments they encounter, and the context within which the information is processed are singular to each reader. Each individual reader therefore develops a personal perspective on the information embedded in a narrative and has a unique experience of the novel.

Context nets are formed during the processing, interpreting and storing of information in the brain. They consist of networks of flexible plastic neurons which act as nodes of saved information. These neurons are capable of being encoded for multiple forms of information simultaneously. For example, the reader of a historical fiction novel such as *Morenga* may read a piece of text recounting an actual event that took place that is predominantly historical, but is presented from a perspective on the situation expressed by a fictional character such as Gottschalk. The fictional perspective on the historical event would be simultaneously encoded in a single context net. Upon remembering and retrieving one of the aspects of that situation, the reader would find it imbued with the context of all connected aspects. Another scenario in which context nets significantly

¹⁸² See chapter II.3 "Reading Structures of the Brain" for more information.

influence the reading experience of a text is a situation in which the emotions of the reader, be they sympathy or more complex forms of empathy, are evoked through textual stimuli in response to an event being portrayed in the narrative. The knowledge of that event is then encoded along with the feelings and experiences the reader perceives during the act of reading. This indicates that the reader's experience of the text and their ability to recollect it are profoundly influenced by the textual context which it is presented in and the emotional context the reader was experiencing during the reading process.

As the research of Iacoboni among others demonstrates, certain neural activities which may be activated through textual stimuli strongly influence how the reader is affected by the narrative elements imbedded in the text, ultimately determining how the text is experienced by the reader.¹⁸³ The two forms of neural activity examined in this work are mirror neurons and the default state network can be prompted to work interactively with each other.¹⁸⁴ Mirror neurons which can be activated through textual stimuli perform multiple neuronal functions simultaneously. Significantly, they activate both the motor neurons which govern action throughout the body and the emotions.¹⁸⁵ Their function is to essentially “mirror” the actions and emotions being expressed by surrounding persons, in the individual’s brain. This is not a simple expression of sympathy or comprehension of the circumstances other people are experiencing, but a replication of their very actions and feelings within oneself. The interconnectivity between two people which can ensue is the biological basis for empathy – the bridging of

¹⁸³ See II.4.a. Mirror Neurons: Reflecting and Re-creating for detailed explanation and references.

¹⁸⁴ See 11.4.a. Mirror Neurons: Reflecting and Re-creating and II.4.b. Default State Networks: Knowledge is Power respectively.

¹⁸⁵ See references to Fogassi’s and Tettamanti’s work on pages 34 and 35 of this work.

the gap between the Self and Other. The default state network is activated when an individual, or in this particular case, a reader, is knowledgeable and relatively well-informed in a subject matter, such as an historical event. When prompted to recollect or consider the ramifications of said event, the reader's brain is then able to consider the issue rationally and logically as opposed to referring to the area of the brain that makes 'snap' decisions, which are based on raw emotions and immediate reactions to the situation. As the activation of the default state network has been demonstrated to correspond with a greater probability of mirror neurons being stimulated, this insinuates that the possibility of the reader being more empathetic, as well as rational in such a situation is a logical conclusion to draw.

These mental procedures or neural activities can affect how information processed during the act of reading is perceived by the reader on two levels. The first is influenced by the textual elements of the narrative itself. Differing elements, be they fictional, historical or a combination of the two contain the possibility of stimulating the neural systems of the reader's brain in different ways. The second is the interaction between the reader's mind and the information embedded in the text. These two levels do not operate independently, but simultaneously influence each other. As demonstrated in the discussion of *Morenga*, fictional elements in the text contain the potential to assist the reader in evolving an emotional or personal connection to characters and through them, events that they otherwise would not have access to. As fictional elements allow for a stronger representation of emotions, dreams, memories, personal perspectives and opinions etc. in the narrative, more opportunities for the activation of mirror neurons are

embedded in the language and wording of the text. Although historical elements also contain performative abilities, the significance of their contribution to reader's experience is more clearly demonstrated in the importance of facilitating the reader's access to factual knowledge which is essential to the mental preparation necessary for activating the default state network.

Regarding the interaction between the reader's mind and the information which is extracted from the text during the reading process, this factor is essential to the creation of context nets in the reader's brain and in determining the components of those context nets. In *Morenga*, the nebulosity of the border between fictional and historical components allows emotional contexts and fictional information to be neurally hardwired to the knowledge of historical events. Because of the truth factor with which historical texts are imbued, fictional events and pseudo-historical events receive an aura of authenticity as the result of the historical context within which they are presented for processing by the reader's mind. Historical textual elements and information also contain an extra-textual reference, binding the reader's experience of the text to the concept that the knowledge, emotions, and empathy they have processed during the act of reading can be applied to the actual historical event or events of a similar nature, *not* experienced through the act of reading.

As first theoretically hypothesized in an exploration of the neuroscience behind the act of reading, processing information and other neural activities in the reading brain, and the demonstrated in practice in a discussion of Timm's novel *Morenga*, a reader's brain

can be provoked to build an emotional and empathetic connection or relationship to a historical event presented through a text. A fundamental element of the development of this relationship is the recreation of the events in the narrative in the mind of the reader. As all experience is the result of the processing of information received through the senses by the mind, whether or not something is considered to be a ‘real’ personal experience as opposed to a ‘not real’ experience is technically an arbitrary designation determined by convention and context. Biologically, the same neurons fire in a human brain when activated through text or more immediately through environment. From this perspective, the denotation of an experience of an event processed through textual stimuli as a ‘personal experience of the reader’ is a valid claim. Therefore, historical events recreated in the mind of the reader and experienced in this fashion can be considered as significant and influential on their perspective as other forms of experience when the reader is attempting to understand, rationalize and empathize with the situation.

All forms of text facilitate the creation of an emotional and rational connection to the subject matter and the evolution of an experience on the part of the reader to varying degrees. The key to the formation of these phenomena lies not solely in the form of the text, the elements from which it is comprised, the information embedded in it, or the human mind that processes the text, but in the interaction and developed interconnectivity between all these factors. Certain historical and fictional textual elements possibly facilitate individual aspects of the reading experience in different ways and to varying degrees. As demonstrated in this work, the novel *Morenga* lends itself particularly well to analysis from neurological perspectives as it combines and interweaves historical and

fictional elements with such consistency as to provide a wide range of opportunities for facilitating an experience of the narrative in the reader. The possibilities of such an experience actually affecting a reader's perception of extra-textual representations or experience of past, present or future historical events cannot be conclusively stated without empirical evidence. Such a quality and degree of evidence would necessitate experimentation which lies outside of the scope of this work. However, based on the neuroscientific and neurological works and experiments cited in this work, certain conclusions can be deduced as being highly probable.

As empathy is a personal experience, caused by the firing of neurons within the reader's own brain and not merely a reaction to an event observed or perceived as occurring external to the reader, it has a profound impact on the reader's ability to care about the historical event and the people involved in it. Personal experiences cause people to have a vested interest in matters that previously did not concern them to the same degree. They are able to develop intrinsic, internal comprehensions of the nuances of the situation that otherwise would remain unavailable to them. The promotion of rationalization, logical thinking and empathy through the activation of default state networks indicates that the combination of all these elements may in fact change or affect a reader's perspective on both extra-textual and textual representations of historical events. The learning process changes the knowledge and perceptions of the reader's mind. Although it is again impossible to state an absolute conclusion on this matter, due to the lack of experimentation and empirical evidence in this field, it is reasonable to predict certain hypotheses which warrant further research concerning the effect of a

textual experience on a reader's concepts of extra-textual events. As long as the events can be connected to the concepts and contexts formed during the reader's experience of a text, for example those of *Morenga*, similar occurrences and events such as other genocides, episodes of colonialism, etc. would be connected in the reader's mind to the empathies, conclusions and perspectives developed regarding the historical events of German colonialism in South West Africa and the genocide of the Herero and Nama tribes during that time.

These conclusions instigate numerous opportunities for further exploration and research into their implications. As stated in the very beginning, the goal of this work has been to form a more accurate comprehension of the interaction and interconnectivity which occurs between a reader's mind, a text, and the information embedded in a text. Approaching this from a neurological perspective has allowed both broad and narrow hypotheses to emerge. On a broad scale, the area of neurology has been demonstrated to be a rich source of precise information concerning activities that occur in the minds of all readers – activities that hitherto could only be surmised or theoretically presumed. On a narrow scale, the exact neurological processes of the reading mind, specifically those of the mirror neurons and default state networks, contain potential for research in many, varied fields. Continuing interdisciplinary research in this area by incorporating literary theories with experiments using brain imaging techniques would facilitate the rapid growth of empirical knowledge in the field and add validity and substance to literary theoretical arguments.

Teaching and learning history, exploring ways of conveying ‘inexpressible’ events and issues such as genocide and promoting and facilitating intercultural relations are only a few of the ways the research begun here could assist in closing the gaps between people, cultures and concepts. The interaction between a reader and a text, or between a Self and an Other, is a continuous event, occurring innumerable times a day, influencing and dictating decision-making abilities, emotions, empathies and relationships between people in a variety of circumstances; be it a business meeting, learning in an academic setting, diplomacy, media or politics, to name just a few. The usefulness of approaching issues which previously have been considered to be separate and distinct from neurological frameworks cannot be underestimated. As technology and research advance in the fields of cognitive science and neuroscience, areas of study that focus on literature and elements thereof, such as the role of the author, the role of the reader, narrative elements, distinctions between genres, fiction and history, and many more, will only gain in relevance and significance.

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